NORSK HYDRO ASA
FINAL WELL REPORT
WELL 6403/10-1

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Final Well Report

6403/10-1

PL 253

Prepared by : Operations Geology Sign. :
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FINAL WELL REPORT
WELL 6403/10-1

PREFACE:

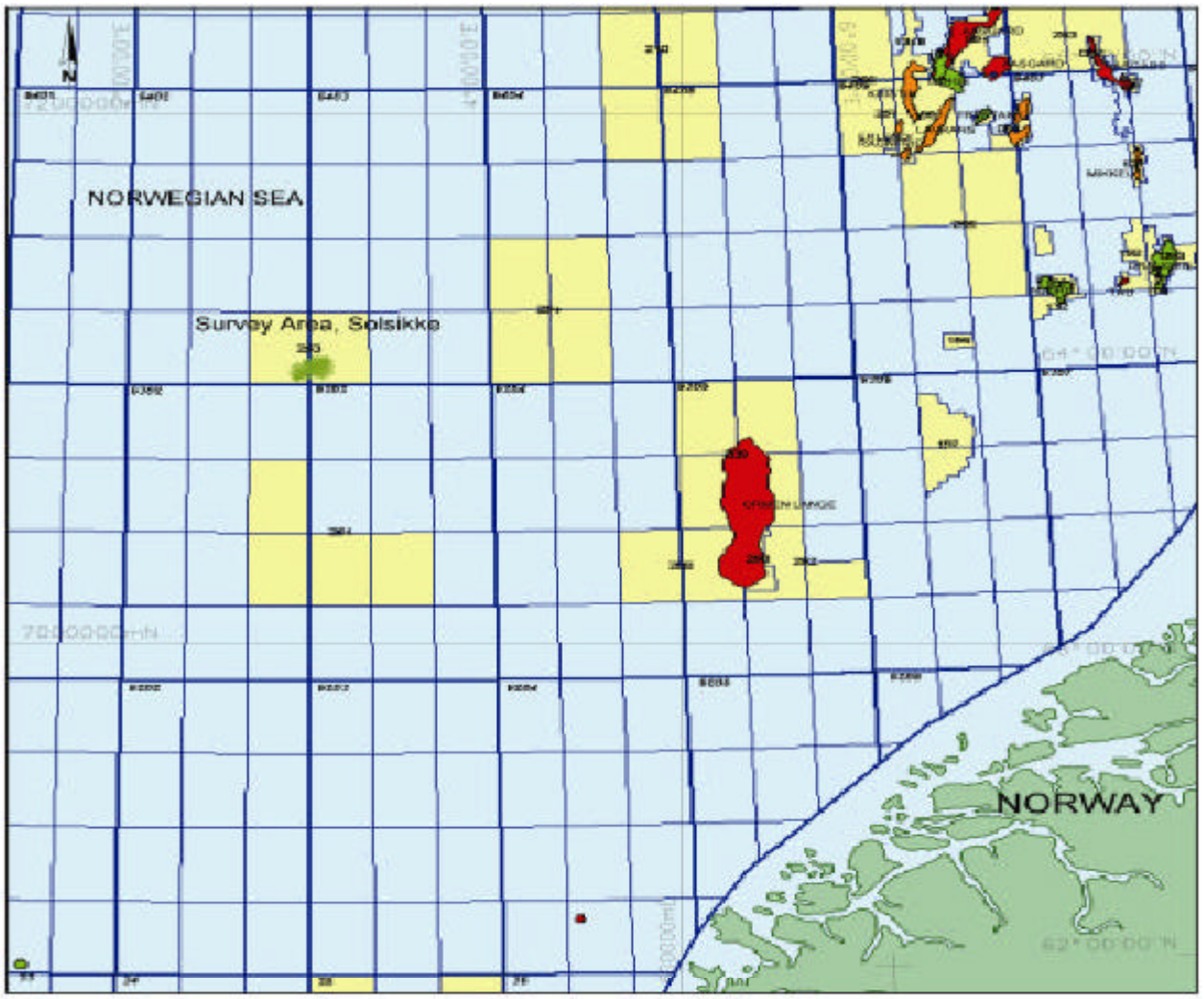
The exploration well 6403/10-1 was drilled to test the hydrocarbon potential in one of the segments of the PL 253 Solsikke dome structure. The primary target was the Nise and Intra Springar sandstones and the secondary target was the Intra Kvitnos sandstones. The license's percentage share of the block is as follows:

PL 253:	
Norsk Hydro ASA (operator)	50.00 %
RWE-DEA	30.00 %
Petoro AS	20.00 %

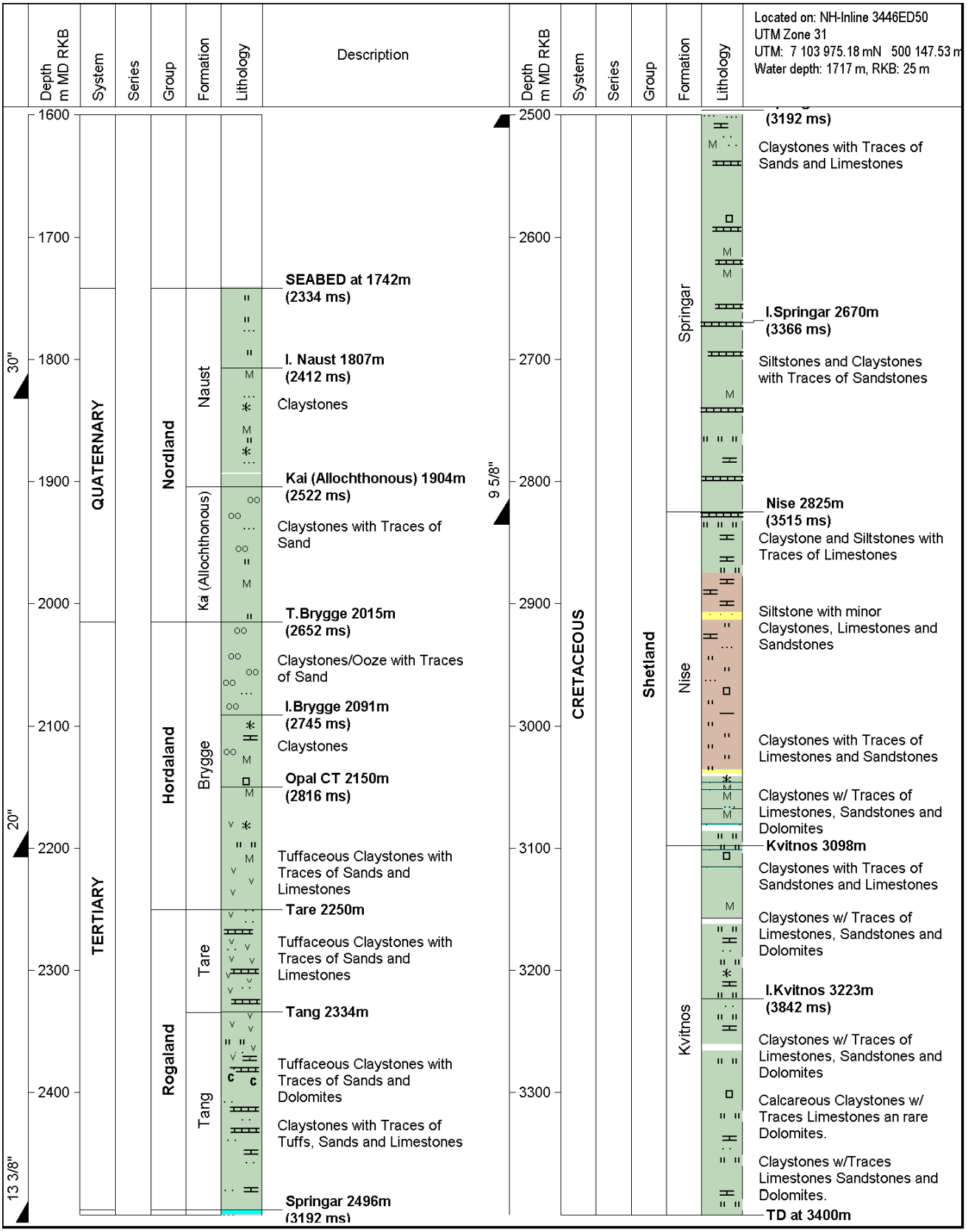
The well was drilled by Norsk Hydro ASA, on behalf of the group, during October to December 2002.

All depths in this report are mMD RKB unless otherwise stated.

Location map:



SUMMARY OF WELL DATA	
LOCATION:	Geo: 64° 03' 39.22" N 03° 00' 10.88" E UTM 7 103 975.2 mN 500 147.5 mE ED 50, UTM Zone 31, CM 03°E
OPERATOR:	Norsk Hydro
RIG:	Scarabeo 5
CONTRACTOR:	Saipem
KB ELEVATION (to MSL):	25m
WATER DEPTH (MSL):	1717m
START OF OPERATIONS:	13.10.2002
WELL SPUDDED (PILOT HOLE):	24.10.2002
REACHED TD PILOT HOLE:	30.10.2002
WELL RE-SPUDDED (PRIMARY HOLE):	31.10.2002
REACHED TD:	15.12.2002
OFF LOCATION (OFF COST):	30.12.2002
STATUS:	Plugged and abandoned
FORMATION AT TD:	Kvitnos
TD DRILLER (mRKB):	3400m MD
TD LOGGER (mRKB):	3398m MD
DRILLING DEPTHS:	8½" pilot to 2207.0 m 36" to 1852.0 m 26" to 2214.0 m 17" to 2518.0 m 12¼" to 2843.0 m 8½" to 3400.0 m
CASING DEPTHS:	30" to 1833.0 m 20" to 2207.0m 13 3/8" to 2510.0 m



Final Well Report 6403/10-1	**Revision: 1.0**	**Geological Well Summary 6403/10-1**

SECTION A

GEOLOGY

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1 Objectives

The PL253 licence is located in the block 6402/12 and 6403/10. The Solsikke structure is situated in the northwestern part of the outer Møre Basin, close to the Møre Marginal High, in the Norwegian Sea. The structure is defined as a large Tertiary dome comprising a thickness anomaly of Upper Cretaceous sediments. The Production License 253 covers partly the dome structure.

The well 6403/10-1 was drilled in a relatively low structural position on the southern part of the dome (Figure 1-1). The location was chosen to test the hydrocarbon potential above a clear flat event within the Nise Formation and at the same time penetrate the Springar in a position of anticipated good Springar reservoir quality near observed flat events within the Springar. The well should also test the intra Kvitnos Formation, but avoid faults within the formations and shallow gas observations. In addition, the spud location had to take into account the rough seabottom. The primary target was the Nise and Intra Springar sandstone and the secondary target was the Intra Kvitnos sandstone.

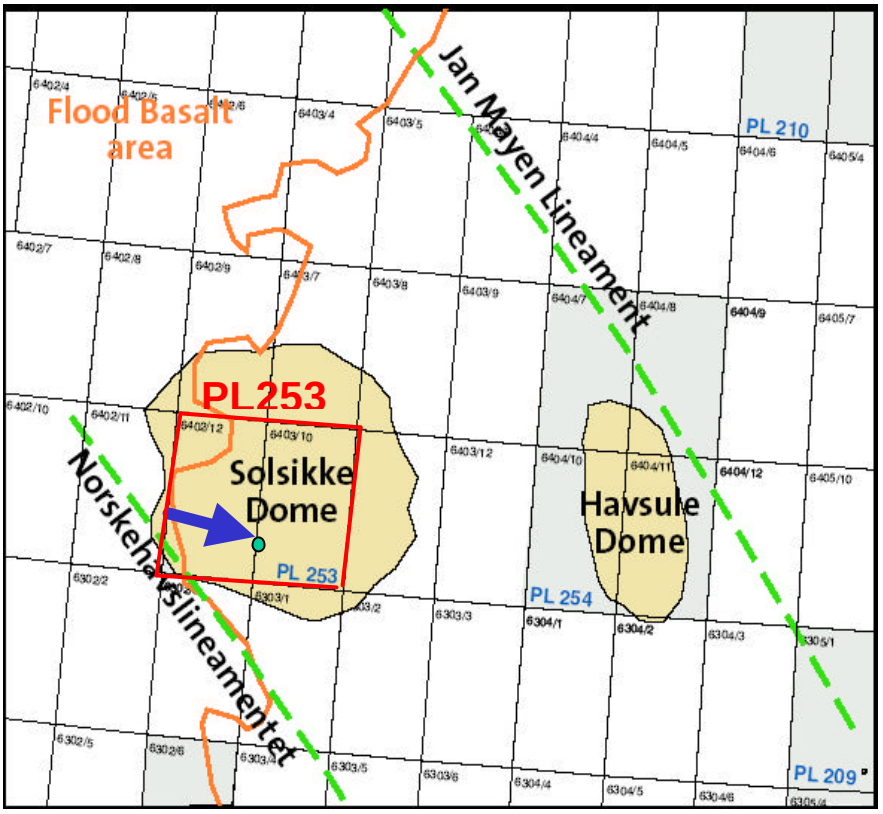


Figure 1-1 Location map

2 Results

The well was spudded 24th October 2002 and reached a total depth of 3400 m MD RKB in the Kvitnos Fm. the 15th December 2002. All drilling objectives were met. The logging objective was not fully met, due to reduced wireline logging with no sidewall coring in the Springar formation of the 12 1/4“ (drilled as 8 ½”) section. The well was permanently plugged and abandoned as a dry well the 30th December 2002.

The main results were as follows:

GROUP	FORMATION	m MD RKB	m TVD RKB	m MSL	Thickness M TVD
NORDLAND	Sea floor	1742	1742	1717	
	Naust Fm	1807	1807	1782	65
	Kai Fm (allochthonous)	1904	1904	1879	97
HORDALAND	Brygge Fm	2015	2015	1990	235
	Opal CT	2150	2150	2125	
ROGALAND	Tare Fm	2250	2250	2225	84
	Tang Fm	2334	2334	2309	162
SHETLAND	Springar Fm	2496	2496	2471	329
	Intra Springar	2670	2670	2645	
	Nise Fm	2825	2825	2800	273
	Kvitnos Fm	3098	3098	3073	
	Intra Kvitnos	3223	3223	3198	
TD		3400	3400	3375	

Figure 2-1: Formation Tops, Well 6403/10-U-1 and 6403/10-1

The well did not prove any hydrocarbons. Mudstone and siltstone were encountered in the Cretaceous reservoir section, with high content of siltstone in Nise. SWC of the siltstone in the Nise Formation showed high porosity but low permeability with no reservoir quality. The well was not conventional cored since the coring criteria were not met.

3 Biostratigraphy

The biostratigraphical evaluation of well 6403/10-1 was carried out by Robertson Research Int. Ltd and covered the interval 1809m - 3400m TD. Micropalaeontological and palynological analyses form the basis for the biostratigraphical interpretation of the well. The analyses were carried out on a combination of samples collected by a remote operated vehicle (ROV) covering the top hole section between 1809m – 2207m, ditch cuttings (2220m – 3400m) and selective sidewall cores (2858m – 3393m). A total 151 samples were analysed for micropalaeontology and 163 samples were analysed for palynology. The analytical results are documented in Robertson's report "Norsk Hydro 6403/10-1 Norwegian Sea Well, Biostratigraphy of the interval 1809m – 3400mTD" (Norsk Hydro report number NH-00146184) and these results have been interpreted and zoned to Figure 3.1 shows a summary of the well chronostratigraphy in accordance with the Norsk Hydro standard zonation for the area. All depths quoted are m MD below RKB.

3.1 Major points

- The interpretation of the top hole section covering the Naust, Kai and (upper) Brygge formations is based entirely on the analysis of selective ROV samples collected between 1809m - 2207m. Even though these samples were of extremely poor quality, the recovery of microfossils was relatively good and has produced viable stratigraphic results.

- The youngest sediments analysed at 1809m are Early Pliocene age and confirm the interpretation of Naust sediments from this depth.

- The top of the Kai Formation is identified at the log break at 1904m MD. A Middle Miocene age was identified at 1895m. This depth difference attributed to a sampling discrepancy. A stratigraphic break is therefore inferred between the Naust and Brygge Formations and represents a maximum time gap of 6 Ma.

- The Kai Formation is identified between 1904mMD – 2015.5mMD and is considered to be bounded both at the top and base by stratigraphic breaks. As an alternative, the seismic interpretation suggests that this unit may represent a slumped unit of Kai Formation into the younger Naust Formation. Significantly, age datings from ROV samples are restricted to the upper part of the Kai Formation above 1923m and critically, there was no recovery from ROV samples in the lower part of the unit making it difficult to test this alternative interpretation.

- The Brygge Formation was penetrated at 2015.5mMD and the boundary represents a major stratigraphic break with the overlying Kai Formation of at least (minimum) 8 Ma. The Brygge Formation is dated as Early Eocene – Late Oligocene/Early Miocene.

- An intra Brygge Formation stratigraphic break is identified at 2118m MD between the Early Oligocene and Middle Eocene and represents a significant time gap of 8 Ma.

- The Opal CT level at 2150mMD lies within the Middle Eocene section of the Brygge Formation.

- The top of the Rogaland Group and Tare Formation at 2242m MD is typically dated as intra – Early Eocene age and the Eocene / Paleocene boundary typically lies within the lowermost part of the formation 2325m ditch cuttings sample.

- The Tang Formation is identified at 2334.5mMD following reference to the standard definition and biostratigraphic control. The unit is entirely Paleocene age. A high gamma unit within the Tang Formation at 2396.5mMD appears to be a regionally correlative maximum transgressive event. The majority of the Tang Formation is Late Paleocene age. However, Early Paleocene microfossils are recorded as cavings (at 2517m)

in the underlying Shetland Group. This suggests that a thin (<6.5m max. potential thickness) unit of Lower Paleocene, Danian sediments (time equivalent to the 'uppermost' Egga Member) are present within a condensed high gamma unit at the base of the Rogaland Group, Tang Formation between 2493mMD and 2496.5mMD.

- The Shetland Group was penetrated at 2496.5mMD defined on the top of a thin limestone.
Supportive biostratigraphic evidence is immediately below this level at 2499m ditch cuttings sample within the underlying mudstones. The boundary between the Shetland Group, Springer Formation and overlying Rogaland Group, Tang Formation represents a stratigraphic break of approximately 4.5 Ma duration. Missing parts of both the Early Paleocene and late Maastrichtian are indicated on the biostratigraphy.

- The Upper Cretaceous, Shetland Group is represented by the Springar, Nise and Kvitnos formations with a total age span of late Maastrichtian to late Santonian.

- The Springar Formation, representing the uppermost formation of the Shetland Group, is typically dated as late Maastrichtian – early Campanian age.
An intra Springar Formation fault at 2620mMD appears to closely coincide with the late / middle Campanian boundary and the minor truncation of some upper Campanian sediments (equivalent to one palyno-subzone).

- The Nise Formation is recognised on a sonic log break at 2825m MD. This is typically dated as an early Campanian age.

- The Kvitnos Formation was identified towards the base of the well 3098m MD to 3400mTD.
The upper boundary (with the overlying Nise Formation) was difficult to define on wireline logs and has been taken on an overall (downhole) decrease in interval transit times. Its position is supported by a late Santonian age based on biostratigraphy and regional correlation.

- The well TD at 3400mMD, within the Kvitnos Formation is dated as being Late Cretaceous, late Santonian age represent the oldest sediments studied.

3.2 Stratigraphic Breaks

Over the entire studied interval 1807m- 3400mMD (Early Pliocene – Late Cretaceous, late Santonian) four stratigraphic breaks have been identified. However, the Shetland – Rogaland Group succession is considered to be remarkably complete (with the exception of the break at the Cretaceous/Tertiary boundary) and no stratigraphic breaks detected. The three main stratigraphic breaks are identified in the younger parts of the well within the Hordaland and Nordland Groups at an intra Brygge Formation level (Eocene/Oligocene boundary), and boundaries between the Brygge, Kai and Naust Formations.

AGE		m MD RKB
Early Pliocene		1809mROV (top not seen)
---Stratigraphic Break----		1904m MD (log)
Middle Miocene (?in situ / re-sedimented unit)		1904m MD (log)
---Stratigraphic Break----		2015.5mMD (log)
Early Miocene		2015.5m MD (log)
Late Oligocene		2064.5m ROV
Early Oligocene		2093m ROV
---Stratigraphic Break----		2118m MD (log)
Middle Eocene		2118m MD (log)
Early Eocene		2207m ROV
Late Paleocene	Thanetian	2325m cu
Late Paleocene	Selandian	2445m cu
Late – Early Paleocene	Selandian - Danian	2490m cu
---Stratigraphic Break----		2496.5m MD (log)
Late Cretaceous	late Maastrichtian	2496.5m MD (log)
	early Maastrichtian	2517m cu
	late Campanian	2553m cu
--------- Fault ----------		2620m MD (log)
	middle Campanian	2628m cu
	early Campanian	2790m cu
	late Santonian	3096m cu
		- 3400m cu TD

KEY TO SAMPLE TYPES: ROV: sample collected by remote operated vehicle, cu: ditch cuttings; swc: sidewall core.

Figure 3-1 Stratigraphic Summary, Well 6403/10-1

LITHOSTRATIGRAPHY		m MD RKB
Nordland Group	Naust Formation	1809mROV (top not seen)
---Stratigraphic Break----		1904m MD (log)
Nordland Group	Kai Formation (? in situ / re-sedimented unit)	1904m MD (log)
---Stratigraphic Break----		2015.5mMD (log)
Hordaland Group	Brygge Formation	2015.5m MD (log)
Rogaland Group	Tare Formation	2250m MD (log)
	Tang Formation	2334.5m MD (log)
---Stratigraphic Break----		2496.5m MD (log)
Shetland Group	Springar Formation	2496.5m MD (log)
	--------- Fault --------	2620m MD (log)
	Springar Formation	2620m MD (log)
	Nise Formation	2825m MD (log)
	Kvitnos Formation	3098m MD (log)
		- 3400m TD (base not seen)

Figure 3-2 Lithostratigraphy well 6403/10-1

4 Lithostratigraphy

All depths are in mMD RKB (RKB elevation is 25 m).

This summary is compiled predominantly from ditch cuttings and sidewall core descriptions.

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 1742 m to 2214 m before setting 20" casing at 2207 m. During drilling of the 8 ½" pilot hole cuttings samples were collected by the use of a ROV (Remote Operated Vessel) at the seabed (wellhead) at each drillpipe connection approximately every 29m. Lag calculations were performed by Geoservices. For details on sampling depths see attached Composite log. The sampling method must be taken into account when interpreting the lithology.
The lithology interpretation is based on MWD logs, cuttings and sidewall core descriptions.

4.1 Nordland Group (1742 – 2015 m MD)

4.1.1 Naust Formation (1742 – 2015 m MD)

1742-1830 m MD: Claystones (from MWD logs and ROV collected cuttings).

Claystones:	mod olv brn-grysh olv, sft, r slty, abd microfos
Age:	Early Pliocene (allochthonous unit)

1830-1866 m MD: Claystones with Traces of Sand (from MWD logs and ROV collected cuttings)

Claystones:	dk gry-grysh blk, sft, sbblky, sli calc mat, Tr slty,
Sand:	m-v crs, Tr Glauc, Tr Microfos, Tr Micromic, r micropyr
Age:	Early Pliocene (allochthonous unit)

1866-1895 m MD: Claystones (from MWD logs and ROV collected cuttings)

Claystones:	m gry-dk gry, sft, sli calc mat, sli slty, Tr sdy: m-v crs, Tr Glauc, Tr Microfos, Tr Micromic.
Age:	Early Pliocene (allochthonous unit)

1895-1923 m MD: Claystones with Traces of Sand (from MWD logs and ROV collected cuttings)

Claystones:	m gry, dk gry-grysh blk, sft, sbblky, sli calc mat, slily slty, slily sdy, Tr Glauc, abd microfos, Tr Micromic
Sand:	clr Qtz, m-v crs, sbrndd, mod srt, lse grns
Age:	Early Pliocene – Middle Miocene (allochthonous unit)

1923-2015 m MD: Claystones/Ooze (from MWD logs and ROV collected cuttings)

Claystones:	lt brn gry-brn gry, sft, ooze, calc, r microfoss, glauc, slty, Tr v f carb fragslty-v f, wl srt, micromic
Age:	Middle Miocene (allochthonous unit)

4.2 Hordaland Group (2091 – 2250 m MD)

4.2.1 Upper Brygge Formation (2015 – 2091 m MD)

2015-2036 m MD: Claystones/Ooze (from MWD logs and ROV collected cuttings)

Claystones: lt brn gry-brn gry, sft, ooze, calc, r microfoss, glauc, slty, Tr v f carb frag, slty-v f, wl srt, micromic
Age: Early Miocene

2036-2065 m MD: Claystones/Ooze (from MWD logs and ROV collected cuttings)

Claystones: lt gry-med lt gry, sbblky, sli stky, sft, ooze, non-r calc, Tr v f Sd, Tr Micropyr, tr Micromic
Age: Early Miocene

2065-2091 m MD: Claystones (from MWD logs and ROV collected cuttings)

Claystones: lt brn gry-lt gry, sft, calc, r microfoss, glauc, slty, Tr v f carb frag
Age: Late Oligocene

4.2.2 Lower Brygge Formation (2091 – 2250 m MD)

2091-2121 m MD: Claystones (from MWD logs and ROV collected cuttings)

Claystones: gn gry-med lt gry, occ gry gn, sft, non calc, sli slty, Tr Micromic, abd v f carb frag
Age: Early Oligocene

2121-2151 m MD: Claystones (from MWD logs and ROV collected cuttings)

Claystones: gn gry-gry gn, sbblky, stky, sft, calc-v calc, sli slty, r micropyr, Tr Glauc, Tr Micromic, Tr v f carb frag
Age: Middle Eocene

2151-2178 m MD: Claystones (from MWD logs and ROV collected cuttings)

Claystones: gn gry-lt olv gry, gry gn-bril gn, sbblky, stky, sft, non calc, sli slty, r micropyr, Tr Glauc, Tr Micromic, Tr v f carb frag
Age: Middle Eocene

2178-2220 m MD: Claystones (from MWD logs and ROV collected cuttings)

Claystones: gry gn-lt olv gry, sbblky, stky, sft, non calc, sli slty, r micropyr, Tr Glauc, Tr Micromic, Tr v f carb frag
Age: Middle Eocene

2220-2250 m MD: Claystones

Claystones:	varicol, pred gry grn-pl grn ,pl olv gry, pl brn, yel gry-lt olv gry, occ sl spkld, sbblky-sbplty, non-sl calc I.P., gen frm, mod hd when pl brn, in lower part of interval also spkld, ashy tex, crmbly, r crs xln Qtz
Age:	Early Eocene

4.3 Rogaland Group (2250 – 2496 m MD)

4.3.1 Tare Formation (2250 – 2334 m MD)

2250-2265 m MD: Claystones with minor Tuff and Traces of Sand

Claystones:	varicol, pred gry grn-pl grn ,pl olv gry, pl brn, yel gry-lt olv gry, occ sl spkld, sbblky-sbplty, non-sl calc I.P., gen frm, mod hd when pl brn,
Tuff:	olv gry-m lt gry-dk gry, crmbly, spkld, shards
Sand:	lse g, m-v crs lse Sd g, also frac frag of larger pbls ,clr-mlky-trnsl Qtz Tr Pyr
Age:	Early Eocene

2265-2271 m MD: Claystones with abundantd Tuff and Traces of Sand

Claystones:	varicol, incr brnsh gry, pl brn, slty firm, non calc, I.P. gry grn, yel gry-lt olv gry, occ sl spkld, sbblky-sbplty, non-sl calc I.P., gen frm, mod hd when pl brn,
Sand:	lse g, m-v crs lse Sd g, also frac frag of larger pbls ,clr-mlky-trnsl Qtz Tr Pyr
Tuff:	olv gry-m lt gry-dk gry, crmbly, spkld, shards
Age:	Early Eocene

2271-2334 m MD: Claystones with abd Tuff and Limestone stringers

Claystones:	pred m dk gry, m dk gry, I.P. brnsh gry-pl brn, sft-frm, slty, non calc, also gry grn, pl grn, slily calc, Tr glauc.
Tuff :	lt gry, m gry, occ blk, spk, mott, crumbly, slily calc.
Limestones:	off wh, v lt gry, I.P. lt brn, mod hd-hd, blky, microxln occ crpto xln, slily to v arg.
Age:	Early Eocene

4.3.2 Tang Formation (2334 – 2496 m MD)

2334-2386 m MD: Claystones with Traces of Tuff and Limestone and Dolomite stringers, rare Sand

Claystones:	pred m gry-m lt gry, tr lt grn gry, mnr dk gry, sft-frm, r mod hd, sbblky, non calc, Tr spkld Tf, r pyr nod frag, tr dsm micropyr
Sand:	lse Qtz g, f-v crs, gen v ang, mnr sbrnd, occ clastic sand,
Limestones:	off wh-wh, v lt gry, I.P. lt brn, mod hd-hd, microxln occ crptoxln, slily to mod arg.
Dolomites:	dk yel brn-pl yel brn, mod hd-hd, blky, brit occ spltry
Tuff:	lt gry, m gry, occ blk, spk, mott, crumbly, slily calc, blk/wh glas shards, tr ang Qtz g, Qtz frag.
Age:	Late Paleocene

2386-2392 m MD: Claystones

Claystones:	dk gry-gry bl-brn blk, carb, tr-loc abd micropyr, dsm micropyr, non calc
Age:	Late Paleocene

2392-2447 m MD: Claystones with Traces of Tuff and Limestones, Dolomite stringers, rare Sand

Claystones:	pred lt gry-m v lt gry, tr lt grn gry, mnr olv gry, sft-frm, sbblky, non calc, tr spkld Tf, r pyr nod frag, tr dsm micropyr, tr slty or Tf glas, I.P. r glauc
Sand:	lse Qtz g, v crs-crs, sbang-sbrnd, clr, trnsl, probably clastic origin
Limestones:	off wh-wh, lt gry-v lt gry, I.P. lt brn, mod hd-hd, microxln occ crpto xln, mnr xln trnsl, slily to mod arg, mnr cln, r micropyr, r glauc
Dolomites:	dk yel brn-pl yel brn, dsky yel brn, mod hd-hd, blky, brit occ spltry, sl arg
Tuff:	lt gry, m gry, occ blk, spk, mott, crumbly, slily calc, blk/wh glas shards, tr ang Qtz g, Qtz frag.
Age:	Late Paleocene

2447-2470 m MD: Claystones with Traces of Limestone and Dolomite stringers, rare Sand, rare Tuff

Claystones:	pred lt gry-m v lt gry, tr lt grn gry, mnr olv gry, sft-frm, sbblky, non calc, gen sl slty, r spkld Tf, r pyr nod frag, tr dsm micropyr, I.P. r glauc
Tuff:	lt gry, m gry, occ blk, spk, mott, crumbly, slily calc, blk/wh glas shards, tr ang Qtz g, Qtz frag.
Sand:	m gry, vf-slt, mod srt, arg, tr glauc, no shows
Dolomites:	dk yel brn-dsky yel brn, hd, blky, brit, spltry, sl arg
Limestones:	off wh-wh, lt gry- m gry, mod hd-hd, microxln, mnr trnsl xln, slily arg-cln, r micropyr, r glauc
Age:	Late Paleocene

2470-2475 m MD: Claystones with Traces of Limestones and Dolomites

Claystones:	pred m gry-lt gry-olv gry, mnr lt grn gry, sft-frm, gen sl slty, mnr dsm micropyr, r grn glauc spkls, pos Tf spkls, tr py
Dolomites:	dk yel brn-dsky yel brn, hd, blky, brit, spltry, sl arg
Limestones:	off wh-wh, lt gry- m gry, mod hd-hd, microxln, mnr trnsl xln, slily arg-cln, r micropyr, r glauc
Age:	Late Paleocene

2475-2491 m MD: Claystones with Traces of Limestones and Dolomite stringers

Claystones:	pred lt gry-olv gry, mnr m gry + lt grn gry, sft-frm, gen sl slty, mnr dsm micropyr, r grn glauc spkls, pos Tf spkls, tr pyr
Dolomites:	dk yel brn-dsky yel brn, hd, blky, brit, spltry, sl arg
Limestones:	off wh-wh, lt gry- m gry, mod hd-hd, microxln, mnr trnsl xln, slily arg-cln, r micropyr, r glauc
Age:	Late Paleocene

2491-2496 m MD: Limestones and Chert with Traces of Dolomite

Limestones:	wh-off wh, lt gry-m gry, mnr trnsl xln, mod hd-v hd, microxln, mnr crs xln, blky, mnr sl arg, gen cln, r micropyr
Dolomites:	dk yel brn-dsky yel brn, hd, blky, brit, spltry, sl arg
Chert:	trnsl, lt gry, mnr mlky or clr, v frac, v hd, spltry, brit, occ w calc lam
Age:	Late-Early Paleocene

4.4 Shetland Group (2496 – 3400 m MD)

4.4.1 Springar Formation (2496 – 2825 m MD)

2496-2518 m MD: Claystones with Traces of Sandstone/Sand, Traces of Limestones

Claystones:	brn gry-lt brn gry, mnr m gry, frm, sbplty-sbblky, non -v sl calc, micromic, I.P. vf-mnr f sdy, r glauc, tr pyr nod frag
Limestones:	mky wh-off wh, lt gry-dk gry, blky, hd, microxln, loc cryptoxln
Sand:	clr, mnr trnsl Qtz, vf-f, lse, sbang-sbrnd, mod srt, tr mic
Age:	Late Maastrichtian

2518-2601 m MD: Claystones with Traces of limestone and rare Sand

Claystones:	m gry-lt gry, occ lt gn, dk gry, occ v hd, sft-frm, sbfiss, blky - sbblky, slily slty, non calc
Limestones:	lt gry, off wh, frm-hd, occ arg, microxln
Sandstones:	clr-trnsl Qtz, lse gr, m-crs, sbang
Age:	Early Maastrictian – Late Campanian

2601-2625 m MD: Claystones with rare Limestones, Dolomites and Sandstones

Claystones:	m gry-lt gry, occ lt gn, sft-frm, sbfiss, sbblky, slily slty, r micromic, tr micropyr, r pyr, non calc
Limestones:	lt gry, off wh, frm-hd, occ arg, microxln
Dolomites:	dk yel brn-dsky yel brn, v hd, blky, brit, sl arg
Sandstones:	lse, vf-slt, sbrnd, mod -wl srt, r g of lrg/v crs ang Qtz frag
Age:	Late Campanian

2625-2661 m MD: Claystones with rare Limestones, Dolomites and Sandstones

Claystones:	m gry-lt gry, occ lt gn, sft-frm, sbfiss, sbblky, slily slty, r vf sdy ,r micromic, tr micropyr, r pyr, non calc, r slic (Very slight fm change)
Limestones:	dk yel or-pl yel or, lt gry, off wh, frm-hd, occ arg, microxln
Dolomites:	dk yel brn-dsky yel brn, v hd, blky, brit, sl arg
Sandstones:	lse, vf-slt, sbrnd, mod -wl srt, r g of lrg/v crs ang Qtz frag
Age:	Middle Campanian

2661-2691 m MD: Claystones with Traces of Limestones and Dolomites

Claystones:	m gry-lt gry, occ lt gn, sft-frm, sbfiss, sbblky, slily slty, r vf sdy ,r micromic, tr micropyr, r pyr, non calc, r slic
Limestones:	dk yel or-pl yel or, lt gry, off wh, frm-hd, occ arg, microxln
Dolomites:	dk yel brn-dsky yel brn, v hd, blky, brit, sl arg, calc trnsl, wh, crs xln, ang frag
Age:	Middle Campanian

2691-2742 m MD: Claystones and Siltstones with Traces of Limestones and Dolomites, rare Sand

Claystones:	pred m gry, mnr m lt gry-vlt gry, pred frm, sbblky, sbfis, non calc, gen non-sl slty, mnr slty grdg Sltst, r vf sdy, r pyr, r Glauc
Siltstones:	lt gry, sbblky, non calc, mnr vf sdy, sl arg-cln, Tr Micromic, r glauc, r micropyr,
Limestones:	lt gry, off wh, frm-hd, occ arg, microxln
Dolomites:	dk yel brn-dsky yel brn, mod brn, hd-v hd, blk, brit, sl arg
Sand:	lt gry-lt olv gry, clr-trnsl Qtz, vf-slt, v fri, sbrnd, mod-wl srt, non calc, Tr Micromic, r glauc, sl vis por, n/s
Age:	Middle Campanian

2742-2770 m MD: Claystones and Siltstones with Traces of Limestones

Claystones:	pred m dk gry, mnr m lt gry-vlt gry, pred sft - frm, sbblky, sbfis, non calc, gen non-sli slty ,r vf sdy, r pyr, r Glauc, r micromic
Siltstones:	lt gry, sbblky, non calc, incr vf sdy, sl arg-cln, tr micromic, r glauc, r micropyr,
Age:	Middle Campanian

2770-2796 m MD: Claystones and Siltstones

Claystones:	m dk gry - olv gry, m lt gry, r lt gn, pred sft - frm, sbblky, non calc, gen non-sl slty, r pyr, r Glauc, r micromic
Siltstones:	m gry - m dk gry, sbblky, non calc, occ vf sdy, sl arg-cln, tr micromic, r glauc, Tr micropyr, r Dol
Age:	Middle Campanian - Early Campanian

2796-2825 m MD: Claystones and Siltstones with Traces of Sandstones and rare Dolomites

Claystones:	m dk gry - olv gry, m lt gry, r lt gn, pred sft - mnr frm, sbblky, non calc, gen non-sl slty, r pyr, r Glauc, r micromic
Siltstones:	m gry - m dk gry, sbblky, non calc, occ vf sdy, sl arg-cln, tr micromic, r glauc, Tr micropyr, r Dolomites
Sandstones:	lt gry-lt olv gry, clr-trnsl Qtz, vf-slt, v fri, sbrnd, mod-wl srt, non calc, tr micromic, r glauc, sl vis por, n/s
Dolomites:	dk yel brn-dsky yel brn, vh, blky, brit, micro-cryptoxln
Age:	Early Campanian

4.4.2 Nise Formation (2825 – 3098 m MD)

2825-2843 m MD: Claystones and Siltstone with Traces of Sand, Limestones and Dolomites

Claystones:	m gry - m lt gry, mnr olv gry, pred sft-frm, sbblky, non calc, gen non-sl slty, r pyr, r Glauc, tr micromic
Siltstones:	m gry-olv gry, sft-frm, sbblky, non calc, gen arg, mnr cln, r glauc, mnr grdg vf Sst, Tr Micromic, r micropyr
Sand:	v lt gry-yel gry, clr-trnsl Qtz, mnr glauc Sd, vf-slt, mnr f, sbrnd, mod-wl srt, arg-cln, brn glauc, r pyr, sl-I.P. v calc cmt
Limestones:	v lt gry-lt gry, blk spec, mod hd-fri, occ vf sdy grdg calc cmt Sst, mnr arg, r glauc,
Dolomites:	dusky yel brn-dk yel brn, mod hd-v hd, blky, brit, sl arg, microxln-cryptoxln
Age:	Early Campanian

2843-2859 m MD: Claystones and Siltstones with Traces of Limestones

Claystones:	m gry - m lt gry, mnr olv gry, pred sft-frm , sbblky, non calc, gen non-sl slty, r pyr, r Glauc, Tr Micromic
Siltstones:	m gry-olv gry, sft-frm, sbblky, non calc, gen arg, mnr cln, r glauc, mnr grdg vf Sst, Tr Micromic, r micropyr
Limestones:	pl yel orng, off wh, frm-mod hd, microxln
Age:	Early Campanian

2859-2874 m MD: Claystones and Siltstones with Traces of Limestones and Sand

Claystones:	m gry-m lt gry-olv gry, pred sft-frm, sbblky, non calc, gen non-sl slty, r pyr, r Glauc, Tr Micromic
Siltstones:	m gry-olv gry, sft-frm, sbblky, non-slily calc, arg, occ grdg vf Sst, Tr Micromic, Tr Glauc, r micropyr
Limestones:	clr mlky wh-clr trnsl, blky, mod hd, microxln
Sandstones:	v lt gry, clr trnsl Qtz, vf-slty, sbrnd, wl srt, arg, Tr Glauc, r pyr, slily-occ v calc cmt
Age:	Early Campanian

2874-2889 m MD: Siltstones with minor Claystones, Sandstones and Limestone stringers

Siltstones:	m gry-olv gry, sft-frm, sbblky, slily calc, arg, occ grdg vf Sst, Tr Micromic, Tr Glauc, r micropyr, r v f carb frag
Claystones:	m gry-m lt gry-olv gry, pred sft-frm , sbblky, non calc, gen non-sl slty, r pyr, r Glauc, Tr Micromic
Sandstones:	v lt gry, clr trnsl Qtz, vf-slty, sbrnd, wl srt, arg, Tr Glauc, r pyr, slily-occ v calc cmt
Limestones:	clr mlky wh-clr trnsl, occ wh, blky, mod hd-hd, microxln
Age:	Early Campanian

2889-2922 m MD: Siltstone with minor Sandstones and Limestone stringers, with rare Traces of Dolomites

Siltstones:	m gry-m dk gry, sft-frm, sbblky, slily stky, calc-v calc, arg, occ grdg v f Sst, Tr Micromic, Tr Glauc, r micropyr, v f carb frag
Sandstones:	v lt gry, clr trnsl Qtz, v f-f, sbrnd, mod-wl srt, slty-arg, Tr Glauc, r pyr, v calc cmt
Limestones:	wh-trnsl wh, v pl org-yel org, sbblky-blky, frm-occ mod hd, occ slily arg, microxln
Age:	Early Campanian

2922-2955 m MD: Siltstones with minor Sandstones and Limestone stringers

Siltstones:	m gry-m dk gry, sft-frm, sbblky, slily stky, sli calc, arg, occ grdg v f Sst, Tr Micromic, Tr Glauc, r micropyr, v f carb frag
Sandstones:	v lt gry, clr trnsl Qtz, v f-f, pred v f, sbrndd, mod-wl srtd, slty-arg, Tr Glauc, sli calc cmt, r pyr nod, r mic
Limestones:	wh-trnsl wh, v pl org, sbblky-blky, frm-occ mod hd, occ slily arg, microxln
Age:	Early Campanian

2955-2976 m MD: Siltstones with Traces of Sandstones and Limestones

Siltstones:	dk gry-m dk gry, frm, blky-sbblky, v calc cmt, I.P. v f sdy, sli arg, r glauc, r micromic, r micropyr, r blk spec
Sandstones:	v lt gry, clr trnsl Qtz, v f-f, pred vf, sbrnd, mod-wl srt, slty-arg, Tr Glauc, v calc cmt, r pyr nod, r mic
Limestones:	wh-v lt gry, yelsh wh, v pl org, sbblky-blky, frm-occ mod hd, occ slily arg, microxln
Age:	Early Campanian

2976-3000 m MD: Siltstones with Traces of Limestones, Sandstones and Dolomites

Siltstones:	m dk gry-olv gry, sft, amor-blky, gen sft-frm, var calc, gen non calc, micromic, v arg grdg Clst, r Tr v f Sdy, r Tr Glauc, r micropyr Limestones: wh-pl yel brn, hd, blky, microxln, loc v arg grdg Mrl
Sandstones:	v lt gry, clr trnsl Qtz, v f-f, pred vf, sbrnd, mod -wl srt, slty-arg, Tr Glauc, sli calc cmt, r pyr nod, r mic
Dolomites:	pl yel brn-brn gry, hd, blky, gen microxln, occ sucr
Age:	Early Campanian

3000-3021 m MD: Claystones with Traces of Limestones and Sandstones

Claystones:	m dk gry-olv gry, sft-frm, stky, amor-blky, non-slily calc, slty, Tr v f Sd, Tr Micromic, r glauc, r micropyr
Limestones:	pl yel brn, frm-hd, blky, microxln, loc v arg grdg Mrl
Sandstones:	v lt-m gry, clr trnsl -mlky wh Qtz, v f-f, pred v f, sbrndd, mod -wl srt, slty-arg, Tr Glauc, sli calc cmt, r micropyr, r mic
Age:	Early Campanian

3021-3030 m MD: Claystones with minor Sandstones and Traces of Limestones

Claystones:	m lt gry-med gry, sft-frm, slily stky, amor-blky, non-slily calc, v slty grdg Sltst, Tr v f Sd, Tr Micromic, r glauc, r micropyr
Sandstones:	v lt-m gry, clr trnsl -mlky wh Qtz, v f-f, pred v f, sbrndd, mod -wl srt, slty-arg, Tr Glauc, sli calc cmt, r micropyr, r mic
Limestones:	wh-pl yel brn, frm-hd, blky, microxln, loc v arg grdg Mrl
Age:	Early Campanian

3030-3041 m MD: Claystones with Traces of Sandstones and Limestones

Claystones:	m lt gry-med gry, sft-frm, slily stky, amor-blky, occ sbfis, non-slily calc, slty , Tr v f Sd, Tr Micromic, Tr Glauc, r micropyr

Sandstones: v lt-m gry, clr trnsl -mlky wh Qtz, v f-f, pred v f, sbrndd, mod -wl srt, slty-arg, Tr Glauc, sli calc cmt, r micropyr, r mic.
Limestones: wh-pl yel brn, frm-hd, blky, microxln, loc v arg grdg Mrl
Age: Early Campanian

3041-3046 m MD: Claystones with Traces of Sandstones and Limestones

Claystones: m lt gry-m gry, sft-frm, amor- sbblky, slily stky-stky, slty, I.P. slily , sdy, slily calc-calc, Tr Glauc, Tr Micromic, r micropyr
Limestones: gry org pk-lt brn gry, wh-v lt gry, frm, blky, occ arg, I.P. slily sdy, pred microxln
Sandstones: lt gry, clr trnsl-mlky wh-lt gry Qtz, v f-f,sbang-sbrndd, wl-mod srt, pred lse Qtz grns, non calc-calc cmt, Tr Mica
Age: Early Campanian

3046-3098 m MD: Claystones with Traces of Limestones, Sandstones and Dolomites

Claystones: olv gry - m dk gry, firm, sbfis-blky, gen var calc, gen slty I.P. v slty grad Sltst , gen vf sdy, Micromic , r Glauc, r Micropyr.
Limestones: wh-lt gry-pl yel brn, hd-mod hd, blky, loc arg, gen microxln.
Sandstones: lt gry, clr-mky Qtz, vf-f, pred f, sbang - sbrndd, mod-wl srt, gen lse, occ fri, mod-wk calc cmt, Tr Micromic, Tr Glauc, n/s.
Dolomites: lt brn gry, hd-v hd, blky, arg, crpxln
Age: Early Campanian – Late Santonian

4.4.3 Kvitnos Formation (3098 – 3400 m MD)

3098-3305 m MD: Claystones with Traces of Limestones, Sandstones and Dolomites

Claystones: olv gry-m dk gry, firm-mod hd, sbfis-blky,gen non calc, mnr calc, gen slty I.P. v slty grad Sltst , var vf sdy, Micromic, r Glauc, r Micropyr
Limestones: wh-lt gry-pl yel brn, hd-mod hd, blky, loc arg, gen microxln
Sandstones: lt gry, clr-mky Qtz, vf-f, pred f, sbang- sbrndd, mod-wl srt, gen lse, occ fri, mod-wk calc cmt, loc arg/slty, Tr Micromic, Tr Glauc, n/s.
Dolomites: lt brn gry-pl yel brn, gen hd, blky, arg, crpxln.
Age: Late Santonian

3305-3400 m MD: Claytstones with Traces of Limestones, Sandstones and Dolomites

Claystones: m dk gry-olv gry , dk gry , firm-mod hd , blky-fis, slily stky, var calc, non slty-slty, pred slty, Micromic
Limestones: wh-gry org, occ lt gry, blky, sft-frm, microxln , non-slily slty, I.P. slily v f sdy, loc arg I.P. grad Mrl
Dolomites: lt brn gry-pl yel brn, gen hd, blky , arg , crpxln
Sandstones: lt gry, clr-mky Qtz, v f, sbang- sbrndd, wl srt, gen lse, occ fri, mod-slily calc cmt ,loc arg -slty ,Tr Mica , Tr Glauc, n/s
Age: Late Santonian

5 Hydrocarbon Shows

The evaluation of hydrocarbon shows at the wellsite was carried out in a conventional manner. A standard (Geoservice) hydrocarbon total gas detector system (Geoservices Gaslogger) together with a gas chromatograph for automatic and continuous gas analysis, recorded as ppm by volume of C1 through nC5, were operational below 2214 m down to the TD of the well.

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

5.1 Gas Record

1742 - 2214m MD: This interval was drilled with returns to sea bed. No gas detection possible.
For gas chromatograph record in the well, see End of Well Report from Geoservices, Well 6403/10-1.

5.2 Oil stain and Fluorescence

No shows were observed in the ditch cuttings in this well.

6 Coring

6.1 Conventional Cores

No conventional cores were cut in this well.

6.2 Sidewall Cores

Using the Mechanical Sidewall Core Tool (MSCT) 50 sidewall cores were drilled and 48 sidewall cores were recovered. Table 6.1 shows a summary of the recovered sidewall cores. For detailed description, see Appendix II.

No	Depth m RKB	Recovered cm	Lithology	Formation/Reservoir Unit
1	3393	4	Claystone	Kvitnos
2	3380	4	Claystone	Kvitnos
3	3360	4	Claystone	Kvitnos
4	3337	4,5	Claystone	Kvitnos
5	3311	5	Claystone	Kvitnos
6	3281	5	Claystone	Kvitnos
7	3262	5	Claystone	Kvitnos
8	3227	3,5	Claystone	Kvitnos
9	3212	4,5	Claystone	Kvitnos
10	3190	5	Claystone	Kvitnos
11	3168	3,5	Claystone	Kvitnos
12	3152	4,5	Claystone	Kvitnos

Figure 6-1: Sidewall Core Summary

No	Depth m RKB	Recovered cm	Lithology	Formation/Reservoir Unit
13	3131	5	Claystone	Kvitnos
14	3088	5	Claystone	Nise
15	3063	5	Claystone	Nise
16	3042	4,5	Claystone	Nise
17	3038	5	Claystone	Nise
18	3028	4,5	Claystone	Nise
19	3016	5	Claystone	Nise
20	3008	3,5	Claystone	Nise
21	2997	4,5	Claystone	Nise
22	2986	2,5	Claystone	Nise
23	2979	4	Claystone	Nise
24	2975	4	Claystone	Nise
25	2966	Empty		Nise
26	2959	4	Siltstone	Nise
27	2944	5	Siltstone	Nise
28	2936	5	Siltstone	Nise
29	2923	5	Siltstone	Nise
30	2917	4,5	Siltstone	Nise
31	2912	4,5	Siltstone	Nise
32	2906	5	Siltstone	Nise
33	2903	4,5	Siltstone	Nise
34	2897	5	Siltstone	Nise
35	2894	4,5	Siltstone	Nise
36	2891	5	Siltstone	Nise
37	2889	5	Siltstone	Nise
38	2886	3,5	Siltstone	Nise
39	2884	5	Siltstone	Nise
40	2882	5	Siltstone	Nise
41	2878	5	Siltstone	Nise
42	2871	5	Siltstone	Nise
43	2867	4	Siltstone	Nise
44	2864	3,5	Siltstone	Nise
45	2862	4,5	Siltstone	Nise
46	2858	5	Siltstone	Nise
47	2857	5	Siltstone	Nise
48	2854	3,5	Siltstone	Nise
49	2853	Empty		Nise
50	2848	4,5	Siltstone	Nise

Figure 6-1: Sidewall Core Summary *continued*

7 Logging

7.1 MWD Logs

A MWD service (Schlumberger Anadrill) yielding gamma ray, resistivity, density, neutron, sonic and survey measurements was run in the following sections:

Run #	Section	Sensors	Drilled from	Drilled to	Logged from	Logged to	Comments
1	8 ½"	GR-Res(CDR)-VisionDN-ISONIC-Dir	1742	1768	1742	1768	Tool parted
2	8 ½"	GR-Res(CDR)-VisionDN-ISONIC-Dir	1742	2207	1740	2207	

Figure 7-1: MWD/LWD runs 6403/10-U-1, Pilot hole

Run #	Section	Sensors	Drilled from	Drilled to	Logged from	Logged to	Comments
1	36"	PowerPulse	1742	1852	1742	1852	
2	26"	GR-Res(CDR)-Dir	1852	2214	1817	2214	
3	17"	GR-Res(ARC)-ISONIC-Dir	2217	2518	2207	2503	
4	8 ½"	GR-Geovision-VisionDN-PWD(CDR)-Dir	2518	2843	2522	2842	
5	8 ½"	GR-Geovision-VisionDN-PWD(CDR)-Dir	2843	2843	2522	2842	Wiper trip
6	12 ¼"	PowerPulse-ARC	2522	2843	2522	2838	Hole opening
7	8 ½"	GR-Geovision-VisionDN-ISONIC-PWD(CDR)-Dir	2843	2990	2843	2990	
8	8 ½"	GR-Geovision-VisionDN-ISONIC-PWD(CDR)-Dir	2990	3041	2930	3041	
9	8 ½"	GR-Geovision-VisionDN-ISONIC-PWD(CDR)-Dir	3041	3400	3041	3400	

Figure 7-2: MWD/LWD runs 6403/10-1

More detailed MWD results can be found in the report "End of Well Report"/Logs, (Schlumberger/Geoservices) Well 6403/10-1.

7.2 Wireline Logs

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

Run #	Tool string	Logged from	Logged to	Tot hrs	Comments
1A	DSI-GR	1742	2625	7.5	Could not pass 2639m.
1B	DSI-GR	1742	2620	5.1	Hung up at 2625m.
1A	VSI-GR	1680	2640	12.8	Hung up at 2645m.
2A	HRLA-PEX-DSI-GR	2848	3393	13.2	
2B	VSI-GR	2521.8	3390.8	9.0	Included 4 hours of lost time.
2A	MSCT-GR	2848	3393	12.2	

Figure 7-3: Wireline Logs 6403/10-1

7.2.1 Velocity Surveys

Schlumberger acquired the data on the 2nd and 18th of December 2002. The receiver array consisted of eleven (run 2B) and eight (run 1A) VSI tools containing three component geophone accelerometer cartridges. The seismic source employed was 3X150 cu.in. G-gun cluster, depth 6.0 and 4.0 m and air pressure 140 bar. The near field monitor hydrophone was kept at an offset of 4.0 m in both runs.
The weather conditions during the survey were good for the first run (run 1A) and rough for the second run (run 2B), with an average swell of 5 to 7 meters.

Zero Offset VSP

Summary of the levels aquired for the Zero Offset VSP (in MD RKB):

Run No.	From	To	Spacing/No of levels
Run 1A	2643 m	421.2 m	~ 10 m/124 levels
Run 2B	3390.8 m	2399.9 m	~ 10 m/121 levels

The processing is performed by Read Well Services.
For further information see the Zero Offset VSP Report (stored in Petrobank and Documentum (NH-00137976)).

Walk Away VSP

The dataset was acquired on the 18th of December 2002 (Run 2B). The survey consisted of two Walk Away lines acquired over a vertical well. The lines were oriented at 50 and 140 degrees from the North. The source-receiver offsets run from –3500 m to 3500 m. Average shot point distance was 25 meters. The tool string was 11 levels VSI, with geophone spacing of 10 meters. The maximum/minimum receiver locations were 2631/2531 m MD RKB.

The processing is performed by Read Well Services.
For further information see the 2 X 2D VSP Walk Away Report (stored in Petrobank and Documentum, NH-00144529)).

7.2.2 Bottom Hole Temperatures From Wireline Logs

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

Wireline logging in 8½" Section:

Log suite	Run #	Depth (mRKB)	Temp ° C	Time since circ. (hrs)
SP-DSI-PEX-HRLA-GR	2A	3396	64,00	24
MSCT-GR	2B	3398	74,00	40.2
VSI-GR	2A	3286	77,00	53.3

Figure 7-4: Bottom Hole Temperatures 6305/4-1 Run2

When entered into a Horner plot, this gave a static formation temperature estimate (BHST) of 79 ° C at 3360m MD (m 3359m TVD RKB).

8 PETROPHYSICAL EVALUATION

8.1 Petrophysical Results

Pilot Well 6403/10-U-1:

A petrophysical evaluation has been carried out for the pilot hole, using the LWD log data from this well.

The pilot well penetrated the Naust, Kai and Brygge formations. Log analysis was conducted using an effective porosity approach with shale volume determined from the gamma ray log, porosity from the density log and the neutron-density log and water saturation from the Archie's equation.

The petrophysical input parameters are presented in Figure 8.1.

Exploration Well 6403/10-1:

The target Springar, Nise and Kvitnos formations consist of siltstones, claystones and occasional limestone stringers and traces of sand. Log analysis was conducted using an effective porosity approach with shale volume determined from the gamma ray log and the neutron-density log, porosity from the density log and water saturation from the Indonesia equation.

The petrophysical input parameters are presented in Figure 8.2.

8.2 Discussion

A summary of the petrophysical evaluation for pilot well 6403/10-U-1 and well 6403/10-1 is described below. For further details and discussion refer to Petrophysical Report, Well 6403/10-U-1 and Well 6403/10-1, 2003.

8.3 CPI input data

Data utilized in this study include:

- Log data (MWD/LWD and Wireline)
- Sidewall Core data (MSCT)

The petrophysical evaluation is based on data from individual MWD/LWD bit runs and Wireline runs, all logged by Schlumberger. The computed interpretation has been generated in Recall, using the PETROS 3 module, with the applications SANDS (CPI) and SUM (average petrophysical results).

The CPI input curves are presented in Figure 8.3. and 8.4.

8.3.1 Log quality

Pilot Well 6403/10-U-1:

The LWD logs were generally of good quality, except the ISONIC. The tool probably failed due to a very weak formation signal.

Well 6403/10-1 LWD logs:

In the 17" hole section the VRT/ISONIC/VDN tools were run. The ISONIC realtime data failed and was not produced for this section, and the ISONIC memory data was of poor quality and no formation arrivals was observed at all when processed by Schlumberger.

The first 8.5" hole section was logged with GVR/RAB-VRT-ADN. The logs were generally of good quality. A washout zone occurred at approximately 2630-2660 m MD RKB, affecting log quality in this interval, particularly density/neutron logs.

The final 8.5" hole sections were drilled in 3 runs. The LWD logs, also including ISONIC data from this section was of generally good quality.

Both resistivity and density images were logged in the 8.5" sections of the well.

The GVR resistivity image data from the last run was of poor quality. In general the GVR resistivity images were of higher quality and showed more details and feature than the VDN density images. The GVR field memory data was reprocessed by Schlumberger onshore due to varying quality. The main improvement from reprocessing were the reduction of noise on the image and results in increased visibility of features.

Well 6403/10-1 Wireline logs :

A few operational problems were associated with the wireline logging of the 8 1/2" intermediate section. The DSI tool did not get passed the depth 2636, and DSI was logged from 2626 - 1740. A second run was attempted, but the tool was again obstructed over the same depth interval.

The final 8.5" wireline logging was run after drilling to TD.

High quality data was obtained from the HRLA and PEX tools.

The DSI data was generally of good quality in open hole. In cased hole the quality was variable. Both the compressional sonic data and the shear data had intervals where the sonic arrival picks were of low quality. In depth intervals where it is clear from DSI image data that the arrival picks are wrong, the data has been removed from the curves and will result in gaps on the composite log.

Over the final 8.5" open hole section the DSI had good quality compressional and shear data.

All data were subjected to quality control. The composite log was generated by merging the high quality MWD and WL runs.

8.3.2 Corrections

The MWD and wireline logs were environmentally corrected at the well site by the Service contractor Schlumberger. No further environmental corrections has been done.

8.4 Evaluation Method

Shale volume:

The shale volume was determined from the gamma ray log and the density-neutron crossplot method, calculated using linear relations and the minimum method.

Total Porosity:

The porosity was computed from the density log.

Water Saturation:

For the pilot hole, the Archie equation was used to calculate the water saturation from logs.

For well 6403/10-1, the effective water saturation, S_{we}, was calculated from the Poupon-Leveaux equation (Indonesia), to evaluate movable hydrocarbons represented by (S_{we} - S_{xo}),

8.5 Fluid System

No MDT data was taken in this well.

Figure 8-1 Petrophysical input parameters, Well 6403/10-U-1

Input Parameters	
GR sand (GAPI)	30
GR shale (GAPI)	90
? formation water	1.03 g/cc
Rshale	2 Ohmm
Shale density	2 g/cc
Matrix density	2.15
Neutron shale porosity	0.4
a	-
m	3
n	2
Formation temperature	20°C @ 2200 m MD RKB
Temperature gradient	+/-4.1°C/100m
Rmf, Ohmm@ °C	0.01@20
Rw, Ohmm@ °C	0.4@15

Figure 8-2 Petrophysical input parameters, Well 6403/10-1

Parameter	Symbol	Unit	Sources	Springar	Intra Springar	Nise	Intra Kvitnos
Formation Top		m MD KB	Report	2496	2670	2825	3223
Formation Bottom		m MD KB	Report	2670	2825	3223	3400 (TD)
Formation temperature	T	Deg C	Equation	84			
Depth of form.temp.		m TVD MSL	Report	3360			
Formation water dens.	RHO_{water}	g/cm^3	Estimated based on log and area value	1.0			
Formation water resist. at form. temp	R_w	ohm.m	Estimated based on log and area value	0.16			
Mud filtrate resistivity at temperature deg C	R_{mf}	ohm.m	Schlumberger	0.081			
Temperature at mud filtrate measurement	T	Deg C	Equation	26			
Shale density	RHO_{sh}	g/cm^3	Estimated based on log and area value	2.12	2.17	2.22	2.31
Shale neutron porosity	$NPHI_{sh}$	fraction	Estimated based on log and area value	0.51	0.44	0.40	0.36
Shale resistivity	R_{sh}	ohmm	LOG	2			
Shale: GR_{min}	GR_{min}	API	LOG	30			
Shale: GR_{max}	GR_{max}	API	LOG	85	80	90	92
Matrix density	RHO_{ma}	g/cm^3	Estimated based on log and area value	2.66			
Matrix neutron porosity	$NPHI_{sh}$	fraction	Estimated based on log and area value	-0.020			
Fluid neutron porosity	$NPHI_{fl}$	fraction	Estimated based on log and area value	1			
Archie factor	a		Estimated based on log and area value	1			
Cementation exponent	m		Estimated based on log and area value	2			
Saturation exponent	n		Estimated based on log and area value	2			
Indonesia parameter	I_{silt}		Estimated based on log and area value	0			
Indonesia parameter	C_{vsh}		Estimated based on log and area value	1			

Figure 8-3 CPI input curves, Well 6403/10-U-1

Wellbore: 6403/10-U-1							
Composite Log			**Source Log & Curve**				
Curve Name	Curve Type	Curve Service	Source Log from Recall (Tool combination)	Run	Curve Name	v.	Interval (m MD RKB)
GR	GAMMA	GR.	ACR-AND-CDR		GR_ARC	1	1739 - 2195
RDEP	DEPRES	RES.DEP.	ACR-AND-CDR		A28H	1	1739 – 2194.5
DEN	DENS	DEN.	ACR-AND-CDR		RHOB	1	1739 – 2172.5
NEU	NEUT	NEU.	ACR-AND-CDR		PEF	1	1739 – 2172.5

Figure 8-4 CPI input curves, Well 6403/10-1

Wellbore: 6403/10-1							
Composite Log			**Source Log & Curve**				
Curve Name	Curve Type	Curve Service	Source Log from Recall (Tool combination)	Run	Curve Name	v.	Interval (m MD RKB)
GR	GAMMA	GR.	ARC-CDR RAB-ARC-AND-CDR SP-DSI-HRLA-GR-PEX-GR-ACTS	3 5 1A	GR_ARC GR_RAB GR	1 1 1	2216 – 2506.7 2524 – 2837 2837 - 3373
RDEP	DEPRES	RES.DEP.	RAB-ARC-AND-CDR RAB-ARC-AND-CDR SP-DSI-HRLA-PEX-SP-GR-ACTS	2-9 5 1A	A28H_UNC RES_BD RT_HRLA	1 1 1	2216.6 – 2590.9 2524 – 2838 2838 – 3373
DEN	DENS	DEN.	RAB-ARC-AND-CDR SP-DSI-HRLA-PEX-SP-GR-ACTS	4 1A	ROBB RHO8	1 1	2524.5 – 2821 2837 – 3374

Figure 8-5 Reservoir zonal averages, Well 6403/10-1

Zonal Averages							
Formation	**Interval (m MD RKB)**	**Thickness (m)**	**NTG (frac)**	**Phie (frac)**	**PhiT (frac)**	**Swe (frac)**	**Net Pay (m)**
Springar	2496 - 2670	174	-------	0.017	0.29	0.98	-------
Intra Springar	2670 - 2825	155	-------	0.010	0.27	0.98	-------
Nise	2825 - 3223	398	-------	0.003	0.21	0.94	-------
Intra Kvitnos	3223 – 3375 (TD CPI logs)	152	-------	0.008	0.17	0.91	-------

Figure 8-6 Raw Logs and CPI, Geological Data sheet, Well 6403/10-U-1

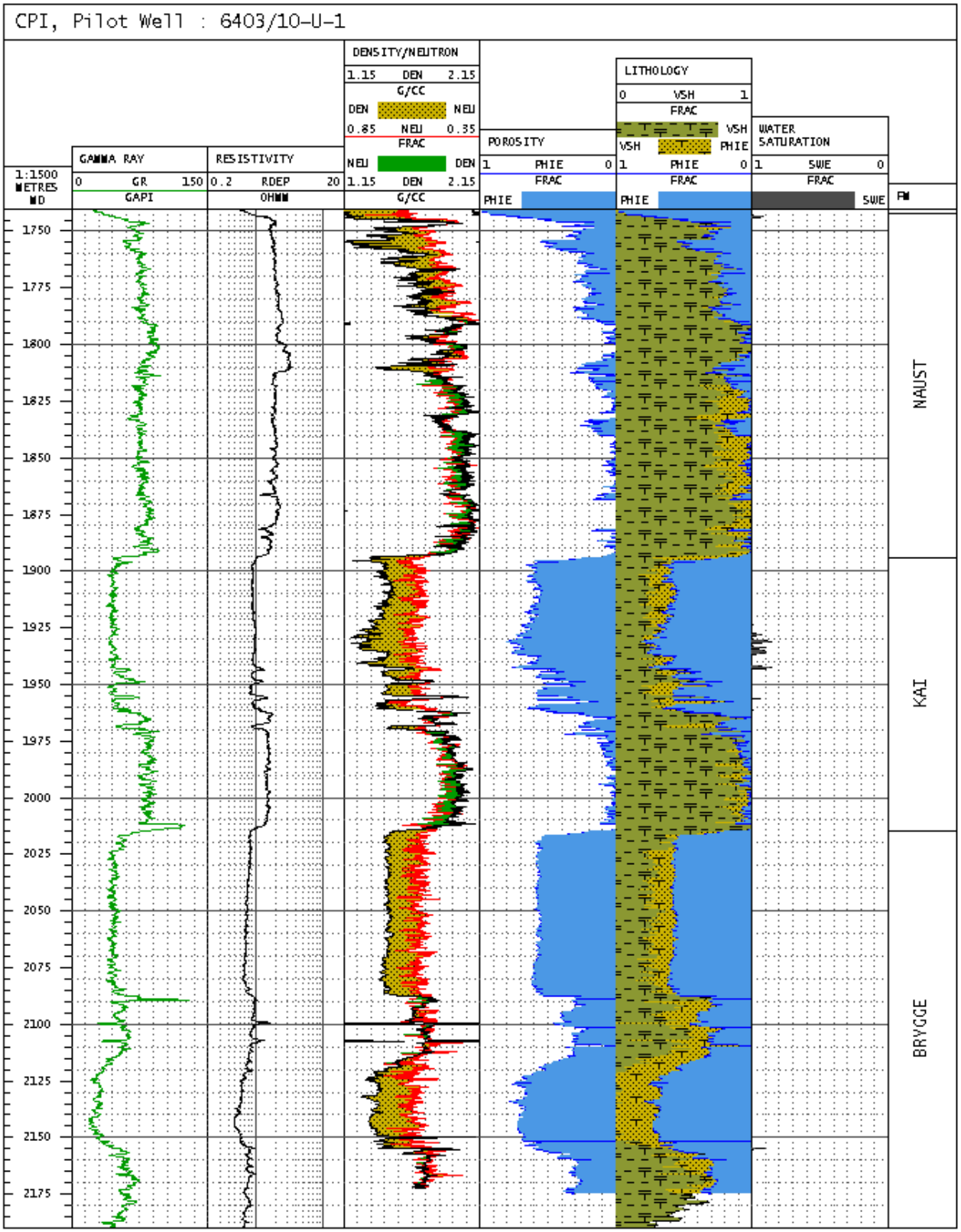
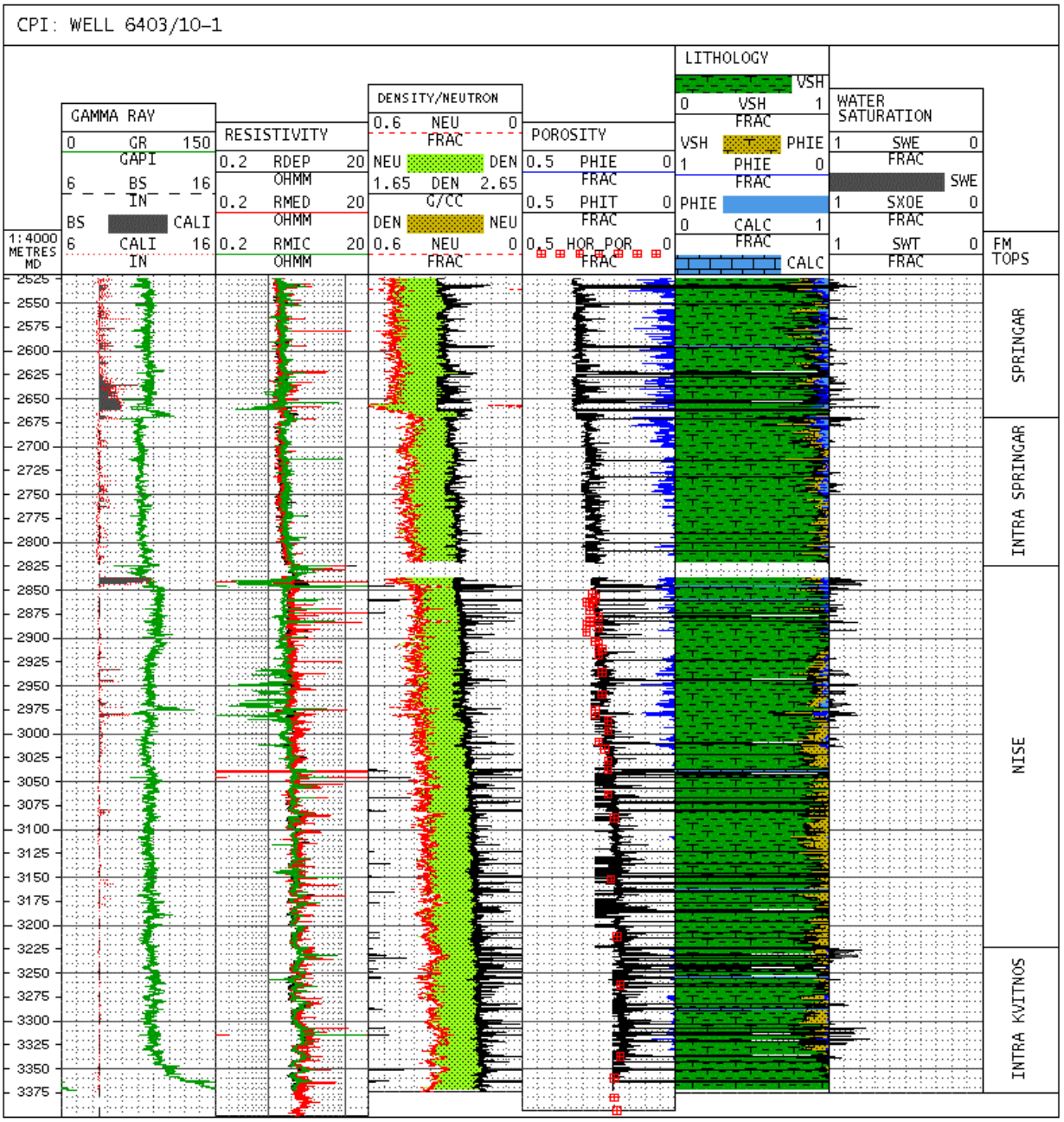


Figure 8-7 Raw Logs and CPI, Geological Data sheet, Well 6403/10-1



9 Estimated Pore Pressure, Fracture, Overburden and Temperature Gradients

9.1 Fracture and Overburden:

All depths are given in m TVD RKB unless otherwise stated.

Overburden calculated by density-log from the 8 ½" pilot hole showed 1.16sg at the start of the 17 ½" section. The low overburden compared to the prognosis is due to the presence of an unexpectedly thick ooze package. This has a significant influence on the fracture gradient. A LOT to 1,145sg was taken at 2218m. The LOT of 25bar above the seawater gradient is equal to the formation strength observed on the Vema-dome. The pressure vs. volume graph and the mud consume (all mud returned, i.e. perfect closure of the induced fracture) of the LOT indicated that it was performed in a claystone.

Due to the low fracture gradient at the shoe there was a special focus on keeping the ECD below 1,14sg.

The reduced overburden gradient at shallow depths reduced the overburden- and fracture- prognosis for the remaining of the well.

Due to possibly plugging of the liner lap mud were lost to the formation (likely just below the 20" shoe) during displacement of the 1,90sg cement around the 13 3/8" casing. The incident had no impact on the result of the cement job.

A LOT to 1,24sg was taken at 2517m below the 13 3/8" shoe. The LOT of 54bar above the seawater gradient corresponds to the formation strength observed on the Vema-dome and slightly lower than prognosed minimum fracture strength but as expected based on the low LOT below 18 5/8" shoe. Fracture gradient is adjusted to be between 1,35sg and 1,38sg at TD of this section (2900m).

Due to the low fracture gradient at the shoe there was a special focus on keeping the ECD as low as possible in this section. At 2662m the ECD-readings from the ECD-sub peaked at 1,29sg after a period of continuous increase. Hi-Vis pills and riser booster was used in order to improve hole cleaning. It was decided that this development could not continue and a wiper trip to the shoe was performed. When resuming drilling the ECD was down to 1,22sg. After a period of 50m the ECD started to increase again. It was then decided to regulate the ECD by reduced flow rate and use of the riser booster-pump. This kept the ECD at approximately 1,26-1,27sg for a while but at approximately 2700m the ECD again reached 1,29sg and it was decided to do a second wiper trip in order to reduce the ECD before entering top of the prognosed Nise reservoir.

The density log was spliced with the density log of the 8 ½" pilot hole and recalculated to obtain the Overburden gradient.

After drilling out the shoe track mud losses was observed with an ECD lower than observed at the end of the previous section. Loss-problem cured by reducing the mudflow. A LOT was performed below the 9 5/8" shoe (2834,4m TVD) to 1,27sg. The expected value was 1,33sg or higher (77bar above normal seawater gradient). No firm cement was observed while drilling out the shoe and rat hole. The LOT indicates that no fracture pressure was obtained and a propagation pressure of 1,28sg was observed. While continuing drilling a lot of cement was observed at the shakers indicating that cement from behind the casing was circulated out. The LOT was lower than the ECD observed while drilling. A likely scenario is that the LOT represents opening of a fracture approximately 100m above the casing shoe and not the LOT-strength of the 9 5/8"shoe.

Difficulties in getting the wireline tools down, mudlosses, tight hole when tripping, presence of balloon gas peaks and observed fractures on the Image-log indicates a substantial overbalance while drilling the two 8 ½" holes, close to the fracture gradient.

9.2 Pore Pressure

All depths are given in m TVD RKB unless otherwise stated.

Pore pressure is estimated on the basis of MWD-logs, drilling parameters and gas-readings.

No major hole-problems due to overpressure were encountered during drilling, tripping and casing running. There were no splintery shale or other hole instability indicators observed from cuttings.

A normal pressure is observed down to 2305m.
Below 2305m there was a slight increase in background gas readings from 0,2% towards 0,6% at TD of this section. The low gas readings do indicate that the well is overbalanced. No connection gases were observed. From same depth (2305m) the ROP increased but not at a steady trend. The DXC-plot also indicates a minor increase in pore pressure.
The resistivity log was influenced by changes in lithologies but there is a dropping trend between 2305m and 2480m. This trend is partly a result of lithology effects but might also represent a minor pore pressure increase. Pressure in top Shetland is difficult to interpret from logs etc, there might be a pressure reduction as seen in other parts of the Norwegian Sea.
The sonic log was unfortunately reading mud-values and could thus not be used as a pressure indicator.

As a summary a normal pressure down to 2305m is suggested and then a slow increase towards 1,06sg at TD of this section.
The DXC-, total gas- and Resistivity-plots indicate a fairly steady pore pressure down to top Nise with minor pressure increases below some limestone stringers and denser shale with consequent pressure drop below. Data indicates a maximum pore pressure of 1,10sg at 2662 – 2674m but several data (density log, torque, ROP, sonic caliper and gas readings) indicates that this might rather be a result of penetrating a slightly gas charged fracture zone rather than a true increase in pore pressure. Estimated pore pressure at base Springar is 1,06sg.

Top Nise (2825m) came in clearly on the logs, marked by a 0,5 m thick limestone bed. The log correlated closely with the Havsule well 6404/11-1. Below top Nise there was a significant change in ROP and cutback in DXC, indicating a pressure increase. The MWD-logs indicated a change in lithology from claystone to siltstone. The DXC-trend (with all its uncertainties) indicated a pore pressure of 1,10sg in the uppermost Nise fm. The top Nise was also marked by a significant gas peak of 1,5 %.
After a drill break it was conducted a flow check. This gave a possible gain of 300 liters. It was decided to shut in the well but no pressure build-up was registrated. 5 minutes of circulation was then performed before a new flow check. This gives a possible gain of 130 liters. The decision was to continue drilling assuming that the changes in the Trip Tank were related to the rig-heave. It could also be a result of overbalance (returning mud that had been charged into the formation).

In order to clean the hole before drilling and as part of the need for a bottoms-up sample the string was lubricated out to the shoe. During this trip there were indications of hole-pack off (pump pressure build-up, increased drag and increased torque).
Gas readings also indicate a pressure build up in top Nise as the heavier components were observed at the chromatograph.

Due to the similarities in geology with the Havsule well 6404/11-1 a possible scenario is that these wells might be in pressure communication. At Havsule a pressure of 1,35sg was interpreted at top Nise. If a porous formation was to be penetrated in deeper parts of the Nise Formaton a higher than anticipated pore pressure could not be ruled out. It was therefore decided to stop drilling at 2843m and run 9 $^{5}/_{8}$" casing.

Trip gases:

Trip gas at 2510m:	Not properly circulated out.
Wiper trip gas at 2661m:	0,8% / 0,2%
Wiper trip gas at 2757m:	1,14% / 0,3%
Trip gas at 2842m:	0,77% / 0,4%
Trip gas at 2989m:	0,25% / 0,06%
Trip gas at 3040m:	0,21% / 0,04%

Summary: A pore pressure of approximately 1,06sg down to top Nise (2825m), then an rapid increase to 1,10sg at top Nise.
Drilling of the 8 ½" section indicates that the pore pressure dropped below 2843m to 1,08sg and stayed stable or slightly dropping (to 1,07sg) down to TD of 3400m MD.
The density log indicates a normal compaction trend from 2528m to TD and thus an alternative theory can be that the pore pressure stayed stable at 1,06sg from 2528m to 3400m.
In the Kvitnos formation there were observed gas peaks corresponding to the return of connection depths. These are interpreted to be a result of the overbalance (charging the formation) and are thus classified as balloon gas peaks.

9.3 Temperature

Temperature readings will be strongly affected by the cooling of mud through the long marine riser.
Maximum-recorded external MWD-temperature was 12 °C. The MWD- temperature trend shows indications of a pore pressure increase from 2327m.
Maximum-recorded surface temperature of the returned mud was 25 °C at 2400m. However, the mud returns temperature readings were quite spiky and is probably affected by external conditions and are not regarded as useful neither for temperature estimates nor detection of over-pressurised zones.
Maximum-recorded external MWD-temperature was 14 °C of the combined 8 ½" and 12 ¼" section. The MWD- temperature trend shows no indications of a pore pressure transition zones in this section.
Maximum-recorded external MWD-temperature of the 8 ½" section was 21 °C.

Figure 9-1: Pore Pressure -, Fracture-, and Overburden Gradients

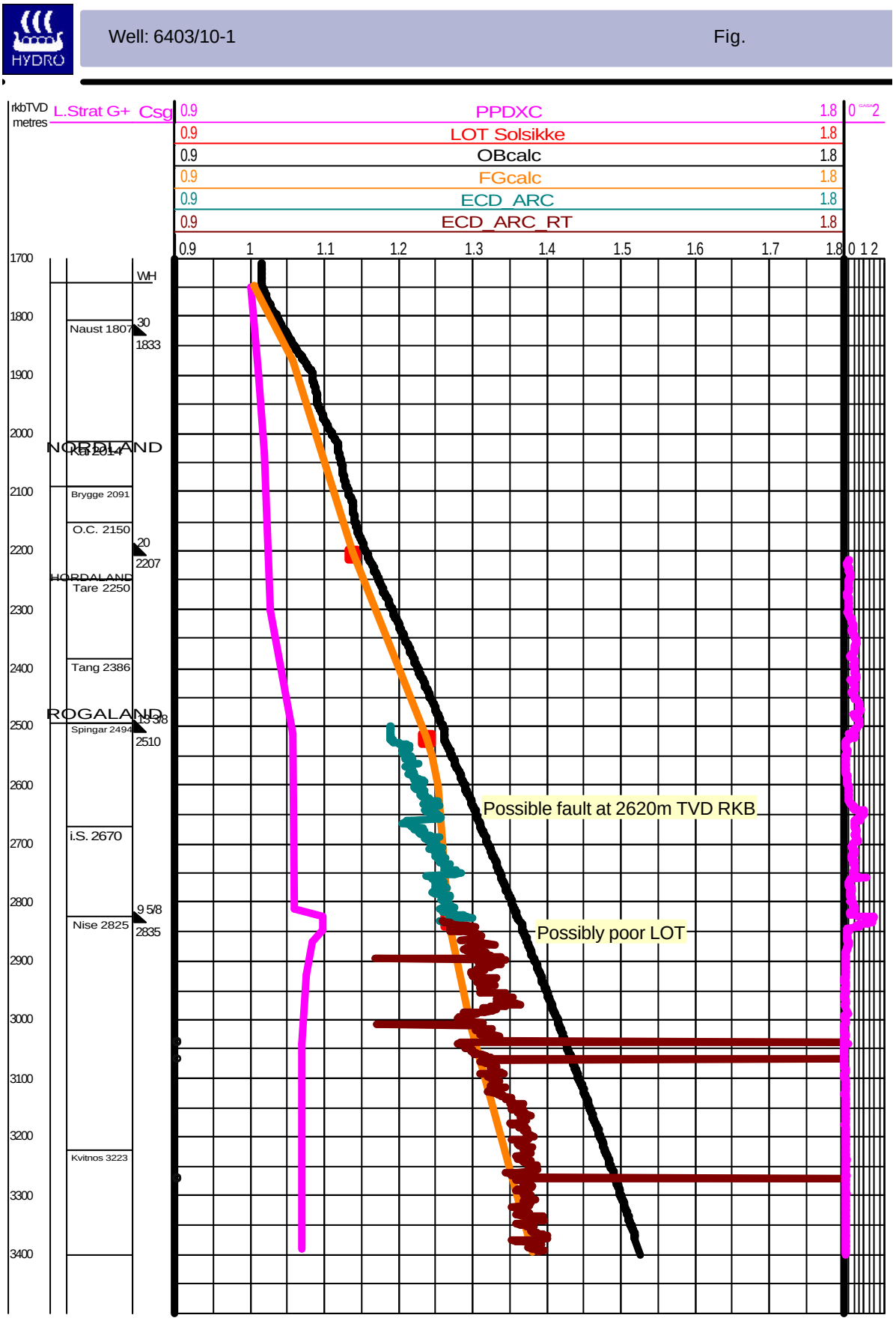
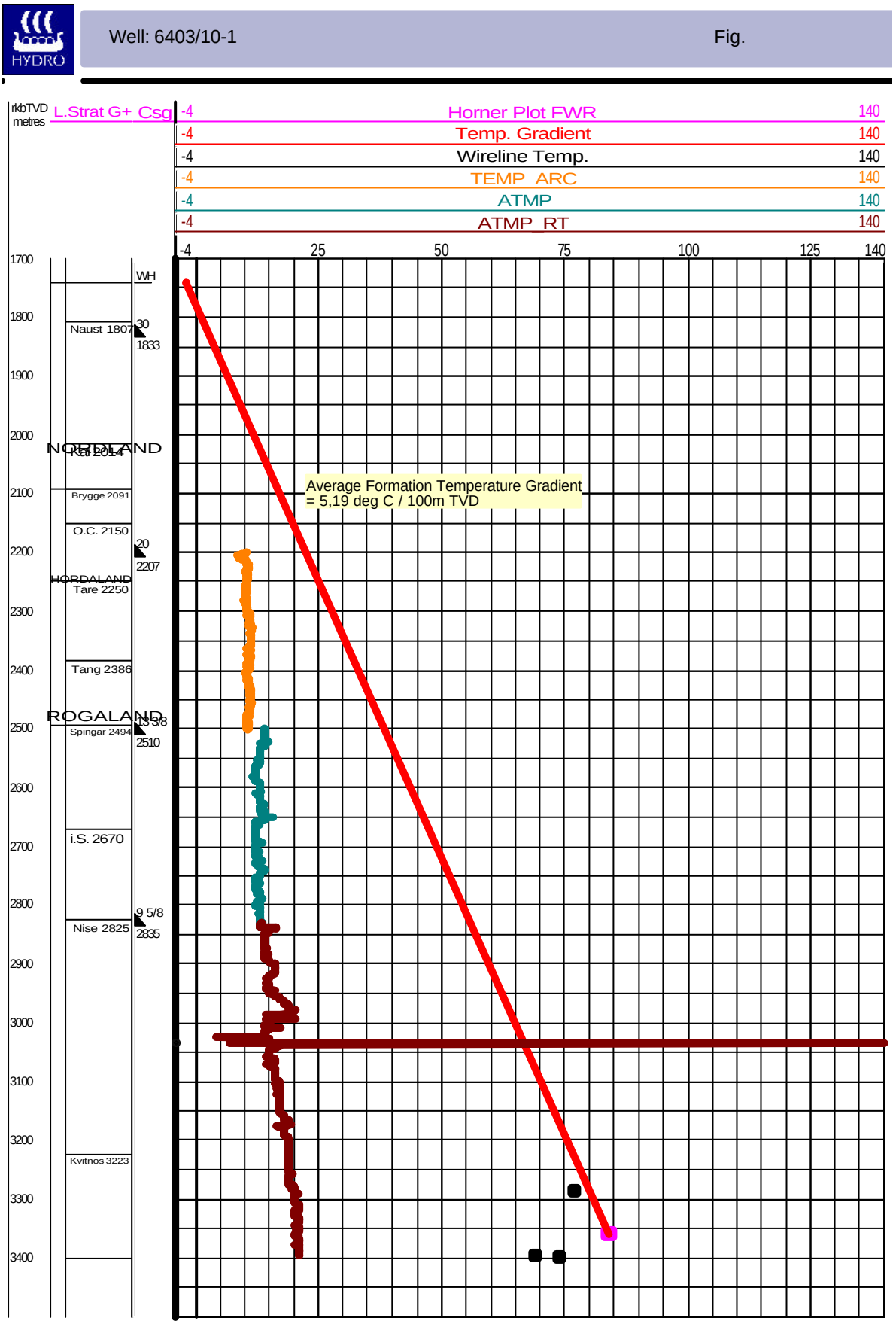


Figure 9-2: Temperature Gradient



10 Geophysical Results

An increase in acoustic impedance is represented as a trough with negative polarity in the seismic.
The seismic to well tie has been based on the velocity and density logs, calibrated with the time/depth curve from the zero offset VSP survey. The VSP was acquired by Schlumberger and processed by READ Well Services. The main seismic horizons, mapped with tie to the well, are displayed in the seismic section in Figure 10.2, and listed in Figure 10.1 showing the prognosis and actual formation tops.

	Progn. TWT (ms)	Actual TWT (ms)	Progn. TVD (mRKB)	Actual TVD (mRKB)	TVD uncert. (m)	Error TVD (m)	Progn. Interval vel (m/s)	Actual Interval vel (m/s)	Progn. Thickn. (m)	Actual Thickn. (m)
Seabed	2333	**2334**	1737	**1742**	+/-9	**0**	1640	**1667**	69	**65**
Naust Unit S t351	2417	**2412**	1806	**1807**	+/-13	**+1**	1680	**1763**	85	**97**
T. Kai	2521	**2522**	1891	**1904**	+/-20	**+13**	1640	**1707**	104	**111**
T. Brygge	2649	**2652**	1995	**2015**	+/-40	**+20**	1600	**1634**	72	**76**
I. Brygge t160	2739	**2745**	2067	**2091**	+/-60	**+24**	1600	**1662**	57	**59**
Opal CT	2810	**2816**	2124	**2150**	+/-60	**+26**	1510	**1840**	286	**346**
B. Tertiary t10	3190	**3192**	2410	**2496**	+/-100	**+86**	1750-*2100*	**2000**	146	**174**
Fault		**3317**		**2620**						
I. Springar k88	3357	**3366**	2556	**2670**	+/-120	**+114**	1610-*2100*	**2080**	114	**155**
T. Nise	3499	**3515**	2670	**2825**	+/-120	**+155**	2360-*2160*	**2434**	400	**398**
Nise flatspot	3561	**3551**	2737	**2865**						
I. Kvitnos k68	3838	**3842**	3070	**3223**	+/-150	**+153**	3077-*2894*	**2693**		
TD		**3973**	3150	**3400**						

Figure 10-1: Formation tops, well 6403/10-1

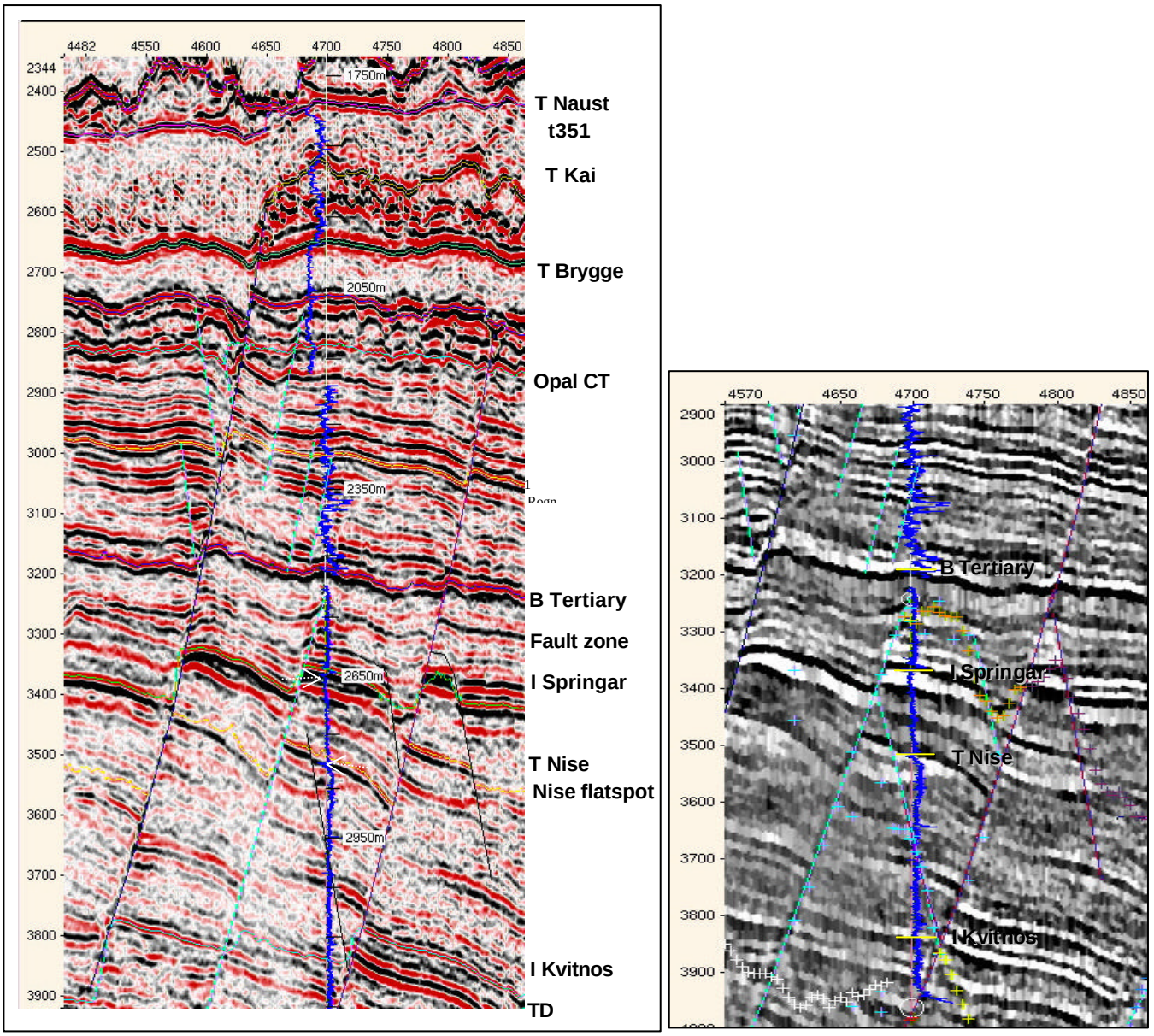


Figure 10-2: Migrated and relative impedance inverted Seismic line 3446 with mapped seismic horizons tied to the GR-log of 6403/10-1.

No seismic reflectors needed to be re-interpreted after drilling. The seismic picks match within +/-6ms, except for the intra Springar Formation and the top Nise Formation, which came respectively 9ms and 16ms deeper than the prognosis. Both formation tops are related to a decrease in seismic impedance below high amplitude shale intervals. One Synthetic seismogram with tie to the pilot well 6403/10-U1 is shown in Figure 10-3 and one with tie to the main well within the Santonian- Campanian (Kvitnos Formation- Nise Formation) interval is shown in Figure 10-4.

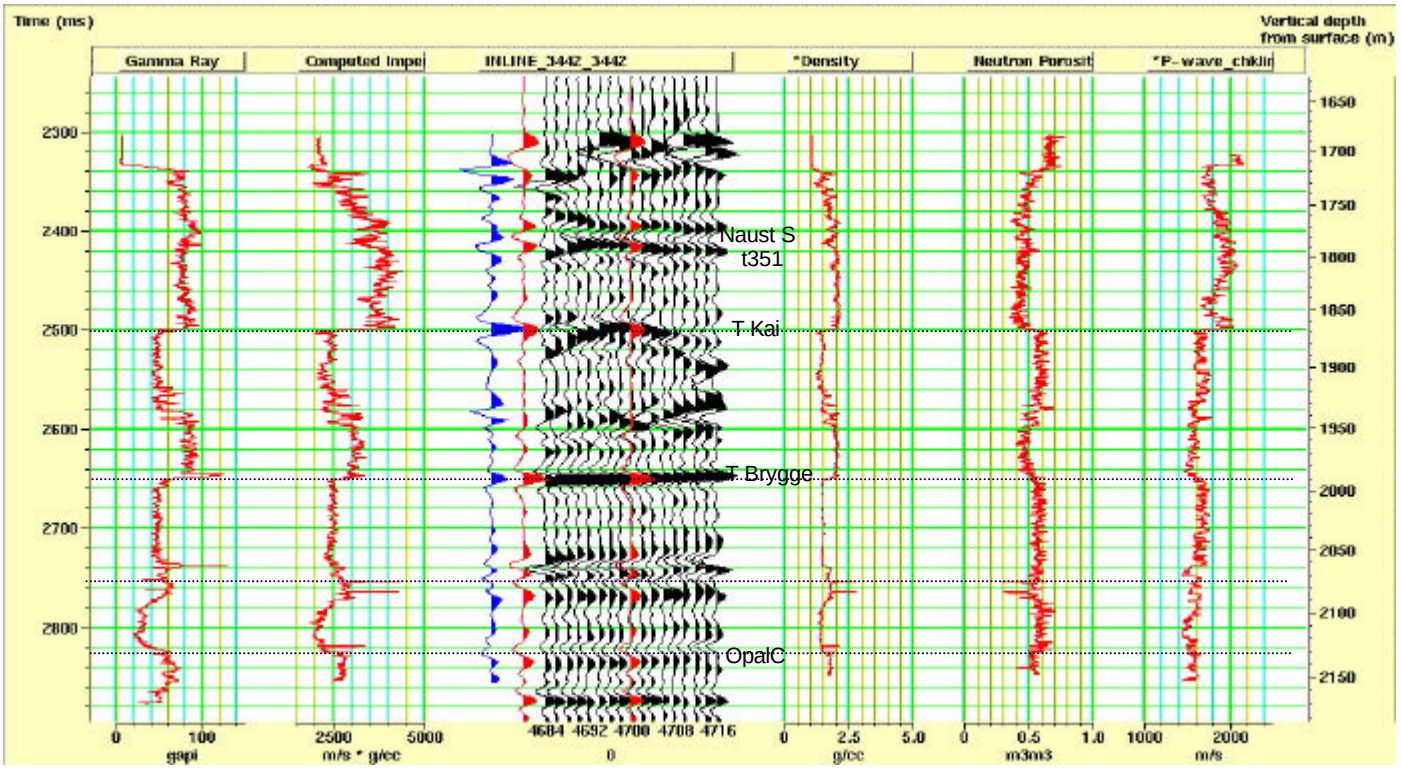


Figure 10-3: **Seismic to pilot well tie, 6403/10-U-1**

A statistical zero phase wavelet is extracted from the amplitude spectrum of the data to produce the synthetic (blue) trace (Figure 10-3). A cross correlation of the seismic trace at the well location with the synthetic trace confirms that the seismic data set NH0003 has a zero phase, with increased acoustic impedance as a white trough. The top of the low gamma ray and low density ooze intervals show clear reductions in impedance and are easily correlated with the seismic as peaks. The Opal CT transition is recognized as a slight increase in GR and density giving a seismic tie as onset black peak where the sudden change in seismic impedance is dominated by the density contrast rather than the insignificant P-wave velocity contrast.

The well tie within the Santonian- Campanian (Kvitnos Formation- Nise Formation) interval (Figure 10-4) shows a synthetic trace generated with a 45 Hz zero-phase Ricker wavelet. The top Nise Formation horizon is not to be included due to the reduced data quality at the casing shoe down to 2843m RKB. The Intra Kvitnos horizon has a good match with the synthetic trace showing increased acoustic impedance at near zero-phase minimum amplitude. Two other density and acoustic impedace changes are also related to zero-phase horizons, which have not been mapped. The flat event at 2865-2875m RKB appears to represent an approximate 7% increase in acoustic impedance, probably caused by a reduction in total porosity.

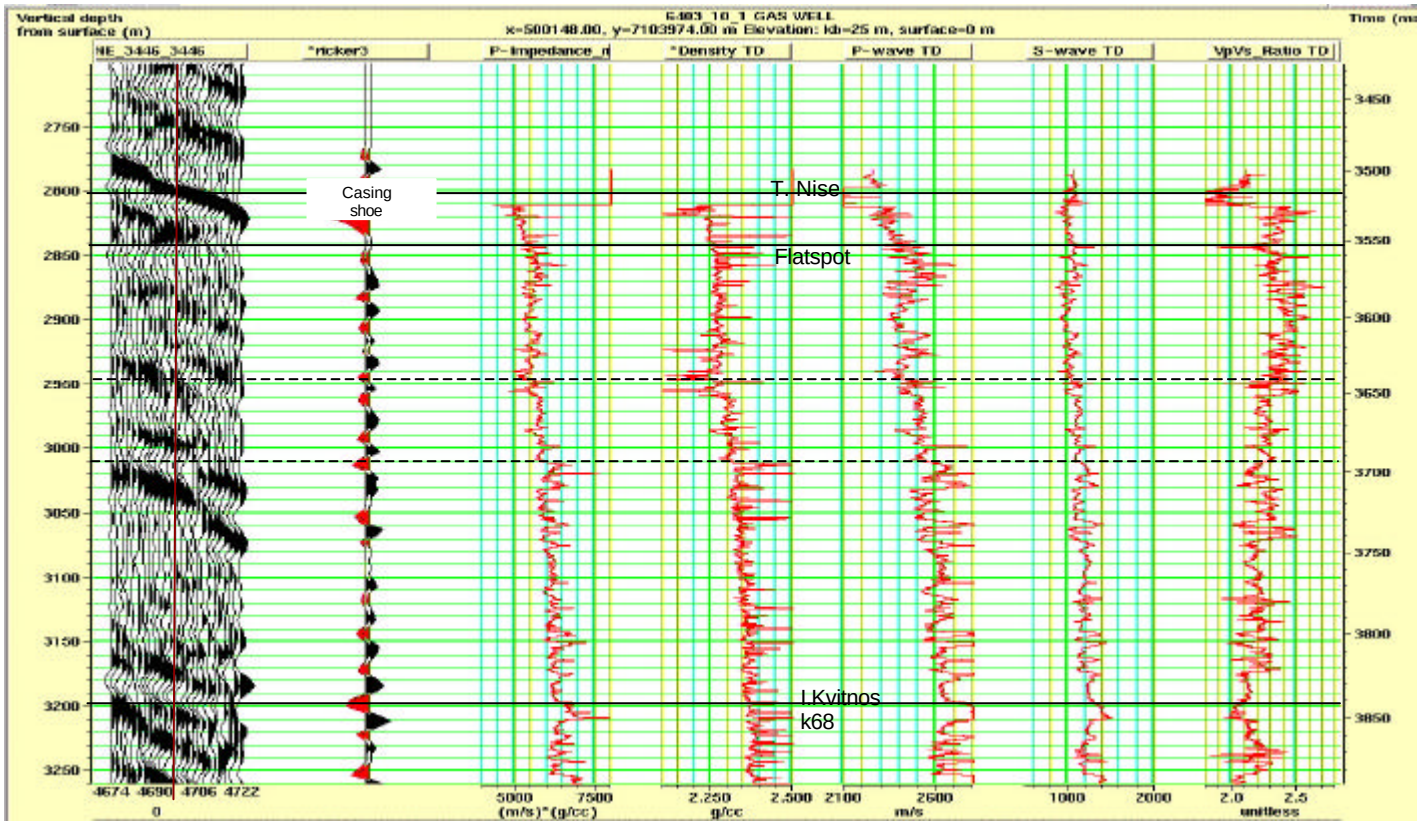


Figure 10-4: **Seismic to well tie within the Santonian-Campanian interval, 6403/10-1**

11 Post Site Survey Report

This memo contains the Post Site Survey Report for Well 6403/10-1. The results are based on:

- 2D high-resolution reflection seismic (NH0170)
- 3D reflection seismic (NH0003)
- Site Survey at Location 6403/10-1 (NH-00047306)
- Drilling results (MWD logs) from 6403/10-1
- Norsk Hydro standard stratigraphic interpretation of Well 6404/11-1 (Havsule) and regional well correlations with 6505/10-1 (Helland Hansen), 6403/10-1 (Solsikke) and 6305/1-1T2 (Ormen Lange), NH Report no. NH-00159689

POST SITE SURVEY REPORT

Well Data

1 **Distance from rig floor to sea level**: 25 m

2 **Water depth (MSL)**: 1720 m[1]

3a **Setting depth for conductor (m RKB)**: m

3b **Leak Off / Formation Integrity Test (g/cc)**: N/A

4a **Setting depth (m RKB TVD) for casing on which BOP mounted:**

4b **Formation Integrity Test (g/cc)**: 1.14 sg

5 **Depth (m RKB TVD & Two Way Time) to formation/section/layer**

Top Naust S Fm	:	1807 m	(2412 ms)
Top Kai Fm (Base Pliocene)	:	1904 m	(2522 ms)
Top Brygge Fm	:	2015 m	(2652 ms)
Opal CT	:	2150 m	(2816 ms)
Top Tare Fm	:	2250 m	(2926 ms)
Intra Tare	:	2278 m	(2964 ms)
Top Tang Fm	:	2334 m	(3012 ms)
Base Tertiary	:	2496 m	(3192 ms)

Note: - Limited chronostratigraphic information from the top-hole section of the well (from seabed down to approximately 2215 m RKB TVD). Consequently, the interpretation of the different formations in this interval is based on the MWD logs, seismic character and previous work.

Mud logging commenced at c. 2215 m RKB TVD.

6 **Depth interval (m RKB TVD & Two Way Time) and age of sand**

No data exists on background gas levels from seabed down to c. 2215 m (section drilled with returns to seabed). However, no gas related incidents were reported when drilling this interval.

No sand layers have been observed, only traces of sand.

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

The well is drilled with returns to seabed above c. 2215 m RKB TVD.

Below 2215 m RKB TVD gas analyses were accomplished using flame ionisation detectors (FID) with gas measured as percentage methane (C1) equivalent in air, and chromatographic analyses expressed in parts per million.

[1] Based on detailed ROV bathymetry (NH0262)

8 **Composition and origin of gas:**

N/A

9 **Describe all measure ments taken in gas bearing layers:**

N/A

Seismic Data

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

The 2D high resolution and 3D seismic have been examined for high amplitude reflections and other indications of shallow gas. These have been mapped at several levels within the Brygge, Tare and Tang formations. No gas warning was issued for the 6403/10-1 Well Location. However, caution due to potential gas hydrates was advised (down to c. 170 m below seabed).

The top-hole section of the well was drilled with returns to seabed to c. 2215 m RKB TVD. Background gas levels were consequently not monitored. However, no gas-related problems were experienced over this section.

Shallow water flow was considered unlikely in the absence of thick sands. No water-related problems were experienced in the well.

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

N/A

12 **How does the interpretatio n of the site survey correspond to the well data with respect to:**

12a **Shallow Gas:**

No amplitude anomalies were mapped at the 6403/10-1 Well Location and therefore no gas warning was given.

No gas related problems were experienced in the well.

12b **Sand Bodies:**

No sand layers were anticipated and no sand bodies were encountered.

12c **Boulders:**

Scattered boulders were predicted throughout the interval from seabed down to 2070 m ± 64 m RKB (E. Miocene). No boulders were encountered.

12d Unconformities (depths in metres RKB [TVD]):

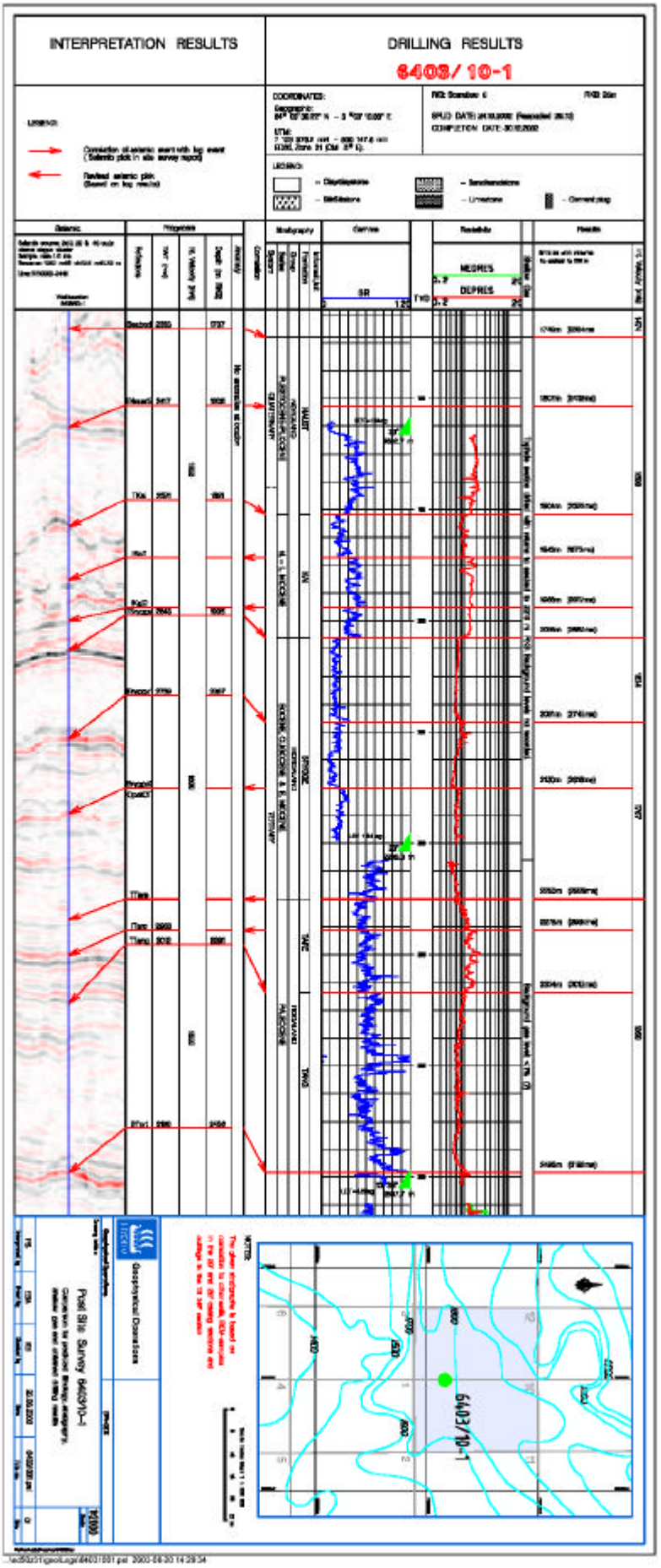
Horizon	Prognosis (P)	Observed (O)	Difference (O-P)
Seabed	1737 ± 9 m	1745 m	+ 8 m (deeper)
Top Naust S	1806 m ± 13 m	1807 m	+ 1 m (deeper)
Top Kai	1995 m ± 40 m	1904 m	- 91 m (shallower)
Top Brygge	2067 m ± 64 m	2015 m	- 52 m (shallower)
Base Tertiary	2456 m ± 120 m	2496 m	+ 40 m (deeper)

The differences between the anticipated and observed depths to different unconformities/formation tops were within the uncertainty limits given in the site survey report except for Top Kai Fm, Top Brygge Fm and Base Tertiary. The difference between the predicted and interpreted depths may be caused by:

1. Discrepancies in the seismic pick and velocity model used for the depth conversion
2. Partly inverted geological section (preliminary results suggest that part of the Kai Fm occur within the Naust Fm, most likely due to re-mobilisation (i.e. slope failure))

12e Correlation to Nearby Wells:

The drilling conditions experienced in well 6403/10-1 are as predicted and similar to those encountered in the tie-wells.


INTERPRETATION RESULTS
DRILLING RESULTS
6403/10-1
6403/10-1

12 Standard and Special Studies

As per august 2003

- Robertson Research: Well 6403/10-1 Biostratigraphy of the interval 1809-3400 m (NH-00146184)
- Norsk Hydro: Norsk Hydro Standard stratigraphic interpretation of well 6404/11-1 (Havsule) and regional well correlations with 6505/10-1 (Helland Hansen), 6403/10-1 (Solsikke) and 6305/1-1T2 (Ormen Lange) (NH-00159689)
- Norsk Hydro standard stratigraphic and palaeoenvironmental interpretation (NH-00145702)
- Norsk Hydro: Standard Core Description, well 6403/10-1 (NH-150512)
- Read Well Services: Zero offset VSP, well 6403/10-1 (NH-00137976)
- Read Well Services: 2x2D VSP Walkaway Processing Report (NH-00144529)
- Reslab: Corimag – digital core images, well 6403/10-1
- Norsk Hydro: Petrophysical Report, well 6403/10-1 and 6403/10-U-1 (NH-00147112)
- Sintef: Analysis of headspace gas and occluded gas (C1-C9) from well 6403/10-1
- APT: Petroleum Geochemistry Data Report - Vitrinite reflectance and headspace gas analysis on canned cuttings samples from well 6403/10-1
- Schlumberger / Geoservices: End of Well Reports / Logs 6403/10-1 and 6403/10-U-1

APPENDIX I

SIDEWALL CORE DESCRIPTIONS

SIDEWALL CORE DESCRIPTION

WELL: 6403/10-1
Solsikke

Run:	2A	Logging tool:		MSCT-GR		Date:	17.12.02
Cored	50	Empty	2	Recovered	48	Recovery %	96,0

Core No.:	Depth mRKB	Recovered (cm):	Lithology and shows description:	Fluorescence					
				Direct			Cut		
				Tr	M	G	Tr	M	G
1	3393	4	**Clst**: m dk gry- dk gry,mod hd, fis, non calc, slty, Micromic.						
2	3380	4	**Clst**: m dk gry- dk gry,mod hd, fis, non calc, slty, Micromic.						
3	3360	4	**Clst** as for 3380m.						
4	3337	4,5	**Sltst**: m dk gry, mod hd,sbfis, non calc,arg, vf sdy,loc lam Sst vf, n/s.						
5	3311	5	Frozen						
6	3281	5	Frozen						
7	3362	5	**Sltst**: m dk gry- dk gry,mod hd, fis, non calc-calc,Micromic,loc vf sdy grad Sst.						
8	3227	3,5	Frozen						
9	3212	4,5	**Clst**: m dk gry- dk gry,mod hd, fis, non calc, slty, Micromic.						
10	3190	5	Frozen						
11	3168	3,5	Frozen						
12	3152	4,5	**Clst**: m dk gry- dk gry,mod hd, fis, non calc, slty, Micromic.						
13	3131	5	Frozen						
14	3088	5	**Clst**: m dk gry- dk gry, firm- mod hd, sbfis, non calc, Micromic, slty grad Sltst I.P.						
15	3063	5	**Clst**: m dk gry- olv gry, firm- mod hd, sbfis, non calc, v Micromic, slty grad Sltst.						
16	3042	4,5	Frozen						
17	3038	5	**Clst** as for 3063m w/ **Sst** lam: lt gry,clr- mky Qtz,gen f,sbang- sbrndd,mod srt, fri- mod hd,calc cmt, Tr Glauc.						
18	3028	4,5	Clst: m dk gry- dk gry, firm- mod hd,sbfis-fis, sl calc, Micromic, slty, r vf sdy.						
19	3016	5	**Clst** as for 3028m,sl slty.						
20	3008	3,5	**Clst**: m dk gry- dk gry, mod hd, sbfis,non calc, Micromic,slty,Tr Micropyr.						
21	2997	4,5	**Sltst**: m dk gry- dk gry, mod hd, blky- sbfis, non calc, v Micromic, arg, vf sdy,Tr Micropyr.						
22	2986	2,5	**Clst**: m dk gry- olv gry, firm, blky,sl calc,Micromic, slty grad Sltst.						
23	2979	4	**Sltst**: m dk gry- olv gry, mod hd, blky, calc, Micromic, arg, gen vf sdy.						
24	2975	4	**Clst**: m dk gry- olv gry,mod hd, blky, sl calc, Micromic, gen v slty grad Sltst, gen vf sdy.						

25	2966		Empty						
26	2959	4	**Sltst**: m dk gry- olv gry, firm- mod hd, blky, sl calc, Micromic, arg, gen vf sdy.						
27	2944	5	Frozen						
28	2936	5	**Clst**: m dk gry, firm, sbfis, non calc, Micromic, slty.						
29	2923	5	Frozen						
30	2917	4,5	**Sltst**: m dk gry- olv gry,mod hd, sbfis, non calc, Micromic, arg, Tr vf sdy.						
31	2912	4,5	**Sltst**: m dk gry- olv gry,mod hd, sbfis, calc, Micromic, arg, w/Sst lens: lt gry, clr- mky qtz, f, sbang- sbrndd, wl srt, fri, sl sil/calc cmt,Tr Glauc.						
32	2906	5	**Clst**: olv gry, firm, sbfis, non calc, Micromic, gen v slty.						
33	2903	4,5	**Sltst**: m dk gry- olv gry,mod hd, sbfis, non calc, Micromic, arg, vf Sst len.						
34	2897	5	Frozen						
35	2894	4,5	**Sltst**: m dk gry- olv gry,mod hd, sbfis, sl calc, Micromic, arg, v Sst len: gen f,v Glauc.						
36	2891	5	Frozen						
37	2889	5	**Clst**: olv gry, firm, sbfis, non calc, Micromic, gen v slty.						
38	2886	3,5	**Sltst**: m dk gry- olv gry, firm, sbfis, calc, Micromic, arg, gen vf sdy, Tr Glauc.						
39	2884	5	**Sltst**: m dk gry- olv gry,mod hd, sbfis, calc, Micromic, arg, w/Sst lens: lt gry, clr- mky qtz, f, sbang- sbrndd, wl srt, fri, sl sil/calc cmt,Tr Glauc.						
40	2882	5	**Sltst**: m dk gry- olv gry,mod hd, sbfis, calc, Micromic, arg grad Clst, w/Sst lens: lt gry, clr- mky qtz, f, sbang- sbrndd, wl srt, fri, calc cmt,Tr Glauc.						
41	2878	5	**Sltst**: m dk gry- olv gry, firm, sbfis, non calc, Micromic, arg, Tr vf sdy.						
42	2871	5	**Sltst**: m dk gry- olv gry, firm, sbfis, non calc, Micromic, arg, Tr vf sdy.						
43	2867	4	**Sltst**: m dk gry- olv gry, firm, sbfis, non calc, Micromic, arg, Tr vf sdy.						
44	2864	3,5	**Sltst** as for 2871m.						
45	2862	4,5	Lam Sltst / Sst:						
46	2858	5	**Sltst**: m dk gry- olv gry, firm- mod hd, sbfis, non calc, Micromic, w/Sst lens: lt gry, clr- mky qtz, f, sbang- sbrndd, wl srt, fri, Tr Glauc.						
47	2857	5	Frozen						
48	2854	3,5	**Sltst**: m dk gry- olv gry, firm, sbfis, calc, Micromic, arg, gen vf sdy, Tr Glauc.						
49	2853		Empty						
50	2848	4,5	Frozen						

* The mud gives a weak bluish white flouresing cut,and a yel wh fluor Residue.

SECTION B

OPERATIONS

Prepared by: G. Smaaskjær

Approved by: T. Myrseth

1 DRILLING SUMMARY AND EXPERIENCES

1.1 Summary (times including both wells)

Total time drilling and P&A	1872.8 hours (78.03 days)	
Operational time	1433.8 hours (57.6 days)	76.6 %
Downtime (excl. WOW)	373.0 hours (14.4 days)	19.9 %
Waiting on weather (WOW)	66.0 hours (2.8 days)	3.5 %
Rig on contract	13.10.2002 at 19:00 hours	
Rig off contract	30.12.2002 at 20.45 hours	
Water depth	1717 m at final spud location,	7 103 975.18 mN, 500 147.53 mE
Rig	Scarabeo 5	

1.2 Mobilizing

Total time used:	257.0 hrs	
Operational time:	255.0 hrs	99.2 %
Downtime:	2.0 hrs	0.8 %

1.2.1 Experiences

Rig on contract 13.10.02 from Snorre UPA 34/4-A-4 H. Laid down both 5” and 3 ½” drill pipe while sailing to Florø. Arrived Florø for yard stay on 14.10.02 and anchored rig up in the Aarebrot fjord. Offload 5 K Hydril BOP and on loaded 15 K Cameron 15 K stack. Extended transducer shafts on pontoons based on experiences form the Ormen Lange well. Pulled anchors in the Aarebrot fjord on the 20.10.02 and sailed to Frøysjøen for initial test of the dynamic positioning system. Left Frøysjøen on the 21.10.02 after completing initial dynamic positioning test and sailed for the Solsikke location. Arrived location 22.10.02 at 15:45 hrs. Ballasted the rig to drilling draft and performed DP tests for most of 22-24-10.02 at 12:00. 9 LBL transponders and 3 marker buoys close to the spud position were prelaid in August 2002. Final positioning of the well was done after setting of the 30” conductor while logging position of the ROV holding on to the four corners of the hydrate plate.

1.3 8 ½" Pilot Hole Section (6403/10-U-1)

Water depth (msl):	1717.0 m	
Total depth of section:	1833.0 m	
Total time used:	77.5 hrs	
Operational time:	51.0 hrs	65.8 %
Downtime:	26.5 hrs	34.2 %

Spud Coordinates: 7 103 981.86 mN and 500 196.91 mE (approximately 50 meters to the east of the main spud locations).

1.3.1 Drilling

Prepared 6 ¾" MWD/LWD for 8 ½" BHA with a HP21GL Schlumberger bit. RIH to 1742 m and tagged seabed and verified position with ROV mounted transponder. Spudded 8 ½" pilot hole and washed down with no weights on bit to 1762 m. Drilled 8 ½" hole from 1762 to 1768 m. Lost pump pressure and pulled string 10 m and checked the BHA with ROV. The drilling was found parted in a non-mag connection below the ISONIC tool in the BHA. However when the BHA was pulled to surface, the BHA had parted further and the ISONIC tool was missing as well. A decision was made to run the next BHA with a motor, and since no motor was onboard the rig was moved to the main spud location to drill the 36-42" section prior to a new pilot hole.

The new pilot hole was spudded 10 m west of the first pilot hole. Tagged sea bottom and verified spud position with the ROV. Washed /drilled 8 ½" pilot hole down to 1809 m with no string rotation and max 1-2 tons on the bit. Observed that the MWD did not transmit data ,but managed to restart the tool. Started to rotate the string at 20 RPM and drilled 8 ½" pilot hole from 1809 to 2207 m.

No shallow gas or shallow water flow observed

The pilot hole was drilled in 29.5 hrs with an average ROP of 15.8 m/h. The total time includes the sampling of cuttings with the ROV

1.3.2 Comments and Recommendations:

Based to this experience it is recommended to drill a pilot hole in such water depth with a motor BHA to reduce the string rotation to a minimum. The most likely cause of the parting of the drillstring is believed to be whirling in the drillstring as the string was started rotating at 100 RPM. Furthermore it recommended washing down or drilling with no string rotation and no weight on bit until all non-mag connections in the BHA is below the seabed

Cuttings sample was taken with the ROV at each connection. This is a time consuming operation that adds 10-15 min per connection and must be included in well timing if such operations should be done in future wells.

1.4 36”x42” Hole Section / 30” Conductor

Water depth (msl):	1717.0 m	
Total depth of section (36” hole):	1833.0 m	
Casing depth:	1832.7 m	
Total time used:	81.5 hrs	
Operational time:	81.5 hrs	100 %
Downtime:	0.0 hrs	

Final wellhead coordinates: 7 103 9751.18 m North and 500 147.53 m East.

1.4.1 Drilling

Based on the difficulties observed on Ormen Lange a Powerdrive in the BHA between the 17 1/2" and 26" bit. The BHA contained a combined 26” x 36” Hole Opener assembly with a 42” Hole Opener spaced out to drill the top 20 m. The section was drilled with the 17 ½” bit at 1852 m and the 36” hole opener at 1833 m in 17 hours at an average ROP of 5.4 m/hr.

1.4.2 Casing

Ran 6 joints conductor including 36” housing joint and conductor shoe. Ran 2 joints 5” fibreglass pipe and 6 joints 5” S-135 DP cement stinger. Landed casing with 2.5 m stickup, and less than 0.5 deg on bulls eye

Prepared to mix 65 m3 1.47 SG cement, and displaced with calculated volume to leave 5 m cement plug inside conductor shoe. Had good returns to seabed while pumping the cement. Dropped Titus dart and waited 15 min to let the dart seat. Opened ball valve on 30” tool, and sheared Titus sleeve with 85 bar. Mixed 12 m3 of cement and displaced through Titus hose & ring to top-up the annulus. At the end of the top-up job the hose going from the running tool to the Hydrate plate had come off at the hydrate plate connection. It is estimated that 9 out of 12 m3 of cement was pumped into the annulus prior to the connection coming off (9 m3 was approximately 100 % excess of the annulus volume).

Waited on cement to set down weight on the conductor. The bull-eye showed less than 0.5 deg and the running tool were released and the landing string was pulled. Found the cement stinger below the 30” housing running tool packed with cement. In addition, 14 meters of cement had to be drilled out inside the 30” casing.

1.4.3 Comments and Recommendations:

It is difficult to say if the Powerdrive actually helped or not. Closer examination on the near bit inclination has to be performed, but the objective of achieving verticality of the hole was obtained.

This is the second deep-water well that the Titus system has been used with problems. For future wells the Titus system should not be used if indications form the primary cement job is such that it can be assumed that the primary job has been successful

1.5 26” Hole Section / 20” Surface casing

Total depth of section:	2214.0 m	
Casing depth:	2206.8 m	
Total time used:	497.5 hrs	
Operational time:	255.5 hrs	(51.4 %)
Downtime:	208.5 hrs	(41.9 %)
Waiting on Weather	33.5 hrs	(6.7 %)

1.5.1 Drilling

The section was drilled with a motor assembly and a Security DBS XT02 insert bit. Hi-visc pills were pumped twice per stand for hole cleaning. Due to over pull the hole was reamed from 2214 to 2185 m and a 30m3 hi-visc pill was pumped and displaced out. Performed a wiper trip to 2100 m and the hole took weight at 2188 m. Washed and reamed down to TD of 2214 m and pumped additional 30 m3 of hi-visc pills that was displaced out prior to displacing hole to 1.3 sg mud.

The section was drilled in 24.5 hrs with an average ROP of 15.6 m/h.

1.5.2 Casing

Ran 39 joints of surface casing including conductor shoe and landed 18 ¾” wellhead in 36” housing. No tight spots were observed when running the casing. Attempted to over-pull test against shear pins in wellhead, but no indication on weight. Confirmed with ROV that all shear pins in the 18 ¾” wellhead were broken. Landed out 18 ¾” wellhead in 36” housing and based on Dril-Quip recommendation locked wellhead with running tool prior to the cement job.

Prepared and mixed 156 m3 1.60 SG cement, pumped and displaced cement with seawater using the rig pumps. Lost returns in the middle of the displacement, but the returns came back towards the end of the displacement. Bumped the plug with 60 bar and checked for back flow.

1.5.3 BOP /Riser running

Rigged up to run the riser and BOP. Picked up the instrumented riser joint and connected same and skidded BOP to parked position in the centre. Connected the riser to the BOP and the cables to the instrument joint, but due to bad weather the crew could not work underneath the BOP to change out the VX-ring on the BOP connector. Waited on weather for 21 hours before crew could make up VX-ring to

BOP connector. Ran BOP and riser and pressure tested Kill and Choke lines to 345 bar and conduit lines to 200 bar every 10 joints. Stopped at 1192 m and changed out to 750 tons handling equipment. All pressure tests where performed against inner K/C failsafe valves. On joint 71 a good test could be obtained on the Kill line side. The Kill line isolation valve was closed and a good test was obtained against the isolation valve. The valve was opened again and a good test was obtained against the inner kill line failsafe. The pressure test on joint 81 was OK, but when the BOP was landed, both the wellhead connector and the kill line isolation valve was found leaking. The BOP was released and the VX-ring was found missing. A new ring was placed on the wellhead by the ROV and the BOP was connected again. The wellhead connection was pressure tested to 96 bar and found OK, but the external leak on the kill line could not be repaired. The BOP and riser was then pulled to surface to repair the leak on the kill line.

The lower stem on the kill line isolation valve was found to the washed out causing the leak. The stem was replaced and all other failsafe valves stems were inspected and found to be OK.

During the Emergency Quick Disconnect (EQD) test sequence a pilot operated check valve would not allow the pressure in the riser connector to bleed of. The valve was repaired and riser connector was tested with a total EQD sequence time of 35 seconds on the blue pod.

Ran the BOP into water but the first pressure test indicated a leak on the choke line side. Pulled the BOP and found the leak in the connection between the instrumented joint and the finned riser joint. Inspection revealed scratches in the finned joint chokeline stab. The finned joint was lead out and the BOP was run without the finned joint in the riser.

The BOP was then run and tested every 10 joints and landed and function-and pressure tested ok

1.5.4 Comments and Recommendations:

Base on the experience on the first attempted on running the BOP and riser, the pressure test of the should not be higher than Maximum Design Well Pressure when running the riser and BOP. A stump test of the BOP should be performed to a minimum of 345 bars prior to running the BOP.

The BOP should be run with the BOP failsafe and the Kill- and Choke line isolation valve in open position to allow the Kill - and Choke line to be filled with seawater from below. In addition this will prevent trapping any pressure below the valves that can damage the seals in the valves.

1.6 17” Hole Section / 13 3/8” Liner

Total depth of section:	2518 m RKB	
Casing depth:	2510 m RKB	
Total time used:	149.0 hrs	
Operational time:	146.5 hrs	(98.3 %)
Downtime:	2.5 hrs	(1.7 %)

Drilled Section: 2214 – 2518m (304m)
Drilling Hrs: 34,5 hrs

The main objective of this section was to drill a 17” hole and set a 13 3/8” liner into TOP SPRINGAR (Shetland Group), and to seal of the possible weak Tuff formation in the base Rogaland formation. It was important to get as high leak off value as possible prior to drill into the Intra Springar and Nise reservoir.

1.6.1 Drilling

The 20” shoe track was drilled out with a conventional rotary assembly and a Smith MSDGH bit due to junk in the hole.
Float collar and junk were tagged at 2191m, and the shoe track was drilled out in 3.5hrs. The thin walled stainless steel sleeve from the cementing head gave no drillout problems. Bit condition was good with no junk marks or broken teeth.

Leak of test at 20” shoe @2207mTVD with high visc mud pill on bottom and seawater in main part of hole gave an EMW of 1,14 SG with surface pressure 24bar. A large fluid volume was carefully pumped during the LOT with all fluid returning indicating a very plastic formation. Due to the low LOT the decision was made to drill ahead without any remedial work, except cutting mud weight to 1.10sg. ECD became even more critical and the risk for loss circulation was considered high.
A new BHA was made up, including mud motor and MWD/LWD tools. The tools were shallow tested and RIH to drill the remaining short 17” hole section. Due to low LOT and loss circulation risk, mud weight was cut back to 1.10sg prior to drill ahead. The ECD was continuously monitored and with flow rate 3500 lpm a 1.12sg ECD was recorded with the PWD tool.
The Schlumberger sonic tool stopped recording possible due to low down hole battery capacity, but after dumping memory data at surface the sonic data was found to be intact. Due to the large hole size the sonic data needs to be further processed.

The section was drilled to TD 2518m MD (2517.5mTVD) in 34.5 hrs, averaging only 8.8m/hr. The low ROP was contributed due to strict directional steering requirement and drilling fluid control. The hole was carefully nudged and lined up towards Springar target in 250 ° directions in the Shetland group. Top Springar Formation

was encountered at 2494m,approx. 90m deeper than prognosed and the section TD was set 40 meter into the Springar Formation as planned.

No mud losses or hole stability problems was experienced during drilling the section, the mud weight was balanced between 1.10 – 1.12sg.

1.6.2 13 3/8" Liner

A 13 3/8" liner (72#/ft, L-80,NSCC) was run on 6 5/8" DP landing string and successfully hung of with hanger top @ 2139m and shoe @ 2510m.
Circulation was lost while circulating liner volume prior to cementation, most likely due to plugged liner hanger ports. It was further agreed to proceed with the primary cement job and a total of 13.3m^3 1.90sg slurry was mixed and pumped. Partial return was obtained while displacing cement and the plug was bumped and the liner and float collar was pressure tested to 96bar. While pressure testing the well flowed back 15 m^3 mud at a rate of 50 lpm indicating induced charged formation.

1.6.3 Comments and Recommendations:

During the LOT at the 20" the test itself had to be repeated three times due to "ballooning effect" of the hole. Expected volume pumped for the LOT were approximately 300-400 litres, but at the last test more than 2600 litres were pumped, before the curve broke off and a good LOT could be obtained. The first two tests were stopped at the "elastic leak-off " value for plastic formation, while it proved necessary to pump much more to reach the "plastic leak-off" (or proper leak-off) value for such formations.

1.7 8 ½”- 12 1/4” Hole opening/ 9 5/8” Liner

Total depth of section:	2542 m RKB	
Casing depth:	2535 m RKB	
Total time used:	317.0 hrs	
Operational time:	241.5 hrs	(76.2 %)
Downtime:	75.5 hrs	(23.8 %)

Drilled Section: 2518 – 2843m (325 m)
Drilling Hrs: 43.0 hrs

The main objective of this section was to drill both the Intra Springar and Nise reservoir. Both sand should be cored with minimum of one core if sand present and the entire interval for both sand if hydrocarbons where present.

1.7.1 Drilling

The 13 3/8” shoe track was drilled out with a conventional 12 ¼”assembly and a Smith HP 21G rock bit. Shark bit had been installed in the 13 3/8” shoe and float. Tagged the float at 2842 m and out shoe track to shoe at 2510 m. The shoe track was drilled out in 7 hrs including a well control drill.

Drilled rat hole and 4 meters of new formation. Performed Leak of test at 13 3/8” shoe at depth 2522 m TVD RKB with 1.12 SG water based mud to an EMW of 1,24 SG with surface pressure 32 bar.

Continued to drill the 8 ½” section with a conventional rotary assembly and a Smith MA99PX PDC bit. Drilled 8 ½” hole down to 2662 m but had perform a wiper trip to the shoe due to high ECD (1.27 sg). Circulated the hole around an ran in hole again and washed own form 2500 to 2661 m. Drilled and surveyed 8 ½” hole down to 2757 m and pulled back into the shoe for a new wiper trip to circulated hole clean due to high ECD (1.29 sg). Pumped at 800 lpm while pulling into the shoe. Pumped hi-visc pills and circulated around until above BOP. Increased to max 3 available mud pumps and cement pumps and pumped to displace out pills with 2100 lpm down the string and 3000 lpm on riser booster line.

Tripped back in hole while washing at 1500 lpm and 30 rpm on the string. Drilled and surveyed 8 ½” hole down to 2843 m. Pulled into casing shoe to circulate out geological samples.

The project wanted the section to be logged and 2843 m was set at section TD. Performed a wiper trip to TD prior to pulling out, but observed no fill.

First logging suite stood up at approximately 2636 m. The section was logged, but during rig down of the wireline equipment prior to a wiper trip, lost the top drive wireline hang off tool in hole. Sun lost in hole was approximately 2 m with a max OD of 8 “ with a closed inn bottom end and a 6 5/8” full hole box up.

Ran in hole with fishing tool string. Washed down from 2497 m and tagged and engaged the fish at 2785 m. Washed down with 500 lpm and 18 bar circulating pressure and with 10 rpm string rotation. At 2785 observed a 20 bar pressure increase and a slight torque increase when engaging the fish.

Recovered the fish and performed a wiper trip to section TD without seen any restriction at 2636 m. Worked tight spot at 2799-2809 m and circulated hole clean prior to pulling out.

A second attempt with wireline was performed, both tool string stood up at the same point, approximately 2636 m, and the rest of the logging program was cancelled.

The hole was then opened up to 12 ¼" with a conventional rotary assembly with a 8 ½" MA99PX PDC bit and a Halliburton HP 1200 hole opener. The hole was opened up in only 9 hrs of drilling time without any problems.

1.7.2 9 5/8" Casing

A 13 3/8" liner (53.5 #/ft, L-80, NSCC) was run on 5" DP landing string. Worked and washed string last 15 m and landed the casing hanger in the wellhead. Broke circulation and conditioned the hole/mud before cementing. Mixed and pumped 13.5 m3 of calls "G" cement slurry and started to displace mud with rig pumps. Dropped dart when starting to displacement with rig pumps. Observed as shear of the top plug with 68 bar. Got a sudden pressure increase 2 m3 after the plug had sheared. Started to trouble shoot surface line up. Increased pressure in steps to 150 bar and observed a sudden drop in pressure. Continued displacing the cement but the plug did not bump and stopped pumps after over-displacing ½ of the shoe track.

Attempted to set seal assembly and pressure tested same to 200 bar. Pulled out of hole with running tool and observed that seal assembly was not set and was retrieved with the running tool. Ran in hole with Dril-Quip flush adapter and washed and cleaned seal assembly area, prior to running the seal assembly again.

Successfully set the seal assembly and pressure tested with 260 bars. Tested both BOP and 9 5/8" casing to 110 bars.

1.7.3 Comments and Recommendations

Shark Bit was installed both in the shoe and float in the 13 3/8" casing. Based on experience on the Ormen Lange well where they used 29 hrs to drill out the shoe-track, compared to 7 hrs used in this well, Shark Bit did help preventing the plugs to spin and thus helping in drilling out the shoe.

Due to low leak-off obtained, the section had to be drilled with a lower flow rate than optimum for hole cleaning. This caused the both the bit and BHA to ball up and thus increasing the ECD. Two wiper trips had to be performed to the shoe and both hi-visc pills and maximum flow rate on the riser booster line was used to help circulated out cuttings build up in both the 20" conductor and riser.

Both logging attempts stood up at the same point (2636 m) and this depth corresponds to a large washout seen on the LWD log. The LWD caliper goes into saturation and it is difficult to tell how large the hole was. In addition the interval from2575 to 2825 large fractures could be seen in the LWD Resistivity At Bit image log. Based on the danger of total hole collapse projected decided to set an early TD to case off the fractured interval

The 9 5/8” seal assembly would not set properly and the seal assembly area had to be flushed and washed prior to setting the seal assembly on the second attempt. Due to restriction in the flow rate due to low leak-off at the 13 3/8” shoe, cutting and debris build up in the seal area.

1.8 8 ½" TD Section

Total depth of section:	3400 m RKB
Casing depth:	2835 m RKB
Total time used:	256.5 hrs
Operational time:	218.5 hrs (85 %)
Downtime:	38.0 hrs (15 %)

Drilled Section: 2843 – 3400 (557m)
Drilling Hrs: 64.4 hrs

1.8.1 Drilling

The 9 5/8" shoe track was drilled out with a conventional rotary assembly and a Smith MA99PX PDC bit. Shark bit had been installed in the 9 5/8" shoe and float Tagged the plug at 2783 m, and drilled plug and cement to float collar at 2796 m. Drilled out float and cement in the shoe track down to casing shoe at 2835 m. The shoe track was drilled out in 7 hrs including a well control drill.

Drilled the rat hole and 1 m of new formation. Had steady losses while cleaning out the rat hole. Lost a total of 15 m^3. Performed Leak of test at 9 5/8" shoe at depth 2844 m TVD RKB with 1.21 SG water based mud to an EMW of 1,28 SG with surface pressure 20 bar.

Continued to drill the 8 ½" section with a conventional rotary assembly and a Smith MA99PX PDC bit down to 2849 m while observing steady losses. Flow checked well but well was stable. Drilled 8 ½" hole at low flow rate (min. for MWD) and moderate rotation to control ECD and thus preventing further mud losses down to 2990 m. Pulled out of hole for bit trip due to low ROP. Observed tight hole with over pull throughout while tripping out and the string and to be worked out with slow rotation and low pump rate into the shoe The BHA was packed with clay especially the waterways in the stabilizers and the Bit was balled up and had 2 nozzles plugged

Ran in hole with a conventional rotary assembly and an Schlumberger DD44HD insert bit. Re-logged the interval from 2930 to 2988 for comparison with while drilling log. Continued to drill 8 ½" hole to 3041 m but had to pull out of hole due to down hole tool failure. Lost signals from near bit MWD logging data (RAB) and signals from the pressure sub.

Changed out failed MWD and ran in hole with a conventional rotary assembly and a Hughes Christensen HC 605 PDC bit. Drilled 8 ½" hole to well TD at 3400 m with reduced drilling parameters due to control ECD.

Due to tight hole, pumped out of hole to 3267 m with 400 lpm to avoid swabbing. The pipe was pulled wet and the booster pump on riser was running. Due to increase in

over-pull from 3267 m the string was back reamed out of hole to the shoe with 100 RPM and a flow rate of 900 lpm. Circulated bottom up with 1600 lpm down the string and 1300 lpm on riser booster line with an ECD at the bit of 1.29 sg prior to performing a wiper trip to bottom. The riser was boosted with 2500 lpm while performing the wiper trip to clean out the riser. Back into the shoe the hole was again circulated bottoms up prior to logging with 1850 lpm down the drill string and 1000 lpm on the riser booster line with and ECD at bit of 1.29 sg, indicating a cleaner BHA.

1.8.2 Comments and Recommendations

Again due to low leak-off obtained, the section had to be drilled with a lower flow rate than optimum for hole cleaning. This caused the both the bit and BHA to ball up and thus increasing the ECD. However after a while the hole had “healed up” and allowed for a higher flow rate. A contingency bit balling pill was pumped but without any success in cleaning the bit.

The insert bit that was run had no better performance than the first PDC bit the meters that is was drilling, but the last Hugh Christensen bit, the HC 605 drilled at an average ROP of 11.2 m/hr compared to 5.35 – and 7.4 m/hr for the first Smith PDC and insert Bit. The same bit was used in the BP Havsule well with very good performance and thus is recommended for drilling in such environments.

Even though that the obtained leak-off was as low as 1.28, the well healed itself after a short while and most of the section was drilled with estimated ECD at the shoe (done by MI PresPro offshore) of 1.3-1.32 with peaks up to 1.35 and ECD at bit of 1.38-1.40 sg without any losses. The increased flow rate 1530-1550 lpm (up from 1250 lpm) helped preventing detrimental bit balling.

1.9 Plug and Abandonment

Total time used:	288.3 hrs
Operational time:	235.8 hrs (81.8 %)
Downtime:	20.0 hrs (6.9 %)
Waiting on Weather	32.5 hrs (11.3 %)

A 7.9 m3 hi-visc pill was set from 3200 to 2985 m and a 8.3 m3 1.9 sg balanced cement plug was set from 2895 to 2700 m. Pulled out of hole to 2700 and circulated out contaminated mud and cement. Ran in hole with a 9 5/8" bridge plug and set same at 2670 m and pressure tested bridge plug to 92 Bar, 70 bar above 9 5/8" leak-off pressure.

The 9 5/8" casing was then cut at 2065 m with good indication of a cut. Ran in hole with a spear, fishing jar and accelerator and pulled casing free with 145 tons over pull and pulled 9 5/8" casing, bore protector and seal assembly. The 9 5/8" casing hanger hung up on upper annular and the rig had to moved to be able to get hanger trough BOP.

A 20" bridge plug was then run a attempted to be set at 2033 m. Pressurized plug to 138 bar (2000 psi) and attempted to set bridge plug upper slips, but slipped upwards when applying over pull to set lower slips. A new attempt was made to set the upper slips with 275 bar, but again did the plug slip when applying the intended over pull to set lower slips. Slacked off weight and while pushing plug back down hole did the plug take weight at 2031 m. Sat down 20 tons on the plug and it stayed in position. Released running tool from plug by applying 9 right hand turns. Pressure tested the plug to 79 bar, 70 bar above 13 3/8" leak-off pressure. Pumped 260 liters and bled back 260 liters during the test. Tagged plug after pressure test and found that the plug had moved 0.5 m.

Mixed and dumped 48 m3 of 1.75 sg class A cement on top of bridge plug. Pulled out to 1760 and dressed off cement plug. Pulled out of hole and laid down drill pipe and drill collars while waiting for cement to set up. Ran in hole with a 12 174" bit and tagged cement at 1775 m with 10 tons down weight. Pressure tested the cement plug to 79, 70 bar above 13 3/8" leak-off pressure. Pumped 100 liters and bled back 100 liters during the test. Displaced well to seawater before pulling out of hole.

Waited for 32.5 hrs on weather prior to unlatching the wellhead. Pulled BOP and riser without any problems. Ran in hole Halliburton MOST tool and cut 20" conductor 36" housing 5 m below seabed. Attempted several times to engage MOST tool after cut, but tool would not latch. Checked bulls eye and found that wellhead had tilted out of range for the bulls' eye (more than 5 degrees with heading 300 degrees). Moved rig 50 meters aft and port to straighten wellhead. Attempted to latch MOST tool but without success. The wellhead had tilted the other way at heading 130 degrees. Pulled out of hole with MOST tool and prepared and ran ROV operable choker hitch on 15 tons lifting sling. ROV guided choker hitch over wellhead and cut straps and

tightened choker hitch. Lifted wellhead of seabed and pulled wellhead and hydrate plate to surface.

Laid out hydrate shield and conductor and the rest of 6 5/8" drill pipe and drill collars. Rig of contract on the 30.12.2002 at 20.45 hrs.

1.9.1 Comments and Recommendations

Since no hydrocarbon bearing zones was penetrated on the 8 ½" hole section, only on balanced cement plug was set 135 m into the 9 5/8" casing. This saved time compared to cementing all the way from TD. A 9 5/8" bridge plug was set as the barrier and pressure tested thus avoiding the waiting time on the cement to set up. Time saving compared to waiting on the cement prior to pressure test was in the order of 6-8 hrs.

A 20" bridge plug was planned as the top barrier. Prior to running the plug a 20" brush was planned to be as a casing scraper. However the body on the brush was too large to go trough the bore protector seat in the wellhead and had to be cancelled. More attention should have been made onshore to check that the OD of this brush would go trough the minimum restriction in the wellhead.

During the setting of the 20" bridge plug the plug would not bit properly into the casing wall and it is assumed that was due to clay/mud scaling on the casing wall. The plug was finally set with down weight only and could not be used as a proper barrier. The consequence was that the rig had to wait for 20 hrs on the top cement plug to set up prior to pressure testing the barrier to 70 bars above 13 3/8" leak-off pressure.

GENERAL INFORMATION ON WELL 6403/10-1

Field : UNDEFINED **Country** : NORWAY
Licence : 253 **Installation** : SCARABEO 5
UTM zone : 31 **Central Median** : 3' E **Horiz. Datum:** ED50

Location coordinates:		**Surface**	**Target**
UTM	**North [m]:**	7103975.18	
UTM	**East [m]:**	500147.53	
Geographical	**North :**	64 03'39.22"	
Geographical	**East :**	03 00'10.88"	

Water Depth: 1717.0 **m** **Reference Point Height:** 25.0 **m**
Formation at TD: KVITNOS at 2976 m MD

Operators: NORSK HYDRO PRODUKSJON A/S **Share:** 50.00 **%**

Partners: RWE-DEA **Share:** 30.00 **%**
PETORO 20.00 **%**

Total depth (RKB) : 3400.0 **m MD** 3399.0 **m TVD**

TIME SUMMARY
Start Time : 2002-10-13 19:00:00
Spudding date : 2002-10-26
Abandonment date :

Main operation	**Hours**	**Days**	**%**
MOBILIZATION	255.0	10.6	14.2
DRILLING	831.5	34.6	46.3
FORMATION EVALUATION MWD	6.5	0.3	0.4
FORMATION EVALUATION LOGGING	56.0	2.3	3.1
PLUG AND ABANDONMENT	235.8	9.8	13.1
DOWNTIME MOBILIZATION	2.0	0.1	0.1
DOWNTIME DRILLING	290.5	12.1	16.2
DOWNTIME FORM. EVAL. LOGGING	65.5	2.7	3.6
DOWNTIME PLUG AND ABANDONMENT	52.5	2.2	2.9
Sum:	**1795.3**	**74.8**	

Hole and casing record

Hole	**Track**	**Depth [m MD]**	**Casing/Tubing**	**Track**	**Depth [m MD]**
36"		1832.7	30"		1832.7
26"		2214.0	20"		2206.8
17"		2518.0	13 3/8"		2510.2
12 1/4"		2843.0	9 5/8"		2835.0
8 1/2"		3400.0			

Well status: Permanently abandoned Exploration Well

CONTRACTORS:

Bit Supplier : SMITH RED BARON
Casing/Running Contractor : WEATHERFORD NORGE A/S
Cement Contractor : BJ SERVICES
Directional Drilling Contractor : ANADRILL
Liner Hanger Supplier : BAKER OIL TOOLS
Logg Contractor : SCHLUMBERGER OFFSHORE SERVICES LTD
Mud Contractor : MI NORGE

GENERAL INFORMATION ON WELL 6403/10-1

CONTRACTORS:

Mudlog Contractor :	GEOSERVICES
Rig Contractor :	SAIPEM S.P.A.
Rov Supplier :	OCEANEERING A/S
Slick Line Contractor :	MARITIME WELL SERVICE

FINAL COST REPORT

SOLSIKKE 6403/10-1 & 6403/10-U-1	Drilling	Drilling	Drilling	TOTAL	TOTAL	TOTAL
	900297	2016936	2016387	ACTUAL	BUDGET	DIVIATION
UPDATED PER 10.1.2003	INVOICE	INVOICE	INVOICE	INVOICE	AFE	DIFF
EMPLOYEE RELATED COSTS	2,006,809	12,820,550	254,623	15,081,982	21,326,140	6,244,158
RIGCOSTS	77,142,666		-	77,142,666	94,852,461	17,709,795
RIG SUPPORT COSTS/REIMB.	2,501,003	6,895		2,507,898	6,379,530	3,871,632
				-	-	-
FUEL/LUB	1,671	6,986,772		6,988,443	4,735,500	-2,252,943
BITS	3,137,726			3,137,726	3,537,500	399,774
CASING/CASING EQUIPMENT	4,627,368			4,627,368	4,564,223	-63,145
WELLHEAD/X-MASTREE	3,564,481			3,564,481	2,222,937	-1,341,544
CEMENT/CEMENT ADDITIVES	1,780,439			1,780,439	2,700,925	920,486
MUD	5,210,201	96,280		5,306,481	7,064,992	1,758,511
				-	-	-
CHARTERFLY				-	-	-
OTHER TRANSPORTATION	26,080			26,080	615,000	588,920
STANDBY VESSEL		4,640,550		4,640,550	4,128,926	-511,625
HELICOPTER TRANSPORT		6,342,963		6,342,963	2,583,000	-3,759,963
POOL VESSEL		15,628,650		15,628,650	23,150,000	7,521,350
				-	-	-
CORING	443,892			443,892	1,914,100	1,470,208
DRILLING TOOLS	24,134,049			24,134,049	2,122,240	-22,011,809
CUTTING OF CASING	617,381			617,381	800,000	182,619
COMPLETION SERVICES	729,382			729,382	-	-729,382
PERFORATION				-	-	-
MWD SERVICES	7,173,413			7,173,413	4,139,899	-3,033,515
CASING OPERATIONS	1,474,652			1,474,652	1,871,720	397,068
MUD LOG/MUD SERVICES	1,850,179			1,850,179	833,466	-1,016,713
				-	-	-
CEMENTING SERVICES	2,897,929			2,897,929	1,100,251	-1,797,678
ELECTRICAL LOGGING	5,754,813			5,754,813	6,115,656	360,843
VSP	38,676			38,676	3,729,482	3,690,806
PROD TESTING	35,231			35,231	-	-35,231
DIVING/ROV	5,779,479			5,779,479	3,964,345	-1,815,134
MISC.RENTAL & OP.COSTS	1,325,307	6,417,206	146,717	7,889,230	6,441,500	-1,447,730
COILED TUBING				-	-	-
				-	-	-
SITE SURVEY	275,271	22,298	2,867,760	3,165,329	3,500,000	334,671
RIG POSITIONING	2,876,728			2,876,728	5,674,000	2,797,272
DRILLING SITE CLEAN UP				-	350,000	350,000
				-	-	-
WAREHOUSE COSTS		4,880,116		4,880,116	2,152,500	-2,727,616
LAB COST				-	6,090,000	6,090,000
SUM	155,404,826	57,842,280	3,269,100	216,516,206	228,660,292	12,144,086

DOWNTIME REPORT SCARABEO 5

Last 237 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	6403/10-1	2002-10-23	1	2.0	Equipment failure	SAIPEM S.P.A.	EDM	Repair oil leak on main engine #6.	SERVICE EQUIPMENT/SYSTE	RIG MOVE/SKIDDIN	DRILLING CONTRACTOR	370.00	Other Service Equipment/Sy	
SCA5	6403/10-1	2002-11-03	2	1.5	Other	DRIL-QUIP		Was not able to lock the 18 3/4" wellhead in the 36" housing.		DRILLING				
SCA5	6403/10-1	2002-11-03	3	0.5	Other	SAIPEM S.P.A.		Pump pressure suddenly dropped 10 bar.		CEMENTING				
SCA5	6403/10-1	2002-11-03	4	2.0	Equipment failure	BJ SERVICES	HALLIBURTON OILFIELD SERVICES NORWAY INC.	Problem to start the cementing unit.	SERVICE EQUIPMENT/SYSTE	CEMENTING	CEMENTING	371.01	Cement: Unit/pipe	
SCA5	6403/10-1	2002-11-03	5	1.0	Equipment failure	BJ SERVICES	HALLIBURTON OILFIELD SERVICES NORWAY INC.	Troubleshooting on a mix / transfer pump in the cement unit.	SERVICE EQUIPMENT/SYSTE	CEMENTING	CEMENTING	371.01	Cement: Unit/pipe	
SCA5	6403/10-1	2002-11-04	6	33.5	Waiting on weather					BOP INSTALLATION AND TESTING				
SCA5	6403/10-1	2002-11-06	7	2.5	Equipment failure	SAIPEM S.P.A.	CAMERON NORGE	Attempted to test the kill and choke line.	WELLCONTROL EQUIPMENT/SYSTI	DRILLING	DRILLING CONTRACTOR	335.00	Riser System (incl. K/C/B Lines)	
SCA5	6403/10-1	2002-11-07	8	3.0	Equipment failure	SAIPEM S.P.A.	CAMERON NORGE	Laid down damaged riser joint.	WELLCONTROL EQUIPMENT/SYSTI	BOP INSTALLATION AND TESTING	DRILLING CONTRACTOR	335.00	Riser System (incl. K/C/B Lines)	
SCA5	6403/10-1	2002-11-08	9	1.0	Equipment failure	SAIPEM S.P.A.	CONTIENTAL EMSCO	Respooled the drill-line on the drawwork, due to bad spooling.	DRILL FLOOR EQUIPMENT/SYSTE	BOP INSTALLATION AND TESTING	DRILLING CONTRACTOR	312.00	Drawworks and Machinery	
SCA5	6403/10-1	2002-11-09	10	177.0	Equipment failure	SAIPEM S.P.A.	HYDRIL CO.	Leakage on BOP and kill line isolation valve.	WELLCONTROL EQUIPMENT/SYSTI	BOP INSTALLATION AND TESTING	DRILLING CONTRACTOR	331.00	BOP Stack	
SCA5	6403/10-1	2002-11-10	11	4.5	Equipment failure	SAIPEM S.P.A.	MARITIME HYDRAULICS A/S	Repaired the after catwalk.	MATERIAL HANDLING SYSTEM	BOP INSTALLATION AND TESTING	DRILLING CONTRACTOR	360.00	Other Material Handling System	

DOWNTIME REPORT SCARABEO 5

Last 237 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	6403/10-1	2002-11-14	12	6.5	Equipment failure	SAIPEM S.P.A.	CAMERON NORGE	Troubleshot EQD problem. Found that the problem was caused by a pilot operated control valve that would not allow the closing pressure to bleed off. Repaired and reinstalled control valve. Function tested EQD, and found that the riser connector was working properly with a total sequence time of 35 seconds on blue pod.	WELLCONTROL EQUIPMENT/SYSTI	BOP INSTALLATION AND TESTING	DRILLING CONTRACTOR	332.00	Bop Control System	
SCA5	6403/10-1	2002-11-16	13	1.0	Equipment failure	SAIPEM S.P.A.	MARITIME HYDRAULICS A/S	Repaired spooling wheel for hydraulic hoses to the aft catwalk trolley, after it had collided with the aft V-door. Meanwhile cleaned rig floor for hydraulic oil.	PIPE HANDLING EQUIPMENT/SYSTI	BOP INSTALLATION AND TESTING	DRILLING CONTRACTOR	342.00	Drillfloor Tubular Handling	
SCA5	6403/10-1	2002-11-16	14	0.5	Equipment failure	SAIPEM S.P.A.	MARITIME HYDRAULICS A/S	Removed spooling wheel for hydraulic hoses to the aft catwalk trolley after another collision with the aft V-door. Connected hydraulic hoses directly to the trolley.	PIPE HANDLING EQUIPMENT/SYSTI	BOP INSTALLATION AND TESTING	DRILLING CONTRACTOR	342.00	Drillfloor Tubular Handling	
SCA5	6403/10-1	2002-11-17	15	0.5	Equipment failure	SAIPEM S.P.A.	CONTIENTAL EMSCO	Changed brake cylinder on middle caliper on drillers side of drawworks.	DRILL FLOOR EQUIPMENT/SYSTE	BOP INSTALLATION AND TESTING	DRILLING CONTRACTOR	312.00	Drawworks and Machinery	

DOWNTIME REPORT SCARABEO 5

Last 237 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	6403/10-1	2002-11-17	16	5.5	Equipment failure	SAIPEM S.P.A.	CAMERON NORGE	Hydraulic stab for blue conduit line on support ring was leaking. Replaced stab with gosseneck directly to the top of the conduit line on the slip joint.	WELLCONTROL EQUIPMENT/SYSTI	BOP INSTALLATION AND TESTING	DRILLING CONTRACTOR	332.00	Bop Control System	
SCA5	6403/10-1	2002-11-18	17	0.5	Equipment failure	SAIPEM S.P.A.	VARCO BJ OIL TOOLS	Troubleshot malfunctioning open and closing of hydraulic BX elevator. Adjusted actuation pressure.	HOISTING EQUIPMENT	DRILLING	DRILLING CONTRACTOR	303.00	Traveling Equipment	
SCA5	6403/10-1	2002-11-18	18	1.5	Equipment failure	BJ SERVICES	BJ SERVICES	Attempted to retrieve dart guide tube. Guide tube was stuck. Removed guide tube retaining nut and removed top cover. During remote operation of the cement head, the guide tube was lost in the well. The guide tube is a 76 cm long and 3.81 cm OD stainelss steel tube. Evaluated situation. Laid down cement stand.	SERVICE EQUIPMENT/SYSTI	DRILLING	CEMENTING	371.02	Cement: Head	
SCA5	6403/10-1	2002-11-22	19	0.5	Other	NORSK HYDRO A/S		Had to mix new 1.42 SG slug, since the first slug was not enough to keep the string dry.		DRILLING				

DOWNTIME REPORT SCARABEO 5

Last 237 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	6403/10-1	2002-11-22	20	0.5	Other	SAIPEM S.P.A.		Attempted to pump new slug. Discovered that the line up was incorrect. Lined up correctly and pumped 5 m3 1.42 SG slug.		DRILLING				
SCA5	6403/10-1	2002-11-22	21	0.5	Other	NORSK HYDRO A/S		Pumped new 5m3 slug, since pipe was wet.		DRILLING				
SCA5	6403/10-1	2002-11-24	22	0.5	Equipment failure	SAIPEM S.P.A.	VARCO BJ OIL TOOLS	Checked and greased torque assembly. Changed broken grease nipples.	HOISTING EQUIPMENT	DRILLING	DRILLING CONTRACTOR	313.02	Top Drive	
SCA5	6403/10-1	2002-11-25	23	1.5	Equipment failure	NORSK HYDRO A/S	SCHLUMBERGE DRILLING & MEASUREMENT	Investigated low circulation pressure.	DRILLSTRING/DOV EQUIPMENT	DRILLING	OTHER	355.01	Bit	
SCA5	6403/10-1	2002-11-26	24	2.0	Other	SAIPEM S.P.A.		Had forgot to make up dart sub. Had to pull out to make up dart sub.		DRILLING				
SCA5	6403/10-1	2002-11-26	25	1.5	Equipment failure	SAIPEM S.P.A.	CONTIENTAL EMSCO	Made up dart sub to 8 1/2" drilling assembly. Ran in hole with 8 1/2" drilling assembly on 5" drill pipe to 300 m. Got backlash on drill line due to block saver was inadvertently activated. Unspooled and respooled drill line on drawworks drum.	DRILL FLOOR EQUIPMENT/SYSTI	DRILLING	DRILLING CONTRACTOR	312.00	Drawworks and Machinery	
SCA5	6403/10-1	2002-11-30	26	29.5	Other	NORSK HYDRO A/S		Obstruction in hole while logging		LOGGING				
SCA5	6403/10-1	2002-11-30	26.1	20.0	Other	SAIPEM S.P.A.		Lost wireline hang-off sub in hole.		LOGGING				

DOWNTIME REPORT SCARABEO 5

Last 237 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	6403/10-1	2002-12-01	26.2	0.5	Equipment failure	SAIPEM S.P.A.	VARCO BJ OIL TOOLS	Repair Iron roughneck.	PIPE HANDLING EQUIPMENT/SYSTI	LOGGING	DRILLING CONTRACTOR	342.00	Drillfloor Tubular Handling	
SCA5	6403/10-1	2002-12-01	27	0.5	Equipment failure	SAIPEM S.P.A.	CONTIENTAL EMSCO	Broken spline coupling on drawworksmotor B	HOISTING EQUIPMENT	LOGGING	DRILLING CONTRACTOR	305.00	Other Hoisting Equipment	
SCA5	6403/10-1	2002-12-02	28	6.0	Equipment failure	SCHLUMBERGE WIRELINE & TESTING	SCHLUMBERGE WIRELINE & TESTING	Faulty logging equipment, VSI	MISCELLANEOUS EQUIPMENT/SYSTI	LOGGING	ELECTRIC LOGGING	380.00	Miscellaneous equipment, systems and services	
SCA5	6403/10-1	2002-12-06	29	12.0	Other	DRIL-QUIP		Seal assembly for 9 5/8" casing did not set.		CASING				
SCA5	6403/10-1	2002-12-12	30	26.5	Equipment failure	ANADRILL	ANADRILL	Lost signals from RAB tool and pressure sub	DRILLSTRING/DOV EQUIPMENT	DRILLING	OTHER	357.02	MWD/LWD	
SCA5	6403/10-1	2002-12-14	31	1.0	Equipment failure	SAIPEM S.P.A.	SAIPEM S.P.A.	Electrician tested smoke detector in mudlogging unit causing shut down of unit and MWD computers	MISCELLANEOUS EQUIPMENT/SYSTI	DRILLING	OTHER	650.00	Rig Power Supply	
SCA5	6403/10-1	2002-12-17	32	9.5	Equipment failure	SCHLUMBERGE WIRELINE & TESTING	SCHLUMBERGE WIRELINE & TESTING	Detected leak on the VSI-GR logging tool, unable to operate the tool.	SERVICE EQUIPMENT/SYSTI	LOGGING	ELECTRIC LOGGING	374.04	Vertical Seismic (VSP)	
SCA5	6403/10-1	2002-12-18	33	0.5	Other	SAIPEM S.P.A.		Picked up and broke off lift sub belonging to Saipem, from a 6 1/2" non mag drill collar. This had been forgotten while laying down the 8 1/2" drilling assembly.		DRILLING				
SCA5	6403/10-1	2002-12-18	34	0.5	Equipment failure	SAIPEM S.P.A.	VARCO BJ OIL TOOLS	Changed inserts in PS-30 hydraulic slips, due to that wrong size inserts had been installed previously.	PIPE HANDLING EQUIPMENT/SYSTI	PLUG AND ABANDONMEN	DRILLING CONTRACTOR	344.00	Slips and Spider	

DOWNTIME REPORT SCARABEO 5

Last 237 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	6403/10-1	2002-12-20	35	3.5	Waiting on weather					PLUG AND ABANDONMEN				
SCA5	6403/10-1	2002-12-21	36	1.0	Equipment failure	SAIPEM S.P.A.	CAMERON NORGE	Attempted to pull casing hanger through BOP. No success. Hanger hung up on lower annular. Opened and closed lower annular several times.	WELLCONTROL EQUIPMENT/SYSTI	PLUG AND ABANDONMEN	DRILLING CONTRACTOR	331.00	BOP Stack	
SCA5	6403/10-1	2002-12-22	37	2.0	Equipment failure	NORSK HYDRO A/S	BJ SERVICES	Pressurised string to 138 bar to set bridge plug upper slips. Attempted to take 20 tonnes overpull on bridge plug. Plug slipped upwards. Pressurised string to 275 bar. Attempted to take 20 tonnes overpull. Plug slipped upwards. Slacked plug down. Plug took weight at 2031 m. Set down 20 tonnes. Released from plug with 9 right hand turns.	SERVICE EQUIPMENT/SYSTE	PLUG AND ABANDONMEN	DOWNHOLE CASING/COMP EQUIPMENT	372.09	Permanent packer	
SCA5	6403/10-1	2002-12-24	38	29.0	Waiting on weather					PLUG AND ABANDONMEN				
SCA5	6403/10-1	2002-12-26	39	0.5	Equipment failure	SAIPEM S.P.A.	MARITIME HYDRAULICS A/S	Repaired spooling drum for hydraulic hose on catwalk trolley.	PIPE HANDLING EQUIPMENT/SYSTI	PLUG AND ABANDONMEN	DRILLING CONTRACTOR	347.00	Other Pipe Handling Equipment	
SCA5	6403/10-1	2002-12-27	40	0.5	Equipment failure	SAIPEM S.P.A.	CAMERON NORGE	Repaired broken drive chain on yellow mux cable winch.	MATERIAL HANDLING SYSTEM	PLUG AND ABANDONMEN	DRILLING CONTRACTOR	365.00	Utility Winches	
SCA5	6403/10-1	2002-12-28	41	0.5	Equipment failure	SAIPEM S.P.A.	VARCO BJ OIL TOOLS	Changed broken hydraulic fitting on iron roughneck.	PIPE HANDLING EQUIPMENT/SYSTI	PLUG AND ABANDONMEN	DRILLING CONTRACTOR	342.00	Drillfloor Tubular Handling	

DOWNTIME REPORT SCARABEO 5

Last 237 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	6403/10-1	2002-12-28	42	1.5	Equipment failure	SAIPEM S.P.A.	VARCO BJ OIL TOOLS	Changed broken hydraulic hose for PS-30 slips. Could not get slips to work properly. Changed out slips with air operated slips.	PIPE HANDLING EQUIPMENT/SYSTI	PLUG AND ABANDONMEN	DRILLING CONTRACTOR	344.00	Slips and Spider	
SCA5	6403/10-1	2002-12-28	43	12.0	Other	NORSK HYDRO A/S		Could not latch Multi Operational Single Trip (MOST) tool on to wellhead due to tilting of wellhead.		PLUG AND ABANDONMEN				
SCA5	6403/10-1	2002-12-29	44	0.5	Equipment failure	SAIPEM S.P.A.	VARCO BJ OIL TOOLS	Repaired broken bolt on iron roughneck spinner tong motor.	PIPE HANDLING EQUIPMENT/SYSTI	PLUG AND ABANDONMEN	DRILLING CONTRACTOR	342.00	Drillfloor Tubular Handling	
SCA5	6403/10-1	2002-12-29	45	1.5	Equipment failure	SAIPEM S.P.A.	VARCO BJ OIL TOOLS	Changed broken shear pin on upper racking arm.	PIPE HANDLING EQUIPMENT/SYSTI	PLUG AND ABANDONMEN	DRILLING CONTRACTOR	341.00	Vertical Pipe Handling	
			Sum:	410.5										
			Total Sum:	410.5										

DAILY REPORT ON WELL 6403/10-1

Daily report no : 1 **Date:** 2002-10-13
Midnight depth : 0 m MD **Estimated PP:** sg **Mud weight:** 0.00 sg

Stop time		Description
19:00		No activity on well 6403/10-1
23:59		Rig in transit from block 34/7, Snorre UPA to Florø.
	*	Meanwhile laid down 5" drill pipe on deck

Daily report no : 2 **Date:** 2002-10-14
Midnight depth : 0 m MD **Estimated PP:** sg **Mud weight:** 0.00 sg

Stop time		Description
05:00		Rig in transit from block 34/7, Snorre UPA to Florø
	*	Meanwhile laid down 5" drill pipe
10:00		Rig in transit from block 34/7, Snorre UPA to Florø
	*	Meanwhile laid down 3 1/2" drill pipe
15:30		Performed DP trials, anchored rig
	*	Rig anchored in the Aarebrot fjord according to anchoring procedure. Meeanwhile laid down 3 1/2" from derrick
23:59		Yard stay in Florø. Performed partial black ou test on rig
	*	Offloaded Cameron Sub Sea Tree umbilical and Kongsberg Flowline Hub Connection Tool umbilical. Offloaded Schlumberger welltest lab container. Commenced diving operations on starboard pontoon. Prepared to widen manhole openings in pontoons to gain access to new transponder spears

Daily report no : 3 **Date:** 2002-10-15
Midnight depth : 0 m MD **Estimated PP:** sg **Mud weight:** 0.00 sg

Stop time		Description
23:59		Yard stay in Florø.
	*	-Offloaded ROV tools. -Completed blinding of transponder spear holes in both pontoons.. -Widened manhole openings in pontoons to gain access for new transponder spears. -Prepared Cameron and Kongsberg sub sea equipment and backloaded equipment. -Loaded bentonite. -Spooled off MUX cable. -Performed level 5 black out test.

Daily report no : 4 **Date:** 2002-10-16
Midnight depth : 0 m MD **Estimated PP:** sg **Mud weight:** 0.00 sg

Stop time		Description
23:59		Yard stay in Florø
	*	-Offloaded well test separator and heat exchanger. -Loaded new oceaneering control container for back up ROV. -Loaded power pack for Saipem. -Completed electrical maintenace on top drive. -Backloaded 5K Hydril BOP stack. Lifted onboard 15K Cameron BOP stack. Heavy lifter Uglen, departed 1700. -Installed new transducer spear in starboard forward pontoon penetration.

Daily report no : 5 **Date:** 2002-10-17
Midnight depth : 0 m MD **Estimated PP:** sg **Mud weight:** 0.00 sg

Stop time	Description
23:59	Yard stay in Florø

DAILY REPORT ON WELL 6403/10-1

Daily report no : 5 **Date:** 2002-10-17

Midnight depth : 0 m MD **Estimated PP:** sg **Mud weight:** 0.00 sg

Stop time		Description
23:59	*	Backloaded test-surge tank and lose equipment. Continued cleaning welltetst area. Dismounted burnerheads. Packed and backloaded 3 1/2" & 5" DP. Maintenance on forward catwalk, changed out forward piston. Completed work with divers, divers released. Continued work on transducer modifications, welded back in sections cut out in pontoons for access to transducers. Skidded BOP to park position, service BOP. Spooled on new cable for blue pod. Serviced lower racking arm.

Daily report no : 6 **Date:** 2002-10-18

Midnight depth : 0 m MD **Estimated PP:** sg **Mud weight:** 0.00 sg

Stop time		Description
23:59		Yard stay in Florø
	*	Backloaded rental drillpipe, and surplus Saipem DP & DC . Took onboard 6 5/8" drillpipe for next well. Tested Link-tilt, OK. Tested 'Sense Pedestal' drillers console, functions OK. Installed Blue Pod on BOP. NDT check of lifteyes on slipjoint support ring. Serviced Iron roughneck, rotary table and drawworks brakes. Slipped through new wire for Rucker tensioner 5A.

Daily report no : 7 **Date:** 2002-10-19

Midnight depth : 0 m MD **Estimated PP:** sg **Mud weight:** 0.00 sg

Stop time		Description
23:59		Yard work in Florø
	*	- Replaced Rucker tension wire on # 5B, 4A & 2B - P/U Riser slip joint from deck, landed on spider, stroked out and service/overhaul same. - Continued NDT of Riser support ring, 750 T Bails, Rucker sockets and Riser Bolts. - Worked on BOP, maintenance, checked pressure and temperature sensors. - Unspooled wire on old pod line

Daily report no : 8 **Date:** 2002-10-20

Midnight depth : 0 m MD **Estimated PP:** sg **Mud weight:** 0.00 sg

Stop time		Description
17:00		Work in Yard Florø
	*	- Unloaded spud equipment and supplies from Olympic Orion. - Break inner slip joint connection - Install Rucker wire on support ring. - Service slip joint, changed seal. - NDT inspection of bails and elevator. - Varco checked and function tested BX elevator and LRA. - Tested yellow pod communication. -Tested instrumented riser joint horiz/vert.
22:00		Pulled anchors and prepared rig for transit.
	*	Started pulling first anchor 17:06 hrs. Last anchor on bolster 21:12 hrs. - Continued checks on drilling handling tools. - Prepare to spool pod cable onto spare pod reel.
23:59		Rig in transit from Florø yard anchorage to sheltered deepwater location for testing of positioning equipment.
	*	- Laid down slip-joint. - Removed riser handling equipment & installed master bushing in rotary table.

DAILY REPORT ON WELL 6403/10-1

Daily report no : 9 **Date:** 2002-10-21

Midnight depth : 0 m MD **Estimated PP:** sg **Mud weight:** 0.00 sg

Stop time		Description
00:30		In transit to Frøysjøen, location for testing of positioning system.
14:30		Tested & verified positioning system.
	*	- Launched ROV and set out transponder on seabed, for test of transducers. -Spooling in podcable on spare reel. - Slip wire on #2B tensioner. - Retrieved transponders and recovered ROV.
23:59		In transit to Solsikke.
	*	- Rig up for handling 6 5/8" DP & prepared to pick up DP to build stands and rack in derrick, while in transit. Pipedeck overhead crane shut-down with faulty solenoid valve, hence unable to pick up pipe. Working to repair crane. - Changed to 6 5/8" saver sub in Top Drive

Daily report no : 10 **Date:** 2002-10-22

Midnight depth : 0 m MD **Estimated PP:** sg **Mud weight:** 0.00 sg

Stop time		Description
17:00		Completed transit to Solsikke and arrived on location 15:45. Stabilized rig and turned heading to 61 deg. before ballasting.
	*	- Preparing to slip on new wire on tensioner 4A - Installing new agitator in slug pit. - Changed dies in RBS and lubricated same. Repaired and installed dies holder on torque assembly. - Overhead crane repaired and operational at 14:00 hrs. Started P/U 6 5/8" DP - Drifted 5" DP in derrick w 2 1/2" drift. - P/U 6 5/8" DP, built stands and racked in derrick, drifted to 4 3/4".
21:00		Ballasted rig to drilling draught of 23,5 m.
	*	- Halted P/U of 6 5/8" DP, until 19:30 hrs while ballasting rig.
23:59		Started bottom survey and test of LBL array with ROV mounted transducer.
	*	- Picking up 6 5/8" DP, building stands and racking in derrick.

Daily report no : 11 **Date:** 2002-10-23

Midnight depth : 0 m MD **Estimated PP:** sg **Mud weight:** 1.05 sg

Stop time		Description
11:30		Continued test and calibration of LBL array.
	*	- Performed tests, first with ROV carried transducer, and then between rig and seabed transponders. - Continued P/U 6 5/8" DP and racking stands in derrick..
13:30		Rig Repair.
	*	Repair oil leak on engine #6.
16:30		Continued testing of positioning control systems. Test on integrating HPR on both ADP (703/100) successful.
	*	- P/U 6 5/8" DP, 5" HWDP and 6 1/2" DC and rack stands in derrick.
22:00		Installed current meter (transponder) on seabed, using ROV.
	*	- Continued P/U DP & DC as required for planned BHAs and rack in derrick.
23:30		Perform DP tests ADP 703 switched to ADP 100.
23:59		Perform DP trials.

Daily report no : 12 **Date:** 2002-10-24

Midnight depth : 0 m MD **Estimated PP:** sg **Mud weight:** 1.05 sg

Stop time		Description
12:00		Performing DP trials.
	*	- P/U remaining 6 5/8" DP as required for this well.
23:59		Activity reported on 6403/10-u-1

DAILY REPORT ON WELL 6403/10-1

Daily report no : 13 **Date:** 2002-10-25

Midnight depth : 0 m MD **Estimated PP:** sg **Mud weight:** 1.05 sg

Stop time		Description
14:30		No activity.
	*	Activity reported on 6403/10-U-1.
16:00		Made up 36" wellhead running tool and racked in derrick.
18:00		Made up cement stand and racked in derrick.
	*	Made up 6 5/8" DP stand w/ kelly cock x pump-in x kelly cock. Installed 2 3/4" Titus Dart inbetween two K-Cs, and hooked up low torque valve and cemet hose on pump-in sub.
21:30		Made up 36" Hole Opening assembly.
	*	M/U 17 1/2" Bit, Power Drive, 26" x 36" dual stage holeopener and Power Puls.. Tested Power Drive 50 Bar at 2600 lpm.
23:30		Spaced out with Drill Collars and made up 35 7/8" STB and 42" Hole Opener.
	*	Pin threads on Stabilizer were damaged, apparantly hit by pointed object causing indention on 2-3 threads in the middle. Repaired by filing down.
23:59		Continued RIH w/ 8" DC.

Daily report no : 14 **Date:** 2002-10-26

Midnight depth : 1852 m MD **Estimated PP:** sg **Mud weight:** 1.30 sg

Stop time		Description
01:30		Continued RIH w/ 8" DC, Jar and HWDP.
	*	Laid down accelerator already built into a stand.
03:00		Trip in above seabed w/ 6 5/8" DP.
03:30		Filled pipe and tested MWD.
05:00		Continued tripping above seabed.
05:30		Checked block, TDS and derrick for loose objects. Part of routine check prior to spud.
06:30		Continued RIH above seabed. Tagged seabed at 1742 m and checked spud location with ROV mounted transponder.
07:00		Sat down weight on string and pushed 3 m into seabed without pumping. Verified correct spud location.
	*	Started washing down 3300 lpm without rotation at 06:50 hrs.
09:30		Continued washing down without rotation.
23:00		Drilled hole for 30" conductor.
	*	Drilled 17 1/2" hole w/ piggy-back hole openers, 26" x 36" and 42". Setting depth for 30" at 1833 m. Pumped Hi-Vis pills 2 x 10 m3 per stand.
23:59		Pumped around Hi-Vis pill to sweep hole before wiper trip.
	*	Pumped 30 m3 on TD

Daily report no : 15 **Date:** 2002-10-27

Midnight depth : 1852 m MD **Estimated PP:** sg **Mud weight:** 1.05 sg

Stop time		Description
01:30		Made wipertrip from TD to 1761 m. RIH and washed down last 10 m.
02:00		Displaced hole to 1,30 sg mud.
06:00		Pulled out of hole with 36" BHA and racked in derrick..
07:30		Rig up and prepared to run 30" conductor.
08:00		Held pre-job meeting with personell involved with running of the conductor.
12:00		Made up and ran in with 30" conductor, shoe joint, intermediate joints and housing.
	*	Picked up shoe joint and tested float. Ran 5 intermediate joints. Conductor housing s/n: AW 39974-01.
15:00		Picke up and ran in with cement stinger. Made stinger up to conductor housing running tool and installed running tool in housing.
	*	Made up cement stinger of 2 joints fiberglass pipe and 2 stds of 5" DP. Locked housing into hydrate shield and installed Titus hose. Installed inclinometer to running tool.
19:00		Ran in with conductor on DP landing string, to seabed.
20:00		Entered conductor into hole and continued running in and tagged bottom. Attempted to slack off weight, conductor slipped down. Picked up to planned stick-up of housing above seabed.

DAILY REPORT ON WELL 6403/10-1

Daily report no : 15 **Date:** 2002-10-27

Midnight depth : 1852 m MD **Estimated PP:** sg **Mud weight:** 1.05 sg

Stop time		Description
20:00	*	Closed vent valve on R/T when 20m to land. After landing and picking up to setting position, checked level indicators both < 1/2 deg, and inclinometer on R/T reading 0.1 / 0.3.
21:30		Circulated attempting to break circulation. No indication of flow up alongside conductor.
22:00		Prepared for mixing and pumping cement.
23:59		Mixed and pumped first stage cement for conductor.
	*	Mixed 10 m3 lite slurry followed by 1.47 sg cmt.

Daily report no : 16 **Date:** 2002-10-28

Midnight depth : 1852 m MD **Estimated PP:** sg **Mud weight:** 1.05 sg

Stop time		Description
02:00		Continued mixing and pumping cement.
	*	Observed returns to seabed while pumping cement.
02:30		Displaced cement with seawater. Checked for backflow.
	*	Displaced with calculated volume to leave 5 m cement plug inside conductor shoe.
03:30		Dropped dart and opened circulating sleeve on housing running tool.
	*	Dropped dart and waited for 15 min for it to fall. Opened vent valve on R/T. Started pumping and sheared Titus sleeve with 85 bar. Continued circulating and pumped 20 m3 through Titus sleeve. Observed returns at seabed.
07:30		WOC with conductor hanging on landing string.
09:30		Mixed and pumped cement for second stage.
	*	Mixed 12 m3 of 1.47 sg gas-tight slurry, and displaced through Titus hose & ring to top-up the annulus. It was observed that hose had disconnected and that some of the cement went over the hydrate shield, est. last 3 m3.
12:00		WOC
12:30		Set down weight of conductor. Checked housing with ROV, and verified housing / conductor stable. Disconnected R/T.
15:30		Pulled out of hole with landing string to housing running tool.
18:30		Laid down sement stinger and conductor housing running tool.
	*	Cement stinger full of cement, Laid down 6 jts of 5" DP and 2 jts of fiberglass pipe. Racked R/T in derrick while laying out cement stinger. Laid out R/T and cleared drillfloor of conductor handling tools.
23:59		Laid down 36" BHA.
	*	Laid down 26 x 36 HO, 6 ea 9 1/2" DC, 36" STB, 42" HO and 2 ea NMDC. NMDC difficult to break, damaged threads on 2 NMDCs and 1 DC.

Daily report no : 17 **Date:** 2002-10-29

Midnight depth : 1852 m MD **Estimated PP:** sg **Mud weight:** 1.05 sg

Stop time		Description
01:00		Finnished laying down 36" BHA.
01:30		No activity on this well
	*	Activity reported on Pilot Hole 6403/10-U-1
23:59		Made up 8 1/2" Pilot BHA.

Daily report no : 19 **Date:** 2002-10-31

Midnight depth : 1901 m MD **Estimated PP:** sg **Mud weight:** 1.05 sg

Stop time		Description
04:30		No activity on well 6403/10-1.
06:30		Rebuilt and charged the cement stand. Racked same back in the derrick.
	*	Drifted the cement stand to 3 1/4".
08:30		Made up the rigid lockdown tool and racked same in the derrick.

DAILY REPORT ON WELL 6403/10-1

Daily report no : 19 **Date:** 2002-10-31

Midnight depth : 1901 m MD **Estimated PP:** sg **Mud weight:** 1.05 sg

Stop time		Description
08:30	*	Drifted the tool to 2 3/4".
12:00		Made up the 26" bottom hole assembly. Tested the MWD and motor.
13:30		Picked up one 8" drill collar from deck and continued to run in the hole with 8" drill collar from the derrick to 123 m. Picked up the accelerator and one 8" drill collar from deck.
14:00		Ran in the hole from 143 m to 280 m with 5" heavy weight drill pipe.
17:00		Changed to 6 5/8" drill pipe equipment and continued to run in the hole to 1737 m. Positioned the rig.
	*	Filled the pipe at 1050 m and 1704 m.
18:00		Ran in the hole from 1737 m to 1817 m.
20:00		Drilled cement from 1817 m to 1832.5 m.
23:59		Drilled 26" hole in new formation from 1832.5 m to 1901 m.
	*	Pumped 2 x 10 m3 hi-vis pill every stand.

Daily report no : 20 **Date:** 2002-11-01

Midnight depth : 2214 m MD **Estimated PP:** sg **Mud weight:** 1.05 sg

Stop time		Description
18:30		Drilled 26" hole from 1901 m to TD at 2214 m.
	*	Pumped 2 x 10 m3 hi-vis pills every stand.
19:30		Pumped a 30 m3 hi-vis pill and displaced same out of the hole with seawater.
	*	Performed a survey at TD.
21:00		Due to overpull reamed from 2214 m to 2185 m. Pumped a 30 m3 hi-vis pill and displaced out same.
22:30		Performed a wipertrip to 2100 m.
	*	Observed 30 ton overpull from 2214 m to 2209 m. Spots with 20 ton overpull to 2160 m. When running in the hole took weight at 2188 m, washed & reamed down to TD at 2214 m.
23:00		Pumped a 30 m3 hi-vis pill followed by 50 m3 seawater.
23:30		Displaced the hole with 155 m3 1.30 sg mud.
23:59		Pulled out of the hole from 2214 m to 2131 m.
	*	No overpull.

Daily report no : 21 **Date:** 2002-11-02

Midnight depth : 2214 m MD **Estimated PP:** sg **Mud weight:** 1.05 sg

Stop time		Description
01:00		Pulled out of the hole with the 26" bottom hole assembly from 2131 m to 1804 m.
	*	No overpull.
01:30		Serviced the topdrive.
04:00		Pulled out of the hole from 1804 m to 280 m.
06:00		Pulled out with the 26" bottom hole assembly.
06:30		Cleaned and cleared the drill floor.
09:30		Rigged up to run 20" casing.
	*	Changed elevator, bails, PS-21 slips and gripper head.
15:00		Ran the 20" surface casing to 460 m.
16:30		Changed BX-elevator and bails.
18:00		Picked up and made up the 18 3/4" housing joint.
	*	Picked up the Lockdown tool from deck. Mounted the BJ plug mandrel and top plug. Filled glycol above top plug. Made up the Lockdown tool.
23:00		Ran in with the casing on 6 5/8" drill pipe from 460 m to 1738 m.
23:59		Positioned the rig over the well and stabbed into the 30" conductor. Ran in the hole with the 20" casing to 1835 m.

DAILY REPORT ON WELL 6403/10-1

Daily report no : 22 **Date:** 2002-11-03

Midnight depth : 2214 m MD **Estimated PP:** sg **Mud weight:** 1.05 sg

Stop time		Description
01:30		Ran in the hole with the 20" casing from 1835 m to 2198 m.
02:30		Made up the cement stand. Established circulation and verified returns with the ROV.
	*	Circulated with 1500 l and 20 bar.
04:00		Attempted to land and lock 18 3/4" wellhead to 36" housing without success.
05:00		Preloaded and locked the 18 3/4" wellhead to the 36" housing with Rigid Lockdown tool according to DrilQuip procedure.
	*	Performed a 20 ton overpull test on the wellhead.
07:30		Circulated out the 1.30 sg mud with seawater before the cement job.
	*	Pressure tested the cement line to 200 bar. Held prejob meeting prior to start cementing.
08:00		Observed pressure drop of 10 bar. Investigate same.
08:30		Pumped 10 m3 fresh water spacer.
10:00		Troubleshoot to start the Halliburton cement unit.
	*	Circulated the well with 1000 lpm.
10:30		Pumped 10 m3 fresh water spacer.
12:00		Mixed and pumped 98 m3 of 1.60 sg gastight cement slurry.
13:00		Troubleshoot on mix / transfer pump on the Halliburton cement unit.
14:00		Continued to mix and pump 56 m3 of 1.60 sg gastight cement slurry.
16:00		Dropped the dart. Displaced the cement with 109 m3 of seawater. Bumped the plug and pressured up to 60 bar. Checked for backflow.
	*	Displaced the cement with 2000 lpm. After bumping the plug pressured up to 40 bar above final circulating pressure.
16:30		Released the running tool with 8 ton overpull and pumped seawater to clean the string and hydrat shield.
19:00		Pulled out of the hole with the landing string.
20:00		Laid down the runningtool and removed the PS30 slips.
21:30		Cut and slip the drilling line.
23:59		Laid down the cement stand and the 26" bottom hole assembly.

Daily report no : 23 **Date:** 2002-11-04

Midnight depth : 2214 m MD **Estimated PP:** sg **Mud weight:** 1.05 sg

Stop time		Description
01:00		Continued to lay down the 26" bottom hole assembly.
01:30		Cleaned and cleared the drill floor.
06:00		Rigged up to run riser and BOP.
10:30		Picked up the riser instrument joint. Skidded the BOP to parked position in the center. Prepared to connect riser to BOP.
13:00		Connected the riser to the BOP and the cables to the instrument joint. Tested same. Changed the BX-gasket.
23:59		Waited on the weather.
	*	Deballasted the rig to 26,5 m (RKB) m. Max. wave height at 24:00 hrs: 9.7 m.

Daily report no : 24 **Date:** 2002-11-05

Midnight depth : 2214 m MD **Estimated PP:** sg **Mud weight:** 1.05 sg

Stop time		Description
18:00		Waited on the weather.
22:00		Rigged up to run the BOP.
	*	Ballasted the rig to drilling draft.
23:59		Ran BOP and riser from surface to 60 m.

DAILY REPORT ON WELL 6403/10-1

Daily report no : 25 **Date:** 2002-11-06

Midnight depth : 2214 m MD **Estimated PP:** sg **Mud weight:** 1.05 sg

Stop time		Description
10:30		Run BOP and riser from 60 m to 232 m.
	*	Pressure tested every 10 th joint.
15:00		Waited on the weather.
21:00		Continued to run BOP and riser from 232 m to 423 m.
23:30		Attempted to test the choke and kill line.
23:59		Tested the kill and choke line.
	*	After operating the failsafe valves several times got a good test.

Daily report no : 26 **Date:** 2002-11-07

Midnight depth : 2214 m MD **Estimated PP:** sg **Mud weight:** 1.05 sg

Stop time		Description
00:30		Tested the choke and kill lines.
	*	Tested conduite line to 3000 psi and kill & choke lines to 5000 psi.
06:00		Ran the BOP and riser from 423 m to 615 m.
07:30		Pressure tested the kill and choke lines.
	*	Tested conduite line to 3000 psi and kill & choke lines to 5000 psi.
08:30		Laid down damaged joint and picked up a spear one.
13:30		Continued to run BOP and riser from 615 m to 808 m.
15:00		Tested the kill and choke lines.
	*	Tested conduite line to 3000 psi and kill & choke lines to 5000 psi.
19:30		Ran the BOP and riser from 808 m to 1000 m.
21:30		Tested the kill and choke lines.
	*	Tested conduite line to 3000 psi and kill & choke lines to 5000 psi.
23:59		Continued to run BOP and riser from 1000 m to 1077 m.

Daily report no : 27 **Date:** 2002-11-08

Midnight depth : 2214 m MD **Estimated PP:** sg **Mud weight:** 1.05 sg

Stop time		Description
04:30		Ran BOP and riser from 1077 m to 1154 m.
	*	Charged the BOP accumulators. Slow operation between 03:30 - 04:30 due to bad spooling on the drawwork drum.
05:30		Worked on the drawwork due to bad spooling on the drum. Respooled the drill-line on the drawwork.
06:30		Continued to run BOP and riser from 1154 m to 1192 m.
07:30		Tested the kill-, choke- and conduite line.
	*	Tested conduite line to 3000 psi and kill & choke lines to 5000 psi.
09:30		Changed to 750 tons handling equipment.
	*	Checked the drawwork brakes.
15:00		Continued to run BOP and riser from 1192 m to 1345 .
17:00		Laid down damaged riser joint and picked up a spare one
	*	Damaged buoyancy due to rig movment. With the ROV found the buoyancy on the lower part of the thirth lowest yellow riser to be lost, this will be 487 m from RKB when BOP is landed. Buoyancy picked up by the standby boat.
18:00		Ran BOP and riser from 1345 m to 1384 m.
19:00		Tested the kill-, choke- and conduite line
	*	Tested conduite line to 3000 psi and kill & choke lines to 5000 psi.
23:59		Continued to run BOP and riser from 1384 m to 1519 m.

DAILY REPORT ON WELL 6403/10-1

Daily report no : 28 **Date:** 2002-11-09

Midnight depth : 2214 m MD **Estimated PP:** sg **Mud weight:** 1.05 sg

Stop time		Description
01:00		Ran the BOP and riser from 1519 m to 1537 m.
03:00		Picked up the fill-up joint and one standard buoyancy joint and ran in with same to 1554 m.
	*	Connected the fill-up joint and tested same.
04:30		Tested the kill-, choke- and conduite line
	*	Tested conduite line to 3000 psi and kill & choke lines to 5000 psi.
12:00		Ran the BOP and riser from 1554 m to 1704 m.
13:00		Laid down one 1.5 m pup joint and picked up a 3 m pup joint due to space out.
14:30		Tested the kill-, choke- and conduite line
	*	Tested conduite line to 3000 psi and kill & choke lines to 5000 psi.
15:30		Picked up the slip joint and ran in with same.
16:00		Picked up the landing joint.
18:00		Latched the support ring and prepared to land the BOP.
19:00		Positioned the rig and landed the BOP. Locked the connection. Performed a 20 ton overpull test.
	*	Landed the BOP with 20 ton down weight.
19:30		Displaced the kill and choke lines to seawater and attempted to test the casing and wellhead connector to 96 bar.
23:59		Troubleshoot to find leakage on surface equipment, kill and choke lines and the BOP.

Daily report no : 29 **Date:** 2002-11-10

Midnight depth : 2214 m MD **Estimated PP:** sg **Mud weight:** 1.05 sg

Stop time		Description
06:00		Troubleshoot on the kill - , choke line and the BOP. Observed leakage in the kill isolation valve in open and closed position. Also observed leakage in the wellhead connector.
07:00		Released the wellhead gasket and prepared to disconnect the BOP to inspect and change the VX-gasket.
07:30		Disconnected the BOP and lifted the BOP off the wellhead, observed missing VX-gasket on the wellhead connection.
11:00		Pulled the ROV to surface and picked up a new VX-gasket. Ran in with the ROV and installed the new VX-gasket on the wellhead connection.
12:00		Positioned the rig and landed the BOP with 20 ton. Locked the connection and performed a 20 ton overpull test.
13:00		Pressure tested the wellhead connection and the casing to 96 bar.
16:30		Attempted to pressure test the kill line isolation valve. Troubleshoot on same due to external leak.
18:00		Disconnected the BOP. Disconnected the support ring and laid down same.
	*	Decided to pull the BOP and riser due to external leakage on the kill isolation valve.
19:00		Laid down the telescopic joint.
20:30		Pulled the riser and BOP from 1738 m to 1684 m.
	*	Held prejob meeting prior to pull the BOP.
22:00		Repaired the after deck catwalk.
23:59		Continued to pull the riser and BOP from 1684 m to 1637 m.

Daily report no : 30 **Date:** 2002-11-11

Midnight depth : 2214 m MD **Estimated PP:** sg **Mud weight:** 1.03 sg

Stop time		Description
23:59		Pulled the riser and BOP from 1637 m to 520 m.
	*	Problem to break some of the connections due to low buoyancy. Held prejob meeting with the new crew at 22:00 hrs.

Daily report no : 31 **Date:** 2002-11-12

Midnight depth : 2214 m MD **Estimated PP:** sg **Mud weight:** 1.03 sg

Stop time	Description
12:00	Pulled the riser and BOP from 520 m to surface.

DAILY REPORT ON WELL 6403/10-1

Daily report no : 31 **Date:** 2002-11-12

Midnight depth : 2214 m MD **Estimated PP:** sg **Mud weight:** 1.03 sg

Stop time		Description
12:00	*	Problem to break some of the connections due to low buoyancy.
23:59		Landed the BOP on the carrier and performed repair on the BOP.
	*	Performed rig maintenance. Installed buoyancy on riser joint no. 17364.

Daily report no : 32 **Date:** 2002-11-13

Midnight depth : 2214 m MD **Estimated PP:** sg **Mud weight:** 1.03 sg

Stop time		Description
02:00		Repaired BOP stack kill line isolation valve.
03:00		Rigged up and pressure tested kill line isolation valve to 20 and 345 bar in both the open and closed position.
05:30		Function tested the BOP stack.
06:30		Pressure tested upper and lower outer kill valve to 20 and 345 bar.
07:30		Pressure tested upper and lower outer choke valve to 20 and 345 bar.
09:00		Pressure tested upper and lower inner kill valve to 20 and 345 bar.
10:30		Changed seals in instrumented riser joint, choke side.
12:00		Retested kill and choke line valves to 20 and 345 bar.
15:00		Repaired leaking check valve on the yellow pod. Changed bladder in blue pod accumulator.
23:59		Function tested the BOP stack and control system.
	*	-Prepared pod cable clamps. -Installed buoyancy on riser joint number 17364. -Checked seals on the seal subs. -Performed general maintenance.

Daily report no : 33 **Date:** 2002-11-14

Midnight depth : 2214 m MD **Estimated PP:** sg **Mud weight:** 1.03 sg

Stop time		Description
04:00		Installed test pipe and pressure tested BOP's to 20 and 345 bar.
	*	-Checked valve stems for burrs and wash outs on all fail safes in open position. -Visually checked for leaks at fail safe valve stems during pressure tests.
06:00		Function tested the BOP stack from remote panel in toolpushers office.
12:00		Performed test of Emergency Quick Disconnect (EQD) sequence. Found problem with disconnect of the riser connector, as the closing pressure on the riser connector would not bleed off.
18:30		Troubleshot EQD problem. Found that the problem was caused by a pilot operated check valve that would not allow the closing pressure to bleed off. Repaired and reinstalled check valve. Function tested EQD, and found that the riser connector was working properly with a total sequence time of 35 seconds on blue pod.
23:59		Prepared to run BOP. Installed bulls eyes and beacon. Tested instrumented riser joint sensors. Installed MUX cables and clamped to riser.

Daily report no : 34 **Date:** 2002-11-15

Midnight depth : 2214 m MD **Estimated PP:** sg **Mud weight:** 1.03 sg

Stop time	Description
00:30	Prepared to run BOP into water.
05:00	Ran BOP into water. Lined up and leak tested conduit lines to 207 bar. Tested kill line to 110 bar. Attempted to test choke line to 110 bar. No success. Troubleshot leak. Attempted to retest several times without success.
06:00	Pulled BOP out of water. Laid down finned riser joint. Lined up and pressure tested choke line to 110 bar. Chokeline held pressure, indicating that the leak was in the connection between the instrumented joint and the finned joint. Inspection revealed scratches in the finned joint chokeline stab.
10:00	Changed out leaking conduit line check valve.
10:30	Ran BOP into water to 40 meter depth.
11:00	Lined up and pressure tested conduit lines to 207 bar. Pressure tested kill and choke line to 110 bar.

DAILY REPORT ON WELL 6403/10-1

Daily report no : 34 **Date:** 2002-11-15

Midnight depth : 2214 m MD **Estimated PP:** sg **Mud weight:** 1.03 sg

Stop time	Description
15:30	Ran BOP to 232 m.
16:30	Pressure tested conduit lines to 207 bar. Pressure tested kill and choke lines to 110 bar.
21:00	Ran BOP to 443 m.
22:30	Pressure tested conduit lines to 207 bar. Pressure tested kill and choke lines to 110 bar.
23:59	Ran BOP to 520 m.

Daily report no : 35 **Date:** 2002-11-16

Midnight depth : 2214 m MD **Estimated PP:** sg **Mud weight:** 1.03 sg

Stop time	Description
04:30	Ran BOP to 730 m.
*	Pressurised conduit lines to 207 bar every 4th joint due to loss of accumumulator pressure as the BOP stack is run deeper.
05:30	Pressure tested kill and choke lines to 110 bar.
10:00	Ran BOP to 1000 m.
11:00	Pressure tested kill and choke lines to 110 bar.
14:00	Ran BOP to 1192 m.
14:30	Cleaned and tidied rig floor.
16:00	Ran BOP to 1288 m.
17:00	Pressure tested kill and choke lines to 110 bar.
18:30	Ran BOP to 1365 m.
19:30	Repaired spooling wheel for hydraulic hoses to the aft catwalk trolley, after it had collided with the aft V-door, due to bent wheel bracket. Meanwhile cleaned rig floor for hydraulic oil.
21:00	Trouble shot pressure loss in the BOP control system. Attempted to pressurise the LMRP accumulator through the blue conduit line. Not able to retain pressure. Switched to yellow conduit line and pressurised LMRP accumulator to 207 bar. Accumulator retained pressure, indicating that the check valve in the blue conduit line was leaking.
22:00	Ran BOP to 1403 m.
22:30	Removed spooling wheel for hydraulic hoses to the aft catwalk trolley after another collision with the aft V-door. Connected hydraulic hoses directly to the trolley.
23:59	Ran BOP to 1422 m. Installed 3 e/a cargo straps around buoyancy on joint number 17346, due to worn balmoral straps.

Daily report no : 36 **Date:** 2002-11-17

Midnight depth : 2214 m MD **Estimated PP:** sg **Mud weight:** 1.05 sg

Stop time	Description
05:00	Ran BOP to 1550 m.
07:30	Hooked up control hoses to the riser fill up valve and function tested valve. Pressure tested kill and choke lines to 110 bar.
08:00	Changed brake cylinder on middle brake caliper on drillers side of drawwork.
14:00	Ran BOP to 1707 m.
15:30	Pressure tested kill and choke lines to 110 bar. Pressure tested conduit lines to 207 bar.
17:00	Made up slip joint. Picked up landing joint. Ran in with slip joint and installed support ring.
18:00	Pressure tested kill and choke lines to 110 bar. Pressure tested conduit lines to 207 bar. Found hydraulic support ring stab for blue conduit line leaking.
23:30	Replaced leaking conduit line stab with goose neck directly on top of blue conduit line. Installed hose and pressure tested conduit line to 207 bar.
23:59	Moved rig over wellhead and prepared to land BOP.

DAILY REPORT ON WELL 6403/10-1

Daily report no : 37 **Date:** 2002-11-18

Midnight depth : 2214 m MD **Estimated PP:** sg **Mud weight:** 1.05 sg

Stop time	Description
01:30	Adjusted rig over wellhead. Landed BOP on wellhead and set down 20 tonnes weight at 00:50 hrs. Locked wellhead connector. Performed 20 tonnes overpull test on the connector. Adjusted riser tensioners.
02:30	Closed upper shear ram with accoustic system. Lined up and pressure tested wellhead connector to 96 bar.
04:00	Function tested BOP on blue and yellow pod. Meanwhile held safety meeting with crew. Went through SJA for release of slip joint inner barrel.
04:30	Installed hoses for slip joint seals. Released inner barrel. Pulled inner barrel to rig floor. Laid down landing joint.
06:00	Rigged down 750 ton lifting equipment.
07:30	Picked up and installed diverter.
13:30	Rigged down riser handling equipment. Installed torque assembly on top drive. Installed hydraulic BX elevator.
14:00	Troubleshot malfunctioning open and closing of hydraulic BX elevator. Adjusted actuation pressure.
15:30	Picked up cement stand from derrick. Dismanteled top cover on cement head to reload cement head.
17:00	Attempted to retrieve dart guide tube. Guide tube was stuck. Removed guide tube retaining nut and removed top cover. During remote operation of the cement head, the guide tube was lost in the well. The guide tube is a 76 cm long and 3.81 cm OD stainelss steel tube. Evaluated situation. Laid down cement stand.
22:00	Picked up and ran in hole with 17" clean out assembly.
23:00	Changed inserts in BX elevator to 6 5/8" drill pipe inserts. Installed PS-30 hydraulic slips in rotary table.
23:59	Ran in hole with 17" clean out assembly on 6 5/8" drill pipe to 430 m.

Daily report no : 38 **Date:** 2002-11-19

Midnight depth : 2217 m MD **Estimated PP:** sg **Mud weight:** 1.05 sg

Stop time	Description
05:00	Ran in hole with 17" clean out assembly and tagged junk/cement at 2191 m. Filled pipe at 1000 m. Held briefing with involved personnel prior to entering BOP with unshearable tubulars.
06:30	Filled drill pipe. Function tested BOP.
07:30	Performed stripping drill with 900 psi closing pressure on annular and 6 5/8" Drill Pipe. Had 15 tonnes overpull to get tooljoint to slip through up. Had 15 tonnes drag to get tooljoint to slip through down.
08:00	Pressurised well to 35 bar. Performed choke drill. Practiced constant casing pressure start up and shut down method.
08:30	Function tested diverter packer and diverter valves.
12:00	Spudded junk several times. Drilled float, shoetrack and shoe with 40 RPM, 10 tonnes WOB and 4300 LPM circulation rate. Cleaned out rat hole to 2214 m.
13:00	Drilled 17" hole from 2214 m to 2217 m with 80 RPM, 3 to 5 tonnes WOB and 4300 LPM circulation rate.
15:30	Pumped 10 m3 hivisc pill. Circulated pill out of the hole. Pumped and spotted 15 m3 hivisc pill on bottom.
19:00	Pulled bit into casing shoe. Closed BOP. Lined up and performed leak off test to 1.14 SG
*	Performed leak off test three times to achieve good data. Achieved what was interpreted as leak off pressure of 25 bar, corresponding to an equivalent mudweight of 1.146 SG. Pumped a total of 2600 litres. Bled back 2200 litres. An additional 500 litres came back from the well into the trip tank while preparing to displace well to 1.12 SG mud.
23:30	Held displacement meeting with involved personnel. Prepared displacement job. Displaced kill and choke lines to 60/40 MEG and seawater. Dispalced boosterline and wellbore to 1.12 SG glydrill mud.
23:59	Flowchecked well while mixing slug. Well was static.

Daily report no : 39 **Date:** 2002-11-20

Midnight depth : 2247 m MD **Estimated PP:** sg **Mud weight:** 1.10 sg

Stop time	Description
08:00	Slugged pipe. Pulled out of the hole with the 17" clean out assembly.
13:30	Held safety meeting with crew. Picked up and made up 17" drilling assembly. Lined up motor and MWD. Ran in hole with the 17" drilling assembly. Shallow tested MWD/LWD tool on first drill pipe stand.
17:00	Installed PS-30 hydraulic slips in rotary table. Ran in hole with 17" drilling assembly on 6 5/8" drill pipe to 1690 m. Filled pipe and broke circulation every 500 meter.
17:30	Checked drawwork brakes, travelling assembly and crown block.
19:30	Ran in hole with 17" drilling assembly on 6 5/8" drill pipe to 2190 m.

DAILY REPORT ON WELL 6403/10-1

Daily report no : 39 **Date:** 2002-11-20

Midnight depth : 2247 m MD **Estimated PP:** sg **Mud weight:** 1.10 sg

Stop time	Description
20:30	Filled pipe and broke circulation. Increased pumprate in steps to 3500 LPM. Observed Equivalent Circulating Density (ECD) on pressure sub. Pressure sub showed ECD of 1.13 from 2500 LPM to 3500 LPM.
23:59	Drilled 17" hole from 2217 m to 2247 m. Meanwhile, reduced mudweight from 1.12 SG to 1.10 SG.

Daily report no : 40 **Date:** 2002-11-21

Midnight depth : 2447 m MD **Estimated PP:** 1.06 sg **Mud weight:** 1.10 sg

Stop time	Description
23:59	Drilled and surveyed 17" hole from 2247 m to 2447 m . At 01:30 hrs, the entire mud system had been diluted to 1.10 SG. ECD with 3500 LPM was then reduced to 1.12 SG.

Daily report no : 41 **Date:** 2002-11-22

Midnight depth : 2518 m MD **Estimated PP:** 1.06 sg **Mud weight:** 1.11 sg

Stop time	Description
01:30	Drilled and surveyed 17" hole from 2447 m to 2475 m.
02:30	Circulated hole while evaluating LWD log results.
07:00	Drilled and surveyed 17" hole from 2475 m to 2518 m.
08:00	Circulated 16000 strokes with 4000 LPM circulation rate.
09:30	Pulled out of hole to 2192 m. No overpull
11:00	Circulated hole clean with 4300 LPM circulation rate. Rotated and reciprocated string.
11:30	Pulled out of hole to 2139 m. Washed supplemental adapter joint with 4300 LPM for 10 minutes.
12:00	Flowchecked well. Well static. Pumped 4.5 m3 1.36 SG slug.
12:30	Pulled out of the hole to 2080 m. Pipe was wet.
13:00	Mixed new 1.42 SG slug.
13:30	Attempted to pump new slug. Discovered that the line up was incorrect. Lined up correctly and pumped 5 m3 1.42 SG slug.
15:00	Pulled out of the hole with the 17" drilling assembly from 2080 m to 1530 m where pipe got wet.
15:30	Pumped 5 m3 1.42 SG slug.
17:00	Pulled out of the hole from 1530 m to 600 where the pipe got wet.
18:00	Pulled out of the hole with reduced speed to 285 m.
19:30	Cleaned rig floor for mud. Removed PS-30 hydraulic slips. Installed masterbushing. Changed to 5" handling equipment.
23:30	Pulled out of the hole with the 17" bottom hole assembly. Laid down ISONIC, LWD tool and motor.
23:59	Emptied catwalk. Meanwhile tidied rig floor and rigged up liner running equipment.

Daily report no : 42 **Date:** 2002-11-23

Midnight depth : 2518 m MD **Estimated PP:** 1.06 sg **Mud weight:** 1.11 sg

Stop time	Description
01:00	Made up cement stand. Racked cement stand in derrick.
01:30	Checked and greased travelling assembly and top drive.
04:00	Rigged up 13 3/8" liner running equipment. Held safety meeting with involved personnel.
09:30	Picked up and bakerlocked 13 3/8" shoetrack. Checked shoe and float. Ran in hole with 13 3/8" 72 ppf, L-80, NSCC connection, liner to 363 m,
10:30	Changed BX hydraulic elevator.
11:00	Picked up and made up 13 3/8" liner hanger. Weight below hanger was 38 tonnes.
11:30	Changed insert carrier and inserts in PS-30 hydraulic slips.
12:00	Made up crossover to 6 5/8" Full Hole connection. Made up top drive and broke circulation. Meanwhile changed gripper head on lower racking arm.
21:30	Ran in hole with 13 3/8" liner on 6 5/8" drill pipe to 2186 m. Filled every stand. Broke circulation every 500 meters.

DAILY REPORT ON WELL 6403/10-1

Daily report no : 42 **Date:** 2002-11-23

Midnight depth : 2518 m MD **Estimated PP:** 1.06 sg **Mud weight:** 1.11 sg

Stop time		Description
23:00		Closed upper annular. Pulled tooljoint under annular and verified tooljoint position. Closed lower pipe ram. Displaced kill and choke line to 1.10 SG mud. Opened BOP. Broke circulation. Measured weight of string. Up weight: 110 tonnes. Down weight: 116 tonnes.
23:59		Continued to run in hole with 13 3/8" liner on 6 5/8" drill pipe to 2386 m.

Daily report no : 43 **Date:** 2002-11-24

Midnight depth : 2518 m MD **Estimated PP:** 1.06 sg **Mud weight:** 1.11 sg

Stop time		Description
01:00		Ran in hole with 13 3/8" liner on 6 5/8" drill pipe to 2500 m. String took 20 tonnes weight.
01:30		Broke circulation. Established 1000 LPM circulation rate. Washed down and landed hanger. Stopped circulation. Set down 40 tonnes. Performed 20 tonnes overpull test to verify hanger position.
02:30		Started to circulate. Increased pump rate in steps up to 1300 LPM circulation rate with 16 bar pressure. After having circulated 22 m3 (Liner annulus volume) the pressure increased to 25 bar and returns were lost, indicating that the liner hanger circulation path had been plugged. Attempted to establish circulation. No success, even at very low rates.
	*	Injected with 10 bar pressure, corresponding to fracture propagation pressure experienced during LOT.
04:00		Held prejob meeting with involved personnel. Pumped 9 m3 1.5 SG spacer. Dropped ball. Mixed and pumped 13.3 m3 1.90 SG cement. Dropped dart. Displaced cement to rig floor with 400 liters mix water.
04:30		Lined up rig pumps. Chased cement with 3300 LPM to reach cement. Had no circulation pressure. After having chased 1750 strokes, pressure increased to 60 bar. Pressure bled off immidiately. Observed partial returns from the well. Continued to chase cement. After 2372 strokes, the dart landed in the top plug. (pre calculated 2461 strokes). Sheared top plug with 115 bar pressure. Displaced cement with 2200 LPM and 20 bar pressure. Bumped plug after 4196 strokes. (Pre calculated 4261 strokes).
05:00		Pressure tested liner to 96 bar for ten minutes. Bled off and checked floats. Observed gain in trip tank during pressure test, indicating that the charged formation bled back to the well. Gained a total of 15 m3 back from the well. Gain rate decreased to 50 LPM.
06:00		Closed BOP. Observed well for 15 minutes. No pressure increase. Opened BOP and performed overpull test with 20 tonnes overpull.
08:00		Set seal assembly with 6 right hand turns on the running tool. Lined up and pressure tested seal assembly to 35 and 96 bar. Pulled running tool free from seal assembly with 30 tonnes overpull.
09:00		Lined up and reverse circulated landing string volume. Dumped 7m3 of spacer contaminated mud.
09:30		Relanded running tool. Pressurised well to 128 bar for final installation of seal assembly.
12:30		Tested BOP to 35 and 96 bar.
14:00		Slugged pipe. Laid down cement stand.
19:00		Pulled out of the hole with the 13 3/8" casing running tool. Laid down the casing running tool.
21:30		Lined up and pressure tested top drive valves and rotary hose to 35 and 345 bar.
22:00		Greased and checked top drive torque assembly. Changed broken grease nipples.
23:30		Made up 12 1/4" clean out assembly.
23:59		Changed inserts in BX hydraulic elevator. Made up crossover to 6 5/8" Full Hole connection.

Daily report no : 44 **Date:** 2002-11-25

Midnight depth : 2522 m MD **Estimated PP:** 1.06 sg **Mud weight:** 1.12 sg

Stop time	Description
02:00	Installed PS-30 hydraulic slips. Ran in hole with 12 1/4" clean out assembly on 6 5/8" drill pipe to 1100 m.
03:00	Tested both shear rams to 35 and 96 bar. Meanwhile filled drill pipe.
05:30	Ran in hole with 12 1/4" clean out assembly to 2475 m.
06:30	Filled pipe. Ran in hole and tagged float at 2482 m. Broke circulation and increased pump rate to 3000 LPM with 164 bar pressure. Measured slow circulating rates up kill line and up riser.
08:00	Performed choke drill with both crews. Practiced constant casing pressure start up method.
09:30	Drilled float with 50 RPM, 0-5 tonnes WOB, 3500 LPM and 115 bar. Got no progress.
10:00	Pressure tested surface equipment due to low circulation pressure. No loss of pressure on the surface.

DAILY REPORT ON WELL 6403/10-1

Daily report no : 44 **Date:** 2002-11-25

Midnight depth : 2522 m MD **Estimated PP:** 1.06 sg **Mud weight:** 1.12 sg

Stop time		Description
10:30		Pulled out of hole to 2392 m. Held kickdrill with crew. Meanwhile investigated reason for low circulation pressure during drilling of float.
11:00		Performed preventive maintenance on travelling assembly and top drive while simulating drill string pressure losses. Found that reduction in pressure to 115 bar corresponded to loss of one nozzle.
12:30		Ran in hole to 2482 m. Drilled float, shoetrack and shoe at 2510 m. Cleaned out rat hole to 2518 m.
14:00		Drilled 12 1/4" hole to 2522 m.
16:00		Commenced circulating hole clean. At 14:10 hrs, the circulation pressure increased from 115 bar to 195 bar. Continued to circulate hole clean with 3400 LPM and 195 bar pressure. Mudweight in 1.12 SG. Mudweight out 1.12 SG.
17:00		Pulled bit into casing. Performed Leak Off Test to 1.24 SG equivalent mud weight.
22:00		Displaced hole to 1.18 SG deepwater mud. Displaced kill, choke and booster lines to 1.18 SG deepwater mud.
23:30		Cleaned shaker pits and flowlines for old mud. Mixed slug. Meanwhile observed well on trip tank. Well static. Pumped slug.
23:59		Pulled out of the hole with the clean out assembly, to 2334 m.

Daily report no : 45 **Date:** 2002-11-26

Midnight depth : 2522 m MD **Estimated PP:** 1.06 sg **Mud weight:** 1.17 sg

Stop time		Description
06:30		Pulled out of the hole with the 12 1/4" clean out assembly. Broke off bit and near bit stab.
07:00		Tidied rig floor.
09:30		Held pre job meeting with crew. Oicked up and made up 8 1/2" drilling assembly.
11:00		Shallow tested MWD tool. Installed radioactive sources in LWD tool.
13:00		Continued to make up and run in hole with 8 1/2" drilling assembly.
14:00		Ran in hole with 8 1/2" drilling assembly on 5" drill pipe to 683 m.
15:00		Found that the dart sub had not been made up to the 8 1/2" drilling assembly. Pulled out of the hole with the drilling assembly.
16:30		Made up dart sub to 8 1/2" drilling assembly. Ran in hole with 8 1/2" drilling assembly on 5" drill pipe to 300 m. Got backlash on drill line due to block saver was inadvertently activated. Unspooled and respooled drill line on drawworks drum.
17:30		Ran in hole with 8 1/2" drilling assembly on 5" drill pipe to 908 m.
19:00		Changed to 6 5/8" inserts in BX elevator. Filled pipe and performed pump readings at 908 m. Meanwhile changed inserts in PS-30 hydraulic slips.
22:30		Ran in hole with 8 1/2" drilling assembly on 6 5/8" drill pipe to 2500 m. Filled pipe and broke circulation at 1700 m.
23:59		Filled pipe. Broke circulation and took pump readings with 1500, 2000 and 2250 LPM. Measured SCR's. Found chokeline friction to be 25 bar with 20 strokes on mud pump. Measured SCR's with cement pump. Measured chokeline friction of 11 bar with 100 LPM and 17 bar with 200 LPM.

Daily report no : 46 **Date:** 2002-11-27

Midnight depth : 2662 m MD **Estimated PP:** 1.06 sg **Mud weight:** 1.17 sg

Stop time		Description
02:30		Drilled and surveyed 8 1/2" hole from 2518 m to 2545 m.
03:00		Observed 1 m3 gain in active. Pulled off bottom and closed in the well on upper annular preventer. Observed for pressure for ten minutes. No pressure build up. Opened well. Flowchecked on trip tank. Well static.
06:30		Continued drilling 8 1/2" hole to 2564 m. Commenced boosting the riser with 1000 LPM to aid cuttings transport in the riser.
07:00		Pumped Hi-Vis pill.
	*	Pumped three Hi Vis pills each 10 m3, while drilling.
18:30		Continued drilling 8 1/2" hole to 2662 m.
20:30		Pulled out to casing shoe for wipertrip.
	*	Pumped with 1500 lpm while pulling to shoe.
23:00		Pumped Hi-Vis pill and circulated around.

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Daily report no : 46 **Date:** 2002-11-27

Midnight depth : 2662 m MD **Estimated PP:** 1.06 sg **Mud weight:** 1.17 sg

Stop time		Description
23:00	*	Pumped 15 m3 HI Vis pill to clean hole and reduce ECD. ECD had increased to 1.27 sg..
23:30		Relogged from 2474 m to 2500 m.
	*	Relogged to tie-in MWD logs across casing shoe.

Daily report no : 47 **Date:** 2002-11-28

Midnight depth : 2770 m MD **Estimated PP:** 1.06 sg **Mud weight:** 1.17 sg

Stop time		Description
01:00		Tripped back in hole.
	*	Washed down from 2500 m to 2661 m.
02:30		Drilled 8 1/2" hole and surveyed from 2662 m to 2668 m. Had drilling break at 2665 m.
03:00		Flowchecked drilling break. Hole stable.
14:00		Continued drilling 8 1/2" hole from 2668 m to 2757 m.
	*	ECD (from PWD instrument) increased to 1.29 sg.
16:00		Pulled out to casing shoe for wiper trip and to circulate and clean hole.
	*	Pumped 800 lpm while pulling out of hole. Read ECD 1.21 at 2507m w/ 2280 lpm before pumping HiVis pill.
19:00		Circulated and cleaned hole.
	*	Pumped 4 m3 LoVis pill followed by 10 m3 HiVis pill. Pumped pills around with 2270 lpm until above BOP. Increased to maks available 3 mud-pumps and cmt pump to displace pills out. 2100 lpm down string and 3000 lpm on riser boost line. ECD reading at 2500m, 1.20 w/2370 lpm.
22:00		Trip back to bottom.
	*	Washing down with 1500m lpm and 30 rpm.
23:59		Drilled 8 1/2" hole from 2757 m to 2770 m.
	*	Read ECD 1.23 sg on btm w/2100 lpm before drilling ahead.

Daily report no : 48 **Date:** 2002-11-29

Midnight depth : 2843 m MD **Estimated PP:** 1.12 sg **Mud weight:** 1.18 sg

Stop time		Description
03:00		Continued drilling 8 1/2" hole to 2795 m.
	*	Had drilling break and drilled 3 m.
03:30		Flow checked drilling break. Hole stable.
06:00		Continued drilling 8 1/2" hole to 2814 m.
06:30		Pumped Hi-Vis pill and displaced above 8 1/2" hole.
	*	Pumped 10 m3 Hi Vis.
09:30		Continued drilling 8 1/2" hole to 2835 m. Had drilling break, stopped to flowcheck.
10:30		Flowcecked after drilling break. Observed slight gain and shut-in well and observed for pressure build-up. No indication of pressure build-up. Opened well, pumped 50 m3, then flowchecked.
	*	Observed 300 lit gain on first flowcheck. On second flowcheck, had 130 lit gain over 15 mins.
11:30		Continued drilling to 2843m. Took survey and flowchecked well.
	*	Recorded ECD 1.269 sg .
15:00		Pulled out to casing shoe, to circulate up geological samples..
	*	Pumped 800 lpm and rotated 40 rpm while pulling out. Pumped 15 m3 Hi-Vis pill around. ECD 1.204 w/ 2250 lpm.
17:00		Pumped Hi-Vis pill and pumped around
	*	Pumped 15 m3 Hi-Vis pill w/2250 lpm ECD 1,204 sg.
19:00		Tripped back to bottom.
	*	Tagged btm, no fill observed. Pumped 1300 stk, (open hole volume).
20:00		Pulled out to run wireline logs.
23:00		Flow checked at shoe, then circulated bottoms up.
	*	Recorded SCR w/ Cmt pump.

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Daily report no : 48 **Date:** 2002-11-29

Midnight depth : 2843 m MD **Estimated PP:** 1.12 sg **Mud weight:** 1.18 sg

Stop time		Description
23:59		Pumped slug and pulled out of hole to 1990 m.

Daily report no : 49 **Date:** 2002-11-30

Midnight depth : 2843 m MD **Estimated PP:** 1.12 sg **Mud weight:** 1.18 sg

Stop time		Description
00:30		Flow checked before pulling BHA through BOP.
02:00		Continued pulling out with 6 5/8" DP.
02:30		Changed handling tools to 5" DP.
03:30		Continued pulling out with 5" DP.
05:00		Changed handling tools for BHA, pulled and racked BHA in derrick.
07:00		Removed Radioactive sources from MWD/LWD and racked tools i derrick. Downloaded data from MWD
09:30		Rigged up wireline equipment. Made up logging toolstring and tested.
12:30		Run in hole with wireline logging tools, Run #1. Hit obstruction at 2639 m. Worked tools down to 2647 m. Unable to work past obstruction.
	*	Logs Run #1, DSI/GR
15:00		Pulled out of hole with logging tools. Rigged down loging tools. Lost wireline hang-off tool in hole.
	*	Fish: Over all length 2.01 m. Max OD 8". Closed in bottom end and 6 5/8" FH box up.
18:30		Evaluate situation and considered options for recovering fish. Made up BHA for retrieving tools lost in hole.
23:59		Run in hole with fishing-toolstring.

Daily report no : 50 **Date:** 2002-12-01

Midnight depth : 2843 m MD **Estimated PP:** 1.12 sg **Mud weight:** 1.18 sg

Stop time		Description
03:30		Washed down from 2497 m to 2785 m. Tagged and engaged fish.
	*	Washed down with 500 lpm and 18 bar circ press, rotated 10 rpm. Observed 20 bar pressure increase and slight torque increase when engaging fish.
07:30		Pulled out of hole with fish.
08:00		Repaired Iron roughneck.
11:30		Continued pulling out of hole with fish. Recovered fish and layed out.
13:30		Made up BHA for wipertrip and ran in hole.
14:30		Slipped and cut drilling line. Interupted due to problems with coupling on drawworks motor.
15:00		Disconnected drawworksmotor from drawworks drive shaft. Coupling damaged / broken.
	*	Broken coupling on motor B.
16:00		Continued slip and cut of drilline.
21:00		Continued running in hole for wipertrip.
23:59		Washed and reamed down 8 1/2" OH from 2520 m.
	*	Washed and reamed with 1500 lpm, 30-40 rpm. ECD 1.22-1.23 sg.

Daily report no : 51 **Date:** 2002-12-02

Midnight depth : 2843 m MD **Estimated PP:** 1.12 sg **Mud weight:** 1.18 sg

Stop time		Description
02:00		Continued washing and reaming to TD.
	*	Worked through tight spot 2799m to 2809m. Set down 5 ton. Torque 7000 ft-lbs from free torque 3000 ft-lbs. Increased flow to 2200 lpm and reamed out tight spot. ECD 1.24-1.26 sg while circulating / reaming on TD.
04:00		Circulated to clean hole from TD.
	*	Pumped 5 m3 Lo-Vis followed by 10 m3 Hi-Vis pill, pumped and displaced to above BOP.
12:00		Pulled out of the hole with DP.

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Daily report no : 51 **Date:** 2002-12-02

Midnight depth : 2843 m MD **Estimated PP:** 1.12 sg **Mud weight:** 1.18 sg

Stop time		Description
12:00	*	Flowchecked before pulling off bottom. Pulled into casing shoe, flowchecked and pumped slug. Running boost line on riser 3000 lpm, while pulling out of open hole and into casing shoe.
13:00		Pulled and racked BHA.
	*	Downloaded data from MWD.
14:00		Rigged up equipment to run wireline logs.
17:00		Made up and ran in hole with DSI / GR toolstring to 2620m. Hit obstruction, unable to work toolstring through.
	*	Hit tight spot on first run at 2639m.
18:30		Pulled out of hole with DSI / GR tools. Logs cancelled.
21:30		Made up and ran in hole with VSI tools. Stopped to take check shot. Tools malfunctioned.
23:59		Checked tools and instruments to identify equipment problem. Pulled out with toolstring in order to check cable and cable head.

Daily report no : 52 **Date:** 2002-12-03

Midnight depth : 2843 m MD **Estimated PP:** 1.12 sg **Mud weight:** 1.18 sg

Stop time		Description
02:30		Worked to locate fault in toolstring, and repaired tools..
03:30		Running in hole with loging tools, VSI.
04:00		Continued running in hole with logging tools. Hit obstruction at 2650m, unable to work toolstring through obstruction.
07:00		Log VSI from 2620m to 1760m (last survey point). Pulled out of hole with logging tools.
08:30		Rigged down wireline tools and handling equipment.
10:00		Prepared casing running/landing string. Made up cementing stand.
14:30		Made up 8 1/2" bit/ 12 1/4" hole-opener and BHA for opening 8 1/2" hole to 12 1/4". Ran in and tested MWD.
	*	Changed to PS30 slips.
15:30		Ran in with HWDP and 5" DP.
19:30		Continued running in hole with 6 5/8" DP to casing shoe.
	*	Broke circ at 1000m, 2000lpm - 50 bar.
21:00		Broke circulation and established full circulation rate. Washed down to top of 8 1/2" hole at 2522m.
	*	Recorded ECD 1.227 sg w/ 3500 lpm.
23:59		Opening hole to 12 1/4" from 8 1/2".

Daily report no : 53 **Date:** 2002-12-04

Midnight depth : 2843 m MD **Estimated PP:** 1.12 sg **Mud weight:** 1.19 sg

Stop time		Description
06:30		Opening hole to 12 1/4" to section TD at 2841m.
	*	Bottom of 8 1/2" rat-hole at 2843m.
09:00		Circulated to clean hole.
13:00		Pulled out of hole to casing shoe. Took 15 T overpull at 2780m.
	*	Back-reamed w/ 35 rpm and 2600 lpm while pulling out 2780m to 2490 m.
14:00		Circulated to clean hole from casing shoe.
15:30		Ran back in hole for wiper trip.
	*	Tagged fill at 2839m. Washed down to 2842m.
16:00		Circulated and conditioned hole.
17:30		Pulled out of hole to casing shoe.
18:00		Circulated to clean the hole from casing shoe.
23:59		Pulled out of hole with holeopening BHA.
	*	Stopped and flow-checked before pulling BHA through BOP. Held kick drill with crew.

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Daily report no : 54 **Date:** 2002-12-05

Midnight depth : 2843 m MD **Estimated PP:** 1.12 sg **Mud weight:** 1.19 sg

Stop time		Description
02:00		Continued pulling out of hole. Racked BHA in derrick.
03:00		Made up wearbushing retrieving tool. Changed DP handling tools and started running in hole.
05:30		Continued running in hole to wash BOP / wellhead and to retrieve wearbushing
06:00		Washed through BOP and latched onto wearbushing.
	*	Latched wearbushing and pulled free with 20 T overpull.
09:30		Pulled out with wearbushing. Layed down wearbushing and retrieving/washing tool.
11:30		Cleared rigfloor, rigged up tools and prepared to run casing.
21:30		Made up casing shoe / intermediate and floatcollar joints. Continued running in with casing.
	*	P/U and ran sho jt, 2 int. jts, FC jt and 87 reg jts.
22:30		Changed handling tools to pick up casing hanger.
23:30		Made up casing hanger with running tool installed, to casing.
23:59		Circulate and condition mud.

Daily report no : 55 **Date:** 2002-12-06

Midnight depth : 2843 m MD **Estimated PP:** 1.12 sg **Mud weight:** 1.19 sg

Stop time		Description
00:30		Continued circulating and condition mud.
06:00		Continued running in hole with casing on DP landing string to casing shoe.
	*	Entered BOP with casing at 0300.
10:00		Continued running in with casing in open hole. Worked and washed through tight hole last 15 m. Landed casing hanger in wellhead.
	*	Worked and washed with 500 lpm to landing depth. Set down 80 T when landing.
11:30		Broke circulation. Circulated to condition hole/mud before cementing.
14:30		Cemented casing in place with 13,5 m3 of class 'G' cement slurry. Displaced cement with mud using rig pumps.
	*	Dart dropped when starting to displace with rig pumps. Observed shear of top plug with 68 bar. Got a sudden pressure increase 2 m3 after plug sheared. Trouble shoot surface line up. Increased pressure in steps to 150 bar and observed a sudden drop in pressure. Continued displacing cement Plug did not bump. Checked for backflow-ok, before setting seal assy.
15:30		Set seal assembly and pressure tested.
	*	Pressuretested seal assy with 200 bar.
19:00		Pulled out of hole with landing string and casing hanger R/T. Sealassembly not set, retrieved with R/T
	*	Got 15 ton overpull when releasing running tool, observed overpull after releasing tool from hanger.
20:00		Made up washing tool, to clean/wash seal assembly seating area.
20:30		Performed maintenance on drawwork brakes.
23:00		Ran in hole with washing tool.
	*	RIH w/ Dril-Quip Mill and Flush adapter.
23:30		Washed and cleaned seal assembly seating area.

Daily report no : 56 **Date:** 2002-12-07

Midnight depth : 2843 m MD **Estimated PP:** 1.12 sg **Mud weight:** 1.19 sg

Stop time		Description
01:30		Circulated btms up to clear riser of debris.
04:00		Pulled out with washing tool.
07:30		Made up seal assembly and running tool. Ran in with seal assembly, sat and tested satisfactorily.
	*	Sat down 20 T to set, and tested with 260 bar.
10:30		Tested BOP after installation of 9 5/8" casing. Tested shear rams towards 9 5/8" casing to 110 bar.
	*	BOP test press 35 bar/ 5 min and 110 bar (MSDP)/ 10 min.
13:30		Pulled out with seal assembly running tool.
17:00		Layed down BHAs used for 12 1/4" hole section.

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Daily report no : 56 **Date:** 2002-12-07

Midnight depth : 2843 m MD **Estimated PP:** 1.12 sg **Mud weight:** 1.19 sg

Stop time		Description
17:00	*	L/D 12 1/4" HO BHA and MWD from 8 1/2".
18:30		Layed down Cement head and casisng handling tools still left in derrick.
21:30		Ran in with and set wearbushing in wellhead.
23:59		Pulled out with wearbushing running tool.

Daily report no : 57 **Date:** 2002-12-08

Midnight depth : 2843 m MD **Estimated PP:** 1.12 sg **Mud weight:** 1.20 sg

Stop time		Description
01:30		Pulled out and layed down wearbushing running tool.
04:00		Tested Inside BOPs, Stabbing Valve and Kelly Valves.
	*	Test pressure 35 bar / 345 bar. Tested Standpipe manifold in 'background' 35 bar / 345 bar.
09:30		Made up 8 1/2" Bit and BHA.
15:00		Continued running in hole with 5" DP.
	*	P/U 12 singles of 5" from deck while RIH.
17:30		Changed DP handling tools and continued running in with 6 5/8" DP.
19:30		Washed down from 2755m to 2783m. Tagged plug at 2783m, drilled plugs and cement to float collar at 2796 m.
20:30		Performed well control drill with crew.
	*	Recorded SCR's up riser and kill line.
23:59		Continued drilling float collar and cement in shoe track.

Daily report no : 58 **Date:** 2002-12-09

Midnight depth : 2922 m MD **Estimated PP:** 1.09 sg **Mud weight:** 1.20 sg

Stop time		Description
00:30		Continued drilling cement to casing shoe at 2835 m. Lost mud returns.
03:00		Re-established circulation. Drilled out casing shoe, cleaned out rat-hole and drilled 1m of new formation.
	*	Had steady loss while cleaning out rat hole. Lost total of 15 m3. Pumped w/ 2000lpm.
06:30		Pulled into casing and performed formation test.
	*	Established full circulation in shoe. Recorded circulating pressure at several rates for reference. Recorded SCRs.at 10 stk, Riser 18 bar / Kill Line 40 bar.
07:30		Attempted to drill ahead. Had loss of return. Re-established returns at reduced pumprate to drill ahead with.
09:00		Continued drilling to 2849m. Lost return.
09:30		Flowchecked well. Shut in and bled off pressure over choke line. Flow checked and verified hole stable.
	*	Registered pressure build up to 4,5 bar while shut-in. Cirulated bottom up to BOP and repeated flow check.
23:59		Drilled 8 1/2" Hole. Occasional loss of returns.
	*	Regained circulation by shutting down pumps, pulling off bottom and slowly bringing pumps up to circulation. Mantained min circ rate for MWD to function, 1250 lpm. Other paramters, 70-80 rpm, wob 12-15 T. Torque 5 kNm. Total mud loss 25 m3.

Daily report no : 59 **Date:** 2002-12-10

Midnight depth : 2990 m MD **Estimated PP:** 1.09 sg **Mud weight:** 1.20 sg

Stop time		Description
17:30		Continued drilling 8 1/2" hole, with occasional loss of returns, to 2990 m.
	*	Drilled with low flowrate (min for MWD) 1250 lpm and moderate rotasjon +/- 80 rpm, to control ECD and prevent mud losses. Able to increase parameters without losses, towards the end. Circulated w/ 1800 lpm without losses.
18:30		Pumped Hi-Vis pill to clean/sweep hole before trip.
	*	Pumped 15 m3 Hi-Vis and circulated above BOP w/ 1700 lpm.
19:30		Flowchecked well before starting to pull out.
	*	Gained 700 lit first half hour, extended check and hole stable. Lost approx 30 m3 while drilling.

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Daily report no : 59 **Date:** 2002-12-10

Midnight depth : 2990 m MD **Estimated PP:** 1.09 sg **Mud weight:** 1.20 sg

Stop time		Description
20:30		Pulled out to 2964m, had 20 T overpull. Observed slight gain. Slacked down to 2682 m and observed hole.
	*	Hole stable, no gain.
23:00		Pulled out of hole and into casing shoe. Tight hole with overpull throughout.
	*	Worked streng through tight sections with slow rotation and low pump rate. Dragged into casing.
23:59		Flowchecked hole before continnuing trip.

Daily report no : 60 **Date:** 2002-12-11

Midnight depth : 2990 m MD **Estimated PP:** 1.09 sg **Mud weight:** 1.20 sg

Stop time		Description
07:00		Continued pulling out of hole to bottom hole assemblies. Cleaned clay from tooljoints
	*	Stopped and flowchecked before pulling BHA into BOP.
09:30		Pulled out of hole with BHA. Cleaned clay from BHA. Removed PS-30 slips and installed master bushing
10:30		Removed radioactive source from MWD tool
12:00		Changed bit and downloaded MWD tool. Bit pulled was balled up and had 2 plugged nozzles.
12:30		Loaded MWD tool with radioactive source
14:00		Ran in hole with 8 1/2" roller cone bit (no. 8) on 6 1/2" BHA. Changed to PS-30 slips.
14:30		Continued running in hole on 5" drill pipe. Filled pipe and broke circulation.
15:00		Greased and checked top drive
18:30		Continued running in hole on 5" drill pipe to 1930 m. Filled pipe and broke circulation every 500 m.
22:00		Continued running in hole on 6 5/8" drill pipe to 2930 m..
23:59		Logged 8 1/2" hole with MWD tool to compare with log while drilling. Flowrate while logging: 1300 lpm. Recorded Slow Circulating rates up riser.

Daily report no : 61 **Date:** 2002-12-12

Midnight depth : 3041 m MD **Estimated PP:** 1.09 sg **Mud weight:** 1.20 sg

Stop time		Description
00:30		Logged 8 1/2" hole with MWD from 2984 m to 2988 m. Tagged 2 m fill on bottom. Slow progress/ no torque when washing fill. Worked to unball bit. Washed/ drilled out fill.
03:00		Broke in bit and drilled 8 1/2" hole from 2990 m to 2998 m. Flowrate: 1550 lpm/ ECD up to 1.30 sg. Observed 1 m3 gain. Flowchecked 15 minutes- OK.
10:30		Drilled 8 1/2" hole from 2998 m to 3041 m. WOB: 10-20 tons. RPM: 80-130
	*	Flowrate 1350 lpm/ average ECD from PWD sub 1.30-1.32 sg with peaks up to 1.35 sg
11:30		Lost near bit MWD logging data (RAB) and signals from pressure sub. Troubleshot and attempted to get communication without success.
12:00		Flowchecked well- OK
14:00		Pulled out of hole to casing shoe. Worked string in tight hole from 3000 m to 2900 m. Max overpull 25 tons. Flowchecked inside casing shoe.
15:00		Pulled out of hole to 2413 m.
	*	No slug pumped to reduce the amount of mud dilution
15:30		Checked and greased Top Drive. Meanwhile welded coupling on drawworks motor B.
16:30		Pulled out of hole to 1930 m. Flowchecked prior to pulling BHA through the BOP.
20:30		Changed to 5" handling equipment and continued pulling out of hole to BHA
21:30		Changed PS-30 slips inserts and pulled drill collars out of hole
	*	All drill collars had a layer of packed clay
22:00		Removed radioactive source from LWD tool.
23:59		Broke off bit and laid downLWD/ MWD tools except from Density/ Neutron tool.

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Daily report no : 62 **Date:** 2002-12-13

Midnight depth : 3102 m MD **Estimated PP:** 1.09 sg **Mud weight:** 1.20 sg

Stop time		Description
00:30		Continued laying down MWD tools
04:00		Made up new bit (no. 9: HC605). Picked up MWD tools from deck. Tested tools- OK.
04:30		Loaded LWD tool with radioactive source
09:00		Ran in hole with BHA and 5" drill pipe to 1928 m.
	*	Filled pipe and broke circulation every 500 m
12:00		Changed to 6 5/8" handling equipment and continued running in hole to casing shoe with 6 5/8" drill pipe.
	*	Filled pipe and broke circulation every 500 m
13:00		Continued running into open hole. Washed down from 3011m to 3041m with 1300 lpm/ 100 RPM.
	*	1 m fill on bottom
23:59		Drilled 8 1/2" hole from 3041 m to 3102 m.
	*	8-13 tons WOB/ 125 RPM/ 1530 lpm. Max ECD at bit: 1.33 sg.

Daily report no : 63 **Date:** 2002-12-14

Midnight depth : 3305 m MD **Estimated PP:** 1.09 sg **Mud weight:** 1.21 sg

Stop time		Description
10:00		Drilled 8 1/2" hole from 3102 m to 3171 m. Pumped graphite/ G-seal pill at 09:00 hours to reduce bit balling.
	*	10-13 tons WOB/ 125 RPM/ 1550 lpm. Max ECD at bit 1.38 sg.
11:00		Stopped drilling due to shut down of Mud logging unit and MWD computers
23:59		Drilled 8 1/2" hole from 3171 m to 3305 m
	*	10-14 tons WOB/ 125 RPM/ 1550 lpm. Max ECD at bit: 1.39 sg.

Daily report no : 64 **Date:** 2002-12-15

Midnight depth : 3400 m MD **Estimated PP:** 1.09 sg **Mud weight:** 1.21 sg

Stop time		Description
10:00		Drilled 8 1/2" hole from 3305 m to well TD at 3400 m.
	*	10-14 tons WOB/ 125 RPM/ 1550 lpm. Max ECD at bit: 1.40 sg.
10:30		Circulated bottoms above BOP with 1550 lpm/ Final ECD: 1.34 sg. Flowchecked- OK.
12:00		Due to tight hole, pumped out of hole to 3267 m with 400 lpm to avoid swabbing. Increasing overpull.
	*	Pipe pulled wet and booster pump running on riser during whole trip.
18:00		Backreamed out of hole to casing shoe with 100 RPM/ 900 lpm.
20:30		Circulated bottoms up with 1600 lpm down drill string and 1300 lpm on riser booster line. ECD at bit: 1.29 sg.
22:30		Performed wiper trip to bottom. Hole in good condition.
	*	Meanwhile boosted riser with 2500 lpm
23:59		Circulated bottoms up to clean hole for logging
	*	1850 lpm down drill string, 1000 lpm on riser booster line. ECD at bit: 1.29 - 1.30 sg, indicating a cleaner BHA.

Daily report no : 65 **Date:** 2002-12-16

Midnight depth : 3400 m MD **Estimated PP:** 1.09 sg **Mud weight:** 1.21 sg

Stop time		Description
01:30		Circulated bottoms up to clean the hole for logging.
	*	1850 lpm down drill string and 1000 lpm on riser booster line. ECD at bit: 1.29 - 1.30 sg.
02:30		Had 2 m3 pit gain just after bottoms up. Shut in the well on the upper annular. No pressure build up. Meanwhile flowchecked riser. Opened choke and flowchecked the well on trip tank. Opened the annular and continued to flowcheck for 15 minutes. Circulated at 1000 lpm for 15 minutes to check stable pit volume and to verify no gas in the riser.
	*	Had 0.28 % trip gas on bottoms up. Gas was decreased prior to observing pit gain.
04:30		Pulled out of the hole to the casing shoe. Hole in good condition.

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Daily report no : 65 **Date:** 2002-12-16

Midnight depth : 3400 m MD **Estimated PP:** 1.09 sg **Mud weight:** 1.21 sg

Stop time		Description
06:00		Flowchecked the well. Continued to pull out of the hole to 2296 m.
07:00		Pulled out of the hole from 2296 m to 2070 m. Flowchecked the well.
	*	Flowchecked with the bottom hole assembly just below the wellhead.
07:30		Function tested the BOP.
11:00		Continued to pull out of the hole from 2070 m to 251 m.
	*	At 1928 m changed to 5" handling equipment. Removed clay from the 5" drill string.
12:30		Pulled out with the bottom hole assembly from 251 m to 31 m. Re-built the PS-30 slips.
	*	Removed clay from the bottom hole assembly.
13:00		Removed radioactive sources from the MWD.
14:00		Laid down the bottom hole assembly and 8 1/2" bit.
16:30		Laid down 12 1/4" bottom hole assembly from the derrick. Re-built the PS-30 slips.
17:00		Cleaned and cleared the rig floor.
18:00		Prepared and rigged up for logging with SP-HRLA-DSI-PEX.
20:00		Built the logging tool string. Held safety meeting prior to run in the hole.
23:59		Ran in the hole with SP-HRLA-DSI-PEX on wireline to 3381 m.

Daily report no : 66 **Date:** 2002-12-17

Midnight depth : 3400 m MD **Estimated PP:** 1.09 sg **Mud weight:** 1.21 sg

Stop time		Description
00:30		Ran in the hole with SP-HRLA-DSI-PEX on wireline to 3396 m.
	*	Sticky hole from 3369 m. Reached a total depth of 3396 m.
04:00		Logged out of the hole from 3396 m to 2500 m.
05:00		Pulled out of the hole with the wireline logging tools.
07:00		Removed the radioactive source. Rigged down the wireline logging tools.
08:30		Prepared and made up the MSCT tool string.
10:30		Ran in the hole with the MSCT tool on wireline.
16:00		Logged with the MSCT from 3393 m to 2848 m.
17:30		Pulled out of the hole with the logging tool.
	*	Recovered 48, empty 2. Recovery: 96 %.
18:00		Rigged down the wireline logging tool.
19:00		Rigged up VSI-GR.
21:30		Ran in the hole with VSI-GR on wireline to 2450 m. On checkshot detected failure on the tool string.
23:00		Pulled out of the hole with the VSI-GR.
23:59		Troubleshot on the VSI-GR logging tool.

Daily report no : 67 **Date:** 2002-12-18

Midnight depth : 3400 m MD **Estimated PP:** 1.09 sg **Mud weight:** 1.21 sg

Stop time		Description
03:00		Continued to troubleshoot on the VSI-GR logging tool.
	*	Moved the 4 lowest satellites to top of the string.
04:00		Ran in the hole to 1051 m with the VSI-GR tool. Tested the tool. Negative.
04:30		Pulled out with the wireline logging tool.
05:30		Ttroubleshot on the VSI-GR logging tool.
	*	Laid out one faulty satellite.
07:00		Ran in hole with the VSI-GR logging tool to 2450 m. Took check shot. Toolstring was working properly.
08:00		Ran in hole with VSI-GR logging tool to 3400 m.
10:00		Pulled up to 3390 .8 m. Opened caliper arms. Set anchors. Shot zero offset from 3390 .8 m to 2410.8 m.
10:30		Ran in hole to 2530 m. Opened caliper arms and picked up to 2521.8 m. set anchors. Tuned guns.
15:30		Collected walkaway Vertical Seismic Profile data.

DAILY REPORT ON WELL 6403/10-1

Daily report no : 67 **Date:** 2002-12-18

Midnight depth : 3400 m MD **Estimated PP:** 1.09 sg **Mud weight:** 1.21 sg

Stop time	Description
17:30	Pulled out of the hole with the VSI-GR toolstring.
19:30	Rigged down logging tools and wireline equipment.
20:00	Picked up and broke off lift sub belonging to Saipem, from a 6 1/2" non mag drill collar. This item had been forgotten while laying down the 8 1/2" drilling assembly.
20:30	Installed PS-30 hydraulic slips.
21:30	Made up and racked cement stand in derrick.
22:00	Changed to 3 1/2" handling equipment.
22:30	Greased and checked top drive and travelling assembly.
23:00	Changed inserts in PS-30 hydraulic slips, due to that wrong size inserts had been installed previously.
23:30	Made up and ran in hole with diverter shoe and 3 1/2" drill pipe cement stinger to 315 m.
23:59	Changed to 5" handling equipment.

Daily report no : 68 **Date:** 2002-12-19

Midnight depth : 3400 m MD **Estimated PP:** 1.09 sg **Mud weight:** 1.22 sg

Stop time	Description
02:00	Ran in hole with the cement stinger from 315 m to 1486 m on 5" drill pipe.
02:30	Changed to 6 5/8" handling equipment.
05:30	Ran in hole with cement stinger on 6 5/8" drill pipe to 3200 m.
07:00	Broke circulation and circulated one string volume. Pumped and displaced 7,9 m3 of hivisc mud.
08:00	Pulled out of the hole to 2985 m.
09:00	Made up cement stand. Pressure tested surface lines to 200 bar. Pumped 4.1 m3 spacer. Mixed and pumped 8.3 m3 1.90 SG cement slurry followed by 1 m3 of spacer. Displaced to rig floor.
09:30	Displaced cement down string with rig pump with 1500 LPM circulation rate.
10:30	Pulled out of the hole to 2700 m.
14:00	Circulated bottom up with 1600 LPM circulation rate. Started to boost the riser with 1200 LPM when bottom was above the BOP. Dumped a total of 42 m3 contaminated mud on surface.
20:30	Flowchecked well. Well static. Pumped slug and pulled out of the hole with the cement stinger.
21:00	Cleared rig floor.
22:00	Changed to 5" handling equipment. Made up 9 5/8" bridge plug. filled setting tool below fill up sub with water.
23:30	Ran in hole with 9 5/8" bridge plug on 5" drill pipe to 1000 m.
23:59	Changed to 6 5/8" handling equipment.

Daily report no : 69 **Date:** 2002-12-20

Midnight depth : 3400 m MD **Estimated PP:** 1.09 sg **Mud weight:** 1.22 sg

Stop time	Description
01:00	Ran in hole with 9 5/8" bridge plug on 6 5/8" drill pipe to 1655 m.
04:30	Rig went into yellow position status due to high winds. Waited on weather. Meanwhile prepared to displace riser to sea water. Performed preventive maintenance while waiting on weather.
06:00	Cut and slipped 32 meters drill line while waiting on weather.
09:30	Ran in hole with 9 5/8" bridge plug to 2670 m.
10:00	Dropped ball and circulated ball down with 300 LPM and 20 bar pressure. Pressurised string to 220 bar and set plug according to procedure.
10:30	Closed upper annular. Pressure tested plug to 92 bar.
11:30	Pumped 10 m3 spacer. Displaced spacer down string. Slugged pipe.
13:00	Pulled out of the hole with the bridge plug setting tool to 1598 m.
18:00	Laid down 63 joints of 6 5/8" drill pipe on deck while pulling out of hole to 1000 m.
19:00	Changed to 5" handling equipment. Pulled out of hole with bridge plug running tool to 575 m.
23:30	Laid down 60 joints 5" drill pipe while pulling out of the hole with the bridge plug running tool.
23:59	Changed to 3 1/2" handling equipment. Meanwhile checked drawwork brakes.

DAILY REPORT ON WELL 6403/10-1

Daily report no : 70 **Date:** 2002-12-21

Midnight depth : 2065 m MD **Estimated PP:** 1.09 sg **Mud weight:** 1.22 sg

Stop time	Description
03:30	Ran in hole with 11 stands of 3 1/2" drill pipe from the derrick. Laid down 3 1/2" drill pipe in singles. Cleared rig floor after tripping.
05:00	Picked up cutting assembly. Ran in hole with cutting assembly on 5" drill pipe to 326 m.
09:30	Made up marine swivel and annular swivel sub. Ran in hole with cutting assembly to 2064 m.
10:00	Landed marine swivel and set down 10 tonnes. Closed annular preventer. Cut 9 5/8" casing at 2065 m with 130 RPM, 520 LPM and 100 bar pressure.
11:00	Flowchecked well through choke line. Opened annular preventer and continued to flowcheck well. Observed slight gain on trip tank. Gain rate decreased until well became stable. Gained a total of 700 litres. Observed well for ten minutes after it was stable.
11:30	Flushed kill and choke lines. Pumped slug and displaced same into string.
16:30	Pulled out of the hole with the cutting assembly. Laid down cutting assembly.
21:00	Made up spear, fishing jar and accelerator. Ran in hole with spear assembly on 6 5/8" drill pipe to 1738 m.
22:30	Engaged spear with 10 tonnes weight down. Closed annular. Pressured up string to 20 bar. Attempted to pull string free with 70 tonnes overpull. No success. Opened annular. Pulled string free with 145 tonnes overpull.
23:30	Closed annular. circulated casing annulus volume to surface through kill and choke line with 1400 LPM circulation rate and 60 bar pressure. Flowchecked well throug kill and choke line. Well static. Opened annular and flow checked up riser. Well static.
23:59	Attempted to pull casing hanger through BOP. No success. Hanger hung up on lower annular. Opened and closed lower annular several times.

Daily report no : 71 **Date:** 2002-12-22

Midnight depth : 2065 m MD **Estimated PP:** 1.09 sg **Mud weight:** 1.22 sg

Stop time	Description
00:30	Continued to attempt to pull casing hanger through BOP. Casing hanger hung up on lower annular preventer. Observed flex joint bulls eye with ROV. Adjusted rig to port. Pulled casing hanger through BOP.
03:30	Slugged pipe. Pulled out of the hole with 9 5/8" casing and spear assembly.
05:00	Laid down bumper sub, fishing jar and spear assembly.
07:30	Rigged up 9 5/8" casing handling equipment. Held pre job meeting prior to laying down casing.
10:30	Laid down 9 5/8" casing hanger and 27 joints of 9 5/8" casing.
11:30	Rigged down 9 5/8" casing handling equipment.
17:30	Made up 20" bridge plug. Ran in hole with bridge plug on 5" and 6 5/8" drill pipe to 2033 m.
19:30	Pressurised string to 138 bar to set bridge plug upper slips. Attempted to take 20 tonnes overpull on bridge plug. Plug slipped upwards. Pressurised string to 275 bar. Attempted to take 20 tonnes overpull. Plug slipped upwards. Slacked plug down. Plug took weight at 2031 m. Set down 20 tonnes. Released from plug with 9 right hand turns.
20:30	Rigged up cement hose. Pressure tested surface rig up to 200 bar. Pressure tested bridge plug to 79 bar. Pumped 260 litres. Bled back 260 litres. Tagged bridge plug and found that the plug had moved down 0.5 meter.
22:00	Pumped 5 m3 drill water. Mixed and pumped 48 m3 1.75 SG class A cement slurry. Pumped 1 m3 drill water. Displaced cement down with rig pumps.
23:00	Pulled out of the hole to 1760 m.
23:59	Circulated bottom up with 5000 LPM circulation rate.

Daily report no : 72 **Date:** 2002-12-23

Midnight depth : 2065 m MD **Estimated PP:** 1.09 sg **Mud weight:** 1.23 sg

Stop time	Description
00:30	Circulated bottom up with 5000 LPM circulation rate.
03:00	Slugged pipe and pulled out of the hole with 6 5/8" and 10 stands 5" drill pipe. Rig went into advisory mode due to strong wind.
13:00	Laid down 87 joints of 5" drill pipe.
15:00	Laid down 15 joints 5" Heavy Weight Drill Pipe (HWDP).
16:00	Removed PS-30 slips. Installed master bushing. Rearranged derrick to get access to drill collar stands.
18:00	Laid down 1 joint 8" drill collar, 2 joints 5" HWDP, 6 1/2" jar and 2 joints 6 1/2" drill collar.

DAILY REPORT ON WELL 6403/10-1

Daily report no : 72 **Date:** 2002-12-23
Midnight depth : 2065 m MD **Estimated PP:** 1.09 sg **Mud weight:** 1.23 sg

Stop time	Description
19:00	Tidied rig floor. Installed PS-30 hydraulic slips.
23:59	Made up used 12 1/4" open rock bit and ran in hole to 1775 m. Tagged cement and set down 10 tonnes weight. Pulled out of the hole to 1720 m.

Daily report no : 73 **Date:** 2002-12-24
Midnight depth : 2065 m MD **Estimated PP:** 1.09 sg **Mud weight:** 1.23 sg

Stop time	Description
00:30	Closed shear ram. Pressure tested cement plug to 79 bar. Pumped 100 litres. Bled back 100 litres.
01:30	Held prejob meeting for displacing well to seawater. Displaced kill line, choke line and booster line to seawater.
04:00	Pumped 12 m3 hivisc pill. Displaced well to seawater. Dumped hivisc pill and interface when it came back to surface.
08:00	Pumped slug. Pulled out of the hole with the displacement string.
20:30	Waited on weather to resume operations.
23:30	Ran in hole with 10 stands 5" drill pipe. Changed to 6 5/8" handling equipment. Ran in hole with cement stand. Laid down cement stand.
23:59	Waited on weather to resume operations.

Daily report no : 74 **Date:** 2002-12-25
Midnight depth : 2065 m MD **Estimated PP:** 1.09 sg **Mud weight:** 1.23 sg

Stop time	Description
08:30	Waited on weather to resume operations.
11:00	Laid down 30 joints 5" drill pipe.
16:30	Dismanteled top drive torque wrench. Installed 500 tonnes lifting equipment. Installed gimbal and riser spider. Installed diverter running tool in diverter housing.
21:30	Waited on weather to resume operations.
23:59	Ballasted rig down to drilling draft. Pulled and laid down diverter housing.

Daily report no : 75 **Date:** 2002-12-26
Midnight depth : 2065 m MD **Estimated PP:** 1.09 sg **Mud weight:** 1.23 sg

Stop time	Description
02:00	Changed to 750 tonnes bails and elevator.
02:30	Picked up and made up slick riser joint to slip joint inner barrel.
05:00	Waited on weather to resume operations.
07:30	Held safety meeting with crew. Lowered slip joint inner barrel down to top of slip joint. Bolted inner barrel to slip joint. Prepared to unlatch BOP.
10:00	Unlatched wellhead connector. Pulled BOP off wellhead. Hung off support ring below bell nipple.
12:00	Pulled BOP to 1687 m.
12:30	Repaired trolley on aft catwalk.
23:59	Pulled BOP to 1230 m.

Daily report no : 76 **Date:** 2002-12-27
Midnight depth : 2065 m MD **Estimated PP:** 1.09 sg **Mud weight:** 1.23 sg

Stop time	Description
03:00	Pulled BOP from 1230 m to 1077 m.
03:30	Checked drawworks brakes.
18:00	Pulled BOP from 1077 m to 251 m.
18:30	Repaired broken drive chain on yellow mux cable winch.
22:30	Pulled BOP from 251 m to just below sea level.

DAILY REPORT ON WELL 6403/10-1

Daily report no : 76 **Date:** 2002-12-27

Midnight depth : 2065 m MD **Estimated PP:** 1.09 sg **Mud weight:** 1.23 sg

Stop time	Description
23:30	Tidied and prepared cellar deck for pulling BOP through splash zone.
23:59	Pulled BOP through splash zone and secured stack with cellar deck bumpers.

Daily report no : 77 **Date:** 2002-12-28

Midnight depth : 2065 m MD **Estimated PP:** 1.09 sg **Mud weight:** 1.23 sg

Stop time	Description
03:30	Skidded BOP carrier in to centre. Landed BOP stack on carrier and seafastened BOP stack. Disconnected instrumented riser joint cables, LMRP bulls eye and BOP stack transponder beacon. Disconnected riser from BOP stack. Skidded BOP stack out of centre position.
04:30	Laid down riser joint and instrumented joint.
09:00	Rigged down riser running equipment and tidied rig floor. Meanwhile retrieved the seabed current meter.
12:00	Installed top drive pipe handler. Meanwhile retrieved transponders from seabed.
13:30	Picked up and made up wellhead cutting equipment. Checked Multi Operation Single Trip (MOST) tool.
14:00	Repaired broken hydraulic fitting on iron roughneck.
15:00	Made up drill collars and ran in water with MOST tool and cutting assembly to 150 m.
15:30	Changed to 6 5/8" handling equipment. Installed PS-30 hydraulic slips.
17:00	Made new hydraulic hose for the PS-30 slips. Could not get slips to work properly. Changed to air operated slips.
20:00	Ran in water with cutting assembly to 1738 m. Stabbed into wellhead and landed MOST tool with 5 tonnes weight down on wellhead.
23:00	Cut 20" casing and 36" conductor with 3000 LPM and 100 bar pressure.
23:59	Attempted several times to engage MOST tool. Tool would not latch on to well head. Checked bulls eye and found that wellhead had tilted out of range for the bulls eye. (More than 5 degrees, with heading 300 degrees).

Daily report no : 78 **Date:** 2002-12-29

Midnight depth : m MD **Estimated PP:** sg **Mud weight:** 1.23 sg

Stop time	Description
00:30	Moved rig 50 meters aft and port and straightened wellhead. Attempted to latch MOST tool. No success. Found that wellhead had tilted the other way. (Heading 130 degrees).
02:30	Moved rig back over well. Pulled out of water with the MOST tool to 550 meters.
03:00	Repaired broken bolt on iron roughneck spinner tong motor.
04:30	Pulled out of water with MOST tool to 100 meters.
05:30	Shear pin on uppper racking arm broke. Changed shear pin and retainer cap.
07:30	Pulled out of water with MOST tool. Laid down cutting assembly.
09:00	Prepared ROV operable choker hitch on 15 tonnes lifting sling.
11:30	Ran in water with 15 tonnes sling on drill pipe to 1720 m.
12:30	ROV guided choker hitch over wellhead. ROV cut straps on sling and tightened choker hitch. Lifted wellhead off seabed.
15:00	Pulled wellhead and hydrate shield to surface.
16:00	Landed wellhead and hydrate shield on cellar deck trolley.
18:30	Made up wellhead running tool. Ran in and landed running tool in wellhead on cellar deck trolley. Released hydrate shield from conductor. Pulled wellhead and conductor piece to rig floor. Laid down wellhead and conductor piece on deck. Tidied rig floor.
20:30	Ran in water with 6 5/8" drill pipe to 1140 m.
21:00	Pulled out of hole and laid down 6 5/8" drill pipe on deck to 1030 m.
22:30	Ran in hole with 6 5/8" drill pipe to 1650 m while repairing the pipedeck crane.
23:59	Pulled out of hole and laid down 6 5/8" drill pipe on deck to 1300 m.

DAILY REPORT ON WELL 6403/10-1

Daily report no : 79 **Date:** 2002-12-30

Midnight depth : m MD **Estimated PP:** sg **Mud weight:** 1.23 sg

Stop time	Description
08:00	
	Pulled out of hole and laid down 6 5/8" drill pipe on deck to 375 m.
08:30	Repair BX elevator
10:30	Continued to lay down DP
15:00	Laid down 5 stand 8" DC from derrick
16:30	Completed loading boat.
20:30	Deballasting rig prior to departure
20:45	Passed 500 m limit to Solsikke. End of contract.
23:59	

TIME DISTRIBUTION

Well: 6403/10-1 **PO:** 1 **Start date:** 1980-01-01 **Rig:** SCARABEO 5 **Depth:** 3400.0 **m MD**

All sections **Stop date:** 2003-06-07

Operations	Hours	%	Hours	%	Acc. total
MOBILIZATION					
MOVING	203.5	11.34			
MOORING; RUNNING ANCHORS	46.5	2.59			
MOORING; PULLING ANCHORS	5.0	0.28			
Sum.			255.0	14.20	255.0
DRILLING					
BHA HANDLING/TESTING	69.5	3.87			
EQUIPMENT TEST	2.5	0.14			
TRIPPING IN CASED HOLE	97.0	5.40			
TRIPPING IN OPEN HOLE	31.0	1.73			
DRILLING	204.0	11.36			
OPENING HOLE	10.5	0.58			
OTHER	16.5	0.92			
REAMING	1.5	0.08			
CIRC. AND COND. MUD/HOLE	47.0	2.62			
WIPER TRIP	26.5	1.48			
CASING HANDLING/TESTING	88.0	4.90			
RUNNING CASING IN CASED HOLE	17.5	0.97			
RUNNING CASING IN OPEN HOLE	17.5	0.97			
DRILLING OUT OF CASING	15.0	0.84			
PRIMARY CEMENTING	38.5	2.14			
DRILLING OUT CEMENT PLUG	2.0	0.11			
FORMATION STRENGTH TESTING	10.0	0.56			
BOP HANDLING	17.5	0.97			
BOP RUNNING/RETRIEVING	92.5	5.15			
BOP TESTING	16.0	0.89			
WELLHEAD EQUIPMENT HANDLING	7.5	0.42			
SLIP AND CUT DRILLING LINE	3.5	0.19			
Sum.			831.5	46.32	1086.5
FORMATION EVALUATION MWD					
MWD HANDLING/TESTING/SURVEYING	3.5	0.19			
LOGGING WITH MWD	3.0	0.17			
Sum.			6.5	0.36	1093.0
FORMATION EVALUATION LOGGING					
LOGGING	20.0	1.11			
LOGGING EQUIPMENT HANDLING/TESTING	12.0	0.67			
SIDEWALL CORING	9.0	0.50			
VERTICAL SEISMIC	15.0	0.84			
Sum.			56.0	3.12	1149.0
PLUG AND ABANDONMENT					
TRIPPING IN CASED HOLE	80.5	4.48			
OTHER	7.8	0.43			
CIRC. AND COND. MUD/HOLE	10.0	0.56			
TRIPPING FOR CEMENT JOB	17.0	0.95			
BOP HANDLING	15.5	0.86			
BOP RUNNING/RETRIEVING	46.0	2.56			
SET CEMENT PLUG	7.0	0.39			
SET MECHANICAL PLUG	2.0	0.11			
TRIPPING OF CASING CUTTING EQUIPMENT	20.0	1.11			
CUT CASING/WELLHEAD	4.5	0.25			
CASING RETRIEVING	24.0	1.34			
SLIP AND CUT DRILLING LINE	1.5	0.08			
Sum.			235.8	13.13	1384.8

TIME DISTRIBUTION

Well: 6403/10-1 **PO:** 1 **Start date:** 1980-01-01 **Rig:** SCARABEO 5 **Depth:** 3400.0 **m MD**

All sections **Stop date:** 2003-06-07

Operations	Hours	%	Hours	%	Acc. total
DOWNTIME MOBILIZATION					
EQUIPMENT FAILURE AND REPAIR	2.0	0.11			
Sum.			2.0	0.11	1386.8
DOWNTIME DRILLING					
EQUIPMENT FAILURE AND REPAIR	239.0	13.31			
WAITING	33.5	1.87			
OTHER	18.0	1.00			
Sum.			290.5	16.18	1677.3
DOWNTIME FORM. EVAL. LOGGING					
EQUIPMENT FAILURE AND REPAIR	16.0	0.89			
FISHING	20.0	1.11			
OTHER	6.5	0.36			
WIPER TRIP	23.0	1.28			
Sum.			65.5	3.65	1742.8
DOWNTIME PLUG AND ABANDONMENT					
EQUIPMENT FAILURE AND REPAIR	8.0	0.45			
WAITING	32.5	1.81			
OTHER	12.0	0.67			
Sum.			52.5	2.92	1795.3
Reported time (100.0 % of well total 1795.3 hours) :					1795.3

Norsk Hydro

2003-06-07

HOLE DEVIATION

Well: 6403/10-1 **Reference point:** RKB ; 25.0 **m** ABOVE MSL

Waterdepth: 1717.0 **m** **Vertical to:** 1741.9 **m** **Total Depth:** 3400.0 **m MD**

Utm zone: 31 **Central Median:** 3° E **Horizontal datum:** ED50

Template Centre Coordinates, UTM: **North :** **m,** **East :** **m**

Wellhead Coordinates, UTM: **North :** 7103975.18 **m,** **East :** 500147.53 **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 North [m]	Coordinates East [m]	Vert. Sect [m]	Dogleg [D/30m]	Build [D/30m]	Turn [D/30m]
1752.64	0.22	277.49	MWD	8	1752.64	0.00	0.00	0.00	0.00	0.00	0.00
1781.25	0.35	199.61	MWD	8	1781.25	-0.08	-0.08	0.11	0.39	0.14	-81.66
1809.86	0.47	243.33	MWD	8	1809.86	-0.21	-0.22	0.30	0.34	0.13	45.84
1823.88	0.37	196.63	MWD	8	1823.88	-0.28	-0.28	0.40	0.74	-0.21	-99.93
1874.75	0.50	206.36	MWD	8	1874.75	-0.64	-0.43	0.77	0.09	0.08	5.74
1933.47	0.53	221.07	MWD	8	1933.46	-1.07	-0.72	1.29	0.07	0.02	7.52
1961.18	0.35	224.51	MWD	8	1961.17	-1.23	-0.86	1.50	0.20	-0.19	3.72
1989.95	0.32	243.29	MWD	8	1989.94	-1.33	-1.00	1.66	0.12	-0.03	19.58
2019.28	0.44	244.45	MWD	8	2019.27	-1.41	-1.17	1.83	0.12	0.12	1.19
2047.70	0.27	260.78	MWD	8	2047.69	-1.47	-1.34	1.99	0.21	-0.18	17.24
2075.66	0.20	244.00	MWD	8	2075.65	-1.50	-1.45	2.08	0.10	-0.08	-18.00
2104.37	0.26	222.24	MWD	8	2104.36	-1.57	-1.53	2.20	0.11	0.06	-22.74
2132.75	0.17	262.45	MWD	8	2132.74	-1.62	-1.62	2.29	0.18	-0.10	42.51
2161.70	0.16	225.63	MWD	8	2161.69	-1.66	-1.69	2.37	0.11	-0.01	-38.16
2190.54	0.18	208.35	MWD	8	2190.53	-1.73	-1.74	2.45	0.06	0.02	-17.98
2232.61	0.29	75.10	MWD	8	2232.60	-1.76	-1.67	2.42	0.31	0.08	-95.02
2246.05	0.14	353.89	MWD	8	2246.04	-1.73	-1.64	2.38	0.67	-0.33	-181.27
2276.42	1.08	288.60	MWD	8	2276.41	-1.60	-1.91	2.50	1.02	0.93	-64.49
2305.00	2.21	283.41	MWD	8	2304.98	-1.39	-2.70	3.04	1.20	1.19	-5.45
2337.21	3.61	281.48	MWD	8	2337.14	-1.04	-4.30	4.43	1.31	1.30	-1.80
2366.46	5.27	293.14	MWD	8	2366.31	-0.33	-6.44	6.45	1.93	1.70	11.96
2388.26	6.29	295.66	MWD	8	2388.00	0.58	-8.44	8.46	1.45	1.40	3.47
2416.55	5.61	298.10	MWD	8	2416.13	1.90	-11.05	11.22	0.77	-0.72	2.59
2450.25	3.20	283.85	MWD	8	2449.73	2.90	-13.42	13.73	2.34	-2.15	-12.69
2480.58	0.68	249.96	MWD	8	2480.04	3.04	-14.41	14.73	2.63	-2.49	-33.52
2486.92	0.47	224.59	MWD	8	2486.38	3.01	-14.47	14.78	1.54	-0.99	-120.05
2542.26	0.78	219.12	MWD	8	2541.72	2.56	-14.86	15.08	0.17	0.17	-2.97
2570.78	0.84	218.77	MWD	8	2570.24	2.24	-15.12	15.28	0.06	0.06	-0.37
2598.94	0.72	227.46	MWD	8	2598.39	1.96	-15.38	15.50	0.18	-0.13	9.26
2627.37	0.67	212.76	MWD	8	2626.82	1.70	-15.60	15.69	0.19	-0.05	-15.51
2655.43	1.13	219.92	MWD	8	2654.88	1.35	-15.86	15.92	0.51	0.49	7.66
2683.95	1.12	222.63	MWD	8	2683.39	0.93	-16.23	16.26	0.06	-0.01	2.85
2713.19	1.18	229.08	MWD	8	2712.63	0.52	-16.65	16.66	0.15	0.06	6.62

Norsk Hydro

2003-06-07

HOLE DEVIATION

Well: 6403/10-1 **Reference point:** RKB ; 25.0 **m** ABOVE MSL

Waterdepth: 1717.0 **m** **Vertical to:** 1741.9 **m** **Total Depth:** 3400.0 **m MD**

Utm zone: 31 **Central Median:** 3' E **Horizontal datum:** ED50

Template Centre Coordinates, UTM: **North :** **m,** **East :** **m**

Wellhead Coordinates, UTM: **North :** 7103975.18 **m,** **East :** 500147.53 **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 North [m]	Coordinates East [m]	Vert. Sect [m]	Dogleg [D/30m]	Build [D/30m]	Turn [D/30m]
2740.88	1.19	222.63	MWD	8	2740.31	0.13	-17.06	17.06	0.14	0.01	-6.99
2797.63	1.50	223.93	MWD	8	2797.04	-0.84	-17.98	18.00	0.16	0.16	0.69
2827.48	1.72	220.26	MWD	8	2826.88	-1.47	-18.54	18.60	0.24	0.22	-3.69
2850.97	1.82	226.14	MWD	8	2850.36	-1.99	-19.04	19.14	0.26	0.13	7.51
2907.35	1.70	220.18	MWD	8	2906.72	-3.25	-20.22	20.48	0.12	-0.06	-3.17
2936.79	1.76	223.30	MWD	8	2936.14	-3.92	-20.81	21.18	0.11	0.06	3.18
2993.43	1.79	214.26	MWD	8	2992.75	-5.28	-21.91	22.53	0.15	0.02	-4.79
3051.30	2.06	189.69	MWD	8	3050.59	-7.05	-22.59	23.67	0.45	0.14	-12.74
3109.93	2.21	202.06	MWD	8	3109.18	-9.14	-23.19	24.93	0.25	0.08	6.33
3193.89	2.32	214.50	MWD	8	3193.08	-12.04	-24.76	27.54	0.18	0.04	4.44
3250.12	2.33	227.59	MWD	8	3249.26	-13.75	-26.25	29.63	0.28	0.01	6.98
3307.83	2.25	235.98	MWD	8	3306.93	-15.17	-28.06	31.90	0.18	-0.04	4.36
3385.10	2.40	242.67	MWD	8	3384.13	-16.76	-30.75	35.02	0.12	0.06	2.60

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MAIN CONSUMPTION OF CASING/TUBING ON WELL 6403/10-1 PO: 1

Size	Casing string	Grade	Weight [kg/m]	Weight [lb/ft]	Threads type	Length [m]	No. of joints
36"	CONDUCTOR	X-52	L080.72	726.24	UNDEFINED	18.2	1
36"	CONDUCTOR	X-52	L080.72	726.24	UNDEFINED	1.2	1
30"	CONDUCTOR	X-52	460.86	309.70	SL-60	73.7	6
20"	SURFACE	X-56	197.92	133.00	E60MT	468.3	39
13 3/8"	INTERMEDIATE LINER	L-80	107.14	72.00	NS-CC	370.6	30
9 5/8"	INTERMEDIATE	P-110	79.61	53.50	NS-CC	4.5	1
9 5/8"	INTERMEDIATE	L-80	79.61	53.50	NS-CC	1052.0	88
9 5/8"	INTERMEDIATE	L-80	79.61	53.50	NS-CC	1.5	1
9 5/8"	INTERMEDIATE	L-80	79.61	53.50	NS-CC	36.7	3

BITRECORD FOR WELL 6403/10-1 PO: 1

No	Bit RR	Type	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
1	1	BIT	17.50	SMIT	MGGH+ODC	LW8590	135	13,13,18,18	0.756	1	1852	108	12.80	8.4	40/55	31000	2/12	3300/4450	100/175	1 - 1 - NO - A - 1	I	NO
2		ISRT	26.00	SDBS	XT02C	10374992	415M	13,18,20,20	0.992	2	2114	262		0.0	92/160	0	10/117	2500/4700	99/233	- - - -		
3		MITO	17.00	SMIT	MSDGH	MI6670	135S	13,16,18,18	0.823	3	2217	3		0.0						1 - 1 - NO - A - E	I	NO
4	1	MITO	17.00	SMIT	MSDGH	MJ5657	135S	13,18,18,20	0.933	4	2518	301	25.39	11.9	88/144	166000	0/8	3350/3600	135/153	2 - 2 - WT - A - E	1	NO
5		MITO	12.25	SCHO	HP21G	EP6908	217	15,15,15	0.518	5	2522	4	4.00	1.0	44/50		0/1	3453/3670	108/116	1 - 1 - NO - A - E	I	NO
6		PDC	8.50	SMIT	MA99PX	JS3781	M223	10,10,10,10,10,10	0.460	6	2843	321	34.20	9.4	91/129	221000	1/78	1600/2283	145/201	4 - 3 - BT - N - X	1	CT
6	1	PDC	8.50	SMIT	MA99PX	JS3781	M223	10,10,10,10,10,10	0.460	8	2843	321		0.0	38/38	42000	0/0	1500/1500	115/115	4 - 3 - BT - N - X	1	CT
6	2	PDC	8.50	SMIT	MA99PX	JS3781	M223	10,10,10,10,10,10	0.460	9	2843	321	6.20	51.8	95/125	42000	0/10	3150/3830	115/165	4 - 4 - BT - S - X	1	CT
0		HO	12.25	REDB	STANDARDHO	XXX		18,18,18,18,18	1.243	9	2843	321	2.00	160.5	95/125	13	0/10	3150/3830	115/165	2 - 2 - BT - A - X	I	CT
7		UR	8.50	SMIT	PDC	JS3629		10,10,10,10,10,10	0.460	10	2990	147	27.48	5.3	0/110	143000	0/18	0/1860	0/225	1 - 1 - WT - A - X	I	PN
8		BIT	8.50	SCHO	D44HD	C70458	447	12,14,14	0.411	11	3041	51	6.89	7.4	61/100	41000	168/89	1180/1860	126/225	1 - 1 - WT - A - E	I	NO
9		BIT	8.50	HTC	HC605	TNO678SB		10,10,11,11,11	0.432	12	3400	359	32.04	11.2	61/100	250000	168/89	1180/1860	126/225	1 - 1 - RO - N - X	2	NO

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BOTTOM HOLE ASSEMBLIES USED ON WELL 6403/10-1 PO: 1

BHA no. 1: No. / Element / OD(in) / Length(m) Depth In: 1744 m MD Out: 1852 m MD

1	MGGH+ODC	17.5	0.42	2	POWER DRIVE	17.375	6.82
3	DRILL COLLAR STEEL	9.5	9.12	4	X-OVER	9.5	0.29
5	TWOSTAGE	36.0	3.85	6	FLOAT SUB	9.5	1.05
7	MWD	9.5	8.85	8	NON MAG. COLLAR	9.5	17.46
9	DRILL COLLAR STEEL	9.5	36.32	10	STEEL STAB	35.785	2.29
11	X-OVER	9.5	0.30	13	X-OVER	9.5	1.20
14	DRILL COLLAR STEEL	8.0	36.40	15	JAR	8.0	9.69
16	DRILL COLLAR STEEL	8.0	26.66	17	X-OVER	8.0	0.96
18	HWDP	5.0	137.50	19	DART SUB	6.5	0.50
20	X-OVER	8.0	1.02				

Reason pulled: TOTAL DEPTH/CASING DEPTH Total Length: 300.70 m

BHA no. 2: No. / Element / OD(in) / Length(m) Depth In: 1852 m MD Out: 2114 m MD

1	XT02C	26.0	0.58	2	DOWN HOLE MOTOR WITH STAE	9.5	9.29
3	FLOAT SUB	9.5	0.61	4	NON MAG. STAB	25.75	2.50
5	CDR	9.5	7.09	6	MWD	9.125	8.37
7	NON MAG. STAB	25.75	2.25	8	X-OVER	9.5	1.15
9	DRILL COLLAR STEEL	8.0	54.60	10	JAR	8.0	9.75
11	DRILL COLLAR STEEL	8.0	26.66	12	ACCELERATOR	8.0	9.00
13	DRILL COLLAR STEEL	8.0	9.43	14	X-OVER	8.0	0.96
15	HWDP	5.0	137.50	16	DART SUB	6.5	0.56
17	X-OVER	8.0	1.02				

Total Length: 281.32 m

BHA no. 3: No. / Element / OD(in) / Length(m) Depth In: 2214 m MD Out: 2217 m MD

1	MSDGH	17.0	0.42	2	BIT SUB	9.5	1.03
3	X-OVER	9.5	0.98	4	DRILL COLLAR STEEL	8.0	55.35
5	JAR	8.0	9.75	6	DRILL COLLAR STEEL	8.0	26.54
7	ACCELERATOR	8.0	9.00	8	DRILL COLLAR STEEL	8.0	9.43
9	X-OVER	8.0	0.96	10	HWDP	5.0	137.48
11	X-OVER	8.0	1.02				

Reason pulled: CHANGE BOTTOMHOLE ASSEMBLY Total Length: 251.96 m

BHA no. 4: No. / Element / OD(in) / Length(m) Depth In: 2217 m MD Out: 2518 m MD

1	MSDGH	17.0	0.43	2	DOWN HOLE MOTOR WITH STAE	16.75	9.25
3	FLOAT SUB	9.625	0.92	4	NON MAG. STAB	16.75	1.94
5	X-OVER	9.0	0.85	6	LOGGING WHILE DRILLING TOOL	8.25	5.87
7	MWD	8.25	8.21	8	OTHER	8.25	6.88
9	NON MAG. X-OVER	9.0	0.36	10	NON MAG. STAB	16.5	2.43
11	NON MAG. X-OVER	9.0	0.30	12	NON MAG. COLLAR	8.0	16.27
13	DRILL COLLAR STEEL	8.0	36.82	14	JAR	8.0	9.75
15	DRILL COLLAR STEEL	8.0	26.54	16	ACCELERATOR	8.0	9.00
17	DRILL COLLAR STEEL	8.0	9.43	18	X-OVER	8.0	0.96
19	HWDP	5.0	128.50	20	DART SUB	6.5	0.50
21	HWDP	5.0	8.98	22	X-OVER	8.0	1.02

Reason pulled: TOTAL DEPTH/CASING DEPTH Total Length: 285.21 m

BOTTOM HOLE ASSEMBLIES USED ON WELL 6403/10-1 PO: 1

BHA no. 5: No. / Element / OD(in) / Length(m) Depth In: 2518 m MD Out: 2522 m MD

1	HP21G	12.25	0.34	2	NEAR BIT STAB	12.0	1.84
3	DRILL COLLAR STEEL	8.0	55.35	4	JAR	8.0	9.75
5	DRILL COLLAR STEEL	8.0	17.69	6	ACCELERATOR	8.0	9.00
7	DRILL COLLAR STEEL	8.0	18.45	8	X-OVER	8.0	1.00

Reason pulled: CHANGE BOTTOMHOLE ASSEMBLY Total Length: 113.42 m

BHA no. 6: No. / Element / OD(in) / Length(m) Depth In: 2522 m MD Out: 2843 m MD

1	MA99PX	8.5	0.28	2	LOGGING WHILE DRILLING TOOL	8.375	3.07
3	PRESSURE WHILE DRILLING	7.0	5.70	4	NON MAG. STAB	8.375	1.49
5	MWD	6.75	8.23	6	ADN	8.25	6.24
7	NON MAG. COLLAR	6.5	9.48	8	DRILL COLLAR STEEL	6.5	45.19
9	JAR	6.5	8.86	10	HWDP	5.0	137.48
11	DART SUB	6.25	0.50				

Reason pulled: RUN LOGS Total Length: 226.52 m

BHA no. 7: No. / Element / OD(in) / Length(m) Depth In: 2843 m MD Out: 2843 m MD

1	OTHER	8.0	0.82	2	CIRCULATING SUB	6.5	0.42
3	FLOAT SUB	6.625	0.55	4	DRILL PIPE	5.0	28.44
5	DRILL COLLAR STEEL	6.5	45.19	6	JAR	6.5	8.86
7	HWDP	5.0	137.48	8	DART SUB	6.25	0.50

Total Length: 222.26 m

BHA no. 8: No. / Element / OD(in) / Length(m) Depth In: 2522 m MD Out: 2843 m MD

1	MA99PX	8.5	0.28	2	LOGGING WHILE DRILLING TOOL	8.375	3.07
3	PRESSURE WHILE DRILLING	7.0	5.70	4	NON MAG. STAB	8.375	1.49
5	MWD	6.75	8.23	6	LOGGING WHILE DRILLING TOOL	8.25	6.24
7	DRILL COLLAR STEEL	6.5	45.19	8	JAR	6.5	8.86
9	HWDP	5.0	137.48	10	DART SUB	6.25	0.50

Reason pulled: RUN LOGS Total Length: 217.04 m

BHA no. 9: No. / Element / OD(in) / Length(m) Depth In: 2522 m MD Out: 2843 m MD

1	MA99PX	8.5	0.28	2	BIT SUB	6.5	0.92
3	STANDARDHO	12.25	1.19	4	FLOAT SUB	8.0	0.98
5	LOGGING WHILE DRILLING TOOL	8.25	5.87	6	MWD	8.25	8.68
7	NON MAG. STAB	12.125	1.62	8	NON MAG. COLLAR	8.0	8.84
9	DRILL COLLAR STEEL	8.0	36.72	10	JAR	8.0	9.75
11	DRILL COLLAR STEEL	8.0	26.54	12	ACCELERATOR	8.0	9.00
13	DRILL COLLAR STEEL	8.0	9.43	14	X-OVER	8.0	0.96
15	HWDP	5.0	137.50				

Reason pulled: TOTAL DEPTH/CASING DEPTH Total Length: 258.28 m

BHA no. 10: No. / Element / OD(in) / Length(m) Depth In: 2843 m MD Out: 2990 m MD

1	PDC	8.5	0.28	2	LOGGING WHILE DRILLING TOOL	8.375	3.07
3	LOGGING WHILE DRILLING TOOL	6.75	5.70	4	NON MAG. STAB	8.5	1.49
5	MWD	6.75	8.23	6	LOGGING WHILE DRILLING TOOL	6.875	7.50
7	LOGGING WHILE DRILLING TOOL	6.875	6.24	8	DRILL COLLAR STEEL	6.5	45.19
9	JAR	6.5	8.86	10	DRILL COLLAR STEEL	6.5	28.34
11	HWDP	5.0	138.07	12	DART SUB	6.5	0.50

Reason pulled: PENETRATION RATE Total Length: 253.47 m

BOTTOM HOLE ASSEMBLIES USED ON WELL 6403/10-1 PO: 1

BHA no. 11: No. / Element / OD(in) / Length(m) Depth In: 2990 m MD Out: 3041 m MD

1	D44HD	8.5	0.28	2	LOGGING WHILE DRILLING TOOL	8.375	3.07
3	LOGGING WHILE DRILLING TOOL	6.75	5.70	4	NON MAG. STAB	8.5	1.49
5	MWD	6.75	8.23	6	LOGGING WHILE DRILLING TOOL	6.875	7.50
7	LOGGING WHILE DRILLING TOOL	6.875	6.24	8	DRILL COLLAR STEEL	6.5	45.19
9	JAR	6.5	8.86	10	DRILL COLLAR STEEL	6.5	28.34
11	HWDP	5.0	138.07	12	DART SUB	6.5	0.50
13	DRILL PIPE	5.0	1677.00				

Reason pulled: DOWNHOLE TOOL FAILURE Total Length: 1930.47 m

BHA no. 12: No. / Element / OD(in) / Length(m) Depth In: 3041 m MD Out: 3400 m MD

1	HC605	8.5	0.30	2	LOGGING WHILE DRILLING TOOL	8.375	3.07
3	LOGGING WHILE DRILLING TOOL	6.75	5.70	4	MWD	6.75	8.23
5	LOGGING WHILE DRILLING TOOL	6.875	7.50	6	LOGGING WHILE DRILLING TOOL	6.875	6.24
7	DRILL COLLAR STEEL	6.5	45.19	8	JAR	6.5	8.86
9	DRILL COLLAR STEEL	6.5	28.34	10	HWDP	5.0	138.07
11	DART SUB	6.5	0.50	12	DART SUB	6.5	0.50
13	DRILL PIPE	5.0	1677.00				

Reason pulled: TOTAL DEPTH/CASING DEPTH Total Length: 1929.50 m

CEMENT SLURRY REPORT ON WELL 6403/10-1 PO: 1

Date	CsgSize	Jobtype	Slurry Type	Pumped Volume [m3]	Density [sg]	BHCT [DegC]	Yield [l/100 kg]	Additive	Unit	Additives [../100 kg Cement]	Additive [../m3 Slurry]
2002-10-27	30"	CASING CEMENTING	TAIL SLURRY	65.00	1.47	2.00	171.21				
			DISPLACEMENT			2.00					
2002-10-28	30"	CASING CEMENTING	TAIL SLURRY	12.00	1.47	2.00	171.21				
			DISPLACEMENT			2.00					
2002-11-03	20"	CASING CEMENTING	TAIL SLURRY	156.00	1.60	11.00	127.80	R-12L	l	1.20	
								BA-58L	l	20.00	
								CD-31L	l	0.65	
								FL-63L	l	4.00	
								FP16LG	l	0.40	
			DISPLACEMENT			11.00					
2002-11-23	13 3/8"	LINER CEMENTING	SPACER		1.50	23.00		SODAA	kg		8.00
								FP16LG	l		10.00
								GW-22	kg		2.00
								BARITC	kg		650.00
								MCS-J	l		52.00
			TAIL SLURRY	13.10	1.90	23.00	76.69	FP16LG	l	0.20	
								R-12L	l	0.70	
			WATER BASED MUD SPACER (WEIGHTED)		1.12	23.00					
			DISPLACEMENT			23.00					
2002-12-06	9 5/8"	CASING CEMENTING	SPACER	6.00	1.30	42.00		BARITC	kg		387.00
								FP16LG	l		10.00
								GW-22	kg		4.40
								MCS-J	l		104.00
								SODAA	kg		8.00
			TAIL SLURRY	13.40	1.90	42.00	80.00	BA-58L	l	11.00	
								CD-31L	l	0.80	
								FL-45L	l	6.50	
								FP16LG	l	0.20	
								R-12L	l	0.95	
			DISPLACEMENT			42.00					
2002-12-19	9 5/8"	PLUG IN CASED TO OPEN HOLE	SPACER	4.00	1.25	67.00		BARITC	kg		322.00

CEMENT SLURRY REPORT ON WELL 6403/10-1 PO: 1

Date	CsgSize	Jobtype	Slurry Type	Pumped Volume [m3]	Density [sg]	BHCT [DegC]	Yield [l/100 kg]	Additive	Unit	Additives [../100 kg Cement]	Additive [../m3 Slurry]
2002-12-19	9 5/8"	PLUG IN CASED TO OPEN HOLE	SPACER	4.00	1.25	67.00		FP16LG	l		10.00
								GW-22	kg		3.00
								MCS-J	l		52.00
								SODAA	kg		8.00
			TAIL SLURRY	8.20	1.90	67.00	82.46	BA-58L	l	12.00	
								CD-31L	l	0.60	
								FL-45L	l	6.75	
								FP16LG	l	0.20	
								R-12L	l	1.20	
			DISPLACEMENT		1.21	67.00					
			DISPLACEMENT			67.00					
2002-12-22	20"	PLUG IN CASED HOLE	FRESHWATER	5.00	1.00	14.00					
			TAIL SLURRY	46.00	1.75	14.00	90.63	FP16LG	l	0.20	
								R-12L	l	0.40	
			FRESHWATER	2.00	1.00	14.00					
			DISPLACEMENT	21.00	1.21	14.00					
			DISPLACEMENT			14.00					

CEMENT CONSUMPTION PER JOB ON WELL 6403/10-1 PO: 1

Date	CsgSize	Job Type	Cement/ Additive	Description	Unit	Actual Amount Used
2002-10-27	30"	CASING CEMENTING	A	API CLASS A	MT	34000
			A-3L	EXTENDER: LIQUID LODENSE	l	1362
			A-7L	ACCELERATOR: LIQUID CACL2	l	1945
			BA-10	EXTENDER: MATRIX FLOW CONTROL AGENT	l	353
			BA-58L	BA-58L ANTI-GAS	l	9728
			CD-33L	DISPERSANT: CD-33L LIQUID	l	-1839
			FP16LG	SPECIAL ADDITIVE: DEFOAMER FP-16LG	l	156
			W-6	EXTENDER	kg	3892
2002-10-28	30"	CASING CEMENTING	A	API CLASS A	MT	7000
			A-3L	EXTENDER: LIQUID LODENSE	l	273
			A-7L	ACCELERATOR: LIQUID CACL2	l	390
			BA-10	EXTENDER: MATRIX FLOW CONTROL AGENT	l	
			BA-58L	BA-58L ANTI-GAS	l	1953
			CD-33L	DISPERSANT: CD-33L LIQUID	l	390
			FP16LG	SPECIAL ADDITIVE: DEFOAMER FP-16LG	l	31
			W-6	EXTENDER	kg	-4709
2002-11-03	20"	CASING CEMENTING	A	API CLASS A	MT	127000
			BA-58L	BA-58L ANTI-GAS	l	24727
			CD-31L	DISPERSANT: CD-31L LIQUID	l	813
			FL-63L	FL-63L	l	4945
			FP16LG	SPECIAL ADDITIVE: DEFOAMER FP-16LG	l	495
			R-12L	RETARDER: LIQUID LIGNOSULFONATE UP TO 93 DEG	l	1484
2002-11-23	13 3/8"	LINER CEMENTING	FP16LG	SPECIAL ADDITIVE: DEFOAMER FP-16LG	l	65
			G	API CLASS G	MT	18
			GW-22	GW-22 VISCOSIFIER	kg	25
			MCS-J	MCS-J	l	470
			R-12L	RETARDER: LIQUID LIGNOSULFONATE UP TO 93 DEG	l	474
			SODAA	SODA ASH	kg	75
2002-12-06	9 5/8"	CASING CEMENTING	BA-58L	BA-58L ANTI-GAS	l	2013
			CD-31L	DISPERSANT: CD-31L LIQUID	l	146
			FL-45L	FLUID-LOSS ADDITIVE: BETWEEN 38 AND 177 DEGC	l	1190
			FP16LG	SPECIAL ADDITIVE: DEFOAMER FP-16LG	l	116
			G	API CLASS G	MT	16000
			GW-22	GW-22 VISCOSIFIER	kg	35
			MCS-J	MCS-J	l	832
			R-12L	RETARDER: LIQUID LIGNOSULFONATE UP TO 93 DEG	l	174
			SODAA	SODA ASH	kg	64
2002-12-19	9 5/8"	PLUG IN CASED TO OPEN HOLE	BA-58L	BA-58L ANTI-GAS	l	1507
			CD-31L	DISPERSANT: CD-31L LIQUID	l	81
			FL-45L	FLUID-LOSS ADDITIVE: BETWEEN 38 AND 177 DEGC	l	790
			FP16LG	SPECIAL ADDITIVE: DEFOAMER FP-16LG	l	75
			G	API CLASS G	MT	10
			GW-22	GW-22 VISCOSIFIER	kg	25
			MCS-J	MCS-J	l	260
			R-12L	RETARDER: LIQUID LIGNOSULFONATE UP TO 93 DEG	l	140
			SODAA	SODA ASH	kg	50
2002-12-22	20"	PLUG IN CASED HOLE	A	API CLASS A	MT	53000
			FP16LG	SPECIAL ADDITIVE: DEFOAMER FP-16LG	l	100

CEMENT CONSUMPTION PER JOB ON WELL 6403/10-1 PO: 1

Date	CsgSize	Job Type	Cement/ Additive	Description	Unit	Actual Amount Used
2002-12-22	20"	PLUG IN CASED HOLE	R-12L	RETARDER: LIQUID LIGNOSULFONATE UP TO 93 DEG	l	208

TOTAL CONSUMPTION OF CEMENT ADDITIVES ON WELL 6403/10-1 PO: 1

Section	Cement/Additive	Unit	Total Amount Used
36"	EXTENDER	kg	-817.00
	SPECIAL ADDITIVE: DEFOAMER FP-16LG	l	187.00
	API CLASS A	MT	41000.00
	EXTENDER: LIQUID LODENSE	l	1635.00
	BA-58L ANTI-GAS	l	11681.00
	DISPERSANT: CD-33L LIQUID	l	-1449.00
	ACCELERATOR: LIQUID CACL2	l	2335.00
	EXTENDER: MATRIX FLOW CONTROL AGENT	l	353.00
26"	FL-63L	l	4945.00
	API CLASS A	MT	127000.00
	SPECIAL ADDITIVE: DEFOAMER FP-16LG	l	495.00
	RETARDER: LIQUID LIGNOSULFONATE UP TO 93 DEGC	l	1484.00
	BA-58L ANTI-GAS	l	24727.00
	DISPERSANT: CD-31L LIQUID	l	813.00
12 1/4"	RETARDER: LIQUID LIGNOSULFONATE UP TO 93 DEGC	l	174.00
	DISPERSANT: CD-31L LIQUID	l	146.00
	BA-58L ANTI-GAS	l	2013.00
	FLUID-LOSS ADDITIVE: BETWEEN 38 AND 177 DEGC	l	1190.00
	SPECIAL ADDITIVE: DEFOAMER FP-16LG	l	116.00
	API CLASS G	MT	16000.00
	GW-22 VISCOSIFIER	kg	35.00
	SODA ASH	kg	64.00
	MCS-J	l	832.00
8 1/2"	FLUID-LOSS ADDITIVE: BETWEEN 38 AND 177 DEGC	l	790.00
	SPECIAL ADDITIVE: DEFOAMER FP-16LG	l	75.00
	GW-22 VISCOSIFIER	kg	25.00
	MCS-J	l	260.00
	RETARDER: LIQUID LIGNOSULFONATE UP TO 93 DEGC	l	140.00
	API CLASS G	MT	10.00
	DISPERSANT: CD-31L LIQUID	l	81.00
	BA-58L ANTI-GAS	l	1507.00
	SODA ASH	kg	50.00
0.0	SPECIAL ADDITIVE: DEFOAMER FP-16LG	l	165.00
	GW-22 VISCOSIFIER	kg	25.00
	MCS-J	l	470.00
	API CLASS G	MT	17.50
	RETARDER: LIQUID LIGNOSULFONATE UP TO 93 DEGC	l	682.00
	API CLASS A	MT	53000.00
	SODA ASH	kg	75.00

Norsk Hydro

2003-06-07

DAILY MUD PROPERTIES:RHEOLOGY PARAMETERS FOR WELL 6403/10-1 PO: 1

Hole section : 36" **WATER BASED SYSTEM**

Date	Depth [m] MD	Depth [m] TVD	Mud Type	Funnel Visc [sec]	Dens [sg]	Mudtmp Out [DegC]	Fann Readings 600	300	200	100	60	30	6	3	Rheo Test [DegC]	PV [mPas]	YP [Pa]	Gel0 [Pa]	Gel10 [Pa]
2002-10-22		0	SPUD MUD				0	0	0	0	0	0	0	0					
2002-10-23		0	SPUD MUD	120.0	1.05		0	0	0	0	0	0	0	0					
2002-10-26	1852	1852	SPUD MUD	83.0	1.30		0	0	0	0	0	0	0	0					
2002-10-27	1852	1852	SPUD MUD	118.0	1.05		0	0	0	0	0	0	0	0					
2002-10-28	1852	1852	SPUD MUD	121.0	1.05		0	0	0	0	0	0	0	0					

Hole section : 26" **WATER BASED SYSTEM**

Date	Depth [m] MD	Depth [m] TVD	Mud Type	Funnel Visc [sec]	Dens [sg]	Mudtmp Out [DegC]	Fann Readings 600	300	200	100	60	30	6	3	Rheo Test [DegC]	PV [mPas]	YP [Pa]	Gel0 [Pa]	Gel10 [Pa]
2002-10-31	1852	1852	SPUD MUD	120.0	1.05		0	0	0	0	0	0	0	0					
2002-11-01	2214	2214	SPUD MUD	120.0	1.05		0	0	0	0	0	0	0	0					
2002-11-02	2214	2214	SPUD MUD	120.0	1.05		0	0	0	0	0	0	0	0					
2002-11-03	2214	2214	SPUD MUD	0.0	1.05		0	0	0	0	0	0	0	0					
2002-11-04	2214	2214	SPUD MUD	120.0	1.05		0	0	0	0	0	0	0	0					
2002-11-05	2214	2214	SPUD MUD	120.0	1.05		0	0	0	0	0	0	0	0					
2002-11-06	2214	2214	SPUD MUD	120.0	1.05		0	0	0	0	0	0	0	0					
2002-11-07	2214	2214	SPUD MUD	0.0	1.05		0	0	0	0	0	0	0	0					
2002-11-08	2214	2214	SPUD MUD	0.0	1.05		0	0	0	0	0	0	0	0					
2002-11-09	2214	2214	SPUD MUD	0.0	1.05		0	0	0	0	0	0	0	0					
2002-11-10	2214	2214	SPUD MUD	0.0	1.05		0	0	0	0	0	0	0	0					
2002-11-11	2214	2214	SPUD MUD		1.03						0	0							
2002-11-12	2214	2214	SPUD MUD		1.03						0	0							
2002-11-13	2214	2214	SPUD MUD		1.03						0	0							
2002-11-14	2214	2214	SPUD MUD		1.03						0	0							
2002-11-16	2214	2214	SPUD MUD		1.03						0	0							
2002-11-17	2214	2214	SPUD MUD	0.0	1.05		0	0	0	0	0	0	0	0					
2002-11-18	2214	2214	SPUD MUD	0.0	1.05		0	0	0	0	0	0	0	0					
2002-11-19	2217	2217	SPUD MUD	136.0	1.05		0	0	0	0	0	0	0	0					
2002-11-20	2252	2252	GLYDRIL	47.0	1.10		31	24	20	17	0	0	8	6	50.0	7.0	8.5	4.0	4.0

DAILY MUD PROPERTIES:RHEOLOGY PARAMETERS FOR WELL 6403/10-1 PO: 1

Hole section : 17" **WATER BASED SYSTEM**

Date	Depth [m] MD	TVD	Mud Type	Funnel Visc [sec]	Dens [sg]	Mudtmp Out [DegC]	Fann Readings 600	300	200	100	60	30	6	3	Rheo Test [DegC]	PV [mPas]	YP [Pa]	Gel0 [Pa]	Gel10 [Pa]
2002-11-21	2447	2446	GLYDRIL	74.0	1.10		47	35	30	23	0	0	10	9	50.0	12.0	11.5	5.0	7.0
2002-11-22	2518	2517	GLYDRIL	72.0	1.11		45	34	29	22	0	0	9	8	50.0	11.0	11.5	8.0	10.0
2002-11-23	2518	2517	GLYDRIL	72.0	1.11		46	35	30	23	0	0	10	8	50.0	11.0	12.0	8.0	9.0
2002-11-24	2518	2517	GLYDRIL	72.0	1.11		46	35	30	23	0	0	10	8	50.0	11.0	12.0	8.0	9.0

Hole section : 12 1/4" **WATER BASED SYSTEM**

Date	Depth [m] MD	TVD	Mud Type	Funnel Visc [sec]	Dens [sg]	Mudtmp Out [DegC]	Fann Readings 600	300	200	100	60	30	6	3	Rheo Test [DegC]	PV [mPas]	YP [Pa]	Gel0 [Pa]	Gel10 [Pa]
2002-11-25	2522	2521	GLYDRIL	72.0	1.12		46	35	30	23	0	0	10	8	50.0	11.0	12.0	8.0	9.0
2002-11-26	2522	2521	GLYDRIL	113.0	1.17		51	35	28	20	0	0	8	7	50.0	16.0	9.5	4.0	8.0
2002-11-27	2661	2660	GLYDRIL	145.0	1.17		62	44	36	27	0	0	10	9	50.0	18.0	13.0	6.0	16.0
2002-11-28	2759	2758	GLYDRIL	160.0	1.17		69	49	41	30	0	0	11	9	50.0	20.0	14.5	5.5	17.0
2002-11-29	2844	2843	GLYDRIL	170.0	1.18		77	56	46	33	0	0	13	11	50.0	21.0	17.5	7.0	18.0
2002-11-30	2844	2843	GLYDRIL	182.0	1.18		78	57	46	33	0	0	13	11	50.0	21.0	18.0	7.5	18.0
2002-12-01	2844	2843	GLYDRIL	183.0	1.18		76	54	44	33	0	0	12	9	50.0	22.0	16.0	5.0	15.0
2002-12-02	2843	2842	GLYDRIL	178.0	1.18		77	55	44	32	0	0	12	10	50.0	22.0	16.5	6.0	16.0
2002-12-03	2669	2668	GLYDRIL	180.0	1.18		77	54	45	34	0	0	12	9	50.0	23.0	15.5	6.0	16.0
2002-12-04	2842	2841	GLYDRIL	179.0	1.19		70	49	40	30	0	0	11	9	50.0	21.0	14.0	6.0	16.0
2002-12-05	2842	2841	GLYDRIL	160.0	1.19		69	49	40	29	0	0	10	8	50.0	20.0	14.5	5.0	12.0
2002-12-06	2842	2841	GLYDRIL	165.0	1.19		71	50	40	30	0	0	11	8	50.0	21.0	14.5	5.0	12.0
2002-12-07	2842	2841	GLYDRIL	165.0	1.19		71	50	40	30	0	0	11	8	50.0	21.0	14.5	5.0	12.0
2002-12-08	2836	2835	GLYDRIL	160.0	1.20		70	48	40	30	0	0	11	8	50.0	22.0	13.0	5.0	13.0

Hole section : 8 1/2" **WATER BASED SYSTEM**

Date	Depth [m] MD	TVD	Mud Type	Funnel Visc [sec]	Dens [sg]	Mudtmp Out [DegC]	Fann Readings 600	300	200	100	60	30	6	3	Rheo Test [DegC]	PV [mPas]	YP [Pa]	Gel0 [Pa]	Gel10 [Pa]
2002-12-09	2922	2921	GLYDRIL	165.0	1.20		70	49	40	30	0	0	10	8	50.0	21.0	14.0	4.5	12.0
2002-12-10	2990	2989	GLYDRIL	136.0	1.20		68	49	39	28	0	0	10	8	50.0	19.0	15.0	4.5	10.0
2002-12-11	2990	2989	GLYDRIL	141.0	1.20		68	49	39	28	0	0	10	8	50.0	19.0	15.0	5.0	10.0
2002-12-12	3041	3040	GLYDRIL	145.0	1.20		68	47	39	28	0	0	10	8	50.0	21.0	13.0	4.5	14.0
2002-12-13	3102	3101	GLYDRIL	148.0	1.20		67	47	38	28	0	0	10	8	50.0	20.0	13.5	4.0	13.0
2002-12-14	3305	3304	GLYDRIL	157.0	1.21		71	50	41	30	0	0	10	9	50.0	21.0	14.5	4.5	14.0

DAILY MUD PROPERTIES:RHEOLOGY PARAMETERS FOR WELL 6403/10-1 PO: 1

Hole section : 8 1/2" **WATER BASED SYSTEM**

Date	Depth [m]		Mud Type	Funnel Visc	Dens	Mudtmp Out	Fann Readings								Rheo Test	PV	YP	Gel0	Gel10
	MD	TVD		[sec]	[sg]	[DegC]	600	300	200	100	60	30	6	3	[DegC]	[mPas]	[Pa]	[Pa]	[Pa]
2002-12-15	3400	3399	GLYDRIL	148.0	1.21		69	48	39	28	0	0	9	8	50.0	21.0	13.5	4.5	14.0
2002-12-16	3400	3399	GLYDRIL	148.0	1.21		69	48	39	28	0	0	9	8	50.0	21.0	13.5	4.5	14.0
2002-12-17	3400	3399	GLYDRIL	152.0	1.21		70	49	40	28	0	0	10	8	50.0	21.0	14.0	5.0	14.0
2002-12-18	3400	3399	GLYDRIL	152.0	1.21		70	49	40	28	0	0	10	8	50.0	21.0	14.0	5.0	14.0

Hole section : P&A **WATER BASED SYSTEM**

Date	Depth [m]		Mud Type	Funnel Visc	Dens	Mudtmp Out	Fann Readings								Rheo Test	PV	YP	Gel0	Gel10
	MD	TVD		[sec]	[sg]	[DegC]	600	300	200	100	60	30	6	3	[DegC]	[mPas]	[Pa]	[Pa]	[Pa]
2002-12-19	2750	2749	GLYDRIL	147.0	1.22		66	45	36	26	0	0	8	7	50.0	21.0	12.0	4.0	14.0
2002-12-20	2670	2669	GLYDRIL	145.0	1.22		66	45	36	26	0	0	8	7	50.0	21.0	12.0	4.0	14.0
2002-12-21	2070	2070	GLYDRIL	148.0	1.22		65	45	36	26	0	0	8	7	50.0	20.0	12.5	4.0	14.0
2002-12-22	2035	2035	GLYDRIL	148.0	1.22		65	45	36	26	0	0	8	7	50.0	20.0	12.5	4.0	14.0
2002-12-23	2035	2035	GLYDRIL	148.0	1.23		65	45	36	26	0	0	8	7	50.0	20.0	12.5	4.0	14.0
2002-12-24	1775	1775	GLYDRIL	150.0	1.23		65	45	36	26	0	0	8	7	50.0	20.0	12.5	4.0	14.0
2002-12-25	1775	1775	GLYDRIL	150.0	1.23		65	45	36	26	0	0	8	7	50.0	20.0	12.5	4.0	14.0
2002-12-26	1775	1775	GLYDRIL	150.0	1.23		65	45	36	26	0	0	8	7	50.0	20.0	12.5	4.0	14.0

Hole section : 0.0 **WATER BASED SYSTEM**

Date	Depth [m]		Mud Type	Funnel Visc	Dens	Mudtmp Out	Fann Readings								Rheo Test	PV	YP	Gel0	Gel10
	MD	TVD		[sec]	[sg]	[DegC]	600	300	200	100	60	30	6	3	[DegC]	[mPas]	[Pa]	[Pa]	[Pa]
2003-03-03		0					0	0	0	0	0	0	0	0					

DAILY MUD PROPERTIES : OTHER PARAMETERS FOR WELL 6403/10-1 PO: 1

Hole section : 36" **WATER BASED SYSTEM**

Date	Depth [m] MD	Depth [m] TVD	Mud Type	Dens [sg]	Filtrate API [ml]	Filtrate HPHT [ml]	Filtcake API [mm]	Filtcake HPHT [mm]	HPHT Press/Temp [bar/DegC]	pH	Alcalinity Pm [ml]	Alcalinity Pf [ml]	Alcalinity Mf [ml]	Inhib Chem [Kg/m3]	K+ [mg/l]	CL- [mg/l]	Ca++ [mg/l]	Mg++ [mg/l]	Tot hard [mg/l]	Percentage Solid [%]	Percentage Oil [%]	Percentage Sand [%]	CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
2002-10-22		0	SPUD MUD						/																
2002-10-23		0	SPUD MUD	1.05					/																
2002-10-26	1852	1852	SPUD MUD	1.30					/																
2002-10-27	1852	1852	SPUD MUD	1.05					/																
2002-10-28	1852	1852	SPUD MUD	1.05					/																

Hole section : 26" **WATER BASED SYSTEM**

Date	Depth [m] MD	Depth [m] TVD	Mud Type	Dens [sg]	Filtrate API [ml]	Filtrate HPHT [ml]	Filtcake API [mm]	Filtcake HPHT [mm]	HPHT Press/Temp [bar/DegC]	pH	Alcalinity Pm [ml]	Alcalinity Pf [ml]	Alcalinity Mf [ml]	Inhib Chem [Kg/m3]	K+ [mg/l]	CL- [mg/l]	Ca++ [mg/l]	Mg++ [mg/l]	Tot hard [mg/l]	Percentage Solid [%]	Percentage Oil [%]	Percentage Sand [%]	CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
2002-10-31	1852	1852	SPUD MUD	1.05					/																
2002-11-01	2214	2214	SPUD MUD	1.05					/																
2002-11-02	2214	2214	SPUD MUD	1.05					/																
2002-11-03	2214	2214	SPUD MUD	1.05					/																
2002-11-04	2214	2214	SPUD MUD	1.05					/																
2002-11-05	2214	2214	SPUD MUD	1.05					/																
2002-11-06	2214	2214	SPUD MUD	1.05					/																
2002-11-07	2214	2214	SPUD MUD	1.05					/																
2002-11-08	2214	2214	SPUD MUD	1.05					/																
2002-11-09	2214	2214	SPUD MUD	1.05					/						74000										
2002-11-10	2214	2214	SPUD MUD	1.05					/																
2002-11-11	2214	2214	SPUD MUD	1.03					/																
2002-11-12	2214	2214	SPUD MUD	1.03					/																
2002-11-13	2214	2214	SPUD MUD	1.03					/						74000										
2002-11-14	2214	2214	SPUD MUD	1.03					/						74000										
2002-11-16	2214	2214	SPUD MUD	1.03					/						74000										
2002-11-17	2214	2214	SPUD MUD	1.05					/																
2002-11-18	2214	2214	SPUD MUD	1.05					/																
2002-11-19	2217	2217	SPUD MUD	1.05					/																
2002-11-20	2252	2252	GLYDRIL	1.10	5.0		1		/	8.4	0.2	0.0	0.6		61000	55400	640		640	5.5	3.2			4.0	5

DAILY MUD PROPERTIES : OTHER PARAMETERS FOR WELL 6403/10-1 PO: 1

Hole section : 17" **WATER BASED SYSTEM**

Date	Depth [m] MD	Depth [m] TVD	Mud Type	Dens [sg]	Filtrate API [ml]	Filtrate HPHT [ml]	Filtcake API [mm]	Filtcake HPHT [mm]	HPHT Press/Temp [bar/DegC]	pH	Alcalinity Pm [ml]	Alcalinity Pf [ml]	Alcalinity Mf [ml]	Inhib Chem [Kg/m3]	K+ [mg/l]	CL- [mg/l]	Ca++ [mg/l]	Mg++ [mg/l]	Tot hard [mg/l]	Percentage Solid [%]	Percentage Oil [%]	Percentage Sand [%]	CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
2002-11-21	2447	2446	GLYDRIL	1.10	3.2		1		/	8.9	0.1	0.0	0.6		61000	59000	640		640	6.0	3.2	0.3	10	3.0	29
2002-11-22	2518	2517	GLYDRIL	1.11	3.4		1		/	8.8	0.1	0.0	0.5		61000	58500	640		640	6.0	3.2	0.2	10	3.0	29
2002-11-23	2518	2517	GLYDRIL	1.11	3.6		1		/	8.8	0.1	0.0	0.6		61000	59000	560		560	6.0	3.2	0.2	10	3.7	13
2002-11-24	2518	2517	GLYDRIL	1.11	3.6		1		/	8.8	0.1	0.0	0.6		61000	59000	560		560	6.0	3.2	0.2	10	3.7	13

Hole section : 12 1/4" **WATER BASED SYSTEM**

Date	Depth [m] MD	Depth [m] TVD	Mud Type	Dens [sg]	Filtrate API [ml]	Filtrate HPHT [ml]	Filtcake API [mm]	Filtcake HPHT [mm]	HPHT Press/Temp [bar/DegC]	pH	Alcalinity Pm [ml]	Alcalinity Pf [ml]	Alcalinity Mf [ml]	Inhib Chem [Kg/m3]	K+ [mg/l]	CL- [mg/l]	Ca++ [mg/l]	Mg++ [mg/l]	Tot hard [mg/l]	Percentage Solid [%]	Percentage Oil [%]	Percentage Sand [%]	CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
2002-11-25	2522	2521	GLYDRIL	1.12	3.7		1		/	9.0	0.1	0.0	0.6		61000	58000	560		560	7.0	3.2	0.3	10	2.6	67
2002-11-26	2522	2521	GLYDRIL	1.17	2.4		1		/	9.0	0.1	0.4	1.1		61000	176800	136		136	7.6	23.4	0.0		2.6	3
2002-11-27	2661	2660	GLYDRIL	1.17	1.7		1		/	8.7		0.2	1.8			171000	135		135	7.4	23.2			2.6	17
2002-11-28	2759	2758	GLYDRIL	1.17	1.8		1		/	9.0		0.2	0.7			171000	120		120	13.0	22.6	0.1	8	2.6	16
2002-11-29	2844	2843	GLYDRIL	1.18	1.6		1		/	9.1		0.1	0.7			171000	120		120	11.0	23.8	0.1	10	2.6	37
2002-11-30	2844	2843	GLYDRIL	1.18	1.7		1		/	9.2		0.1	0.7			169000	120		120	11.0	23.5	0.1	14	2.6	39
2002-12-01	2844	2843	GLYDRIL	1.18	1.5	4.5	1		/ 120	9.2		0.1	0.7			169000	120		120	11.0	23.0	0.1	14	2.6	38
2002-12-02	2843	2842	GLYDRIL	1.18	1.6	9.0	1	1	/	9.1		0.1	0.7			170000	120		120	11.0	23.0	0.1	14	2.6	37
2002-12-03	2669	2668	GLYDRIL	1.18	1.6	9.1	1	1	/	9.2		0.1	0.7			167000	120		120	12.0	23.0	0.1	14	2.6	41
2002-12-04	2842	2841	GLYDRIL	1.19	1.3	9.0	1	1	/ 120	9.0		0.1	0.6			168000	120		120	11.5	25.3	0.1	14	2.6	61
2002-12-05	2842	2841	GLYDRIL	1.19	1.2	9.2	1	1	/ 120	9.0		0.1	0.7			164500	160		160	12.0	24.0	0.1	14	2.6	64
2002-12-06	2842	2841	GLYDRIL	1.19	1.2	9.6	1	1	/ 120	9.2	0.8	0.2	0.8			163185	400		400	12.0	23.4	0.2	14	2.6	65
2002-12-07	2842	2841	GLYDRIL	1.19	1.2	9.6	1	1	/	9.2		0.2	0.8			163185	400		400	12.0	23.0	0.2	14	2.6	64
2002-12-08	2836	2835	GLYDRIL	1.20	1.0	9.4	1	1	/ 120	8.5		0.1	0.7			168700	400		400		24.0	0.3	14	2.6	77

Hole section : 8 1/2" **WATER BASED SYSTEM**

Date	Depth [m] MD	Depth [m] TVD	Mud Type	Dens [sg]	Filtrate API [ml]	Filtrate HPHT [ml]	Filtcake API [mm]	Filtcake HPHT [mm]	HPHT Press/Temp [bar/DegC]	pH	Alcalinity Pm [ml]	Alcalinity Pf [ml]	Alcalinity Mf [ml]	Inhib Chem [Kg/m3]	K+ [mg/l]	CL- [mg/l]	Ca++ [mg/l]	Mg++ [mg/l]	Tot hard [mg/l]	Percentage Solid [%]	Percentage Oil [%]	Percentage Sand [%]	CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
2002-12-09	2922	2921	GLYDRIL	1.20	1.2	9.2	1	1	/ 120	8.5		0.1	0.7			173000	400		400	13.0	23.0	0.2	14	2.6	69
2002-12-10	2990	2989	GLYDRIL	1.20	9.2	1.0	1	1	/ 120	9.0		0.1	0.7			172000	400		400	12.0	25.0	0.2	14	2.6	74
2002-12-11	2990	2989	GLYDRIL	1.20	1.0	9.2	1	1	/	9.0		0.1	0.7			167000	400		400	11.0	25.0	0.2	14	2.6	80
2002-12-12	3041	3040	GLYDRIL	1.20	1.0	9.2	1	1	/ 120	8.8		0.1	0.7			167000	380		380	11.0	25.0	0.2	14	2.6	80
2002-12-13	3102	3101	GLYDRIL	1.20	1.0	9.2	1	1	/ 120	8.6		0.1	0.6			166000	360		360	11.5	24.0	0.2	12	2.6	80
2002-12-14	3305	3304	GLYDRIL	1.21	0.8	8.6	1	1	/ 120	8.6		0.1	0.7			169000	320		320	11.5	24.0	0.2	16	2.6	94
2002-12-15	3400	3399	GLYDRIL	1.21	1.0	9.2	1	1	/ 120	8.6		0.0	0.6			169000	280		280	11.5	24.0	0.2	14	2.6	94

DAILY MUD PROPERTIES : OTHER PARAMETERS FOR WELL 6403/10-1 PO: 1

Hole section : 8 1/2" **WATER BASED SYSTEM**

Date	Depth [m] MD	Depth [m] TVD	Mud Type	Dens [sg]	Filtrate API [ml]	Filtrate HPHT [ml]	Filtcake API [mm]	Filtcake HPHT [mm]	HPHT Press/Temp [bar/DegC]	pH	Alcalinity Pm [ml]	Alcalinity Pf [ml]	Alcalinity Mf [ml]	Inhib Chem [Kg/m3]	K+ [mg/l]	CL- [mg/l]	Ca++ [mg/l]	Mg++ [mg/l]	Tot hard [mg/l]	Percentage Solid [%]	Percentage Oil [%]	Percentage Sand [%]	CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
2002-12-16	3400	3399	GLYDRIL	1.21	1.0	9.2	1	1	/ 120	8.6		0.0	0.6			169000	280		280	11.5	24.0	0.2	14	2.6	94
2002-12-17	3400	3399	GLYDRIL	1.21	1.0	9.2	1	1	/ 120	8.6		0.0	0.6			169000	280		280	11.5	24.0	0.2	14	2.6	94
2002-12-18	3400	3399	GLYDRIL	1.21	1.0	9.2	1	1	/ 120	8.6		0.0	0.6			169000	280		280	11.5	24.0	0.2	14	2.6	94

Hole section : P&A **WATER BASED SYSTEM**

Date	Depth [m] MD	Depth [m] TVD	Mud Type	Dens [sg]	Filtrate API [ml]	Filtrate HPHT [ml]	Filtcake API [mm]	Filtcake HPHT [mm]	HPHT Press/Temp [bar/DegC]	pH	Alcalinity Pm [ml]	Alcalinity Pf [ml]	Alcalinity Mf [ml]	Inhib Chem [Kg/m3]	K+ [mg/l]	CL- [mg/l]	Ca++ [mg/l]	Mg++ [mg/l]	Tot hard [mg/l]	Percentage Solid [%]	Percentage Oil [%]	Percentage Sand [%]	CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
2002-12-19	2750	2749	GLYDRIL	1.22	0.8	8.8	1	1	/ 120	9.6	0.8	0.0	0.0			167000	360		360	11.5	24.0	0.0	14	2.6	106
2002-12-20	2670	2669	GLYDRIL	1.22	0.8	8.8	1	1	/ 120	9.6	0.8	0.2	0.7			167000	360		360	11.5	24.0	0.2	14	2.6	106
2002-12-21	2070	2070	GLYDRIL	1.22	0.6	8.8	1	1	/ 120	9.6	0.8	0.2	0.7			166000	420		420	11.5	24.0	0.2	14	2.6	108
2002-12-22	2035	2035	GLYDRIL	1.22	0.6	8.8	1	1	/ 120	9.6	0.8	0.2	0.7			166000	420		420	11.5	24.0	0.2	14	2.6	108
2002-12-23	2035	2035	GLYDRIL	1.23	0.6	8.8	1	1	/ 120	9.7	0.8	0.1	0.7			166000	420		420	11.5	24.0	0.2	14	2.6	108
2002-12-24	1775	1775	GLYDRIL	1.23	0.5	8.8	1	1	/ 120	9.7	0.8	0.1	0.7			166000	420		420	11.5	24.0	0.2	14	2.6	108
2002-12-25	1775	1775	GLYDRIL	1.23	0.5	8.8	1	1	/ 120	9.7	0.8	0.1	0.7			166000	420		420	11.5	24.0	0.2	14	2.6	108
2002-12-26	1775	1775	GLYDRIL	1.23	0.5	8.8	1	1	/ 120	9.7	0.8	0.1	0.7			166000	420		420	11.5	24.0	0.2	14	2.6	108

Hole section : 0.0 **WATER BASED SYSTEM**

Date	Depth [m] MD	Depth [m] TVD	Mud Type	Dens [sg]	Filtrate API [ml]	Filtrate HPHT [ml]	Filtcake API [mm]	Filtcake HPHT [mm]	HPHT Press/Temp [bar/DegC]	pH	Alcalinity Pm [ml]	Alcalinity Pf [ml]	Alcalinity Mf [ml]	Inhib Chem [Kg/m3]	K+ [mg/l]	CL- [mg/l]	Ca++ [mg/l]	Mg++ [mg/l]	Tot hard [mg/l]	Percentage Solid [%]	Percentage Oil [%]	Percentage Sand [%]	CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
2003-03-03		0							/																

TOTAL CONSUMPTION OF MUD ADDITIVES ON WELL 6403/10-1 PO: 1

Section	Product/ Additive	Unit	Total Amount Used
36"	BARITE	kg	38000.00
	BENTONITE	kg	14000.00
	SODA ASH	kg	150.00
26"	BARITE	kg	24000.00
	BENTONITE	kg	22000.00
	CMC EHV	kg	425.00
	SODA ASH	kg	325.00
17"	BARITE	kg	37000.00
	CELPOL ESL	kg	6900.00
	CITRIC ACID	kg	100.00
	CMC EHV	kg	50.00
	FLO-TROL	kg	3475.00
	GLYDRIL MC	l	23100.00
	KCL BRINE	l	477501.00
	RHODOPOL 23P	kg	4550.00
	SODA ASH	kg	575.00
12 1/4"	BARITE	kg	37000.00
	CELPOL ESL	kg	6575.00
	FLO-TROL	kg	3150.00
	GLYCOL	l	157500.00
	GLYDRIL MC	l	51800.00
	KCL POWDER	kg	28000.00
	NACL BRINE	l	534001.00
	NACL PREMIX	l	2500.00
	RHODOPOL 23P	kg	4300.00
	SODA ASH	kg	575.00
	SODIUM BICARBONATE	kg	500.00
8 1/2"	BARITE	kg	77000.00
	BENTONITE	kg	31000.00
	CELPOL ESL	kg	3000.00
	CITRIC ACID	kg	550.00
	DEFOAM S	kg	25.00
	FLO-TROL	kg	1375.00
	G-SEAL	kg	500.00
	GLYCOL	l	65300.00
	GLYDRIL MC	l	34050.00
	KCL POWDER	kg	14000.00
	NACL BRINE	l	189000.00
	NACL PREMIX	l	11250.00
	RHODOPOL 23P	kg	1400.00
	SODA ASH	kg	275.00
	SODIUM BICARBONATE	kg	150.00
0.0	BARITE	kg	24000.00
	CITRIC ACID	kg	550.00

TOTAL CONSUMPTION OF MUD ADDITIVES ON WELL 6403/10-1 PO: 1

Section	Product/ Additive	Unit	Total Amount Used
0.0	SODIUM BICARBONATE	kg	125.00

LOGGING INFORMATION ON WELL 6403/10-1

Hole size: 12 1/4"

#	Run No.	Logging Company	Logged Bottom [m MD]	Logged Top [m MD]	Log Suite
1	1A	SCHLUMBERGER OFFSHORE SERVIC	2636	2434	DSI/GR
2	1B	SCHLUMBERGER OFFSHORE SERVIC	2620	1742	DSI/GR
3	1A	SCHLUMBERGER OFFSHORE SERVIC	2640	1680	GR/VSP

Hole size: 8 1/2"

#	Run No.	Logging Company	Logged Bottom [m MD]	Logged Top [m MD]	Log Suite
4	2B	SCHLUMBERGER OFFSHORE SERVIC	3396	2500	SP/HALS/PEX/DSI
5	2A	SCHLUMBERGER OFFSHORE SERVIC	3393	2848	GR/MSCT
6	2A	SCHLUMBERGER OFFSHORE SERVIC	3390	2521.8	GR/VSP

LEAK OFF TEST ON WELL 6403/10-1

m MD RKB/ m TVD RKB	Section	Date	Mudtype	Mudweight SG	LOT SG
2207/ 2207	17"	19-11-2002	SeaWater	1.03	1.14
2522.5 / 2522.0	12,25"	23-11-2002	Water Based Mud	1.12	1.24
2844.5/ 2844.0	8.5"	09-12-2002	Water Based Mud	1.21	1.28

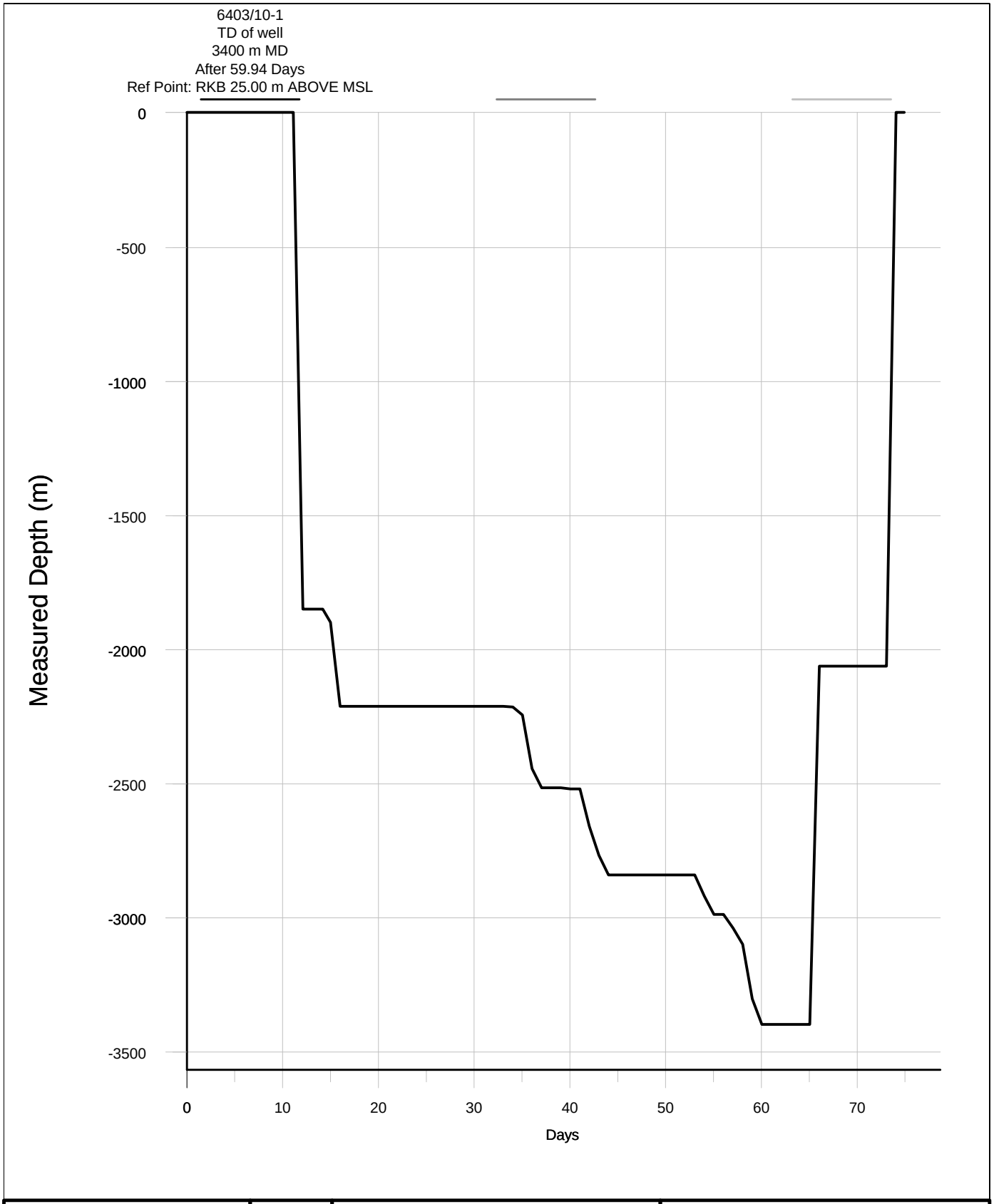

Figure 1		MD Drilling Curve	**HYDRO**

2003-06-07

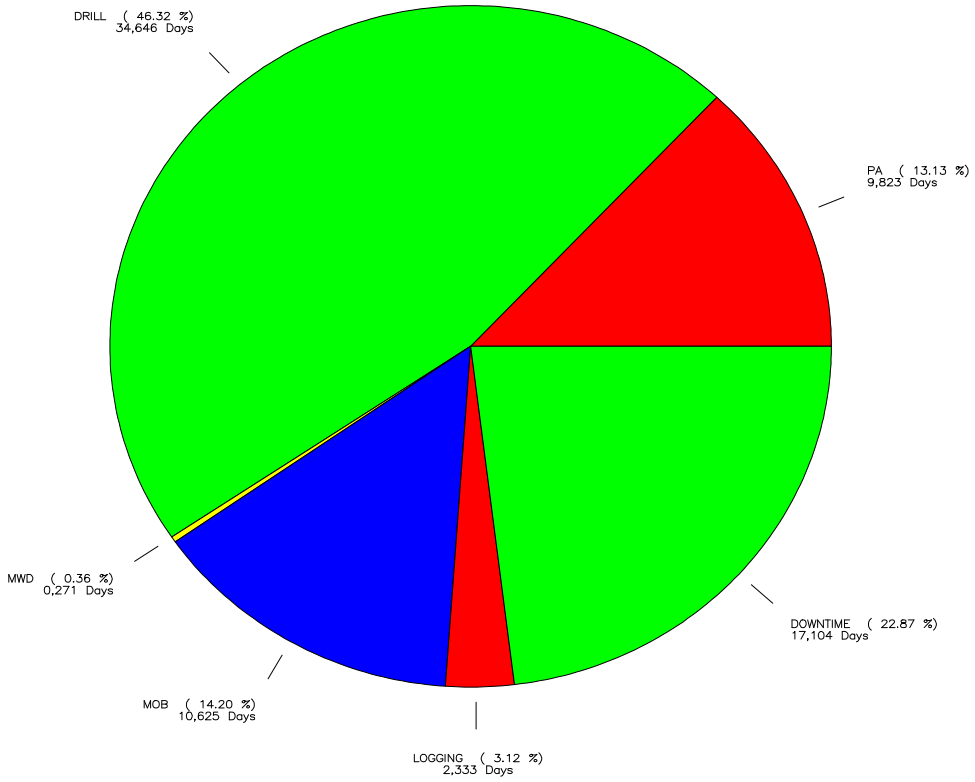

Figure 2		Time Distribution 6403/10-1	**HYDRO**

GENERAL INFORMATION ON WELL 6403/10-U-1

Field : UNDEFINED **Country** : NORWAY
Licence : 253 **Installation** : SCARABEO 5
UTM zone : 31 **Central Median** : 3' E **Horiz. Datum:** ED50

Location coordinates:		**Surface**	**Target**
UTM	**North [m]:**	7103981.86	
UTM	**East [m]:**	500196.91	
Geographical	**North :**	64 03'39.43"	
Geographical	**East :**	03 00'14.52"	

Water Depth: 1719.0 **m** **Reference Point Height:** 25.0 **m**
Formation at TD: BRYGGE at 2087 m MD

Operators: NORSK HYDRO PRODUKSJON A/S **Share:** 50.00 **%**

Partners: RWE-DEA **Share:** 30.00 **%**
PETORO 20.00 **%**

Total depth (RKB) : 2207.0 **m MD** 2206.7 **m TVD**

TIME SUMMARY
Start Time : 2002-10-29 02:00:00
Spudding date : 2002-10-24
Abandonment date :

Main operation	**Hours**	**Days**	**%**
DRILLING	51.0	2.1	65.8
FORMATION EVALUATION MWD	0.5	0.0	0.6
DOWNTIME DRILLING	26.0	1.1	33.5
Sum:	**77.5**	**3.2**	

Hole and casing record

Hole	**Track**	**Depth [m MD]**
8 1/2"		2207.0

Well status: Permanently abandoned Exploration Well

CONTRACTORS:

Bit Supplier :	SMITH RED BARON
Casing/Running Contractor :	WEATHERFORD NORGE A/S
Cement Contractor :	BJ SERVICES
Directional Drilling Contractor :	ANADRILL
Liner Hanger Supplier :	BAKER OIL TOOLS
Logg Contractor :	SCHLUMBERGER OFFSHORE SERVICES LTD
Mud Contractor :	MI NORGE
Mudlog Contractor :	GEOSERVICES
Rig Contractor :	SAIPEM S.P.A.
Rov Supplier :	OCEANEERING A/S
Slick Line Contractor :	MARITIME WELL SERVICE

DOWNTIME REPORT SCARABEO 5

Last 226 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	6403/10-U-1	2002-10-25	1	23.0	Equipment failure	NORSK HYDRO A/S		Toolstring / BHA parted	DRILLSTRING/DOV EQUIPMENT	DRILLING		357.02	MWD/LWD	
SCA5	6403/10-U-1	2002-10-29	2	1.5	Equipment failure	ANADRILL	ANADRILL	MWD tool stopped transmitting data (stopped pulsing)	DRILLSTRING/DOV EQUIPMENT	DRILLING		357.02	MWD/LWD	
SCA5	6403/10-U-1	2002-10-30	3	0.5	Equipment failure	SAIPEM S.P.A.	VARCO BJ OIL TOOLS	Broken hose on the BX-elevator.	PIPE HANDLING EQUIPMENT/SYSTI	DRILLING	DRILLING CONTRACTOR	345.00	Elevator	
SCA5	6403/10-U-1	2002-10-31	4	1.0	Other	SAIPEM S.P.A.		Repaired back-latch on the drawwork.		DRILLING				
			Sum:	26.0										
			Total Sum:	26.0										

DAILY REPORT ON WELL 6403/10-U-1

Daily report no : 1 **Date:** 2002-10-24

Midnight depth : 1745 m MD **Estimated PP:** sg **Mud weight:** 1.05 sg

Stop time		Description
12:00		Activity reported on 6403/10-1
14:30		Made up lower BHA, MWD/LWD tools and flow tested.
16:30		Installed retrievable radioactive source in ADL tool.
18:00		Made up remainder of BHA.
23:30		Trip in to seabed and tag at 1742m RKB.
	*	Tagged seabed at 23:30 local time / 22:30 UTC. Tidal correction est. 143 cm above LAT (tabel 133 cm at 22:00 152 cm at 23:00 all UTC).
23:59		Verified correct spud location with ROV mounted transponder. Washed down to 1745 m, witout rotation.

Daily report no : 2 **Date:** 2002-10-25

Midnight depth : 1740 m MD **Estimated PP:** sg **Mud weight:** 1.05 sg

Stop time		Description
01:00		Continued washing down f/ 1745m - t/ 1762m.
01:30		Drilled and surveyed, f/ 1762m - t/ 1768m. Lost pump pressure. Pulled up 10 m and checked string w/ ROV. Found string parted.
07:30		Pulled out of hole to check BHA.
	*	Removed and secured radioactive source. Laid down tools.
09:00		Investigate possible cause of parted string an loss of tools in hole.
13:00		Started making up new 8 1/2" BHA, installed radioactive source and RIH.
	*	Checked all NonMag connections with rig tongs. Installed radioactive source.
14:30		Retrieved radioactive source, and pulled out with 8 1/2" BHA, laid down same.
	*	Received instructions for change of plans.
23:59		No activity.
	*	Activity reported on 6403/10-1.

Daily report no : 3 **Date:** 2002-10-29

Midnight depth : 1877 m MD **Estimated PP:** sg **Mud weight:** 1.05 sg

Stop time		Description
01:30		No activity on this well
	*	Activity reported on 6403/10-1.
03:00		Made up 8 1/2" Pilothole BHA.
05:00		Started up LWD tool, pumped through and tested motor and installed radioactive source.
07:00		Continued running in with BHA.
11:00		Continued running in with drillpipe.
	*	RIH w 7 stds of 5" DP followed by 6 5/8" DP. Checked position of string with ROV, moved rig to correct spud position.
11:30		Tagged seabed at 1740m. Slacked off to 1743m and verified spud location with transducer on ROV.
19:00		Drilled 8 1/2" hole, logging LWD.
	*	Drilled with PDM, no string rotation. WOB 1-2 ton.
20:30		MWD tool did not transmit data. Investigated tool problem and were able to re-start tool.
23:59		Drilled 8 1/2" hole.

Daily report no : 4 **Date:** 2002-10-30

Midnight depth : 2207 m MD **Estimated PP:** sg **Mud weight:** 1.05 sg

Stop time		Description
17:00		Drilled 8 1/2" hole from 1877 m to 2207 m.
	*	Rotated the string with 20 RPM from 2000 m. Boulder / stringer at 2098 m.

DAILY REPORT ON WELL 6403/10-U-1

Daily report no : 4 **Date:** 2002-10-30

Midnight depth : 2207 m MD **Estimated PP:** sg **Mud weight:** 1.05 sg

Stop time		Description
18:00		Took samples with the ROV. Flowchecked the well. Pumped a 15 m3 hivis pill and circulated the hole clean.
18:30		Displaced the well to 1.30 sg mud.
21:00		Pulled out of the hole from 2207 m to 1440 m.
	*	Pumped slug at 1700 m.
21:30		Repaired broken hydraulic hose on the BX-elevator.
23:00		Continued to pull out of the hole from 1440 m to 300 m.
23:59		Changed to 5" equipment and continued to pull out of the hole from 300 m to 170 m with the bottom hole assembly.

Daily report no : 5 **Date:** 2002-10-31

Midnight depth : 2207 m MD **Estimated PP:** sg **Mud weight:** 1.05 sg

Stop time		Description
01:30		Pulled out of the hole with the bottom hole assembly from 170 m to 36 m.
02:00		Removed the radioactive sourses from the drill string.
03:00		Pulled out of the hole with the bottom hole assembly.
04:00		Repaired back-latch on the drawwork.
04:30		Pulled out with rest of the bottom hole assembly.
06:00		No activity on well 6403/10-U-1.
	*	Dumped the memory on the MWD tool. Rest of the activity will be on well 6403/10-1.

TIME DISTRIBUTION

Well: 6403/10-U-1 **PO:** 1 **Start date:** 1980-01-01 **Rig:** SCARABEO 5 **Depth:** 2207.0 **m MD**

All sections **Stop date:** 2003-06-07

Operations	Hours	%	Hours	%	Acc. total
DRILLING					
BHA HANDLING/TESTING	9.0	11.61			
TRIPPING IN OPEN HOLE	10.5	13.55			
DRILLING	30.0	38.71			
CIRC. AND COND. MUD/HOLE	1.5	1.94			
Sum.			51.0	65.81	51.0
FORMATION EVALUATION MWD					
BHA HANDLING/TESTING	0.5	0.65			
Sum.			0.5	0.65	51.5
DOWNTIME DRILLING					
EQUIPMENT FAILURE AND REPAIR	25.0	32.26			
OTHER	1.0	1.29			
Sum.			26.0	33.55	77.5
Reported time (100.0 % of well total 77.5 hours) :					77.5

Norsk Hydro

2003-06-07

HOLE DEVIATION

Well: 6403/10-U-1 **Reference point:** RKB ; 25.0 **m** ABOVE MSL

Waterdepth: 1719.0 **m** **Vertical to:** 1743.9 **m** **Total Depth:** 2207.0 **m MD**

Utm zone: 31 **Central Median:** 3° E **Horizontal datum:** ED50

Template Centre Coordinates, UTM: **North :** **m,** **East :** **m**

Wellhead Coordinates, UTM: **North :** 7103981.86 **m,** **East :** 500196.91 **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 North [m]	Coordinates East [m]	Vert. Sect [m]	Dogleg [D/30m]	Build [D/30m]	Turn [D/30m]
1744.00	0.00	0.00	MWD	3	1744.00	0.00	0.00	0.00	0.00	0.00	0.00
1758.47	1.24	220.98	MWD	3	1758.47	-0.12	-0.10	0.16	2.57	2.57	-288.22
1897.40	2.26	195.67	MWD	3	1897.33	-3.89	-1.83	4.30	0.27	0.22	-5.47
1930.21	2.61	192.14	MWD	3	1930.11	-5.24	-2.16	5.67	0.35	0.32	-3.23
1958.07	2.86	195.64	MWD	3	1957.94	-6.53	-2.48	6.99	0.32	0.27	3.77
1986.40	2.77	193.53	MWD	3	1986.24	-7.88	-2.83	8.37	0.15	-0.10	-2.23
2015.10	2.59	192.83	MWD	3	2014.91	-9.19	-3.14	9.71	0.19	-0.19	-0.73
2042.50	2.40	195.75	MWD	3	2042.28	-10.34	-3.43	10.90	0.25	-0.21	3.20
2099.56	2.33	195.42	MWD	3	2099.29	-12.61	-4.06	13.25	0.04	-0.04	-0.17
2157.25	2.13	197.20	MWD	3	2156.94	-14.76	-4.69	15.49	0.11	-0.10	0.93
2186.95	2.21	200.21	MWD	3	2186.62	-15.83	-5.05	16.62	0.14	0.08	3.04

BITRECORD FOR WELL 6403/10-U-1 PO: 1

Bit No	RR	Type	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
1		BIT	8.50	SMIT	HP21G	HA7470	217	13,13,13	0.389	2	2207	467	23.00	20.3	115/175	236000	0/60	1200/1800	70/135	- - - -		

Norsk Hydro 2003-06-07

BOTTOM HOLE ASSEMBLIES USED ON WELL 6403/10-U-1 PO: 1

BHA no. 1: No. / Element / OD(in) / Length(m) Depth In: 1741 m MD Out: 1768 m MD

1	HP21G			2	NEAR BIT STAB	8.375	1.90
3	CDR	6.75	5.78	4	STEEL STAB	8.375	1.47
5	MWD	6.75	8.27	6	LOGGING WHILE DRILLING TOOL	6.75	7.43
7	ADN	8.25	6.26	8	NON MAG. COLLAR	6.5	9.48
9	DRILL COLLAR STEEL	6.5	71.39	10	JAR	6.5	8.86
11	DRILL COLLAR STEEL	6.5	28.34	12	ACCELERATOR	6.5	9.54
13	DRILL COLLAR STEEL	6.5	9.44	14	HWDP	5.0	137.50
15	DART SUB	6.75	0.50				

Total Length: 306.16 m

BHA no. 2: No. / Element / OD(in) / Length(m) Depth In: 1740 m MD Out: 2207 m MD

1	HP21G	8.5	0.26	2	DOWNHOLE MOTOR	8.375	7.63
3	FLOAT SUB	7.0	0.86	4	NON MAG. STAB	8.375	1.51
5	CDR	7.5	5.82	6	MWD	6.875	8.24
7	LOGGING WHILE DRILLING TOOL	7.44	5.54	8	LOGGING WHILE DRILLING TOOL	8.25	6.26
9	NON MAG. COLLAR	6.5	9.48	10	DRILL COLLAR STEEL	6.5	71.39
11	JAR	6.5	8.86	12	DRILL COLLAR STEEL	6.5	37.78
13	HWDP	5.0	137.50	14	DART SUB	6.125	0.50
15	DRILL PIPE	5.0	198.93	16	X-OVER	8.0	1.02

Total Length: 501.58 m

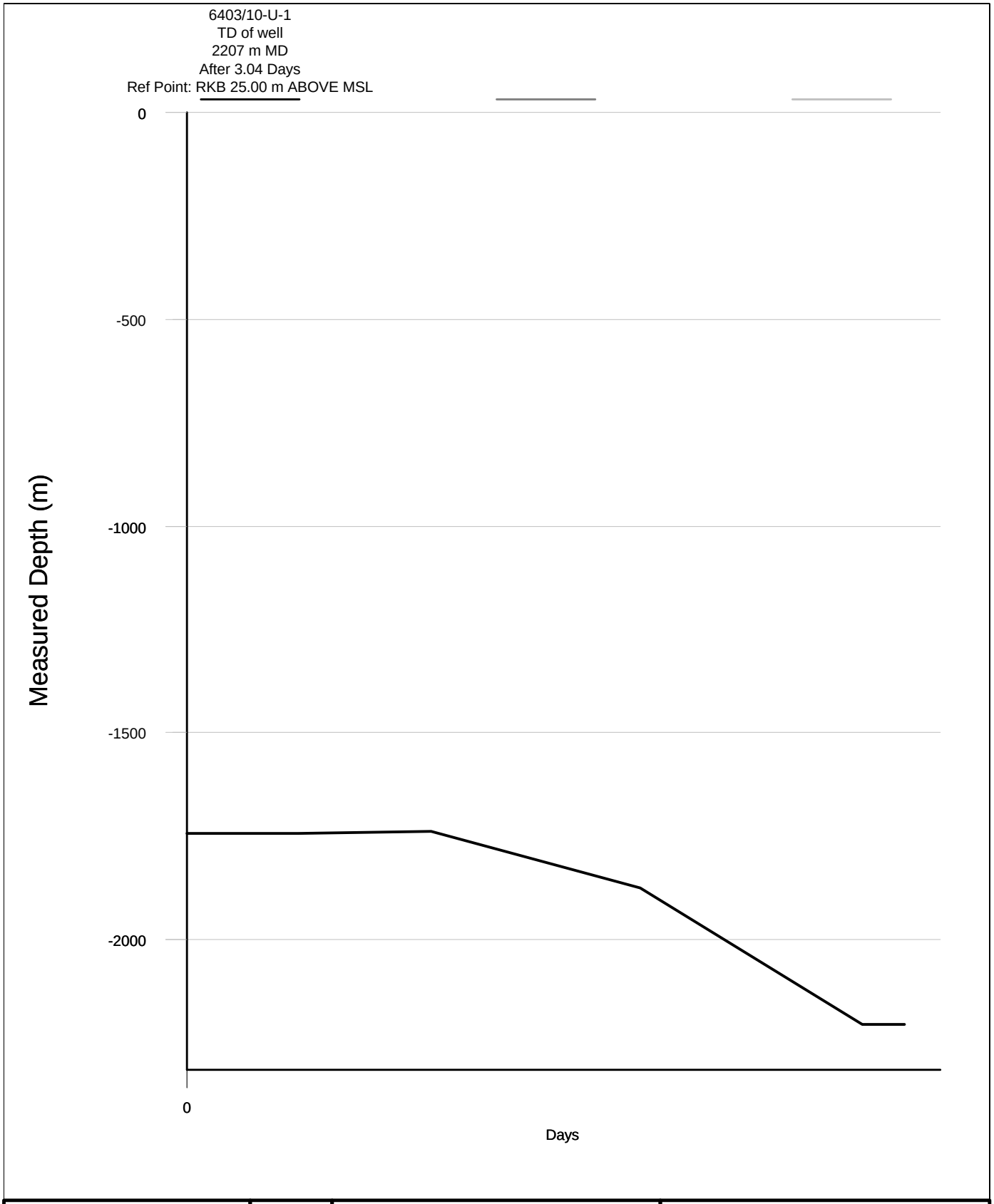

Figure 3		MD Drilling Curve	**HYDRO**

2003-06-07

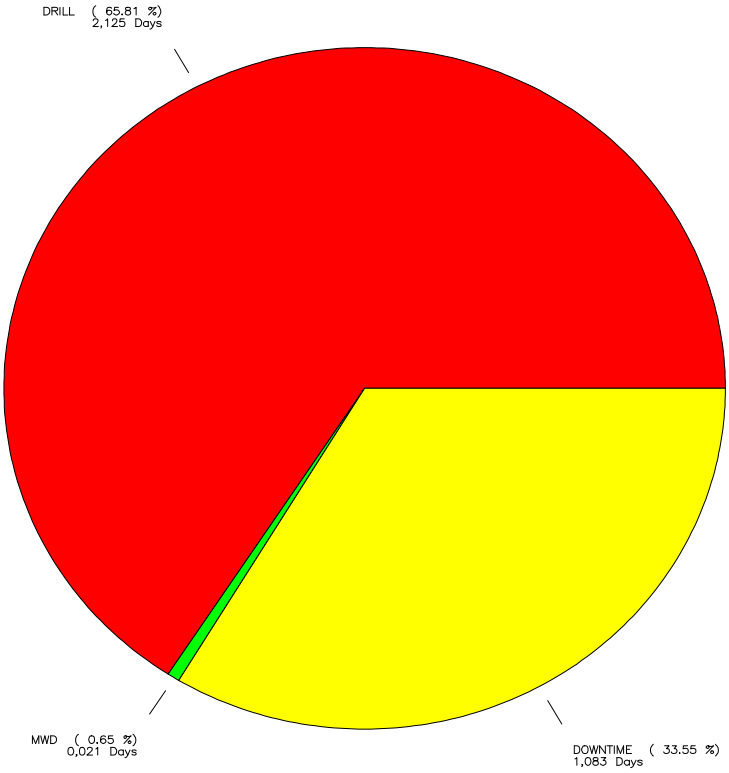

Figure 4		Time Distribution 6403/10-U-1	**HYDRO**