Olje & Energi
Drift
Deepsea Trym Rig team

HYDRO

Oljedirektoratet
Postboks 600
4003 Stavanger

Vår dato: 14 DES 2005
Vår ref.: NH/OD-B-4522/05

Final well report, well 35/11-13 Astero

Vedlagt er Final Well Report for brønn 35/11-13 Astero i PDF format

Brønn 35/11-13 er permanent plugget tilbake og Deepsea Trym forlot lokasjonen den 29. mai 2005.

Med hilsen
for Norsk Hydro Produksjon a.s

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Oil & Energy

HYDRO

Well 35/11-13 Astero

Final Well Report

November 2005

Partners:

STATOIL

IDEMITSU

Gaz de France

revus energy

CONFIDENTIAL

REPORT
Hydro Oil & Energy

Title:	**Final Well Report, well 35/11-13**	No.	:	NH/OD-B-4522/05
		Rev.	:	Rev 1
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		Date	:	2005-12-13

Astero

Licence **PL-090 B**

Drilling permit **L-1092**

Completion Date **29.05.2005**

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WELL SUMMARY

PL 090B Licence owners

Hydro ASA(operator)	25 %
Revus Energy	25%
Statoil ASA	20 %
Idemitsu	15 %
Gaz de France	15 %

Norsk Hydro ASA drilled the well on behalf of the group, from March to May 2005.

All depths in this report have reference to RKB unless otherwise stated.

Summary of Well Data

	Geo: 61° 09' 44.05" N 03° 32' 21.36" E UTM: 6 781 139.0 mN 529 019.0 mE ED 50, UTM Zone31, CM 31°E
OPERATOR: RIG: CONTRACTOR:	Norsk Hydro ASA Deepsea Trym Odfjell Drilling
KB ELEVATION(to MSL): WATER DEPTH (MSL):	25m 361.7 m
START OF OPERATION: WELL SPUDDED: REACHED TD: OFF LOCATION: STATUS: FORMATION AT TD:	16.03.2005 18.03.2005 29.04.2005 29.05.2005 Plugged and abandoned Heather Formation
TD DRILLER(mRKB): TD LOGGER(mRKB):	3291.5m MD 3295.0m MD
Drilling depths (MD):	36" 386 m to 474 m 26" 474 m to 701 m 17 ½" 701 m to 1757 m 12 ¼" 1757 m to 2932 m 8 ½" 2932 m to 3291.5m
Casing / Liner depths:	30" 385.0 m to 471.5 m 20" 384.1 m to 694.6 m 13 3/8" 385.0 m to 1751.3 m 9 5/8" 385.5 m to 2924.4 m 7" liner 2825.5 to 3290.5 m

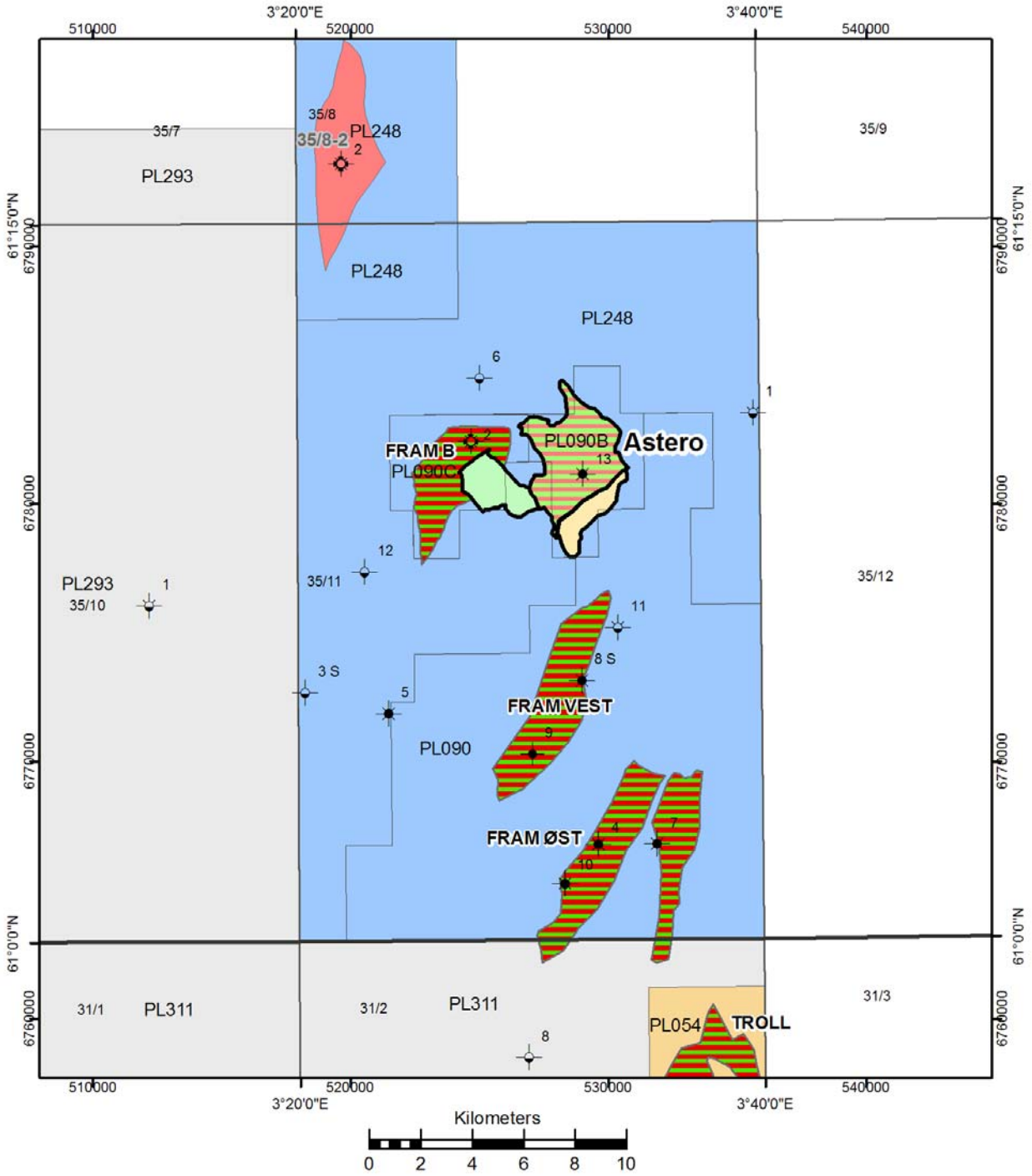
OBJECTIVES AND RESULTS

Objectives

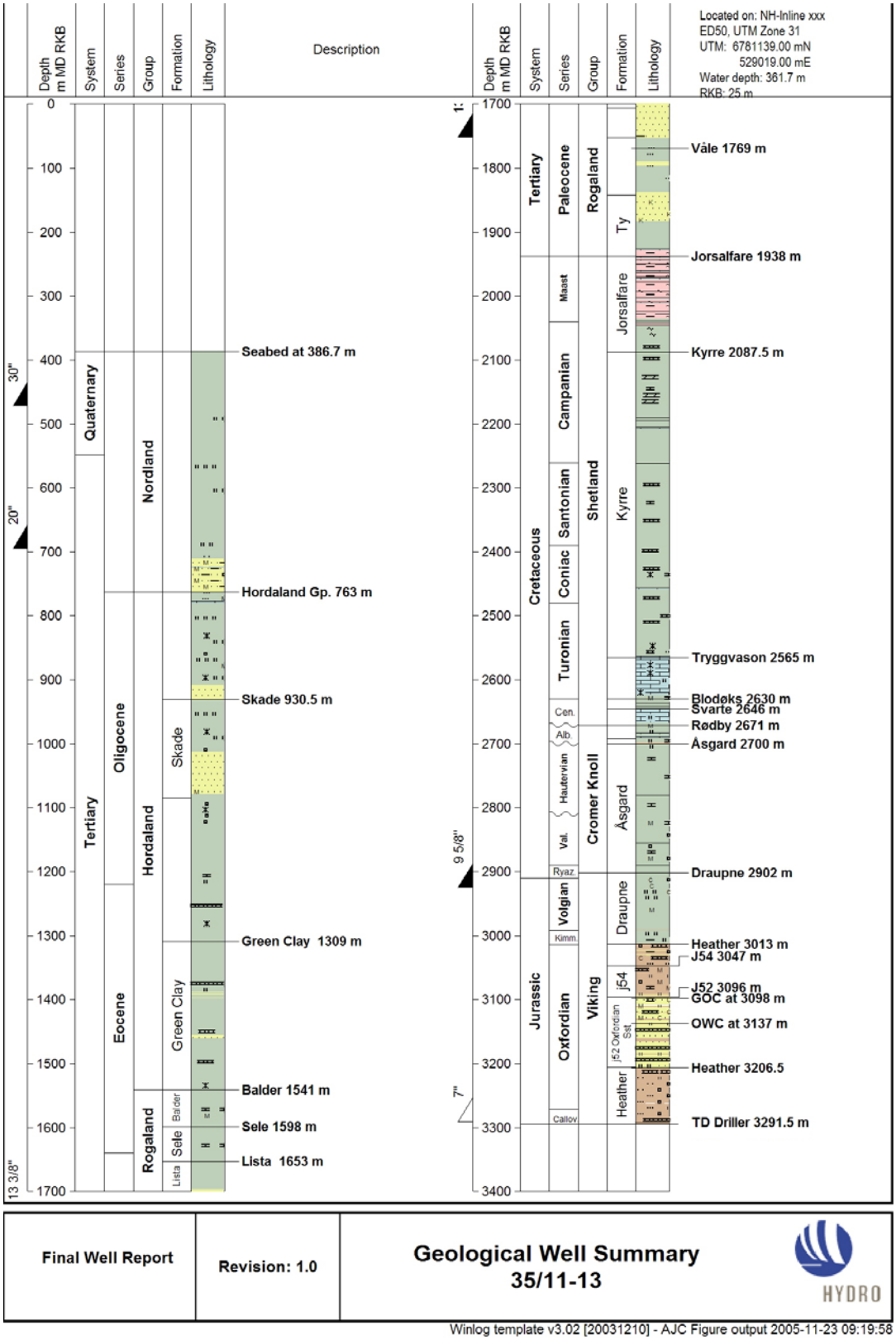
Well 35/11-13 is an exploration well, which tested the Astero prospect in PL090B. The Astero prospect is located north of the Fram West field. The target of the well was Middle Oxfordian Turbidite derived from the Sognefjord delta in the East.

The primary objectives were to test the presence- and type of hydrocarbons in the Oxfordian Turbidite sands of the Astero prospect in northern part of the 35/11-block to the north of the Fram Vest field.
The chosen location was designed to test the Astero prospect within structural closure and stratigraphic trap, close to the top of the structure, in an area where there was good HC indication with thick J52 reservoir sand thickness, leaving acceptable up dip volumes.

Location map



Geological summary



Results

The well was spudded 18th March 2005 and reached a total depth of 3291.5 m MD RKB in the Heather Fm.29th April 2005.

The well proved commercial hydrocarbons, and good oil shows were observed in Oxfordian sands down to 3131m. The Oxfordian reservoir was encountered within the defined reservoir interval. From MDT pressure test results, a gas oil contact was inferred at 3098m TVD RKB and an oil water contact (FWL) at 3137m TVD RKB.

Two cores were taken and comprised mainly sandstones with occasional thin siltstones.

The reservoir was logged on wireline and a drill stem test was performed.

After testing, the well was permanently plugged and abandoned on the 29th May 2005.

SECTION A: GEOLOGY, GEOPHYSICS AND PETROPHYSICS.

1 DATA ACQUISITION

1.1 Lithostratigraphy.

This summary is compiled predominantly from ditch cuttings.

Wireline and MWD logs as well as biostratigraphic information, 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 386.7 m to 701 m, before setting 30" casing at 471.5 m. For details on sampling descriptions see attached Composite log.
Geological interpretations of the lithostratigraphical observations are found in the Discovery Evaluation Report (Hydro 2005).

1.1.1 Nordland Group (386 – 763 m MD)

Undifferentiated Nordland (386 – 763 m MD)

386-701 m MD: Sandy and silty Claystones
Returns to seabed, interpretation based on MWD logs and drilling parameters.

701-710 m MD: Claystones
Clst : m dk gry, sft, amor stky I.P.

710-763 m MD: Sandstones with Traces of Claystones
Sst : clr-trnsl, occ mky wh-yelsh gry, Qtz, f-vcrs, pred m-crs, mod-pr srt, sbrndd-rndd, lse, Tr Rk Frag, blk-dk gry, grsh brn
Clst : dk gry, sft, amor; also brnsh blk, frm-sft, carb

1.1.2 Hordaland Group (763 – 1541 m MD)

Undifferentiated Hordaland (763 – 908 m MD)

763-800 m MD: Claystones with Traces of Sandstones

Clst : bcm pred olv gry-dk yel brn, dk gn gry, occ brn gry, r dsky gn, v sft, stky, solb, amor, pt sli calc, loc abdt gn blk Glauc, r micromic.

Sst : clr-trnsl, occ mky wh-yelsh gry, Qtz, f-vcrs, pred m-crs, mod-pr srt, sbrndd-rndd, lse, Tr Rk Frag, blk-dk gry, grsh brn

800-908 m MD: Claystones

Clst : olv gry, sft, sli stky, amor, solb, non calc, v slty, Tr micromic, loc Tr Glauc, r loc Tr Pyr

908-932 m MD: Sandstones

Sst : clr trnsl-mlky Qtz, r rose Qtz, f-crs, r v crs, ang-sbang, pr srt, tr Glauc, tr C, r mica

Skade Formation (930 – 1084.5 m MD)

930-1012 m MD: Claystones

Clst : olv gry, blky-sbblky, sft-frm, non calc, sli slty, r glauc, r micropyr, r carb mat

1012-1084.5 m MD: Sandstones

Sst : clr-trnsl Qtz, mnr rose & yel brn Qtz, oc Ig lit Frag, f- v crs, pred m, com crs, occ v crs, r Gran <3mm, ang-rnd, pred sbrnd, occ shattered, occ Pol, sbspher- sbelong, pr srt, lse, gd Tr Mic pred Biot, Tr Glauc.

Undifferentiated Hordaland (1084.5– 1309 m MD)

1084.5-1135 m MD: Claystones with rare Limestones

Clst : olv gry, mnr dk gn gry + dsky gn, sft, occ frm-mod hd, stky, occ fri, amor, pred solb, non calc, occ sli slty, loc w/ abdt Glauc, r micromic, loc Tr Pyr.

Ls : v pl or, sft-frm, amor, v arg grad Clst, pt glauc.

1135-1152 m MD: Claystones

Clst : bcm olv gry-olv blk, mnr dk gn gry + dsky gn, sft, occ frm-mod hd, stky, occ fri, amor, pred solb, non calc, pt sli slty, loc w/ abdt Glauc, r micromic, loc Tr Pyr.

1152-1192 m MD: Claystones

Clst : olv gry-olv blk, occ dusky yelsh brn, frm, stky, sbblky, amor, pred solb, non calc, pt sli slty, loc w/ abdt Glauc, r micromic, r micropyr.

1192-1250 m MD: Claystones with rare Limestones

Clst : olv gry-olv blk, occ dusky yelsh brn, frm, stky, sbblky, amor, pred solb, non calc, pt sli slty, loc w/ abdt Glauc, r micromic, R micropyr, r sdy.

Ls : dusky yelsh brn, blky, hd

1250-1309 m MD: Claystones with rare Limestones

Clst : olv gry-olv blk-dsky yel brn, sft-frm, plas-fri, amor, non calc, sli slty, Tr micromic, r Glauc, loc r Tr Pyr

Ls : lt olv gry-pl yel brn, frm-mod hd, fri-sft, sbblky, sli arg, crpxln.

Green Clay (1309 – 1541 m MD)

1309-1390 m MD: Claystones with rare Limestones

Clst : dk gn gry, Tr dsky yel brn, frm, fri, sbblky, non calc, slty, Tr micromic, r Glauc, loc r Pyr.

Ls : lt olv gry-pl yel brn, frm-mod hd, fri-sft, sbblky, sli arg, crpxln.

1390-1400 m MD: Sandstones

Sst : clr-trnsl Qtz, f-m, subang-sbrnd, spher, wl srt, lse, loc Tr fri Agg w/ lt gry slty/arg Mtrx, non calc, n.v.p. n/s.

1400-1456 m MD: Claystones

Clst : dk gn gry, tr-mnr olv gry, frm, fri, sbblky, non calc, slty, Tr micromic, r Glauc, loc r Pyr.

1456-1500 m MD: Claystones with rare Sandstones and Limestones

Clst : dk gn gry, alt olv gry-olv blk-brn blk, frm, fri, sbblky, non calc, sli-mod slty, Tr micromic, r Glauc, loc r Pyr.

Sst : clr-trnsl Qtz, f-crs, pred m, ang-sbrnd, sbspher, pr srt, lse, Tr Mic.

Ls : pl yel brn, hd, sft, brit, fri, sli arg, crpxln.

1500-1541 m MD: Claystones

Clst : bcm pred mod brn, mnr dk gn gry, Tr olv gry-olv blk-brn blk, frm, fri, sbblky, non-occ mod calc, sli-mod slty, Tr micromic, loc r Pyr.

1.1.3 Rogaland Group (1541 – 1938 m MD)

Balder Formation (1541 – 1598 m MD)

1541-1598 m MD: Claystones and Tuff
Clst : varicol dk gnsh gry-m dk gry, r mod brn, blky-sbblky, frm, fri, I.P. mod calc, r micropyr, r micromic, r Glauc, sli slty
Tf : lt gry-m gry, sft-frm, blky-sbblky, blk spec, calc

Sele Formation (1598– 1653 m MD)

16598-1653 m MD: Claystones
Clst : grysh blk-dk gry, dk gnsh gry, frm-mod hd, noncalc, r micromic, r micropyr, r pyr nod, I.P. sli slty

Lista Formation (1653 – 1769 m MD)

1653-1697 m MD: Claystones
Clst : grysh blk-dk gry, dk gnsh gry, frm-mod hd, noncalc, r micromic, r micropyr, r pyr nod, I.P. sli slty

Heimdal Member (1697 – 1752 m MD)

1697-1735 m MD: Sandstones
Sst : clr-trnsl Qtz, f-m-loc crs, r v crs, subang-sbrnd, pred sbang, sbspher, pr-loc wl srt, lse, r mic, loc r Pyr.

1735-1752 m MD: Argillaceous Sandstones
Sst : m-dk gry, lt olv gry, dk gn gry, clr-trnsl Qtz, pred f, occ m-crs, sbang-sbrnd, sbspher, mod srt, sft-frm, lse-fri, non calc, v arg Mtrx grad Clst w/ fltg Sd, r mic, loc glauc, v r Pyr, n.v.p., n/s.

Undifferentiated Lista Formation (1752 – 1769 m MD)
1757-1769 m MD: Claystones
Clst : m-dk gry, dk gnsh gry, frm, non calc, r micromic, r micropyr, sdy

Våle Formation (1769 m - 1938 m MD)
1769-1938 m MD: Claystones and Sandstones
Clst : m-dk gry, dk gnsh gry, frm, non calc, r micromic, r micropyr, sdy
Sst : m-lt olv gry, clr-trnsl Qtz, pred f, occ m-crs, sbang-sbrnd, sbspher, mod srt, sft-frm, lse-fri, non calc, v arg, r mic, Tr Glauc, n.v.p., n/s.

Ty Member (1842 – 1929 m MD)

1838-1883 m MD: Sandstones

Sst : v lt gry, clr trnsl Qtz, f-m, r crs, sbang -sbrnd, mod srt, sft, pred lse Qtz grns, r calc cmt, occ Kao mtx, tr Glauc nod, r Pyr, n.v.p., n/s

1.1.4 Shetland Group (1938 – 2671 m MD)

Jorsalfare Formation (1938 – 2087.5 m MD)

1927-2040m MD: Marl with Limestone stringers

Mrl : lt gry-m gry, dk gry I/P, sft-frm, amor-sbblky, arg grd to mrly clst, slily Glauc in slty prts, Pyr I/P

Ls : wh-off wh, prtly lt gry, sft-frm, hd I/P, amor-blky, pred micr, occ slily Glauc, Tr Pyr

2040-2087.5 m MD: Claystones and Marls with Limestone stringers

Clst : gn gry-lt olv gry-lt bl gry, sft-frm, sbblky, calc-v calc, occ glauc, r slty

Mrl : mod brn-pl rd brn, sft-frm, sbblky, sli slty-v f sdy

Ls : wh-off wh, prtly lt gry, sft-frm, hd I/P, amor-blky, pred micr, occ slily Glauc, Tr Pyr

Kyrre Formation (2087.5 – 2565 m MD)

2087.5-2120 m MD: Claystones with Limestone stringers

Clst : gn gry-lt olv gry-lt bl gry, sft-frm, sbblky, calc-v calc, occ glauc, r slty

Ls : wh-off wh, prtly lt gry, sft-frm, hd I/P, amor-blky, pred micr, occ slily Glauc, Tr Pyr

2120-2270 m MD: Claystones with stringers of Dolomitic Limestone

Clst : pred m dk gry, prtly m gry and m lt gry, sft-frm, sbblky, mod-v calc, micromica, r Glauc

Ls : dolomitic, pa-dk yel brn, yel gry in less dol prts, hd, blky, crptoxln, prtly wh-off wh, frm, sbblky, micr, Glauc.

2270-2330 m MD: Claystone with Limestone stringers and Traces of Dolomites and Sandstones

Clst: m gry-gn gry, sft-frm, sbblky, calc-v calc, Tr Glauc, pred sli slty, r micropyr

Ls: wh, occ dk gn yel spt, frm, blky, occ glauc, microxln

Dol: v pl org-gry org, frm, blky, occ v f sdy

Sst: gn gry, pl yel brn, vlr trnsl Qtz, f, sbang-sbrndd, wl srt, sft-frm, occ glauc, calc cmt, n.v.p, n/s

2330-2540 m MD: Claystones with Limestone and Dolomite stringers

Clst: m gry-gn gry, sft-frm, sbblky, non-sli calc, Tr Glauc, pred sli slty, r micropyr

Ls: wh-v pl org, sft-frm, sbblky, occ v f sdy, r Tr Micropyr

Dol: lt brn gry-mod brn, hd-mod hd, blky, microxln

2540-2565 m MD: Claystones with sandy Glauconitic Limestone
Clst: m lt gry-olv gry, sft-frm, slily stky, sbblky, calc-v calc, r micropyr, r micromica
Ls: Glauc and sdy, arg I/P, wh-off wh w/ gn Glauc spks, sft-frm
Sst: clr-lt gn trnsl Qtz, f-m, v crs I/P, sbang-sbrnd, pr srtd, fri-mod hd, prtly as lse grns, prtly calc cmt, Glauc.

Tryggvason Formation (2565 – 2630 m MD)

2565-2590 m MD: Limestone, sandy and Glauconitic in parts
Ls: off wh-yel gry, mod hd, blky, slily-v Glauc I/P, microxln-micr, sdy I/P
Sst: Minor amounts, clr-lt gn trnsl Qtz, f-m, v crs I/P, sbang-sbrnd, pr srtd, fri-mod hd, prtly as lse grns, prtly calc cmt, Glauc.

2590-2620 m MD: Limestone, very Silty in parts
Ls: off wh-yel gry-lt gry, mod hd, blky, slily-v Glauc I/P, microxln-micr, v slty grd to sltst, sdy I/P
Sltst: lt-m gry, frm-mod hd, sbblky, v calc grd to slty Ls, prtly v sdy grd to calc sst, arg.

2625.5-2646 m MD: Claystone with Limestone stringers
Clst: dk gry-gry blk-olv blk, frm-mod hd, blky, plty I/P, calc, micromica
Ls: off wh-lt gry, frm-mod hd, blky, slily Glauc, micr, arg, sdy I/P

Svarte Formation (2646 – 2671 m MD)

2646-2671 m MD: Limestone
Ls: Mainly lt gry, prtly off wh, blky, frm-mod hd, arg, v slty

Cromer Knoll Group (2671 – 2902 m MD)

Rødby Formation (2671 – 2700 m MD)

2671- 2700 m MD: Claystone with Limestone stringers in lower part
Clst: m gry, occ m dk gry, frm, blky, v calc, r slty, Tr Micropyr, Tr Micromic
Ls: v lt gry-lt gry, frm, blky, arg, sli slty

Åsgard Formation (2700 – 2902 m MD)

2700-2712 m MD: Siltstones and Claystones
Sltst: m gry-m dk gry, sft-frm, sbblky, v Micromic, Tr Micropyr, sli calc
Clst: mod rd brn, frm, sbblky, sli calc-calc, r Micromic, sli slty

2712-2720 m MD: Claystones
Clst: mod rd brn A/A down to about 2720m, frm, sbblky, sli calc-calc, r Micromic, sli slty

2720-2835 m MD: Claystones, occasionally with Limestone stringers
Clst: lt gry-lt olv gry, sft, stky, sbblky, v calc, r Pyr, sli slty
Ls: v lt gry-lt gry, frm, blky, occ arg, occ sli slty, Glauc I/P
Dol/Ls: v lt gry-lt gry, prtly m-lt brn, dolomitic, blky, hd, crpxln.

2835-2865 m MD: Claystone
Clst: grysh brn - pl brn, frm, sbblky, slily slty, calc - v calc, grdg Mrl I.P., slily micromic, Tr Ls & Pyr nod

2865-2902 m MD: Claystone
Clst: m lt gry - lt gry - m gry, occ m dk gry, sft - frm, sbblky, calc - v calc, micromic, sl Micropyr

Viking Group (2902 – 3291.5 m MD)

Draupne Formation (2902 – 3013 m MD)

2902-3013 m MD: Claystones
Clst: olv blk - occ brnsh blk, frm, sbblky, sl lam / sbfis, slty, spk carb Mat, micromic, micropyr, non calc
Tr Sst: clr - lt yel trnsl Qtz, m, mod - wl srt, sbang - rndd, lse

Heather Formation (2977 – 3291.5 m MD)

2977-3093.5 m MD: Siltstone with thin calcite cemented sandstone beds
Sst: off wh - lt gry, clr Qtz, vf - m, pred f, sbang - sbrndd, mod srt, mod hd - hd, pred sil cmt, I.P. calc cmt, Kaol Mtrx, arg I.P., Mic, micropyr, no - v pr vis por, slily carb, no shows
Shows: at 2998 m MD: r - Tr dull - mod bri yel dir fluor, v slw strmg bl wh cut fluor, mky wh - bl wh res fluor, no vis res
Sltst: at 3012m: dk gry - gry blk, olv blk, frm, sbblky, slily sbfis, micromic, micropyr, sl carb, arg grdg slty Clst, non calc.
Sst: at 3030m: m gry - brnsh gry, clr - trnsl Qtz, f - crs, pred m, wl srt, calc cmt, Tr sil cmt, spk/strk carb Mat, slty, Mic, no - v pr vis por, no shows
Sltst: at 3050m: dk gry - grysh blk, frm - occ mod hd, sbblky - sbfis, micromic, micropyr, non - slily calc, vf sdy I.P.

Oxfordian Sandstones (3095.5 – 3206m MD)

3095.5-3206 m MD: Sandstone with thin siltstones
Sst: pl-dk yel brn, clr-trnsl-occ smky Qtz, f-crs, pred m, ang-sbrnd, sbspher-loc sb elong, pr-mod srt, mod hd, fri, blky, non calc, slty Mtrx, loc r wh arg Mtrx, Mic, loc carb, no-fr vis por.

Shows: 3100-3131m Gd pet od, 90-50% bri yel-bl wh spkld dir Fluor, slo strmg bl wh-yel fluor cut, no vis cut, strng bri yel-bl wh fluor Res, no vis Res.

Sltst: dk gry-olv blk, hd. brit, sbblky-plty, non calc, r-abdt carb, com micromic, loc v f sdy.

Heather Formation (3206 – 3291.5 m MD)

3206-3291.5 m MD: Siltstone with thin limestones
Sltst: olv blk -dk gry-grysh blk, frm-mod hd, fri, sbblky-amor-loc sbfis, non-loc mod calc, pt vf sdy, pt arg, micromic, carb. loc micropyr.
Ls: pl yel brn, m lt gry - lt brnsh gry, frm-mod hd sbblky, pt sdy, pt arg, crpxln.

1.2 Hydrocarbon shows description table.

INTERVAL (mRKB)	SOURCE	LITHOLOGY	SHOWS DESCRIPTION
3903.5-3100	Drill cuttings	Sandstone	r - Tr dull - mod bri yel dir fluor, v slw strmg bl wh cut fluor, mky wh - bl wh res fluor, no vis res
3100-3131	Cores	Sandstone	Gd pet od, 90-50% bri yel-bl wh spkld dir Fluor, slo strmg bl wh-yel fluor cut, no vis cut, strng bri yel-bl wh fluor Res, no vis Res.

1.3 Logging: MWD / LWD / Wireline

Run	Log type	Interval	Comments:
1	DIR– ECD	386 - 474	36” hole
2	DIR– ECD	474 - 476	26” hole
3	DIR - GR – RES – ECD	476 - 701	9 7/8” hole (pilot)
4	DIR - GR – RES – ECD	476 - 701	26” hole
5	DIR - GR – RES - ECD	701 - 1152	17 ½” hole
6	DIR – GR – RES - ECD	1152 - 1757	17 ½” hole
7	DIR – GR – RES – ECD	1757-1782	12 ¼” hole
8	DIR – GR – RES – ECD	1782-1945	12 ¼” hole
9	DIR – GR – RES – ECD	1945-2813	12 ¼” hole
10	DIR – GR – RES - ECD	2813-2932	12 ¼” hole
11	DIR – GR – RES - ECD	2932-2950	8 ½” hole
12	DIR – GR – RES - ECD	2950-3100	8 ½” hole
13	DIR – GR – RES - ECD	3100-3291.5	8 ½” hole
1A	SP-DSI-HRLA-PEX(TLD-MCFL-HGNS)-ECS	2925.2-3268.2	8 ½” hole
1A	MDT-GR	3097-3205.5	8 ½” hole
1A	VSP-GR	1611.5-3290	8 ½” hole
1B	MDT-GR	3097-3157.5	8 ½” hole
1A	MSCT-GR	2960-3151	8 ½” hole

1.4 Sidewall coring table.

Core No.:	Depth	Description	Formation
1	3151.0	Sst: lt gry, clr-trnsl Qtz, f-m-r crs, pred m-f, ang-sbrnd, sb spher, pr-mod srt, mod hd, brit-fri, blky, non calc, slty Mtrx, Tr Mic, r carb, r	Oxfordian Sst
2	3150.0	Sst: as at 3151m	Oxfordian Sst
3	3149.0	Aborted	
4	3148.0	Sst: lt gry, clr-trnsl-mnr smky Qtz, f-v crs, pred crs, com f, ang-sbrnd, sb spher, pr srt, mod hd, brit-fri, blky, non calc, slty Mtrx, Tr Mic, r carb, r vis por. **No Pet od, no dir Fluor.**	Oxfordian Sst
5	3147.0	Sst: as 3148 m	Oxfordian Sst
6	3146.0	Sst: as 3148 m	Oxfordian Sst
7	3145.0	Sst: as 3148 m	Oxfordian Sst
8	3144.0	Sst: pred m - crs, else as 3148m	Oxfordian Sst
9	3143,0	Sst: as 3148m, slily micropyr	Oxfordian Sst
10	3142,0	Sst: slty, m lt gry, vf - m, pred f, mod srt, intrlam/flsr w/slty & carb lam, mic, grdg sdy Sltst	Oxfordian Sst
11	3141,0	Sst: f - crs, pred m, mod - wl srt, else as 3148m	Oxfordian Sst
12	3140,0	Sst: as 3148 m	Oxfordian Sst
13	3103,0	Sst: m lt gry, clr - trnsl - smky gry Qtz, f - v crs, pred m -crs, mod srt, mod hd, fri, non calc, slty/arg Mtrx, Tr Mic, Tr carb Mat, mod vis por. No Pet od, spty bri yel wh dir fluor, mod bri yel wh res ring, no vis res	Oxfordian Sst
14	3102,0	Sst: m lt gry, f -crs, pred m, mod - wl srt, Fnt Pet od, else as 3103m	Oxfordian Sst
15	3101,0	Sst: f -crs, pred m -crs, mod srt, else a.a.	Oxfordian Sst
16	3100,0	Sst: as 3102m	Oxfordian Sst
17	3099,0	Sst: as 3101m	Oxfordian Sst
18	3098,0	Sst: m lt gry, clr - trnsl occ smky Qtz Gr, mod hd, fri, f - m, pred m, wl srt, slty Mtrx, non calc, TR mic, Tr carb Mat Shows a.a.	Oxfordian Sst
19	3097.5	Sst: as 3098 m	Oxfordian Sst
20	3097,0	Sst: slty lam, m lt gry - dk gry (slty lam), vf - f, pred f, mic, sl carb Shows: a.a in Sst lam	Oxfordian Sst
21	3096,0	Sltst: dk gry, mod hd, vf sdy, lam / sh, mic, micropyr, carb, non calc	Heather Fm

Core No.:	Depth	Description	Formation
22	3095.5	Sltst: dk gry, mod hd, sh, v mic, micropyr, sl carb, non calc	Heather Fm
23	3094.5	Sst: m lt gry, clr - trnsl Qtz, vf - f, wl srt, sbrndd, mod hd, arg / slty Mtrx, sl mic, sl carb Shows: wk spty yel wh dir fluor	Heather Fm
24	3093.5	Sst: as 3094.5m	Heather Fm
25	3092.7	Sltst: vf sdy, dk gry, mod hd, mic, sl carb, grdg slty Sst	Heather Fm
26	3091.5	Sst: olv gry, No shows, else as 3094.5m	Heather Fm
27	3085,0	Sltst: m dkgry - grysh blk, mod hd, lam, vf sdy, mic, carb, micropyr. Shows: no shows	Heather Fm
28	3080.5	Sltst: grysh blk, sh, a.a.	Heather Fm
29	3073.5	Sltst: as 3080.5m	Heather Fm
30	3065,0	Sltst: as 3080.5m	Heather Fm
31	3060,0	Sltst: hd, v calc, grdg slty / arg Ls	Heather Fm
32	3055.5	Sltst: grysh blk, mod hd, sh, v mic, carb, non calc	Heather Fm
33	3052,0	Sltst: slily calc, else a.a.	Heather Fm
34	3050,0	Sltst: as 3052 m	Heather Fm
35	3048,0	Sltst: as 3052 m	Heather Fm
36	3047,0	Sltst: as 3052 m	Heather Fm
37	3046,0	Lost in hole	
38	3031.5	Sltst: vf sdy, else as 3052m	Heather Fm
39	3026,0	Lost in hole	
40	3014.5	Sltst: as 3055.5m	Heather Fm
41	3004.5	Sltst: as 3055.5m, grdg Clst/Sh	Heather Fm
42	2996.5	Lost in hole	
43	2985,0	Clst: rysh blk, frm - mod hd, sh, mic, carb, slily slty, non calc	Heather Fm
44	2975,0	Clst: grysh blk, frm - mod hd, sh, v mic, carb	Draupne Fm
45	2960,0	Clst: as 2975m	Draupne Fm

1.5 Conventional Coring table.

Core no.	Top [m MD RKB]	Bottom [m MD RKB]	Recovery (%)	Depth shift (m)*	Formations
1 Rec	3100,00 3100,00	3115,00 3114,40	96,0	+3.5	Oxfordian j52
2 Rec	3115,00 3115,00	3142,00 3134,30	71,5	+3.75 – +4.5	Oxfordian j52
*Average dynamically depth shift applied to each core, there is no overlap in depth between the cores.					

2 GEOLOGICAL AND GEOPHYSICAL EVALUATION

2.1 Geological Results

2.1.1 Structural setting

The Astero is situated within the regional setting of the Eastern flank of the Viking graben. It is located within a NE-SW striking graben, which developed during Bathonian-Volgian rifting. The overall shape of the graben is modified by intra-graben faults with a predominant NE-SW orientation.

The present hydrocarbon trap is filled to the spill point mapped on the mfsJ52 surface (Fig. 2.4.2). The hydrocarbon reservoir on Astero comprises high-density turbidites, fed from the Fram West terrace in the east into the Astero sag basin. Deposition occurred contemporaneously with the main period of rifting in the Viking Graben, although the deposition of the J52 reservoir sequence seems to represent an episode of relative tectonic quiescence (Fig. 2.4.3).

2.1.2 Reservoir description

The reservoir of the Astero structure comprises high-density turbidites of middle Oxfordian age. The presence of thin bedded, dilute turbidites in the overlying strata suggests a continuation of turbidite deposition until the early Volgian and suggests upside potentials in undrilled parts of the structure. The penetrated reservoir section represents the J52 sequence (Fig. 2.4.3). Four packages of stacked and amalgamated high-density turbidites are separated by 3 to 7 m thick mudstone dominated intervals containing a few dispersed thin bedded turbidite beds. The latter are likely to represent abandonment phases of the depositional system and thus to form laterally extensive obstacles to vertical fluid flow during production. This risk remains, even if pressure data indicate static vertical communication between the four sand-dominated sections, and is the reason for the reservoir zonation described below.
The reservoir quality of the sandstones is assumed to be good, with average porosities of 16% and average permeabilities of 100 mD.

Depositional model
The j52 sequence has been interpreted as syn-rift turbidite fans, partly confined by the faults, which bound the Astero sag basin (Fig. 2.4.4). Mudstones predominate the overlying J54-sequence in all correlated wells, with only sporadic intercalations of thin-bedded, often carbonate cemented sandstones. The turbidites of the j54 sequence probably represent channel/overbank deposits rather than stacked lobes, as interpreted for J52

Reservoir zones
The well correlation shown in Fig. 2.4.5 forms the basis for the reservoir zonation used in geological 3D modelling. The zones are informally assigned the codes R1 to R7 from the mfsJ52 down to the sequence Boundary J52. They are alternately sandstone- and mudstone-dominated, the

mudstone dominated zones R2, R4 and R6 representing potential barriers for vertical fluid flow in the reservoir.

Localized heterogeneities such as erosion relics of thin mudstone interbeds and carbonate cemented nodules and layers are expected to occur throughout the sandstone-dominated reservoir zones R1, R3, R5 and R7. The mudstone-dominated intervals on the other hand are expected to contain thin turbidite sandstone beds of limited lateral extension. They are also likely to be interrupted by erosion scours in the bases of the overlying sandstone turbidites. The proportion of such heterogeneities shows a remarkable upward decrease from the lowermost (R7) to the uppermost (R1) sandstone package. This cleaning and coarsening upward sequence was predicted prior to the drilling of well 35/11-13, based on the study of acoustic impedance data. This again means that the well showed that acoustic impedance data might be a valuable indicator of reservoir quality in the Astero structure.

The J52 sequence of well 35/11-6 shows a thinner, slightly condensed development, compared to the contemporaneous section in the 13-well. However, while the lower three sandstone packages all thin considerably from 35/11-13 to 35/11-6, the uppermost zone shows the opposite trend. This is assumed to be due to compensational stacking and a generally progradational development, with the deposited turbidites gradually filling in and smoothing out sea floor topography, enabling subsequent suspension currents to travel further out into the depositional basin (Fig. 2.4.5).

2.2 VSP

A Zero Offset VSP survey was recorded from 1656 m to 3290 m MD through cased hole and open hole using a four level VSI tool. VSP stations were recorded at 15.12 m MD intervals. An array of 3X155 cu.in. airguns were used as a source, deployed from the crane of the rig.
The data quality was poor for the section above 2473. m m MD due to uncemented casing resulting in bad geophone to formation coupling. It was possible however, to extract velocity information from this section, but it could not be used in the process of generating corridor stack. Only the section 2473.5 m to 3290 m was used for this. See figure 2.4.6.
All results are in the VSP processing report created by Schlumberger.

2.3 Biostratigraphy

GeoStrat Ltd (2005) carried out a biostratigraphical evaluation of the interval 710m-3292m MD RKB in well 35/11-13 and the biostratigraphic interpretation is based on micropalaeontological and palynological analyses on ditch cuttings, selective sidewall cores and core material. These results have been calibrated to the Norsk Hydro standard and integrated into the sub-regional framework by correlation with nearby wells.

Figure 2.4.1 show summarised geochronological and lithostratigraphical subdivisions of the well. The interpretation is in accordance with Norsk Hydro's standard zonation of the area. All depths are MD RKB.

Main results

- The youngest sediments analysed at 710m within the Nordland Group are of Pliocene age.

- The Nordland / Hordaland Groups boundary at 763mMD RKB (log) represents a major stratigraphic break with a duration of at least 20 Ma. with sediments equivalent to the entire Miocene being absent .

- The Hordaland Group is a represented by a thick (778m), mud- dominated and relatively continuous sequence of Upper Oligocene - Lower Eocene sediments. The Skade Formation, of Late Oligocene age, is identified within the upper part of this group between 930.5m – 1084.5mMD RKB.

- The Rogaland Group, of Early Eocene to Early Paleocene age was penetrated at 1541m MD RKB (log) and comprises the Balder, Sele, Lista and Våle Formations. The Eocene/Paleocene boundary typically occurs within the lowermost part of the Sele Formation. Sandstones assigned to the Heimdal and Ty Members of Paleocene age are present within this interval.

- The boundary between the Rogaland Group and Shetland Group at 1938m MD RKB (log) represents either a stratigraphic break or an extremely condensed section with sediments equivalent to the 'earliest' Danian not being detected.

- The Upper Cretaceous Shetland Group is a represented by a thick (633m), muddy and calcareous sequence of upper Maastrichtian – Cenomanian sediments. No significant stratigraphic breaks have been identified within this sand- poor group.

- The Jorsalfare Formation of late Maastrichtian – Campanian age, is developed within the upper part of the Shetland Group. The boundary between the Jorsalfare Formation and underlying more argillaceous Kyrre Formation at 2087.5m MD RKB (log) typically lies within a Campanian age.

- The abrupt lithofacies change from a mudstone (Kyrre Formation) to a limestone-dominated succession (Tryggvasson Formation) at 2565m MD RKB within the Turonian is not associated with any detectable stratigraphic break.

- The Blodøks Formation, of early Turonian age is identified between 2630m MD RKB (log) – 2646m MD RKB (log).

- A truncated Svarte Formation, of Cenomanian age, is developed underneath the Blodøks Formation at 2646m MD RKB (log). The lack of any early Cenomanian microfossils indicate the base of this formation is truncated and that the boundary between the Shetland and underlying Cromer Knoll Groups at 2671m MD RKB (log) probably represents a stratigraphic break of approximately 3 Ma. duration.

- The argillaceous Lower Cretaceous Cromer Knoll Group is represented by the late - middle Albian, Rødby Formation and late Barremian – 'latest' Ryazanian Aasgard Formation. The boundary between the Rødby and Aasgard Formations is represented by a significant stratigraphic break (minimum 18 Ma. duration) with sediments equivalent to the early Albian - early Aptian being absent.

- Several potential intra formational stratigraphic breaks have been identified within the argillaceous dominated Aasgard Formation and appear to closely correspond with 'cleaning upward' units identified on wireline logs. These correspond to the base Barremian, base Hauterivian (with truncated early Hauterivian) and intra-Valanginian levels.

- The boundary between the Cromer Knoll and Viking Groups, and corresponding to the top of the Draupne Formation at 2902m MD RKB (log) appears to be conformably developed with a Ryazanian age.

- An intra –Kimmeridgian stratigraphic break is indicated at 2998mMD RKB within the lowermost part of the Draupne Formation. This has an approximate time duration of 2 Ma.

- In this well the boundary between the Draupne and Heather Formations at 3013m MD RKB (log) closely corresponds to the Kimmeridgian/Oxfordian age boundary (within sampling resolution).

- The 'Oxfordian Sandstone' reservoir sequence is developed within the Heather Formation between 3095.5m MD RKB – 3207m MD RKB and is tightly constrained biostratigraphically to within the 'earliest' part of the middle Oxfordian (equivalent to the Densiplicatum Ammonite Zone) based on dinoflagellate cysts.

- A relatively condensed early Oxfordian to middle Callovian sequence of Heather Formation mud-rocks is developed below the 'Oxfordian sandstone' in which the well terminated at 3295m (loggers depth).

Biostratigraphic summary of the sand units

Several sand units where encountered in this well.

The Pliocene age assigned to the youngest sediments analysed at 710m within a 25.5m sandstone unit (704m – 729.5m) developed within the Nordland Group suggests these sands are younger than the Utsira Formation developed elsewhere in the area.

A unit of Upper Oligocene, interbedded sandstones and claystones assigned to the Skade Formation (1158m-1345m, log) are present within the Hordaland Group.

Sandstones within the Lista Formation have been assigned to the Heimdal Member (1706mMD RKB log – 1752m MD RKB log). These are dated to a restricted Late Paleocene, Thanetian age.

Sandstones of the Våle Formation Ty Member (1842m MD RKB log – 1929m MD RKB log) straddle the Late Paleocene (Selandian) and Early Paleocene (Danian) boundary at 1900m MD RKB.

Thin beds of sandstone are developed around the Draupne/ Heather formational boundary within the early Volgian – late Oxfordian interval.

The 'Oxfordian Sandstone' reservoir sequence (3095.5m MD RKB – 3207m MD RKB), developed within the Heather Formation is tightly constrained biostratigraphically to within the 'earliest' part of the middle Oxfordian (equivalent to the Densiplicatum Ammonite Zone) based on dinoflagellate cysts (R. aemula Acme Zone PJ6C1).

2.4 Figures

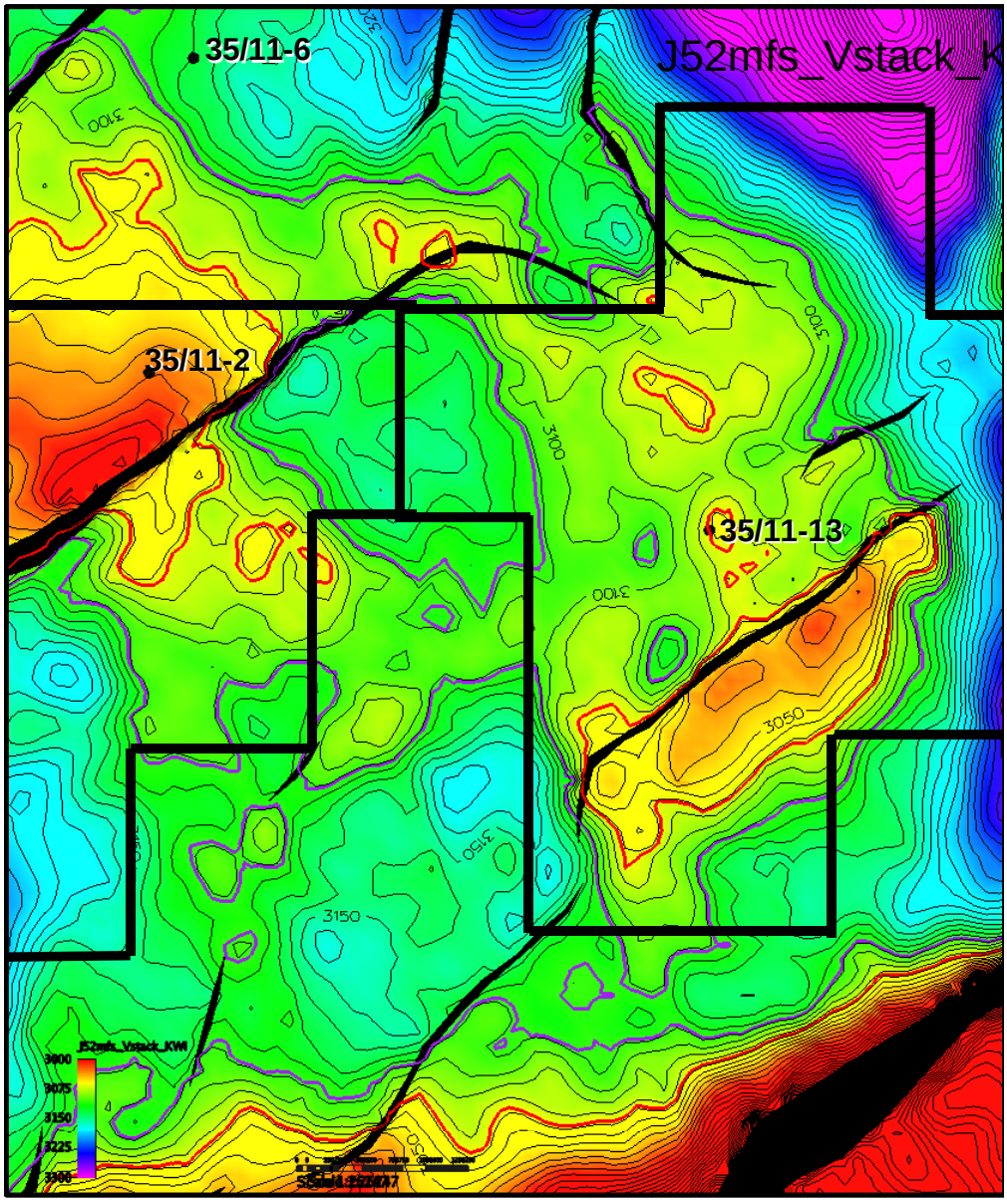
FIGURE LIST

2.4.1 Biostratigraphic table

Biostratigraphy			Lithostratigraphy			
Period/Epoch	Stage	Top depth mMD RKB (based on ditch cuttings unless otherwise stated)	Group	Formation	Member	Top depth mMD RKB
Pliocene (top not seen)		710m	Nordland			
					'Sand Unit'	704m log - 729.5m log
Unconformity						
Late Oligocene		763m log	Hordaland			763m log
				Skade		930.5 log - 1084.5m log
Early Oligocene		1100m				
Late Eocene		1220m				
Middle Eocene		1320m				
Early Eocene		1430m				
			Rogaland	Balder		1541m log
				Sele		1598m log
Late Paleocene		1640m				
				Lista		1653m log
					Heimdal	1706m log - 1752m log
				Våle		1769m log
					Ty	1842m log - 1929m log
Early Paleocene		1900m				
?Unconformity						
Late	late Maastrichtian	1938m log	Shetland	Jorsalfare		1938m log
Cretaceous	early Maastrichtian	1950m				
	middle - late Campanian	2040m				
				Kyrre		2087.5m log
	early Campanian	2190m				
	late Santonian	2260m				
	middle Santonian	2280m				
	early Santonian	2300m				
	Coniacian	2390m				
	middle - late Turonan	2480m				
				Tryggvason		2565m log
	early Turonian	2620m				
	early? -late Cenomanian	2625.5m log		Blodøks		2625.5m log
				Svarte		2646m log
?Unconformity						
Early	late Albian	2671m log	Cromer Knoll	Rødby		2671m log
Cretaceous	middle Albian (as cavings)	2700m				
	Unconformity					
	late Barremian	2700m		Åsgard		2700m log
	early Barremian	2710m				
	?Unconformity					
	late Hauterivian	2810m				
	Unconformity					
	late Valanginan	2820m				
	?Unconformity					
	early Valanginan	2840m				
	'latest' Ryazanian	2890m				
	early? - late Ryazanian	2902m log	Viking	Draupne		2902m log
Late	late Volgian	2910m				
Jurassic	middle Volgian	2930m				
	early Volgian	2977m				
	?late Kimmeridgian	2992m				
	?Unconformity					
	early Kimmeridgian	2998m				
				Heather		3013m log
	late Oxfordian	3014.5m swc				
	middle Oxfordian	3060m swc				
	'earliest' middle Oxfordian	3079m				
					'Heather Sandstone' (mid. Oxford)	3095.5m log - 3206m log
	early Oxfordian	3229m				
Middle	late Callovian	3271m				
Jurassic	middle Callovian (base not seen)	3283m				
		to 3295mTD				to 3295m TD

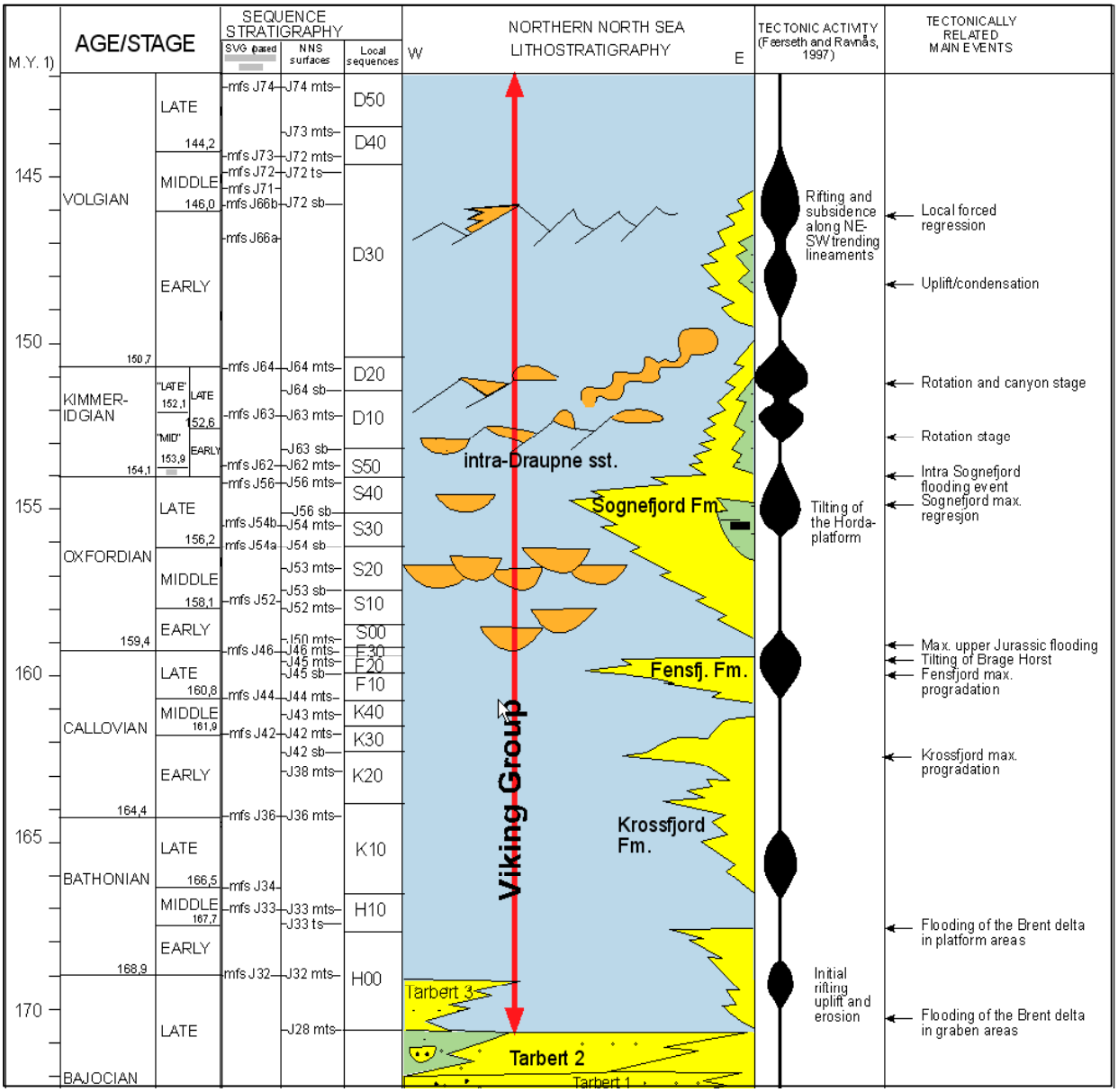
Chronostratigraphic and Lithostratigraphic succession

2.4.2 Reservoir depth map

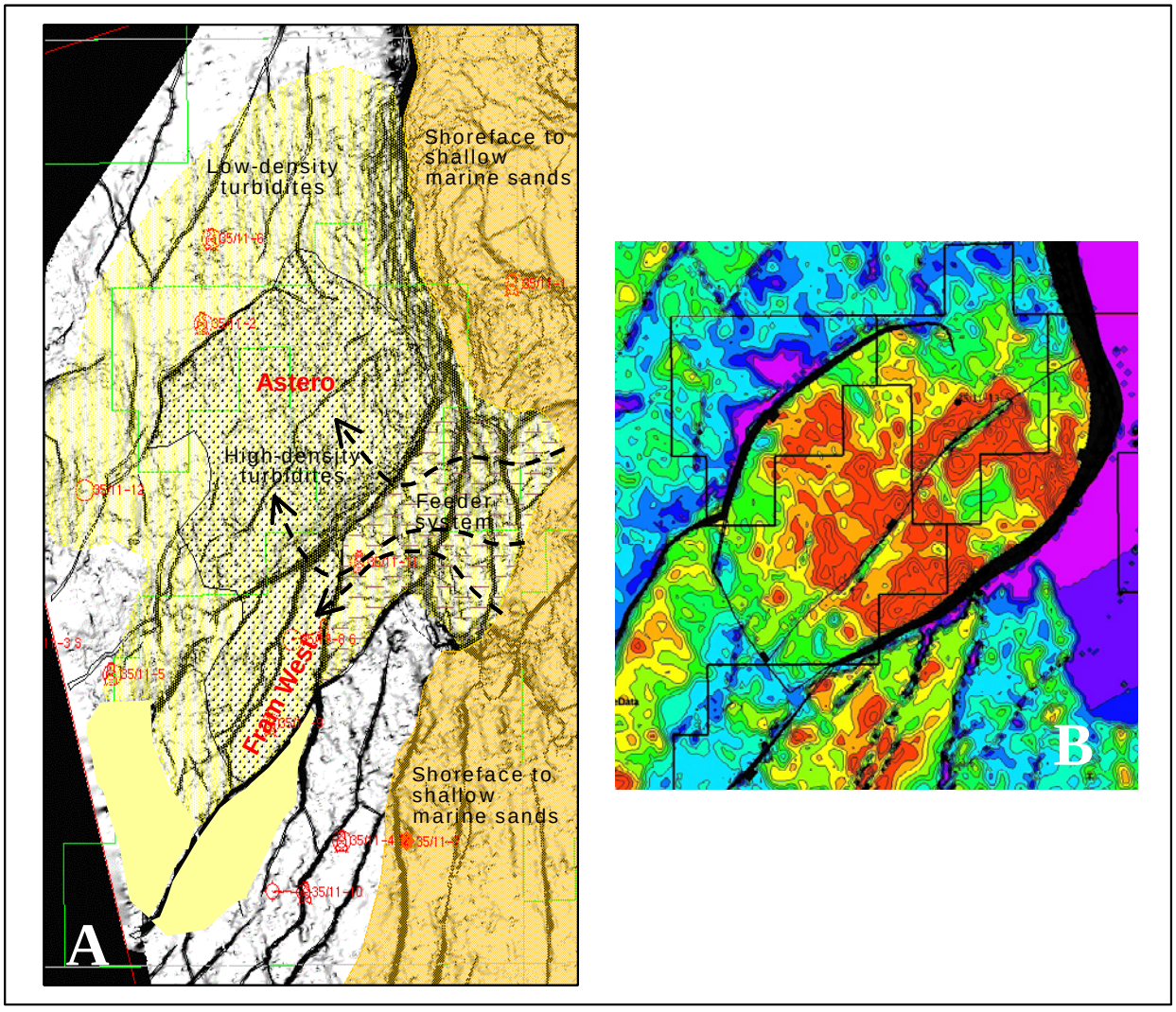


Top mfsJ52 depth map and hydrocarbon contacts penetrated in well 35/11-13: red contour: GOC, lilac contour: FWL. Note that the intersection line of the FWL fits the structural spill point.

2.4.3 Sequence stratigraphic classification of the Middle to Upper Jurassic succession in the northern North Sea

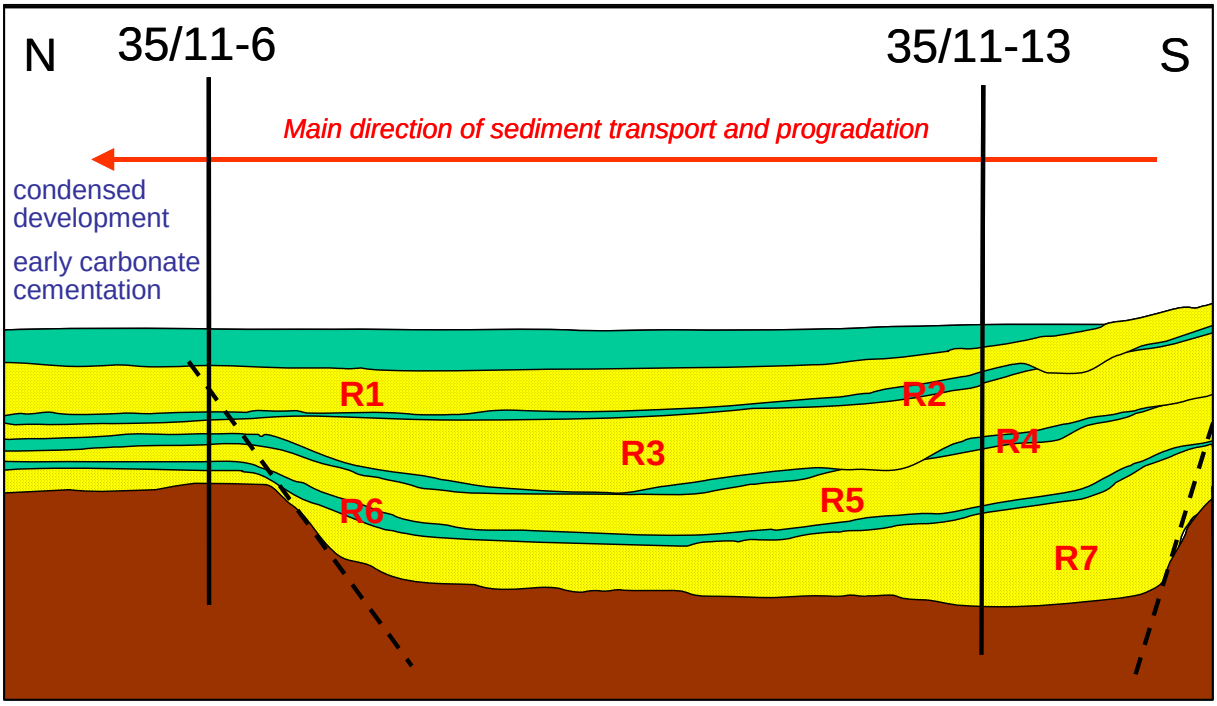


2.4.4 Depositional model j52



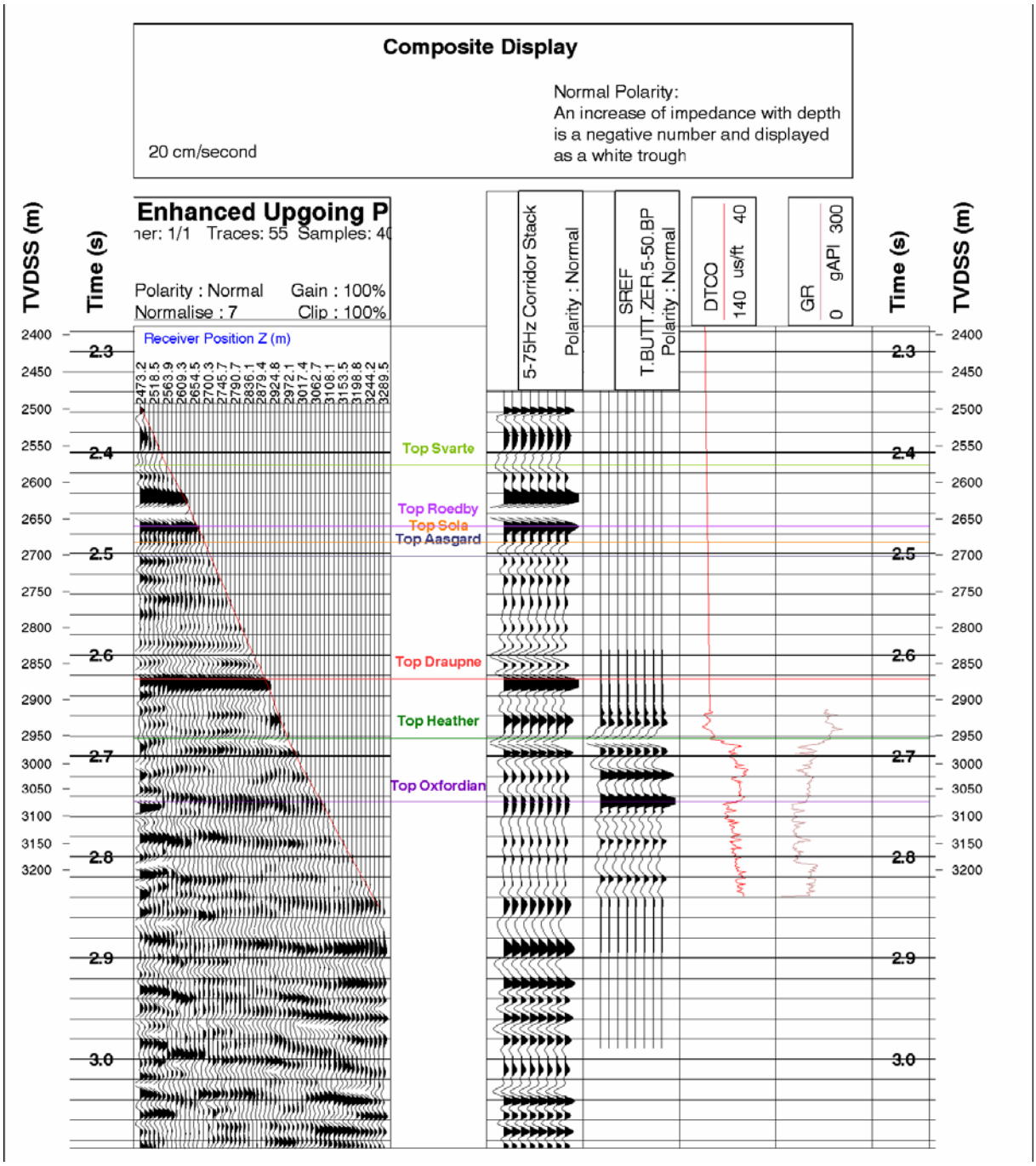
A) Depositional model for the J52 sequence in the Astero area.
B) J52mfs – J52SB isochore in depth. Thickness increase towards red. High density turbidites are predicted where the isochore shows largest sediment thickness.

2.4.5 Turbidite deposition on Astero



Generalized sketch of the progradational and topographically confined turbidite deposition on Astero. No relative scale implied. The differences in thickness and reservoir quality between 35/11-6 and 35/11-13 are explained by fault controlled syn-rift deposition and related variations in accommodation space and sediment accumulation rates.

2.4.6 VSP, Composite display (normal polarity)



3 PETROPHYSICAL EVALUATION

The evaluation covers the J54 and J52 sequences of the middle Oxfordian sandstone within the Heather Formation. The petrophysical evaluation is based on all available well data including:

- MWD/LWD and Wireline logs
- Conventional core measurements from whole core and sidewall cores
- Petrographic and special core analysis (SCAL) measurements
- Wireline formation tester (WFT) pressures, samples and fluid scanning
- Production and fluid samples from DST 1
- PVT analyses on fluid samples

This Chapter provides a summary of the petrophysical evaluation procedures and results; for more detailed information, refer to the Formation Evaluation Report.

3.1 Petrophysical Results

The main results from the petrophysical evaluation of well 35/11-13 are:

- The middle Oxfordian J52 sandstone sequence contains an oil column with a thin gas cap above. The J52 sequence has good reservoir quality whereas the over-lying J54 sequence is predominantly mudstone apart from some thin sand bed developments towards the base which are also most likely gas-bearing. The zone average petrophysical parameters are shown in Table 3.7.2. Plots of the CPI results for the J54 and J52 sequences are shown in Figures 3.7.3.1 and 3.7.3.2 respectively.

- Formation pressure data confirm that the J52 sandstone sequence is oil filled with a thin gas / light hydrocarbon interval above. The oil pressure gradient is 0.655 g/cc. The gas gradient is estimated at 0.25 g/cc; it is not well defined because the column is thin and there are only two pressure points available. The gas-oil contact (GOC) is at 3098.5 m MD RKB / 3073.1 m TVD MSL and the free water level (FWL) is at 3138.0 m MD RKB / 3112.6 m TVD MSL. A plot summarizing the formation pressures, fluid gradients and fluid contacts is shown in Figure 3.7.5.

3.2 Discussion

Depth plots of the wireline logs, core data and CPI results are presented in Figures 3.7.3.1 (J54 section) and 3.7.3.2 (J52 section). Both plots are presented at the same scale to give a visual impression of the relative thickness of the two sections.

The main reservoir sands occur in the J52 sequence where there is a thin interval (around two metres) containing light hydrocarbons at the top of the oil column. The absence of a distinct shale barrier of significant thickness between the oil and the light hydrocarbon interval strongly suggests that the light hydrocarbon interval is most likely a gas cap in communication with the oil column.

The over-lying J54 sequence is dominated by mudstone facies in this well, but there are several thin sand bed developments towards the base that are also most likely gas-bearing (as at the top of the J52 sequence).

The J52 oil column has been analysed as two distinct intervals consisting of an oil zone and an oil transition zone. The oil transition zone is characterised by very high water saturations such that the predominant formation fluid is water rather than oil. The high water saturations are most likely related to the lower permeability in this interval.

3.3 CPI input data

3.3.1 Log data: measurements, quality and corrections

MWD/LWD logs

Baker Hughes Inteq provided MWD/LWD services as summarised in Table 1.4. There were some minor problems as indicated in the Table, but overall there are complete gamma ray and resistivity logs over most of the well interval. Some depth shifts are required to match the MWD/LWD data to the reference wireline logs; these are documented in the Logtek report covering the generation of the Composite logs. The MWD/LWD data were not used in the petrophysical evaluation.

Wireline logs

Schlumberger provided the formation evaluation wireline services as summarised in Table 1.4. High quality log data were recorded over the entire reservoir section where the hole deviation was less than 1.6 degrees, the hole size was very close to bit size and there was minimal tool sticking from the wireline-conveyed tool string. The large washout below the casing shoe occurs well above the reservoir section.

Density, neutron and gamma ray measurements (TLD/CNL/GR) were recorded with 8" vertical resolution processing, and these logs together with the laterolog resistivity (HRLA) data were acquired with high resolution sampling of 0.0508 metres/sample. This high resolution was maintained for the petrophysical evaluation calculations. Sonic (DSI) compressional and shear data were recorded inside the 9 5/8" casing as well as in the open-hole section; these data were subsequently re-processed by Schlumberger for optimal results. The petrophysical evaluation was made using the wireline resistivity, density, neutron and gamma ray logs.

Composite logs

Composite logs were made by Logtek in accordance with NPD requirements. One hybrid composite was made for the entire well, (hybrid of MWD/LWD and wireline), where the MWD/LWD data were depth shifted to match the reference wireline logs. Three petrophysical composite logs were also generated; one with merged depth matched MWD/LWD data, one with standard 0.1524 metres/sample wireline data (sonic), and one with high resolution 0.0508 metres/sample wireline data (resistivity, density, neutron and gamma ray) which was used as input to the CPI calculations. For more detailed information on MWD/LWD depth shifting and other aspects of the compositing procedures, refer to the Logtek report.

CPI Input logs - Environment and Invasion corrected data

Environment and invasion corrections were performed by the wireline contractor during acquisition; the corrected data were sourced from the third petrophysical composite log (refer Composite logs sub-section above). The following corrected curves were used in the petrophysical evaluation:

- Gamma ray, corrected for hole size and mud weight (curve 'EHGR')
- Density, corrected for bit size and mud weight (curve 'RHO8')
- Neutron, corrected for hole size, stand-off, mudcake, borehole salinity, formation salinity, mud weight, pressure and temperature (curve 'HTNP')
- Resistivity Rt and Rxo, invasion corrected from the five HRLA laterolog resistivity measurements, (curves 'RT_HRLT' and 'RXO_HRLT')

3.3.2 Core data: measurements, quality and corrections

Two whole cores were cut in this well with fair recovery as summarised in Table 1.6.

Sidewall cores were acquired by wireline with Schlumberger's mechanical sidewall coring tool (MSCT) as summarised in Table 1.4. Initial recovery appeared to be good (41/45) but conventional core measurements could only be made on 28 samples.

Conventional core measurements were made on core plugs from both the whole cores and from the sidewall cores (refer Reslab report "Conventional Core Analysis, Well 35/11-13"). However, only the whole core measurements were used for core-log calibrations in the petrophysical evaluation; results from the sidewall cores were only used qualitatively because these measurements are considered to be of a lower quality due to the possibility of mechanical damage during acquisition. In the CPI result displays, (Figures 3.7.3.1 and 3.7.3.2), whole core measurements are indicated with "X" symbols whereas sidewall core measurements are shown as "square" symbols.

Conventional core measurements

The conventional core measurements include porosity, permeability and grain density. Although the mud was doped with Tritium tracer, core saturation measurements were not attempted due to poor results in trying to correct for mud filtrate contamination in previous wells drilled with similar high salinity water based mud.

Core plugs from the whole cores were depth shifted to match the wireline logs as summarised in Table 1.6. The shifts were determined from correlations between core porosity and the density log. The split shifts required for Core #2 were implemented at a distinct break seen in the core photographs at 3125.735 Drillers Depth m. MD, (refer Reslab report "Core Photographs 35/11-13, White and UV light").

Slightly different depth shifts were required for the whole core gamma ray measurements; these shifts were determined from correlations between the core and log gamma rays. The different depth shift concerns Core #1 which was shifted +3.75 metres (compared to the +3.5 metre shift for the core plug measurements). It was concluded that the core plug and the core gamma ray

measurements were off-depth with each other by 0.25 metres; this can occur because the gamma ray measurements are made when the core is still inside the aluminium sleeve.

Conventional core measurements were made on 28 sidewall cores that were recovered over the interval 2960.0-3151.0 m MD RKB, (refer Table 1.5). Whilst these cores should in principle be on depth with the wireline logs, a depth shift of –0.5 metres was applied to all samples in order to yield an optimum correlation between core porosity and the density log.

Petrographic core measurements

Petrographic XRD analyses and thin section point count measurements were made on selected whole core samples, (refer Hydro Research Centre Bergen report "Standard Core Description, Well 35/11-13"). Measurements from both analysis methods were used to evaluate clay and shale volume from the core data.

XRD clay volumes and thin section shale volumes were used to guide parameter selection in the log shale volume calculations (refer section 3.4). The petrographic results are shown in the volumetric analysis track of the CPI result displays, (Figures 3.7.3.1 and 3.7.3.2); thin section shale volumes are scaled from 0 to 1.0 and are shown with "star" symbols whereas the XRD clay volumes are scaled from 0 to 0.4 and are shown as "circle" symbols.

Special core analysis (SCAL) measurements

A SCAL programme was initiated with Reslab in mid 2005 and is expected to be completed in February 2006. Evaluations are being performed on 16 plugs selected from the entire cored section, most of the samples are from the oil zone. Measurements include:

- Confining pressure measurements of porosity and formation factor (m)
- Mercury injection capillary pressure
- Porous plate capillary pressure and resistivity index (n) at reservoir conditions

The first item above has been completed with the following results at 170 bar net confining pressure, (the estimated effective reservoir stress in the Astero area):

- Porosity overburden correction factor = 0.979
- Cementation exponent (m) = 2.03 with cementation factor (a) = 1.0

The above parameters were implemented in the petrophysical evaluation.

3.4 Evaluation Method

Net Reservoir / Shale volume

Net reservoir intervals were determined by applying a shale volume cut-off of 0.40 together with a total porosity cut-off of 0.065 in the gas zone and 0.11 in the oil and water zones.

The total porosity cut-off values were evaluated from a crossplot of overburden corrected core porosity versus core horizontal air permeability measurements. The gas zone porosity cut-off

(0.065) corresponds to a permeability of 0.1 mD, and the cut-off for the oil and water zones (0.11) corresponds to a permeability of 1 mD. Note that the core-derived porosity cut-offs are applied to log total porosity 'PHIT' (rather than to log effective porosity 'PHIE') since core porosity measurements are more closely represented by PHIT than PHIE. This is because the core preparation procedures (drying at 60^{o}C and 40% humidity) remove most of the capillary and clay bound water.

Shale volume 'VSH' was determined from a minimum of gamma ray and density-neutron log shale indicators. Linear relationships were applied for both indicators. The density-neutron shale indicator was implemented using apparent grain density 'RHGA' which is a triangulated calculation from the density-neutron crossplot involving the matrix, shale and fluid points. RHGA values were calculated using a sandstone matrix and constant fresh water fluid parameters; fluid effects were subsequently accounted for by picking separate shale indicator parameter values in the gas, oil and water zones. The benefit of the RHGA approach is that the shale indicator parameters (minimum and maximum values) can be assessed in a similar manner to the gamma ray. For both shale indicators, the selection of minimum and maximum parameter values was guided by the results from the petrographic clay and shale volume measurements. The minimum and maximum shale parameter values are summarised in Table 3.7.1.

The gamma ray 'EHGR' and RHGA curves are shown in the first track of the CPI result displays, (Figures 3.7.3.1 and 3.7.3.2); both curves have very similar response characteristics indicating good fundamental agreement between the two shale indicators. Shale volume calculations from each indicator ('VGR' and 'VRHGA') together with the final minimum value ('VSH') are shown in the fourth data track of the CPI result displays; this confirms the excellent agreement between the two indicators.

Porosity

Total porosity PHIT was determined by direct calibration of the density log with overburden corrected core porosity. Separate calibrations were performed for the oil leg above the transition zone, and for the combined water and oil transition zones. The core-log porosity calibrations (crossplots of overburden corrected core porosity versus the density log) yield the fluid density 'ROF' values to be used in calculating PHIT from the density log response equation.

The oil transition zone was treated as an effective "water-bearing interval" for the purposes of the core-log porosity calibrations because analyses show that water rather than oil is the predominant fluid in this interval, i.e. the density log response is influenced more by the water than the oil in the oil transition zone.

Discriminators, (density < 2.45 g/cc, core porosity > 0.1, core permeability > 1mD) were applied in the core-log calibration crossplots to ensure that the calibrations were made over the better quality reservoir samples.

Both core-log calibrations were constrained through the rock matrix/grain density 'ROMA' value of 2.64 g/cc which was determined from a histogram of the conventional core grain density measurements. Non-reservoir samples were also excluded from the histogram analysis, (core plugs excluded if permeability < 0.1 mD).

Fluid density ROF values derived from the core-log porosity calibrations are as follows:

- Oil leg above the transition zone: ROF = 0.996 g/cc
- Water and oil transition zones: ROF = 1.088 g/cc

A calibration was not possible in the gas zone since it was not cored; an estimated ROF value of 0.75 g/cc was applied. The suitability of this estimated value is confirmed from comparisons between log total porosity PHIT and the core porosity measurements from sidewall core samples over the gas zone interval, (refer Figures 3.7.3.1 and 3.7.3.2).

Log effective porosity PHIE was calculated from PHIT by correcting for the shale content: **PHIE = PHIT - (VSH x PHISHALE)** The shale porosity 'PHISHALE' value was estimated to be 0.06 from log and core measurements in the shale intervals.

The log porosity calculation parameter values, (rock matrix/grain density ROMA, fluid density ROF and shale porosity PHISHALE), are summarised in Table 3.7.1.

Water saturation

The Indonesia equation was used to calculate water saturation from the logs. Formation resistivity Rt, and the invaded zone resistivity Rxo were taken from the Contractor's wellsite invasion corrected laterolog measurements (RT_HRLT and RXO_HRLT). The calculations were made using shale volume VSH and effective porosity PHIE as previously described in this section.

Formation temperature of 118^{o}C was determined from DST 1 and is assumed to be from the midpoint depth of the perforated interval, (3120.75 m MD RKB / 3095.35 m TVD MSL). The temperature gradient over the reservoir section was taken from the well prognosis, (Hydro report "Well programme 35/11-13, Astero", page 35). The DST 1 temperature and the temperature gradient were combined to make a continuous formation temperature 'FTEM' curve: **FTEM = 38.76 + (0.0256 x SSDP)** where 'SSDP' is the TVD MSL depth curve.

Formation water resistivity Rw of 0.12 ohmm at 119.3 ^{o}C was estimated from a Pickett plot over intervals with low shale content in the water zone. The Rw temperature was calculated at the midpoint of the water zone (3172 m MD RKB). The Pickett plot (and the subsequent CPI calculations) incorporated the cementation factor (a=1) and cementation exponent (m=2.03) values determined from SCAL measurements in this well, (refer section 3.3.2).

Mud filtrate resistivity Rmf of 0.052 ohmm at 20 ^{o}C was taken from the value reported in the HRLA log heading. Rmf is used with Rxo to calculate invaded zone water saturation Sxo.

Shale resistivity 'RSHALE' was estimated at 30 ohmm from Rt log readings in the shale intervals. Default values were used for remaining parameters in the Indonesia equation, including the saturation exponent (n=2.0); a more specific value should be available when the SCAL programme is completed.

All of the water saturation calculation parameters are also summarised in Table 3.7.1.

3.5 Fluid System

3.5.1 Formation Tester data quality

Wireline formation tester services included the successful acquisition of pressures, samples and fluid logging (scanning) from the MDT tool as summarised in Table 1.4.

Twenty-nine pressure tests were attempted in MDT Run 1A as listed in Table 3.7.4, note all pressure values are from the CQG quartz gauge. Twenty-eight of the pressure tests were considered successful, (only one dry test), but several tests exhibited low mobility as commented in the Table.

In MDT Run 1B, multiple fluid samples were recovered at four depth levels, and fluid logging (scanning) was performed at an additional three depth levels. The fluid sampling and fluid scanning programme met all objectives including confirmation of the free water level (FWL) indicated by the formation pressure measurements.

3.5.2 Formation pressure analysis and Fluid Contacts

The formation pressure measurements listed in Table 3.7.4 were evaluated to determine fluid gradients and fluid contact levels. The results are presented in Figure 3.7.5; the fluid gradient values and consequent fluid contact levels are also summarised below:

Fluid Gradients and Fluid Contacts interpreted from the pressure data					
Gradients:	**bar/m**	**g/cc**	**Contacts:**	**Depth**	
				m. MD RKB	**m. TVD MSL**
Gas	0.0245	0.25			
Oil	0.0642	0.655	GOC	3098.5	3073.1
Water	0.0951	0.97	FWL	3138.0	3112.6

The interpreted oil gradient (0.655 g/cc) is in close agreement with the density determined from PVT analyses on oil samples from DST 1, (0.653 g/cc):

Density from PVT analyses of recombined separator sample from DST 1						
Test	**Test interval**		**PVT analysis method**	**Density at P_{BP} (304.5 bar)**	**Est. correction to reservoir pressure**	**Density at Pi (315 bar)**
	m. MD RKB	**m. TVD MSL**				
DST 1	3111.5-3130.0	3086.1-3104.6	Pycnometer:	0.6518 g/cc	+ 0.0016 g/cc	0.6534 g/cc
			Single stage separation:	0.6530 g/cc	+ 0.0016 g/cc	0.6546 g/cc
			Differential liberation:	0.6480 g/cc	+ 0.0016 g/cc	0.6496 g/cc
			Two stage separation:	0.6540 g/cc	+ 0.0016 g/cc	0.6556 g/cc
Density (average value from the above four methods) at 315 bar reservoir pressure =						**0.653 g/cc**

The PVT values in the above Table are sourced from the Reslab report "PVT analysis of reservoir oil from recombined separator sample, well 35/11-13, Astero Field"

The interpreted water gradient (0.97 g/cc) is consistent with the water density calculated from the formation water resistivity Rw value of 0.12 ohmm at 119.3 ^{o}C. The Rw value corresponds to a

salinity of 15,647 ppm Nacl which converts to a density of 0.962 g/cc at reservoir pressure and temperature.

The gas / light hydrocarbon column is too thin to determine a gradient value from the pressure data. The gas gradient value (0.25 g/cc) presumes that the fluid is gas.

Several pressure tests indicated low mobility, (refer Table 3.7.4); some occur towards the base of the oil transition zone, and several more occur towards the base of the water zone. The interpreted gradient lines were placed through the higher mobility points; consequently, as might be expected, many of the low mobility tests plot above the gradient lines indicating a small degree of supercharging.

Figure 3.7.5 also shows the depths and summary results from the fluid sampling and fluid logging (scanning) measurements discussed in section 3.5.3.

3.5.3 Fluid sampling and fluid scanning

Summary results from the fluid sampling and fluid logging (scanning) measurements are shown below:

Fluid analysis from MDT fluid logging measurements					Offshore analysis results on two samples		
Depth		Reservoir	Samples or	Fluid	MDT chamber	Oil Density	GOR
m. MD RKB	m. TVD MSL	Zone	Scanning	Analysis	No.	(g/cc)	(m^3/m^3)
3097.00	3071.6	J52-R1	Samples (5)	Gas and Oil	MRSC #172	0.789 @ 14.9°C	3872.7
3107.00	3081.6	J52-R1	Samples (4)	Oil	MRSC #100	0.848 @ 14.3°C	120.1
3128.00	3102.6	J52-R3	Samples (2)	Oil			
3135.00	3109.6	J52-R5	Scanning	Oil and Water			
3136.00	3110.6	J52-R5	Scanning	Oil and Water			
3137.00	3111.6	J52-R5	Scanning	Water			
3157.50	3132.1	J52-R5	Samples (2)	Water			

The fluid analysis results from MDT fluid logging measurements (on the left side of the above Table) were evaluated from the Schlumberger report “35/11-13, Modular Formation Dynamics Tester Field Report”. This report includes summary analyses of the recovered fluid samples together with graphical displays showing the fluid scanning results. The fluid analysis results are not conclusive concerning the nature of the ‘gas zone’ at 3097 m MD RKB since both gas and oil are in evidence. The Offshore analysis results on two samples (on the right side of the above Table) were taken from the Oilphase report “Field Operation Report, Well 35/11-13”. These results show a very high GOR for the ‘gas zone’ sample at 3097 m MD RKB compared to the oil sample at 3107 m MD RKB. PVT analyses for the MDT hydrocarbon samples are currently in progress; further information concerning the nature of the ‘gas zone’ may be available when these analyses are completed.

The fluid scanning measurements at 3135, 3136 and 3137 m MD RKB confirm the FWL at 3138 m MD RKB that was determined from the pressure measurements. The fact that no oil was produced at 3137 m MD RKB is entirely consistent with the FWL at 3138 m MD RKB because

the permeability in the transition zone is low and consequently a certain threshold pressure (height above the FWL) is required before oil will move in the rock. Above the threshold pressure (depth) at 3136 m MD RKB both oil and water are flowing.

3.6 Pore Pressure, Overburden and Temperature gradients

All data are presented as sg (specific gravity). Reference point is meters TVD RKB unless otherwise stated. RKB = 25m and Water Depth = 360m
Means of pressure detection:
Drilling parameters, total gas, gamma / resistivity log and MDT's, Software Predict / Drillworks 2005.

Pore Pressure
The Nordland group was normally (1,03sg) pressurised with no shallow gas recorded.

A pressure build up is interpreted from drilling parameters in the mid Hordaland. The drilling parameters indicates a pressure build up from 1186m (beginning of tight hole) and Total Gas readings indicates the onset of overpressure at 1175m. Beside this information there was no clear pressure indicators derived from the drilling data.

Pore Pressure from the Resistivity log:
Shale points were picked from the Gamma log and transferred to the resistivity log. The shale point data set was filtered using Shrinked boxcar /equal weigth). To obtain a pore pressure profile the Eatons method was used, with an Eaton constant of 1.2.
The resistivity log trend was affected by the overcompaction of the Nordland Group, making the onset of deviation from the normal compaction trend difficult as generally seen in the North Sea. A short interval of steady resistivity measurements occurred at 1315m to 1375m. This interval has been used as the start of the normal compaction trend, though this may be up to 200m deep based on the drilling data.
The pressure build up gave a maximum of 1,17sg at base Hordaland, 1,18 to 1,20sg in Balder, 1,20 –1,22sg in Sele. The pressure peaked at 1,25sg in Upper Lista before a steady pressure drop was observed towards 1,03 at the base of Lista / Top Shetland.
The Shetland appears to be pressurised in the middle and lower parts peaking at 1,14sg at 2563m TVD RKB. The pressure drops towards normal at the base Shetland, remains normally or only slightly pressurised in the Cromer Knoll and Draupne. The log became erratic in the Draupne / Heather formations but the main shale points were in equilibrium with the observed reservoir pressures. The pressure peak of 1,13sg in top of Heather may be artificially high, caused by lithology effects and hydrocarbons. If the starting point of departure from normal compaction is set at 1175m the pore pressures calculated becomes very high, in parts well over the mud weights used.

Overburden Gradient
The overburden gradient was imported from nearby wells were good density data was available. This creates an uncertainty when calculating the Pore Pressure.

Fracture Gradient
One leak off was performed to 1,47sg at 704m. This data point was used to calibrate the Fracture Gradient. Two FIT's were performed.
No losses were observed during this well.

Methods:
Eaton method, using an Eaton's constant of 0,47, appears to fit the observed LOT's from the surrounding wells down to top Shetland, but below it appears to be consistently too high compared to the reference LOT's. It is therefore higly recommendable to perform LOT in order to calibrate models correctly.

The Matthews & Kelly method using a constant of 0,8 also produced to high fracture gradient from upper Shetland and downwards compared to offset LOT's.

The Breckels & vanEckelen method gives constant too low Fracture Gradient.

The Daines method fits the reference LOT's of the deeper part of the reference wells and a reasonably fit for the upper part, using a tectonic stress component of 0 and Poisson's ratio of 0,4.

A combination of Eaton and Daines may be the optimum solution for the Fracture Gradient or to use a minimum LOT-trend curve based on the LOT's from the basin.

Temperature Gradient:
A Horner plot was derived from the reservoir flow test. This gave 118,2^{o}C at 3200m as prognosed. This falls in line with the other test results in this area. The temperature gradient becomes then 4,02^{o}C, assuming 4 ^{o}C at seafloor.

3.7 Figures and Tables

LIST OF TABLES AND FIGURES

3.7.1 Petrophysical input parameters

Well 35/11-13: Petrophysical input parameters				Parameter values applied over the Petrophysical fluid zonation (depths in m. MD RKB):				
	Parameter			Shale1	Gas	Oil	Oil transition + Water	Shale2
Calculation	Description	Mnemonic	Units	3040.00-3092.00	3092.00-3098.50	3098.50-3129.18	3129.18-3206.95	3206.95-3260.00
Shale volume	Gamma ray (GR) minimum value	MINGR	GAPI	50				
	Gamma Ray (GR) maximum value	MAXGR	GAPI	136				
	Apparent grain density (RHGA) minimum value	MINRHGA	G/CC	2.67	2.60	2.65	2.67	2.67
	Apparent grain density (RHGA) maximum value	MAXRHGA	G/CC	3.03				
Core Porosity	Horiz. helium porosity - Overburden corrected	PHIH_OBC	FRAC	0.979 x PHIH				
Log Porosity	Rock matrix/grain density	ROMA	G/CC	2.64				
	Fluid density	ROF	G/CC	1.088	0.750	0.996	1.088	1.088
	Shale porosity	PHISHALE	FRAC	0.06				
Saturation (Indonesia eqn.)	Formation temperature at midpoint DST 1		DEGC	118 °C at 3120.75 m MD RKB / 3095.35 m TVD MSL				
	Formation temperature curve	FTEM	DEGC	Calculated from TVDMSL depth curve 'SSDP': FTEM = [38.76 + (0.0256 x SSDP)]				
	Formation water resistivity Rw		OHMM	Rw = 0.12 @ 119.3 °C (from Pickett plot, temperature from midpoint of water zone at 3172 m.MD RKB)				
	Rw curve (at formation temperature).	RW	OHMM	Rw = 0.12 @ 119.3 °C converted to 'Rw at FTEM' = 0.12 x (119.3 + 21.5) / (FTEM + 21.5)				
	Mud filtrate resistivity Rmf		OHMM	Rmf = 0.052 @ 20 °C (from measurement reported in HRLA log heading)				
	Rmf curve (at formation temperature).	RMF	OHMM	Rmf = 0.052 @ 20 °C converted to 'Rmf at FTEM' = 0.052 x (20 + 21.5) / (FTEM + 21.5)				
	Shale resistivity.	RSHALE	OHMM	30				
	Cementation factor	a		1				
	Cementation exponent	m		2.03				
	Saturation exponent	n		2				
	Indonesia equation parameter	ISILT		0				
	Indonesia equation parameter	CVSH		1				
Net Reservoir	Cut-off value for Total Porosity (PHIT)	CO-PHIT	FRAC	> 0.11	> 0.065	> 0.11	> 0.11	> 0.11
	Cut-off value for Vshale (VSH)		FRAC	< 0.40				
Net Pay	Cut-off value for water saturation (SWE)		FRAC	< 0.60				

3.7.2 Reservoir zonal averages

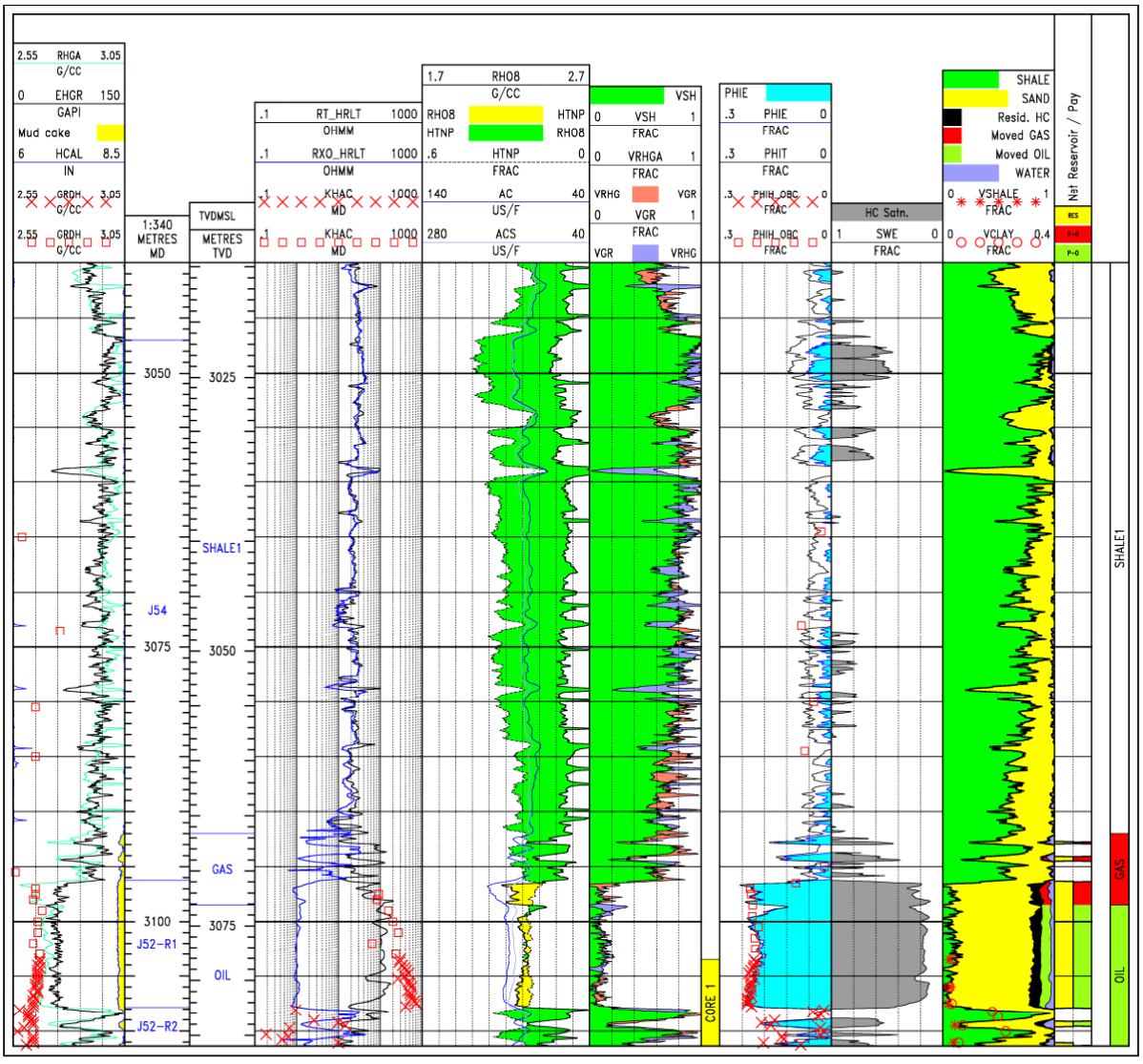
Well 35/11-13	Top		Base		Thickness (TVD)			Porosity		Sw	K (ari)	K (geo)
	MD	TVD	MD	TVD	Gross	Net	N/G	log	core	log	core	core
Zone:	RKB [m]	MSL [m]	RKB [m]	MSL [m]	[m]	[m]	[frac]	[1] [frac]	[2] [frac]	[3] [frac]	[4] [mD]	[5] [mD]
J54	3047.00	3021.63	3096.25	3070.86	49.23	0.61	0.012	0.122	***	0.524	***	***
J52-R1	3096.25	3070.86	3107.85	3082.46	11.60	11.49	0.991	0.199	0.216*	0.192	456*	440*
J52-R2	3107.85	3082.46	3111.37	3085.98	3.52	0.88	0.250	0.146	**	0.587	**	**
J52-R3	3111.37	3085.98	3129.18	3103.78	17.80	17.04	0.957	0.196	0.199	0.342	172	76
J52-R4	3129.18	3103.78	3132.05	3106.65	2.87	0.74	0.257	0.127	**	0.730	**	**
J52-R5	3132.05	3106.65	3158.04	3132.63	25.98	23.85	0.918	0.171	0.181*	0.845	47*	21*
J52-R6	3158.04	3132.63	3165.13	3139.72	7.09	2.23	0.314	0.132	***	0.928	***	***
J52-R7	3165.13	3139.72	3206.95	3181.53	41.81	31.18	0.746	0.160	***	0.902	***	***
J52-Total	3096.25	3070.86	3206.95	3181.53	110.67	87.40	0.790	0.174	0.196*	0.654	188*	74*
J52-above FWL	3096.25	3070.86	3138.00	3112.60	41.74	35.99	0.862	0.193	0.199	0.354	191	84
J52-below FWL	3138.00	3112.60	3206.95	3181.53	68.93	51.41	0.746	0.161	***	0.905	***	***
J52- DST 1	3111.50	3086.11	3130.00	3104.60	18.49	17.37	0.939	0.195	0.199	0.347	173	77

Key:

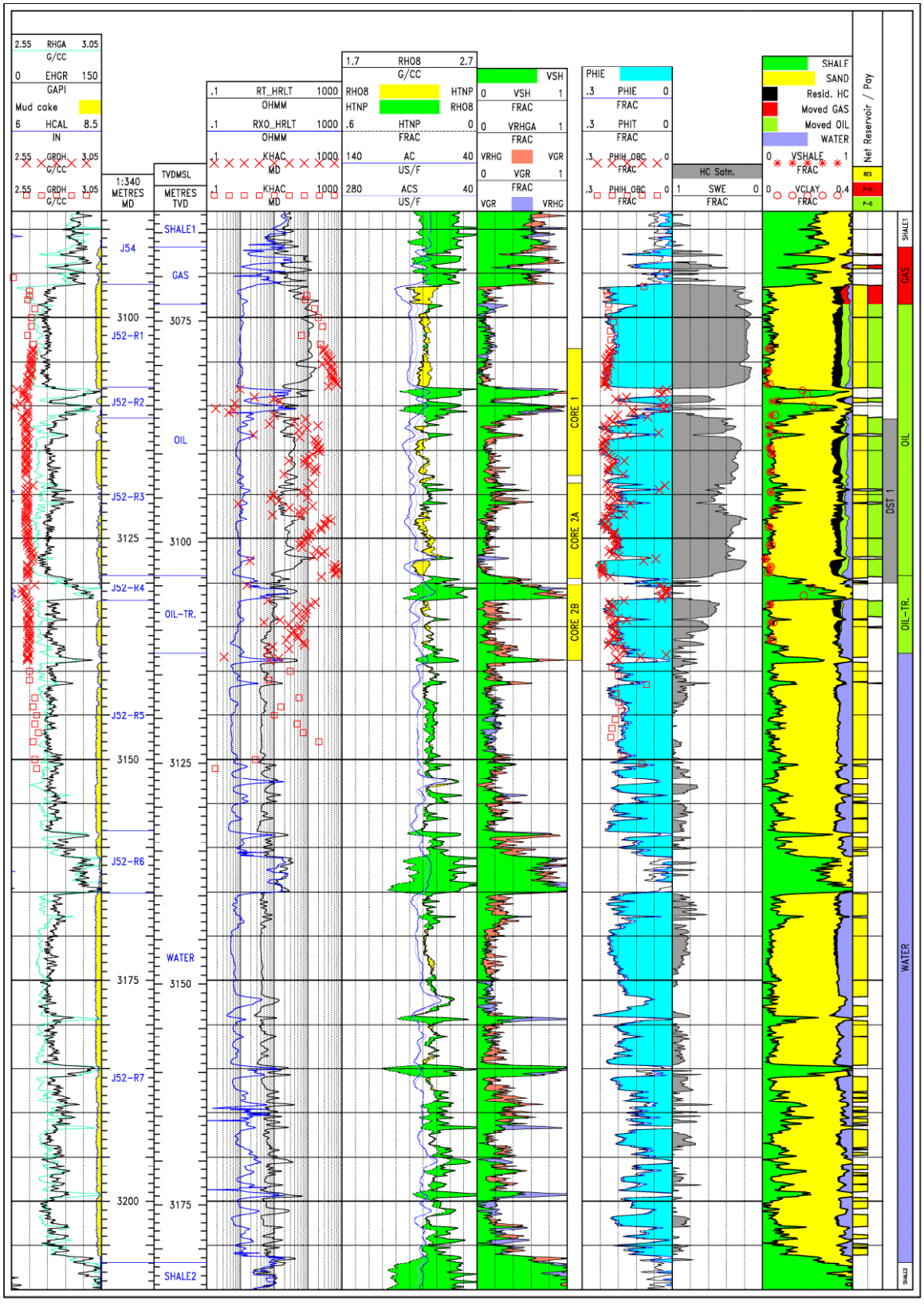
[1]	Log derived effective porosity PHIE - arithmetic average, thickness weighted.
[2]	Core overburden corrected helium porosity PHIH_OBC - arithmetic average.
[3]	Log derived effective water saturation SWE - arithmetic average, porosity and thickness weighted.
[4]	Core klinkenberg corrected horizontal air permeability KHAC - arithmetic average.
[5]	Core klinkenberg corrected horizontal air permeability KHAC - geometric average.
*	Core data values may not be representative due to insufficient core coverage in the zone.
**	Core data values not reported because they are not representative of the zone.
***	Core data values not reported because there are no core data in the zone.

3.7.3 CPI plots

3.7.3.1 CPI plot, middle Oxfordian J54 sequence



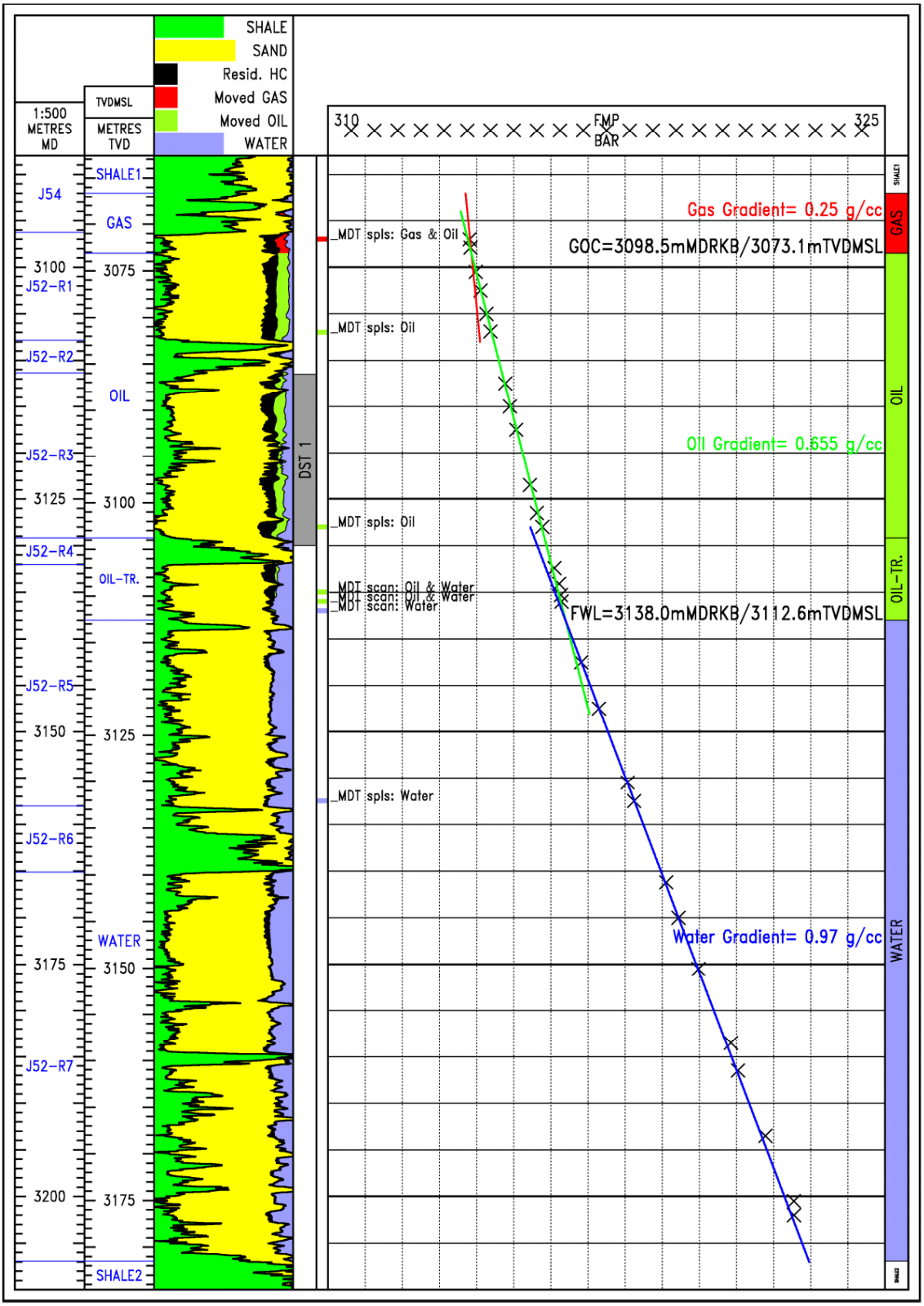
3.7.3.2 CPI plot, middle Oxfordian J52 sequence



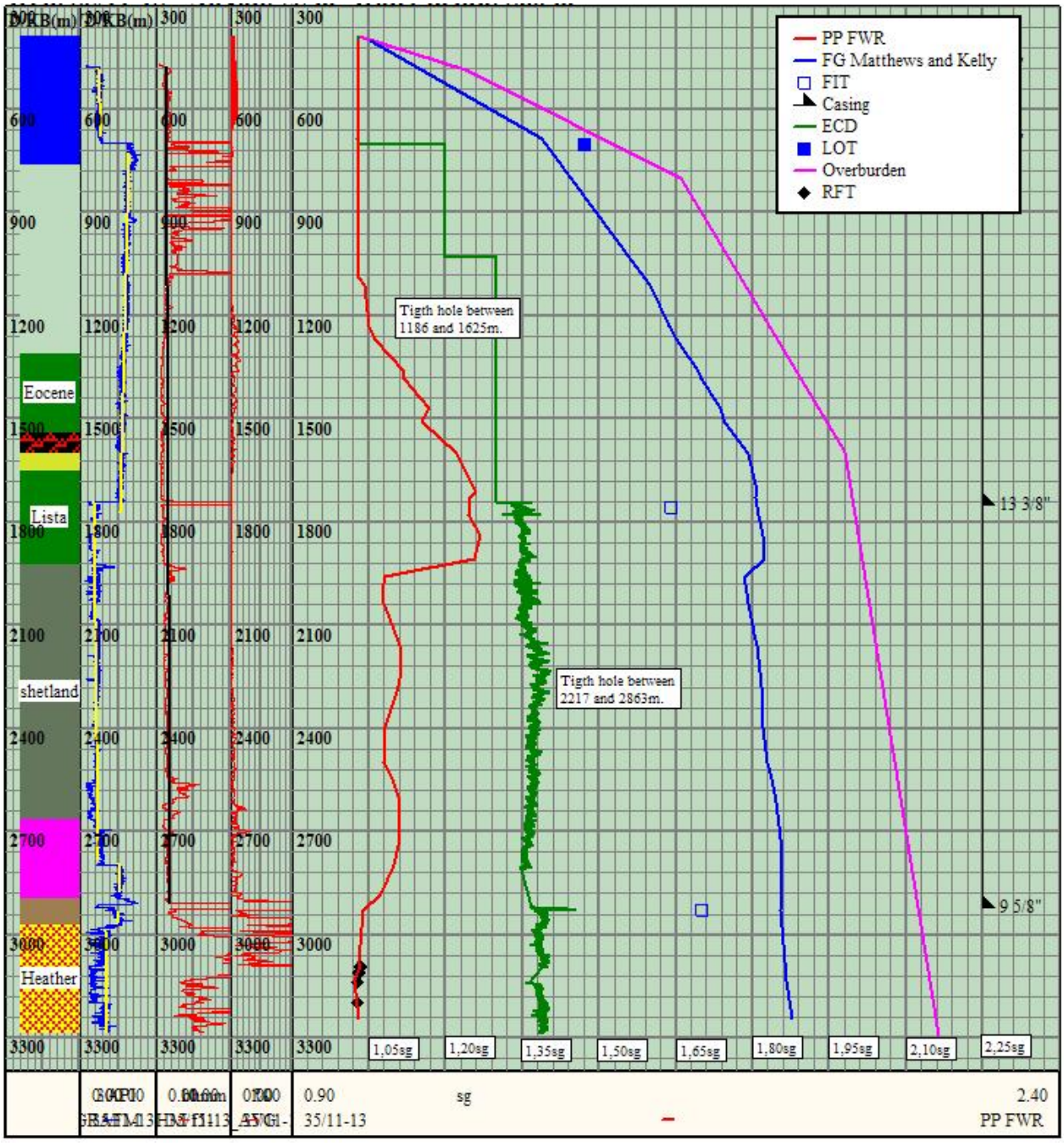
3.7.4 Formation pressure table

Depth MD RKB [m.]	Depth TVD MSL [m.]	Test No.	File No.	Reservoir Zone	Formation Pressure [bar]	Mud pressure Before [bar]	Mud pressure After [bar]	Mobility [mD/cp]	Remarks
3097.00	3071.6	32	111	J52-R1	313.816	393.595	393.602	235.4	ok
3097.90	3072.5	31	110	J52-R1	313.840	393.715	393.714	309.9	ok
3100.50	3075.1	30	109	J52-R1	313.981	394.034	394.031	462.7	ok
3102.50	3077.1	29	108	J52-R1	314.107	394.288	394.285	488.2	ok
3105.00	3079.6	28	107	J52-R1	314.269	394.597	394.596	450.5	ok
3106.90	3081.5	27	106	J52-R1	314.375	394.839	394.835	537.7	ok
3112.50	3087.1	26	105	J52-R3	314.774	395.532	395.534	3.2	Low mobility
3115.00	3089.6	25	104	J52-R3	314.899	395.844	395.841	287.2	ok
3117.50	3092.1	24	103	J52-R3	315.069	396.168	396.169	203.2	ok
3123.50	3098.1	23	102	J52-R3	315.439	396.916	396.915	328.7	ok
3126.50	3101.1	22	101	J52-R3	315.626	397.299	397.295	207.2	ok
3128.00	3102.6	21	100	J52-R3	315.770	397.562	397.560	166.6	ok
3132.40	3107.0	20	99	J52-R5	316.100	398.110	398.111	25.6	ok
3134.10	3108.7	19	98	J52-R5	316.226	398.244	398.247	7.8	Low mobility
3135.30	3109.9	18	97	J52-R5	316.274	398.432	398.433	12.7	Low mobility
3136.00	3110.6	17	96	J52-R5	316.291	398.520	398.521	16.3	Low mobility
3142.50	3117.1	16	95	J52-R5	316.819	399.318	399.322	53.8	ok
3147.50	3122.1	15	94	J52-R5	317.295	399.934	399.932	39.8	ok
3155.50	3130.1	14	93	J52-R5	318.068	400.937	400.942	23.9	ok
3157.50	3132.1	13	92	J52-R5	318.243	401.181	401.187	95.9	ok
3166.20	3140.8	12	91	J52-R7	319.110	402.264	402.261	34.6	ok
3170.00	3144.6	11	90	J52-R7	319.440	402.728	402.728	45.2	ok
3175.50	3150.1	10	89	J52-R7	319.979	403.405	403.408	20.8	ok
3183.50	3158.1	9	88	J52-R7	320.850	404.383	404.390	0.9	Low mobility
3186.50	3161.1	7	87	J52-R7	321.043	404.750	404.748	26.5	ok
3193.50	3168.1	6	86	J52-R7	321.784	405.621	405.607	7.5	Low mobility
3200.50	3175.1	5	85	J52-R7	322.546	406.492	406.469	3.2	Low mobility
3202.00	3176.6	4	79	J52-R7	322.550	406.657	406.643	21.2	ok
3205.50	3180.1	3	78	J52-R7		407.089	407.049		Dry Test

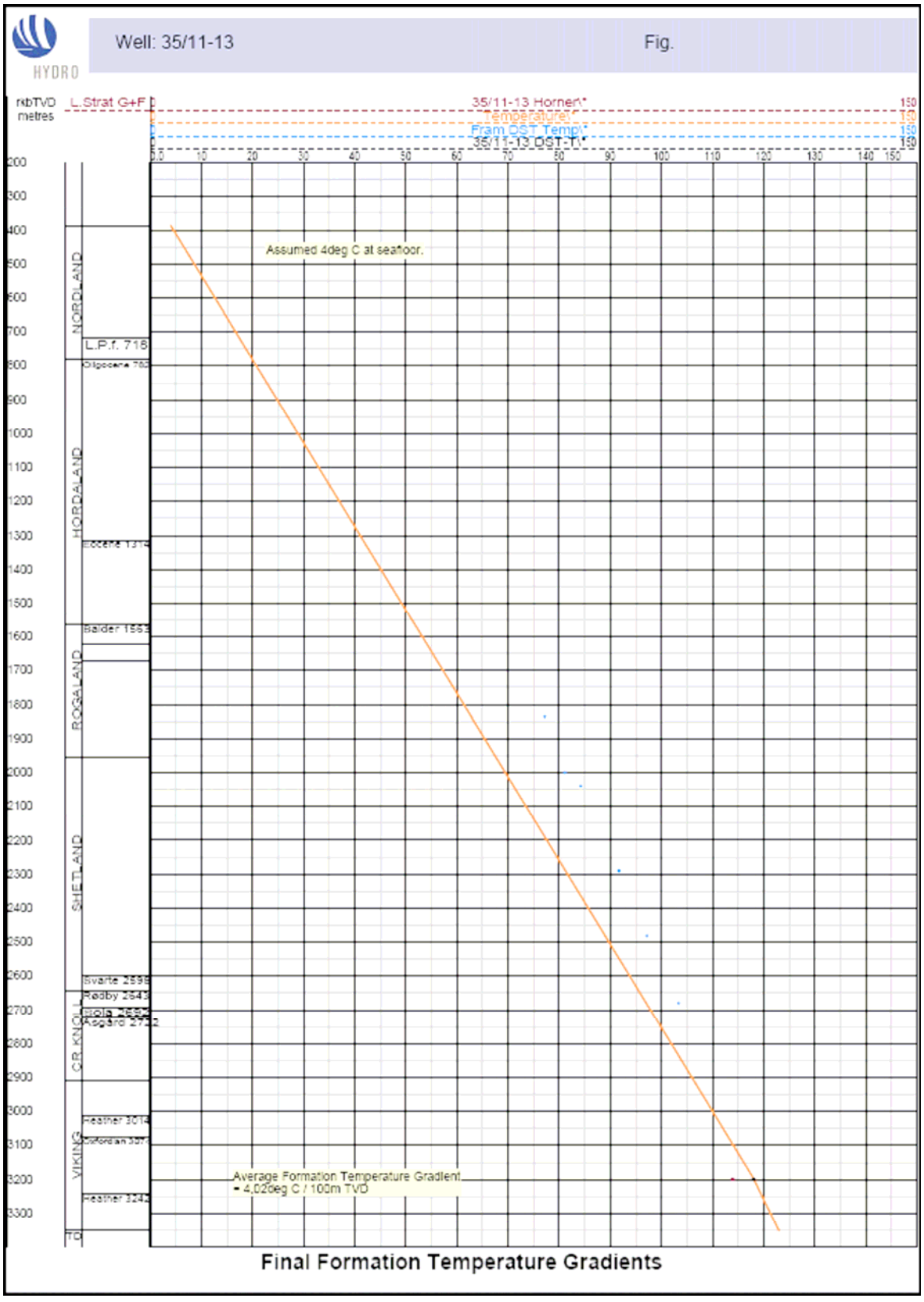
3.7.5 Formation pressure plot, formation gradients and fluid contacts



3.7.6 Formation pressure plot, overburden and fracture gradients



3.7.7 Formation Temperature plot



4 Post Site Survey

Well data

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

2 **Water depth (MSL):** 363m

3a **Setting depth for conductor (m RKB):** 471,5m

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

4a **Setting depth (m RKB TVD) for casing on which BOP mounted:**
694.5m

4b **Formation Integrity Test (g/cc):** 1,47 sg

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

Base Unit III:	512 m	(658ms)
Base Unit IV:	542m	(658ms)
Base Pleistocene:	550.5m	(672ms)
Top Lower Pliocene:	710m	(815ms)
Base Pliocene:	773 m	(877ms)
Base Oligocene:	1079m	(1189ms)

Note:
No chrono stratigraphic information was obtained in the top-hole section of the well (from seabed down to 701m RKB MD). Consequently, the interpretation of the different formations in this area is based on the MWD logs, seismic character and previous work.

Mud logging commenced at 701m RKB MD.

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

<u>Pleistocene Interval</u>

No LWD logs above 430m RKB.
512m – 513m
534,5m – 537m
542m – 544,5m
546m – 548m
550m – 550,5m

Pliocene Interval

710m – 773m *

Oligocene Interval

908m – 932m *

1012m – 1079m (Grid Formation)

7 By what means is the presence of gas proven:

The well was drilled with returns to seabed from sea floor at 362m to 701m before setting 20" casing at 694.5m RKB TVD. Hence, no data exists on background gas levels from this interval. Still, no gas-related incidents were reported. Below 701m RKB MD 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.

8 Composition and origin of gas:

N/A

9 Describe all measurements taken in gas bearing layers:

N/A

Seismic data

10 Given depth and extent of any gas blanking, seismic anomalies etc.:

Anomalous reflections have been observed within the survey area and at Location. However, no gas warning was issued as no problems have been experienced with shallow gas during previous drilling operations in the Fram area. Still, attention was recommended whilst drilling through the Base Quaternary (553m RKB, 563ms TWT), since this level is commonly associated with small quantities of gas in Norwegian sector of the North Sea.

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

N/A

* Mud logs indicate sand layer, however, gamma log does not show sand.

12 How does the interpretation of the site survey correspond to the well data with respect to?

12a Shallow Gas:

No shallow gas was observed in the well.

12b Shallow Water Flow:

Lower Pliocene fan deposits were expected to be significant to drilling in this area, as the top of this unit represents the top of a potential shallow water flow zone. No shallow water flow was experienced.

12c Sand Bodies:

The Pleistocene interval was not completely logged. Sand layers at base of Pleistocene were confirmed.

The Lower Pliocene sand layer was anticipated. The mud log indicates thick sand, however the gamma log does not support this (i.e. hole problems?).

The intra-Oligocene sand layers were not anticipated. The sands are not recorded by the gamma log.

12d Boulders:

Boulders were predicted between 408m ±1m RKB and 504m ±2m RKB and between 544m ±2m RKB and 557m ±3m RKB. No boulders were encountered.

12e Unconformities (depths in metres RKB (TVD)):

Horizon	Prognosis, P (m)	Observation, O (m)	O-P (m)
Base Pleistocene	557m ± 3m	550,5m	-6,5m (Shallower)
Base Pliocene	782m ± 7m	773m	-9m (Shallower)
Base Oligocene	1117m ± 40m	1079m	-38m (Shallower)

The differences between the anticipated and observed depths to different formation tops were close to the uncertainty limits. The difference between the predicted and observed depths is most likely caused by erroneous seismic picks and/or interval velocities.

12f Correlation to Nearby Wells:

The drilling conditions experienced in well 35/11-13 are as predicted and similar to those encountered in the tie-wells.

CONFIDENTIAL

REPORT
Hydro Oil & Energy
Operations
Deepsea Trym Rig Team

Title:	**Final well report, Well 35/11-13 Astero**	No.	: NH/OD-B-4522/05
		Rev.	: Rev 1
		Page	: B-1 of 141
		Date	: 2005-11-01

Prepared by	: Stein Ove Rokstad Drilling engineer	Sign.	:
Verified by	: Geir Smaaskjær Drilling Supervisor	Sign.	:
Approved by	: Svein Dybdahl Drilling Superintendent	Sign.	:

CONTENTS Section B

1 Operations and experiences

All depths are referenced to RKB, 25 m above MSL. Seabed was located at 361,7 m below MSL.

The semi submersible drilling rig “Deepsea Trym” drilled the 35/11-13 Astero well north of the Fram field. Deespsea Trym arrived location 16th of March 2005, and the well was spudded the 18th of March. The 35/11-13 well was plugged and permanently abandoned on the 29th of May 2005.

Total time used on the well was ~74,1 days (1778.0 hours), of which ~64.5 days (1548 hours) were operational time (87.0 %).

2 Transit and positioning

The total time used for mobilization from Idun well 31/4-12 and anchoring of Deepsea Trym for well 31/4-12 was 77.5 hours. This includes rig move, positioning, anchoring, and testing of anchor lines and installation of transponders at seabed.

3 36" hole section

TD 17 ½” (MD, TVD)	474 m	474 m
TD 30" casing (MD, TVD)	471.5 m	471.5m
Total time consumption	64.5 hrs	
Operational time (hrs, %)	62.0 hrs	96.1 %
Downtime (hrs, %)	2.5 hrs	3.9 %

3.1 Drilling

The section was drilled with a 17 1/2” Hughes Christensen MXT305HDX2 bit and a two-stage 26”x 36” hole opener. The drilling fluid consisted of seawater and spud mud. The hole was washed down from seabed at 386 m to 394 m. To improve the hole cleaning, a 10 m^3 Hi-Vis pill was pumped on each stand. Displaced the well to 1.5 sg mud prior to pulling out of hole.

BHA no	Bit name	Bit Type	Bit meters	Rotating hours	Effective ROP, m/hr	Pull reason
1	MX-T305HDX2	Insert	88	10.2	8.6	TD

3.2 30" Conductor

Ran 8 joints of the 30” Conductor to 471.5 m, and sat it down with 10 tons. The conductor was run in 1.50 SG mud. Mixed and pumped a total volume of 26 m^3 with 1.56 SG lead slurry and 28 m3 of

1.95 SG tail slurry. Displaced the cement with seawater and held the conductor in tension until the cement was set up before releasing the running tool.

4 26” hole section

TD 26” (MD, TVD)	701	700.9
TD 20” csg (MD, TVD)	694.6 m	694.5 m
Total time consumption	154 hrs	
Operational time (hrs, %)	143.5 hrs	93.2 %
Downtime (hrs, %)	10.5 hrs	6.8 %

4.1 Drilling

The 30” conductor shoe was drilled out along with 2 m new formation to 476 m with a 26” bit. A 9 7/8” pilot hole was then drilled to 701 m MD. No shallow gas was encountered. A 26” hole was drilled down to 561 m when the assembly was pulled back into the casing to repair the pipe handling system. The repair resulted in 4 hours of downtime. Drilling continued until TD was reached at 701 m and the hole was displaced to 1.2 SG mud. A wiper trip was performed to the 30” conductor shoe at 471,5 m. At TD the hole was displaced to 1.50 SG KCl mud prior to pulling out of hole.

The 26" section was drilled using a rotary assembly. Due to angle building tendency, the drilling parameters had to be held back, resulting in a low ROP to keep the hole vertical. A downhole motor should be considered when drilling vertical holes to prevent angle building. This becomes a strong recommendation in long 26” hole sections.

BHA no	Bit name	Bit Type	Bit meters	Rotating hours	Effective ROP, m/hr	Pull reason
2	GTX-CM03	Insert	2	2,5	0,8	Change BHA
3	MX-03	Insert	225	10,5	21,4	TD of Pilot Hole
4	GTX-CM03	Insert	237	18,5	12,8	TD

4.2 20” Surface casing

Ran the 20” casing and 18 ¾” wellhead using 23 joints. Landed the surface casing on 5 ½” HWDP with the 20” shoe at 694.6 m. No obstructions were observed. Pumped a 10 m^3 1.53 SG spacer prior to dropping the bottom dart,. Mixed and pumped 66.6 m^3 1.56 SG lead slurry and 30.2 m^3 1.92 SG tail slurry. The cement unit failed for 20 minutes whilst pumping the tail cement. The top dart was then dropped, and the cement was displaced with seawater at a rate of 2000 l/min. Bumped the plug and pressure tested the 20” surface casing to 100 bar.

5 17 1/2" hole section

TD 17 ½" (MD, TVD)	1757 m	1756.8 m
TD 13 3/8" csg (MD, TVD)	1751.3 m	1751.0
Total time consumption	212 hrs	
Operational time (hrs, %)	181.5 hrs	85.6 %
Downtime (hrs, %)	30.5 hrs	14.4 %

5.1 BOP testing

Ran the BOP and riser according to the plan. A decision was made to test the BOP to the maximum well design pressure,. Norsk Hydro Steering documentation demands only to the test the BOP to the maximum section pressure at this phase of the well. This required two extra trips to retrieve and install the boreprotector, plus an additional run with the BOP test tool to test the BOP and wellhead connector to MWDP, causing a downtime of 25 hours.

5.2 Drilling

Drilled out of the 20" shoe and 3 m of new formation to 704 m. Performed a leak-off test to 1.47 SG using 1.2 SG mud. The section was drilled in two runs using a the PDC bit down to 1152 m, and a roller cone down to 1757 m. The HCR-606-Z bit experienced high Stick Slip from 1103 m MD and a low rate of penetration (ROP) from 1145 m MD. Suspected bit balling because of hydraulic lift of the drillstring and low drilling progress. A KCL pill was spotted at the bit and the drilling parameters were adjusted periodically with no result.

The hole was circulated 1,5 times bottoms up before pulling out of the hole. Tight spots were observed from 1120 m to 1106 m. The tight spots were backreamed from 1127 m to 1068 m and the hole was then circulated clean one time bottoms up from 1068 m. A washout was discovered in the MPR Resistivity Gamma Tool, though the drilling parameters gave no indication of a washout. The bit and the stabilizers was also found to be completely balled up. This caused a downtime of 29.5 hours.

On the second trip out from TD, tight spots were observed at 1625 m to 1186 m. The bottom hole assembly was lubricated out of the hole from 1186 m to the 20" casing shoe. Circulated 1 times bottoms up while reciprocating the string over the interval from 1186 m to 1157 m to ensure good hole cleaning. A wiper trip was performed and several tights spots were observed from 1186 m to TD on the trip in. Reamed and washed the tight spots as required. On the trip out, no obstructions were observed.

BHA no	Bit name	Bit type	Bit meters	Rotating hours	Effective ROP, m/hr	Pull reason
5	HCR-606-Z	PDC	451	21,9	20.6	Low ROP
6	MX-ST303DX	Insert	605	19,40	31,2	TD

The section was drilled with a Aquadrill mud type. The mud weight was 1.20 SG at the start and was increased to 1.30 SG at 1078m.

5.3 13 3/8" Intermediate casing

Ran 110 joints of the 13 3/8" casing of grade P-110 and landed the intermediate casing on 5 ½" HWDP, with the 13 3/8" shoe at 1751.3, leaving a 6 m rathole. The casing ran smoothly to target depth. Pumped 10 m3 of soap pill and 15 m3 of spacer prior to mixing and pumping 29.2 m^3 1.90 SG cement slurry. Bumped the plug and pressure tested the casing 265 bar. Pressure tested the 13 3/8" seal assembly to 400 bar and the BOP to 35/300 bar for 5/10 minutes.

6 12 1/4 hole section

TD (MD, TVD)	2932 m	2931.7 m
TD 9 5/8" liner (MD, TVD)	2924.4 m	2924.1 m
Total time consumption	409 hrs	
Operational time (hrs, %)	257 hrs	62.8 %
Downtime (hrs, %)	152 hrs	37.2 %

6.1 Drilling

The 13 3/8" shoetrack, rat hole and 3 m of new formation to 1760 m were drilled with a 12 ¼" clean-out assembly without a MWD service, due to damaged threads on MPR/DCP equipment. This caused a downtime of 20 hours. A high viscosity pill was spotted on bottom at 1760 m and a formation integrity test was performed to 1.64 sg using 1.3 SG mud

The rest of the section was drilled in 5 runs and one fishing run.

A 12 ½" hole was drilled using a HCR-606Z bit down to 1782 m MD and was pulled out of hole in preparation due to bad weather forecast. Out of hole observed that one of the bit blades was left in the hole, resulting in one run with junk basket. An attempt to recover the fish was made without success. A junk bit and junk basket was then run to crush the fish and the bit drilled new formation down to 1794 m MD.

A roller cone bit and motor assembly drilled on from 1794 m MD and it was pulled at 1945 m MD, due to low ROP and high stick slip values. Found the bit and stabilizers to be balled up with clay, and a change was made from rock bit to PDC bit. The PDC bit drilled to 2813 m before it was pulled due to signal failure from the MWD. Found the lower bearing on the motor worn out. Tested the BOP and picked up a new motor and re-run the PDC bit nr 10. Drilled to 12 ¼" section TD at 2932 m MD.

BHA no	Bit name	Bit type	Bit meters	Rotating hours	Effective ROP, m/hr	Pull reason
7	HCR-606Z	*PDC*	3	0,1	30	BHA
8	HCR-606	*PDC*	22	3,20	6,9	WC
9	ATJ-G8	Mill tooth	12			BHA
10	MXC09DX	Insert	151	12.9	11,7	PR
11	HCR-606	PDC	868	46.1	18,8	DTF
12	HCR-606	PDC	119	5,7	20,9	TD

The hole was drilled with 1.30 SG Aquadrill mud.

6.2 9 5/8" Production casing

Ran 198 joints of 9 5/8" P-110. Landed the casing on 5 ½" HWDP with the 9 5/8" casing shoe at 2924.4 m TD. The casing was cemented with 13.2 m^3 1.80 SG cement slurry. Bumped the plug and pressure tested the casing to 370 bar. Sat the 9 5/8" seal assembly an pressure tested the seal assembly to 370 bar and continued and pressure tested the BOP to 35/370 bar for 5/10 minutes.

7 8 1/2" Main bore section

TD (MD, TVD)	3291.5 m	3291.5 m
Total time consumption, drilling	260 hrs	
Operational time (hrs, %)	233.5 hrs	89.8 %
Downtime (hrs, %)	26.5 hrs	10.2 %

7.1 Drilling

Drilled out the 9 5/8" shoe track and 3 m of new formation to 2935 m. Performed a formation integrity test to 1.70 SG using 1.3 SG mud. The first bit run drilled only 69 m when the string had to be pulled due to bad decoding from the MWD.

High stick slip and erratic torque readings were experienced and the drillstring was occasionally pumped off bottom during drilling of the rathole. While drilling a range of varied parameters was employed without any marked improvement in stick slip readings. MWD decoding was erratic and supplied insufficient information for geological interpretation of potential core point. Due to the erratic MWD signals together with an unacceptable low penetration rate, the string was pull out of hole. When laying out the MWD telemetry, BCPM, found traces of rope in the stop sub screen.

The next bit drilled successfully down to coring point at 3100m (drill break at 3096 m). When circulating bottoms up from 3100 m, high content of hydrocarbons were found in the samples. The run was drilled with a HCR 607 PDC bit due to the low ROP seen from the previous run, where a tricone bit was used.

Pick up an 18 m coring assembly and cored from 3100 m to 3115 m where the core jammed off. Recovered a total of 14.4 m, giving a 97 % recovery. A second core was cut from 3115m to 3142m. Recovered a total 19.3 m of 27 m, giving a 71.5% recovery.

Made up a 8 ½"drilling assembly and drilled a 8 ½" hole down to well TD at 3291.5 m.
From 3200 m there was a formation change that gave excessive stick slip. Several attempts were made to minimize Vertical Stick Slip to acceptable limits by varying the drilling parameters without much success. The downhole vibrations continued and the level of vibration exceeded INTEQ tool specifications. Drilling of the section was completed with an acceptable penetration rate.

BHA no	Bit name	Bit type	Bit meters	Rotating hours	Effective ROP, m/hr	Pull reason
13	MX18DX	Insert	18	9,40	1,9	BHA
14	HCR607	PDC	150	9,70	15,5	CP
15	BHC606	Core Bit	15	1,60	9,4	CJ
16	BHC606	Core Bit	27	2,8	9,6	Coring TD
17	HCR607	PDC	150	15,60	9.6	TD

The hole was drilled with 1.30 SG Aquadrill mud.

7.2 Electric Wireline Logging

Rigged up and logged HRLA-DSI-PEX-ECS from 3297.6 m to 2901.5 m with good quality logs. Ran MDT an attempted 29 pressure point resulting in 28 good pressure points and 1 dry point.

A 4 level VSI was used to acquire a zero Offset VSP survey in combination with Gamma Ray run on conventional wireline. Data quality for the Zero Offset VSP was considered to be good over the surveyed interval up to 2443 m with casing arrival impairing data quality from 2443 m to requested VSP top interval of 1700 m.

Ran in hole with the MDT tool and sampled 11 fluid samples. Ran in hole with MSCT coring tool and cored 45 sidewall cores.

8 Downhole production test

8.1 7" Liner

Ran 41 joints of NSCC grade L-80 Liner (47.6 kg/m). The landing string consisted of 5 stands of 5" HWDP and 94 stands of 5" DP. The shoe was set at 3290.5 m MD with the top of the 7"liner at 2825.5 m MD. No problems occurred when running in with the liner.

Circulated to condition the mud prior to the cement job pumping a total of 145 m^3 of Aquadrill 1.3 SG mud. Pumped a 5 m^3 of soap wash pill, followed by 10 m^3 1.6 SG spacer, before mixing and pumping 19.3 m^3 of 1.80 SG cement slurry at a pump rate of 1000 l/min

Displaced the cement with 32.0 m^3 of mud at 1200 l/min using the cement unit, Bumped the plug and pressure tested the liner to 280 bars for 15 minutes. No losses were recorded during the cementing and displacement.

8.2 Test summary

Ran in hole with a scraper/top dress mill assembly and scraped the test string packer area and perforating interval and displaced the well to 1.1 SG packer fluids. Rigged up and ran a CBL/VDL-GR-CCL cement evaluation log. Ran the test string as per tally and perforated the 7" liner from 3311.5 m MD to 3130 m MD. Performed the initial flow/build-up followed by the main flow/build-up and performed a mini-fracture test at the end of the test. For detailed description of the well test see Enclosure A; "Well test operations report, well 35/11-13".

9 P&A

After the testing was done, a cement retainer and casing collar locator was run on wireline. The cement retainer was sat at 3094 m, and was pressure tested to 270 bars for 10 minutes.

Ran in hole with a cement stinger and stung into the cement retainer. Closed the lower annular preventer and performed an injectivity test. Mixed and pumped 6 m^3 freshwater, 5 m^3 1.8 SG cement slurry, 2.1 m^3 freshwater and displaced the cement with 21.1 m^3 1.1 SG brine to squeeze cement the perforations. Pulled out of to 2818 and mixed and pumped another 6 m^3 spacer followed by 5 m^3 1.8 SG cement slurry, which were displaced with 20,4 m3 1,1 SG brine. Pulled slowly of the cement plug to 2672 m and circulated out excess cement. Pulled out of hole with the cement stinger and ran in hole with a 8 ½" bit and tagged the cement plug with 10 tons at 2690 m. Pressure tested the cement plug to 70 bars above the 9 5/8" leak of to 220 bar using 1.3 SG mud.

A shooting nipple was run in hole, spaced out and the middle pipe ram was closed. Rigged up to punch hole in 9 5/8" casing using wireline. Correlated the casing punch at stopped at 405 m MD and pressured the well up to 20 bar. Fired the gun and observed a pressure drop from 20 bar to 0 bar, indicating no gas behind the 9 5/8" casing.

The 9 5/8" wear bushing and seal assembly had to be retrieved in two runs due to the 9 5/8" lock ring. The 9 5/8" casing was cut at 1651.2 m with a 9 5/8" casing cutting assembly. Ran in hole with a 9 5/8" spear assembly and pulled free with 10 tons and retrieved the casing.

A 13 3/8" bridge plug was sat at 1644 m, and pressure tested to 144 bars.
A 10 m3 balanced 1.9 SG cement plug was set on top of the 13 3/8" bridge plug from 1644 m to 1520 m. This cement plug was not tagged nor pressure tested.

The second 13 3/8" bridge plug was sat at 635 m on the 5th attempt. It was necessary to pressurize the string to 200 bars and pull fast to set the plug.

The 13 3/8" casing was cut at 560 m. Several attempts were made with different overpulls to retrieve the casing with a spear assembly. As there was no success, a multi purpose tool (MPR) was

run in the hole. The 13 3/8" seal assembly was pulled loose with 55 tons of overpull and retrieved. Ran in hole with the spear assembly and pulled the casing free with 73 tons overpull.

A 32.5 m3 balanced 1.95 SG cement plug was set on top of the second 13 3/8" bridge plug from 635 m to 405 m. Ran in hole with a 12 ¼" bit and tagged the cement plug at 436 m with 12 tons.

Pulled the riser and BOP.

A 20" x 30" conductor cutting and retrieval tool was run in the hole, stung in the wellhead, and a correct landing was verified by 10 tons overpull. The 20" x 30" conductor was cut at 393.13 m and several attempts were made to pull the wellhead free, but there was no success. The 20" x 30" conductor was then re-cut 390.36 m, and the conductor was pulled free along with the guidebase with 213 tons of overpull.

The anchors were handled and the rig was in transit for CCB at 05:02 hrs 29th of May 2005.

GENERAL INFORMATION

Well : 35/11-13 **PO** : 1

Field : ASTERO **Country** : NORWAY **Wellbore Type :** WELL
Licence : PL 090 **Installation** : DEEPSEA TRYM
UTM zone : 31 **Central Median** : 3° E **Horiz. Datum:** ED50

Location coordinates:		Surface	Target
UTM	**North [m]:**	6311139,00194454	
UTM	**East [m]:**	6019,001893124	
Geographical	**North :**	61 09'44.05"	
Geographical	**East :**	03 32'21.36"	

Water Depth: 361,7 **m** **Reference Point Height:** 25,0 **m**
Formation at TD: HEATHER at 3204 m MD

Operator:	NORSK HYDRO PRODUKSJON AS	**Share:** 25.00 **%**
Partners:	MOBIL DEVELOPMENT NORWAY AS	**Share:** 25,00 **%**
	STATOIL ASA	20,00 **%**
	GAZ DE FRANCE NORGE AS	15,00 **%**
	IDEMITSU PETROLEUM NORGE AS	15,00 **%**

Total depth (RKB) : 3291,5 **m MD** 3291,1 **m TVD**

TIME SUMMARY

Start Time : 2005-03-16 06:30:00
Spudding date : 2005-03-18
Abandonment date : 2005-05-29

Main operation	Hours	Days	%
MOBILIZATION	77,5	3,2	4,4
DRILLING	735,5	30,6	41,4
FORMATION EVALUATION MWD	3,0	0,1	0,2
FORMATION EVALUATION LOGGING	72,0	3,0	4,0
FORMATION EVALUATION CORING	67,0	2,8	3,8
TESTING (PRODUCTION TEST)	317,5	13,2	17,9
PLUG AND ABANDONMENT	275,5	11,5	15,5
DOWNTIME DRILLING	216,0	9,0	12,1
DOWNTIME FORM. EVAL. MWD	1,0	0,0	0,1
DOWNTIME FORM. EVAL. LOGGING	0,5	0,0	0,0
DOWNTIME FORM. EVAL. CORING	4,5	0,2	0,3
DOWNTIME TESTING (PROD. TEST)	4,0	0,2	0,2
DOWNTIME PLUG AND ABANDONMENT	4,0	0,2	0,2
Sum:	**1778,0**	**74,1**	

Hole and casing record

Hole	Track	Depth [m MD]	Casing/Tubing	Track	Depth [m MD
36"		471,5	30"		471
26"		701,0	20"		694
17 1/2"		1757,0	13 3/8"		1751
12 1/4"		2932,0	9 5/8"		2924
8 1/2"		3291,5	7"		3290

Well status: Permanently abandoned Exploration Well

CONTRACTORS:

Mwd/Lwd Contractor : BAKER HUGHES INTEQ
Rig Contractor : ODFJELL DRILLING BERGEN A/S
Wireline Logg Contractor : SCHLUMBERGER OFFSHORE SERVICES LTD

DAILY REPORT

Well: 35/11-13 **PO:** 1

Daily report no : 1 **Date:** 2005-03-16
Midnight depth : 0 m MD **Estimated PP:** sg **Mud weight:** 0,00 sg

Stop time	Description
06:30	
18:30	Rig under tow to the Astero location after mooving from the 31/4-12 location.
21:30	Anchor number 6 at bottom.
22:30	Deepsea Trym arrived at the Astero location.
23:59	Running anchors.

Daily report no : 2 **Date:** 2005-03-17
Midnight depth : 0 m MD **Estimated PP:** sg **Mud weight:** 0,00 sg

Stop time	Description
02:00	Anchor number 2 at bottom.
03:30	Anchor number 9 at bottom.
04:00	Anchor number 5 at bottom.
06:00	Anchor number 7 at bottom.
06:30	Anchor number 3 at bottom.
09:00	Anchor number 4 and 8 at bottom.
10:30	Demobilised Maersk Advancer and Higland Endurance.
15:00	Ballasted the rig.
16:30	Completed tensioning up anchor number 2.
19:00	Completed tensioning up anchor number 3.
21:00	Completed tensioning up anchor number 4.
23:00	Completed tensioning up anchor number 5.
23:59	Tensioned up anchor number 6.

Daily report no : 3 **Date:** 2005-03-18
Midnight depth : 0 m MD **Estimated PP:** 1,03 sg **Mud weight:** 1,05 sg

Stop time	Description
00:30	Completed tensioning up anchor # 6.
02:30	Completed tensioning up anchor number 7.
04:30	Completed tensioning up anchor number 8.
06:30	Completed tensioning up anchor number 9.
08:00	Ran in to 6 m above seabed, and prepared to spud the well.
08:30	TMS spool failure on the ROV.
09:00	Installed depthline on the DDM.
10:00	Adjusted rig in position above spud point.
10:30	Tagged seabed when observing with the ROV.
11:30	Replaced the marker buoys, and installed an additional transponder on seabed.
12:30	Placed the transponder 45 m off location, in a 300 deg direction. 2 buoys were placed forward and aft, 10 m off the well center.
13:30	Washed down with the 17 1/2" x 36" hole opener from seabed at 386 m to 394 m.
15:00	Drilled 17 1/2" x 36" hole from 394 m to 403 m.
19:00	Drilled 17 1/2" x 36" hole from 403 m to 427 m.
21:00	Mooved the rig 5 m North-East and reamed from 410 m to 427 m.
22:30	Drilled 17 1/2" x 36" hole from 427 m to 440 m.
23:59	Reamed the hole from 416 m to 440 m.

Daily report no : 4 **Date:** 2005-03-19
Midnight depth : 474 m MD **Estimated PP:** 1,03 sg **Mud weight:** 1,05 sg

Stop time	Description
01:00	Mooved the rig back to above well centre while reaming.
02:30	Drilled 17 1/2" x 36" hole from 440 m to 450 m.
04:00	Drilled 17 1/2" x 36" hole from 450 m to 459 m.
06:30	Mooved the rig 12 m East and reamed from 448 m to 459 m.
10:30	Drilled 17 1/2" x 36" hole from 459 m to 473,75 m

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Daily report no : 4 **Date:** 2005-03-19
Midnight depth : 474 m MD **Estimated PP:** 1,03 sg **Mud weight:** 1,05 sg

Stop time	Description
11:30	Circulated to clean the 36" hole. Displaced to 1,50 sg mud afterwards.
12:00	Pulled out of the 36" hole to 402 m.
13:00	Installed new marker buoys.
18:00	Pulled out of the 36" hole.
20:00	Moved guidebase to well center and rigged up casing running equipment.
22:00	Ran the 30" casing.
23:59	Ran the 5 " drillpipe innerstring using false rotary.

Daily report no : 5 **Date:** 2005-03-20
Midnight depth : 474 m MD **Estimated PP:** 1,03 sg **Mud weight:** 1,50 sg

Stop time	Description
00:30	Landed the conductor in the guidebase on the trolly.
01:30	Picked up conductor, made up loose connection in the landing string and relanded the conductor in the guidebase on the trolly.
04:00	Picked up the guidebase and ran the conductor from 102 m and down to the seafloor at 386,7 m.
05:30	Ran the conductor from 386,7 m to 471,5 m, and sat down 10 tons.
07:00	Pulled the conductor up 1 m from 471,5 m to 470,5 m, and circulate with seawater, 20 m3 at 400 lpm.
09:30	Cemented the 30" casing according to programme.
18:30	Held conductor in tension to allow the cement to set before releasing the 30" running tool.
22:00	Released the 30" running tool and pulled out of the hole with the running tool and cement stinger.
23:00	Laid down the 36" bottom hole assembly.
23:30	Made up the 26" bottom hole assembly.
23:59	Made up the MWD in the 26" bottom hole assembly.

Daily report no : 6 **Date:** 2005-03-21
Midnight depth : 591 m MD **Estimated PP:** 1,03 sg **Mud weight:** 1,05 sg

Stop time	Description
03:00	Ran down to the 30" housing at 385 m with the 26" clean out assembly.
04:00	Entered the 30" housing with the 26" clean out assembly, and ran down to the 30" conductor shoe from 385 m to 464 m.
06:30	Cleaned out the 30" conductor and the rathole from 464 m to 476 m.
07:00	Pumped 20 m3 Hi-Visc and circulated the hole clean.
08:00	Pulled out the 30" conductor with the 26" clean-out assembly.
09:30	Pulled out with the 26" clean-out assembly, and racked same.
10:00	Inspected the derrick for loose objects.
11:00	Held pre job meeting with the crew, and picked up the bottom hole assembly.
12:00	Tested the MWD while performing HAZID analyzis for drilling the 9 7/8" hole.
14:00	Made up the remaining 9 7/8" bottom hole assembly, and ran in hole.
14:30	Ran in hole with the 9 7/8" bottom hole assembly.
15:30	Ran in to TD at 476 m with the 9 7/8" bottom hole assembly on 5 1/2" drill pipe.
23:59	Drilled 9 7/8" pilot hole from 476 m to 591 m.

Daily report no : 7 **Date:** 2005-03-22
Midnight depth : 553 m MD **Estimated PP:** 1,03 sg **Mud weight:** 1,05 sg

Stop time	Description
06:00	Drilled 9 7/8" pilot hole from 591 m to TD at 701 m.
08:00	Performed flow check, and displaced the hole the 1,2 sg bentonite mud
09:30	Pulled in to the 30" conductor with the 9 7/8" bottom assembly.
10:00	Pulled out of the 30" conductor with the 9 7/8" bottom assembly.
11:00	Pulled out of the hole and racked back the 9 7/8" bottom hole assembly.
12:00	Dumped and racked back the MWD
14:30	Make up the 26" bottom hole assembly.
15:00	Programmed the MWD.
16:30	Made up 26" bottom hole assembly, and ran down to the seabed.

DAILY REPORT

Well: 35/11-13 **PO:** 1

Daily report no : 7 **Date:** 2005-03-22
Midnight depth : 553 m MD **Estimated PP:** 1,03 sg **Mud weight:** 1,05 sg

Stop time	Description
18:30	Stabbed in to the 30" conductor shoe with the 26" bottom hole assembly on 5 1/2" drill pipe.
19:00	Washed down from 471,5 m to 476 m.
23:59	Drilled 26" hole from 476 m to 553 m.

Daily report no : 8 **Date:** 2005-03-23
Midnight depth : 553 m MD **Estimated PP:** 1,03 sg **Mud weight:** 1,05 sg

Stop time	Description
01:30	Drilled 26" hole from 553 m to 561 m.
05:30	Pulled back in to the 30" conductor at 469 m, repaired the pipe handling system, and ran back to TD at 561 m.
19:00	Drilled 26" hole from 561 m to 701 m.
20:00	Pumped 20 m3 Hi-Vis, and circulated the hole clean with seawater.
21:00	Displaced the open hole to drillwater, and flow checked for 1/2 hour.
22:00	Displaced the well to 1,20 sg Bentonite mud.
23:30	Performed wiper trip up to the 30" shoe at 471,5 m.
23:59	Displaced the well to 1,50 sg KCL mud.

Daily report no : 9 **Date:** 2005-03-24
Midnight depth : 553 m MD **Estimated PP:** 1,03 sg **Mud weight:** 1,50 sg

Stop time	Description
02:30	Pull out of the 26" hole with the bottom hole assembly from TD at 701 m, and in to the 30" casing shoe 469 m.
03:00	Pull out of the 30" conductor with the 26" bottom hole assembly from 469 m to 385 m..
06:30	Pulled out of the hole and racked back the 26" bottom hole assembly.
07:30	Dumped and racked back the MWD.
08:30	Made up the cement stand.
10:00	Rigged up to run the 20" casing.
15:00	Ran the 20" casing down to 300 m.
16:00	Installed the 18 3/4" wellhead.
17:00	Ran the 20" casing down to the seabed on 5 1/2" HWDP.
18:00	Entered the 30" housing and ran the 20" casing down to the 30" conductor shoe at 471,5 m on 5 1/2" HWDP.
20:30	Ran the 20" casing down to down to setting depth at 694,6 m on 5 1/2" HWDP. Performed 20 MT overpull.
23:59	Displaced the 20" x 26" annulus from 1,50 sg KCL mud to seawater prior to the 20" casing cement job. Had full returns during the displacing.

Daily report no : 10 **Date:** 2005-03-25
Midnight depth : 695 m MD **Estimated PP:** 1,03 sg **Mud weight:** 1,22 sg

Stop time	Description
00:30	Circulated the well with seawater prior to the 20" casing cement job. Had full returns during the circulation.
01:00	Pumped 10 m3 spacer ahead of the 20" casing cement job.
04:00	Launched the bottom dart, Mixed and pumped 66,6 m3 1,56 sg lead slurry, and 30,2 m3 tail slurry.
04:30	Launched the top dart, and sheared the wiper plug with the cement unit. Dispaced the cement with the rig pumps and bumped the plug with 30 bar. Had full returns during the displacing of the cement.
05:00	Pressure tested the casing to 100 bar with sea water.
06:00	Released the running tool and washed the guidebase.
08:00	Pulled out of the hole with the 20" casing running tool.
08:30	Rigged down the casing handling equipment.
11:30	Laid down the 26"- and 9 7/8" bottom hole assemblies, and the cement stand..
16:30	Prepared to run the BOP, and moved the BOP in to the moonpool center.
19:00	Stabbed the riser in to the BOP, and prepared to run the BOP through the splash zone.
23:59	Ran the BOP on Deepsea Bergen riser from surface to 78 m.

DAILY REPORT

Well: 35/11-13 **PO:** 1

Daily report no : 11 **Date:** 2005-03-26

Midnight depth : 695 m MD **Estimated PP:** 1,03 sg **Mud weight:** 1,20 sg

Stop time	Description
04:00	Ran the BOP on Deepsea Bergen riser from 78 m to 154 m.
13:00	Changed the handling equipment, and continued to run the BOP on Deepsea Trym riser from from 154 m to 350 m.
18:00	Picked up and installed the slip joint. Landed the slip joint in the spider, installed and tested the yoke.
19:00	Landed the BOP. Performed a 25 Tons overpull test. Released- and stroke out the inner barrel
22:00	Installed the diverter and the flowline seal. Filled the the riser with seawater and circulated the riser on the triptank to monitor for leaks.
23:30	Made up and ran in hole from surface to 384 m with Multi Purpose Tool on 5 1/2" DP to retrieve the preinstalled 18 3/4" bore protector.
23:59	Pulled free the bore protector with 10 tons overpull. Pulled out of the hole with the bore protector.

Daily report no : 12 **Date:** 2005-03-27

Midnight depth : 695 m MD **Estimated PP:** 1,03 sg **Mud weight:** 1,20 sg

Stop time	Description
00:30	Continued pulling out of the hole with the bore protector.
01:30	Released the bore protector from the Multi Purpose Tool.
02:00	Made up and ran in hole with the BOP test tool on 5 1/2" DP.
03:00	Clocks adjusted one hour ahead to Daylight Saving Time at 02:00 hrs.
04:00	Ran in hole with the BOP test tool on 5 1/2" DP.
04:30	Performed BOP connector test to 35/400 bar. Function tested the BOP.
07:00	Pulled out of the hole with the BOP test tool from 384 m to surface.
10:00	Made up and ran in hole with the bore protector. Installed the bore protector. Pulled out of hole from 384 m to surface with the running tool.
14:00	Cleared the drill floor. Picked up and made up the 17 1/2" bottom hole assembly. Ran in hole from surface to 162 m.
16:30	Performed planned rig maintenance.
20:00	Continued running in hole with 17 1/2" bottom hole assembly from 162 m to 655 m.
20:30	Performed choke drill. Pressured up to 30 bars and circulated with constant bottom hole pressure.
23:59	Continued running in hole with the 17 1/2" assembly from 655 m. Tagged the plugs and the float at 680 m. Drilled the shoetrack down to 687 m.

Daily report no : 13 **Date:** 2005-03-28

Midnight depth : 924 m MD **Estimated PP:** 1,03 sg **Mud weight:** 1,20 sg

Stop time	Description
03:00	Continued drilling the shoetrack from 687 m to 694.5 m while displacing the well to 1.20 s.g. mud. Cleaned the rathole and drilled 3 meters of new formation from 701 m to 704 m. Spotted a 10 m3 high viscosity pill. Pulled drilling assembly from 704 m into shoe.
04:00	Tested the surface lines and performed a leak-off test with 1.20 s.g mud to 1.47 s.g. Pressured up to 19 bar before leak-off was obtained. Pumped 250 liters, bled back 100 liters.
07:00	Drilled 17 1/2" hole from 704 m to 735 m.
23:59	Drilled 17 1/2" hole from 735 m 924 m.

Daily report no : 14 **Date:** 2005-03-29

Midnight depth : 1152 m MD **Estimated PP:** 1,03 sg **Mud weight:** 1,30 sg

Stop time	Description
09:00	Drilled 17 1/2" hole from 924 m to 1078 m. Increased the mud weight from 1.20 s.g to 1.30 s.g.
13:00	Drilled 17 1/2" hole from 1078 m to 1105 m.
14:00	Suspected bit balling due to hydraulic lift of drillstring and low progress. Pumped and spotted a KCL Glycol pill at the bit. Waited for 15 minutes. Circulated the pill out of the hole.
19:00	Drilled 17 1/2" hole from 1107 m to 1152 m. Adjusted the drilling parameters periodically due to low progress.
20:00	Circulated the hole clean before pulling out of hole to change the bit.
21:00	Pulled out of hole with 17 1/2 drilling assembly on 5 1/2" drill pipe from 1152 m to 1106 m. Pulled 10 ton overpull at 1120 m. Pulled 10 ton, 15 ton and 17 ton overpull at 1106 m. Attempted to lubricate pass restriction. Attempted to lubricate pass restriction with 20 RPM rotation.
22:00	Recorded pressure- and returns parameters in steps from 0 to 4000 lpm. Established backreaming parameters. Backreamed from 1127 m to 1097 m. 130 RPM, 4000 LPM, 150 bar
22:30	Pulled out of hole with 17 1/2 drilling assembly on 5 1/2" drill pipe from 1068 m to 1038 m. Ran in hole to 1068 m and circulated the hole clean.

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Well: 35/11-13 **PO:** 1

Daily report no : 14 **Date:** 2005-03-29
Midnight depth : 1152 m MD **Estimated PP:** 1,03 sg **Mud weight:** 1,30 sg

Stop time	Description
23:59	Pulled out of hole with 17 1/2 drilling assembly on 5 1/2" drill pipe from 1068 m to 968 m.

Daily report no : 15 **Date:** 2005-03-30
Midnight depth : 1192 m MD **Estimated PP:** 1,03 sg **Mud weight:** 1,30 sg

Stop time	Description
02:00	Pulled out of hole with 17 1/2 drilling assembly on 5 1/2" drill pipe from 968 m into the shoe.
02:30	Repaired the guideroller on the lower fastline sleeve.
05:00	Pulled out of hole with 17 1/2 drilling assembly on 5 1/2" drill pipe from 685 m to surface.
10:00	Laid down the bottom hole assembly on drillfloor.
14:30	Built new bottom hole assembly. Replaced the bit, the motor and the MWD assembly. Installed the diverter insert.
15:30	Ran in hole with 17 1/2" bottom hole assembly on 5 1/2" drill pipe from 273 m to 685 m.
16:30	Performed slip and cut of the drilling line.
18:00	Ran in hole with 17 1/2" bottom hole assembly on 5 1/2" drill pipe from 685 m to 1098 m.
19:00	Broke the circulation. Brought the flow rate up in steps from 300 LPM to 3500 LPM.
21:00	Washed down from 1098 m to 1152 m.
23:59	Drilled 17 1/2" hole from 1152 m to 1192 m.

Daily report no : 16 **Date:** 2005-03-31
Midnight depth : 1681 m MD **Estimated PP:** 1,03 sg **Mud weight:** 1,30 sg

Stop time	Description
06:00	Drilled 17 1/2" hole from 1190 m to 1330 m.
23:59	Drilled 17 1/2" hole from 1330 m to 1681 m.

Daily report no : 17 **Date:** 2005-04-01
Midnight depth : 1757 m MD **Estimated PP:** 1,03 sg **Mud weight:** 1,34 sg

Stop time	Description
02:00	Drilled 17 1/2" hole from 1681 m to the planned section TD at 1700 m. Experienced a drilling break the last 2 - 3 meters.
04:00	Circulated the hole clean before pulling out of hole to run 13 3/8" casing.
05:00	Drilled 17 1/2" hole from 1700 to 1713 m.
06:00	Drilled 17 1/2" hole from 1713 to 1725 m.
07:00	Drilled 17 1/2" hole from 1725 to 1749 m.
08:00	Drilled 17 1/2" hole from 1749 to section TD at 1757 m.
12:00	Circulated the hole clean before performing a wipertrip to the 20" casing shoe. Increased the mud weight from 1.30 s.g. to 1.34 s.g. Flowchecked well. Well static.
16:00	Pulled out of hole with 17 1/2 drilling assembly on 5 1/2" drill pipe from 1757 m to 1186 m. Worked several tight spots in interval from 1625 to 1186 m.
18:00	Lubricated out of hole with 17 1/2 drilling assembly on 5 1/2" drill pipe from 1186 m to 1157 m. Circulated bottoms up while reciprocating the string in the same interval.
19:00	Lubricated out of hole with 17 1/2 drilling assembly on 5 1/2" drill pipe from 1186 m to 1050 m.
21:30	Pulled out of hole with 17 1/2 drilling assembly on 5 1/2" drill pipe from 1050 m and into the shoe.
23:00	Repaired the Iron Roughneck torque wrench.
23:59	Ran in hole hole with 17 1/2 drilling assembly on 5 1/2" drill pipe from 685 m to 1083 m.

Daily report no : 18 **Date:** 2005-04-02
Midnight depth : 1757 m MD **Estimated PP:** 1,03 sg **Mud weight:** 1,34 sg

Stop time	Description
02:00	Ran in hole hole with 17 1/2 drilling assembly on 5 1/2" drill pipe from 1083 m to 1186 m. Took weight from 1186 m.
10:00	Reamed the 17 1/2" hole from 1186 m to 1620. Tripped in hole from 1620 m to 1720m. Reamed and washed down from 1720 m to TD.
14:00	Circulated the hole clean while reciprocating the pipe between 1757 m and 1717 m.
18:30	Pulled out of hole with 17 1/2" drilling assembly from 1717 m and into the 20" shoe.
19:00	Pulled out of hole with 17 1/2" drilling assembly on 5 1/2" drill pipe from 685 m to 276 m.

DAILY REPORT

Well: 35/11-13 **PO:** 1

Daily report no : 18 **Date:** 2005-04-02

Midnight depth : 1757 m MD **Estimated PP:** 1,03 sg **Mud weight:** 1,34 sg

Stop time	Description
21:30	Pulled out and racked the bottom hole assembly in the derrick
23:59	Ran in hole from surface to 385 m with 18 3/4" wellhead housing bore protector retrieving tool on 5 1/2" drillpipe. Washed the BOP.

Daily report no : 19 **Date:** 2005-04-03

Midnight depth : 1757 m MD **Estimated PP:** 1,03 sg **Mud weight:** 1,34 sg

Stop time	Description
02:00	Retrieved the bore protector. Dropped the 2 3/4"drift and pulled out of hole from 385 m to surface with the 18 3/4" wellhead housing bore protector.
03:00	Separated the wellhead housing bore protector from the retrieving tool and laid down same.
04:00	Made up the cement stand and racked in derrick.
08:00	Rigged up the casing handling equipment.
15:30	Ran 13 3/8" casing from surface to 695 m.
20:00	Ran 13 3/8" casing from 695 m to 1376 m.
21:00	Picked up and installed the 13 3/8" casing hanger. Changed to 5 1/2" handling equipment.
23:30	Ran 13 3/8" casing on 5 1/2" HWDP from 1376 m to 1745 m
23:59	Established circulation and landed the 13 3/8" casing hanger in the wellhead.

Daily report no : 20 **Date:** 2005-04-04

Midnight depth : 1757 m MD **Estimated PP:** 1,03 sg **Mud weight:** 1,34 sg

Stop time	Description
02:00	Established circulation and landed the 13 3/8" casing hanger in the wellhead. Broke the circulation and increased the flow in steps of 100 lpm up to 1000 lpm.
03:00	Increased flow in steps up to 2000 lpm.
04:00	Flushed the cement lines with drillwater. Pumped 10 m3 1.0 s.g. soap wash pill with the rig pumps. Pumped 15 m3 1.6 s.g spacer with the rig pumps. Isolated the rig pumps.
06:00	Dropped the ball. Pumped 29.2 m3 1.9 s.g. cement with the cement pump.
08:00	Dropped the dart and displaced 3000 l with the cement pumps. Continued the displacing with the rig pumps. Bumped the plug to 70 bar at 6235 strokes. Lined over to the cement unit and pressure tested the casing to 265 bar. Pumped 1300 liters, bled back 1300 liters. No backflow.
09:30	Disconnected all hoses from the cement head. Sat the seal assembly. Pressure tested the seal assembly to 400 bar/10min.
12:00	Pressure tested the BOP to 20/240 bar and 35/300 bar for 5/10 minutes.
12:30	Function tested BOP with yellow pod from toolpushers console.
13:00	Released the casing hanger running tool, pulled up and washed the wellhead area. Re-landed and re-tested the seal assembly to 400 bar/10min.
14:30	Pulled out of hole from 384 m to surface with casing hanger running tool on 5 1/2" HWDP.
17:00	Made up wear bushing on wear bushing running tool and ran in hole from surface to 384 m. Installed the wear bushing. Pulled out of hole with the wear bushing running tool on 5 1/2" HWDP from 384 m to surface.
20:30	Performed planned maintenance.
23:00	Tested the auto kelly cock on the topdrive. Tested the kelly hose.
23:59	Laid down the cement stand and the casing handling equipment on deck.

Daily report no : 21 **Date:** 2005-04-05

Midnight depth : 1760 m MD **Estimated PP:** 1,03 sg **Mud weight:** 1,30 sg

Stop time	Description
02:00	Ran in hole from surface to 20 m with the 17 1/2" BHA to dump the memory data and perform verification test on the MPR Resistivity Gamma tool. Tool disqualified.
06:00	Broke the connection between the DCP (pressure sub) and the MPR. Found damage on the DCP pin threads. Tool disqualified. Laid down the entire MWD assembly.
12:00	Pressure tested the 13 3/8" casing to 300 bar for 10 minutes. Picked up the motor and buildt 12 1/4" drilling assembly consisting of 8" drillcollars and jar.
16:00	Installed the diverter insert. Ran in hole from with 12 1/4" drillout assembly on 5 1/2" drill pipe from 132 m to 1685 m.
17:30	Established circulation in steps while reciprocating the string. Washed down from 1655 m to 1706 m. Tagged the cement on 1706 m.
18:00	Performed a chokedrill.
23:30	Drilled the float and the shoetrack from 1706 m to 1752.

DAILY REPORT

Well: 35/11-13 **PO:** 1

Daily report no : 21 **Date:** 2005-04-05

Midnight depth : 1760 m MD **Estimated PP:** 1,03 sg **Mud weight:** 1,30 sg

Stop time	Description
23:59	Drilled the rathole from 1752 m to 1757 m.

Daily report no : 22 **Date:** 2005-04-06

Midnight depth : 1760 m MD **Estimated PP:** 1,03 sg **Mud weight:** 1,30 sg

Stop time	Description
02:00	Drilled 3 meters of new formation from 1757 m to 1760 m. Cleaned the open hole. Pulled into the casing and circulated the hole clean. Ran in hole to 1760 m and spotted a high viscosiyty pill. Pulled back into the casing.
04:00	Tested the surface lines and performed a Formation Integrity Test with 1.30 s.g mud to 1.64 s.g. Pressured up to 60 bar, monitored the pressure for 15 minutes.
08:00	Flowchecked the well. Well static. Slugged the pipe and pulled out of hole with 12 1/4" drilling assembly from 1745 m to 132 m. Removed the diverter insert.
10:00	Laid down the 12 1/4" drillout assembly.
13:30	Made up the 12 1/4" drilling assembly.
14:00	Rigged up to test the MWD. Power supply from the MWD unit shut down.
15:00	Surface tested the MWD.
17:30	Made up the 12 1/4" drilling assembly.
18:30	Prepared the equipment for hang-off and securing of drill pipe stands in the derrick.
19:00	Ran in hole with 12 1/4" drilling assembly on 5 1/2 " HWDP from 126 m to 265 m.
23:59	Ran in hole with 12 1/4" drilling assembly on 5 " DP from 265 m to 987 m. Broke the circulation.

Daily report no : 23 **Date:** 2005-04-07

Midnight depth : 1782 m MD **Estimated PP:** 1,03 sg **Mud weight:** 1,30 sg

Stop time	Description
01:00	Ran in hole with 12 1/4" drilling assembly on 5 " drill pipe from 987 m to 1275 m. Changed to 5 1/2" handling equipment. Crossed over to 5 1/2" drillstring. Installed the diverter insert.
03:00	Ran in hole with 12 1/4" drilling assembly on 5 1/2" drill pipe from 987 m to 1745 m.
03:30	Established circulation in steps while reciprocating the string. Washed down from 1745 m to 1800 m.
06:00	Drilled 12 1/4" hole from 1760 m to 1780 m. String stalled out at 1772.5 m, topdrive heavily increased the RPM when the heave came up. Drilled down the stand with reduced parameters. Lubricated back into the shoe 3 times to verify that the string was free upwards.
07:30	Drilled 12 1/4" hole from 1780 m to 1782 m. Experienced the topdrive stalled out due to the heave movement downwards and then accelerated when the heave came up. and Had several erratic torque readings. Evaluated the weather- and topdrive situation
08:00	Pulled out of hole with the 12 1/4" drilling assembly from 1782 m and into the casing. Flowchecked the well. Well static.
10:00	Pulled out of hole with the 12 1/4" drilling assembly on 5 1/2" DP from 1745 m to 1275 m.
11:00	Pumped new slug. Changed to 5" handling equpment.
13:30	Pulled out of hole with the 12 1/4" drilling assembly on 5" DP from 1275 m to 265 m.
14:00	Removed the diverter insert and changed to 5 1/2" handling equipment.
16:00	Racked the bottom hole assembly. Found that a large piece of the rib was broken off the bit. Fish in hole.
17:00	Broke off the bit. Continued racking the bottom hole assembly.
17:30	Prepared displacing the riser to seawater due to bad weather forecast.
18:30	Displace the riser to seawater through the upper kill line.
19:00	Closed the failsafe valves and the upper shear ram.
23:59	Waited on weather.

Daily report no : 24 **Date:** 2005-04-08

Midnight depth : 1782 m MD **Estimated PP:** 1,03 sg **Mud weight:** 1,30 sg

Stop time	Description
03:00	Waited on Weather.
06:00	Waited on weather.
09:00	Waited on weather.
12:00	Waited on weather.
15:00	Waited on weather.
17:00	Waited on weather.
19:00	Waited for fishing equipment.

DAILY REPORT

Well: 35/11-13 **PO:** 1

Daily report no : 24 **Date:** 2005-04-08
Midnight depth : 1782 m MD **Estimated PP:** 1,03 sg **Mud weight:** 1,30 sg

Stop time	Description
23:59	Waited for fishing equipment.

Daily report no : 25 **Date:** 2005-04-09
Midnight depth : 1782 m MD **Estimated PP:** 1,03 sg **Mud weight:** 1,30 sg

Stop time	Description
05:30	Waited for the fishing equipment.
07:00	Made up the jet junk basket to the bottom hole assembly. Ran in hole to 30 m and performed a surface pumping test.
11:30	Ran in hole with the jet junk basket on 5 1/2" drillpipe from 30 m to 1740m.
13:00	Filled the pipe and broke the circulation. Performed a pump test. Troubleshot pressure deviations from Rate 1 and Rate 2.
15:00	Ran in hole with the jet junk basket on 5 1/2" drillpipe from 1740 m to 1770m. Washed down from 1770 m to 1780 m. Tagged bottom 3 times with pumps on. Picked off bottom and stopped the pumps. Started the pumps again and repeated sequence. Turned the string 60 deg. and repeated the sequence.
15:30	Pulled out of hole with the jet junk basket on 5 1/2" drillpipe from 1780 m to inside the casing.
17:30	Pulled out of hole with the jet junk basket on 5 1/2" drillpipe from 1730 m to bottom hole assembly below the BOP. Performed a flowcheck. Well static. Performed a choke drill.
18:00	Pulled out of hole with the jet junk basket on 5 1/2" drillpipe from 580 m to 198 m.
19:00	Racked the BHA.
20:00	Checked the the jet junk basket for junk. No fish collected. Laid down the tool, removed the diverter insert.
21:00	Performed planned maintenance on the Topdrive.
23:00	Made up the junk bit and the junk basket to the bottom hole assembly. Ran in hole to 200 m and installed the diverter insert.
23:59	Ran in hole with the junk bit and the junk basket on 5 1/2" drillpipe from 200 m to 700m.

Daily report no : 26 **Date:** 2005-04-10
Midnight depth : 1794 m MD **Estimated PP:** 1,03 sg **Mud weight:** 1,30 sg

Stop time	Description
01:30	Ran in hole with the junk bit and the junk basket on 5 1/2" drillpipe from 700 m to 1100 m. Broke circulation.
03:00	Ran in hole with the junk bit and the junk basket on 5 1/2" drillpipe from 1100 m to 1748m. Established circulation in steps. Circulated and recorded pressure loss.
03:30	Washed down from 1750 m. Tagged bottom at 1782 m.
07:00	Worked the fish at 1782 m. Increased the flow to 3500 LPM, pulled off bottom, reduced the rotation to a minimum and turned off the pumps to collect junk in the junk basket. Repeated the sequence. No progress seen.
07:30	Worked the fish from 1782 m to 1782.5 m. Increased the flow to 3500 LPM, pulled off bottom, reduced the rotation to a minimum and turned off the pumps to collect junk in the junk basket. Repeated the sequence.
12:00	Worked the fish from 1782.5 m to 1792 m. Increased the flow to 3500 LPM, pulled off bottom, reduced the rotation to a minimum and turned off the pumps to collect junk in the junk basket. Repeated the sequence several times.
16:00	Worked the fish from 1792 m to 1794 m. Increased the flow to 3500 LPM, pulled off bottom, reduced the rotation to a minimum and turned off the pumps to collect junk in the junk basket. Repeated the sequence several times.
17:30	Circulated bottoms up while reciprocating the string.
18:00	Pulled out of the hole with the junk bit and the junk basket on 5 1/2" drillpipe from 1794 m to inside the casing. Flowchecked the well. Well static. Pumped slug.
20:30	Pulled out of the hole with the junk bit and the junk basket on 5 1/2" drillpipe from 1731 m to 200 m.
21:30	Pulled out of hole from 200 m to 25 m. Displaced the riser to seawater. Removed the diverter insert.
22:30	Pulled out of hole from 200 m to surface. Removed the master bushing, installed the diverter retrieval tool and the riser spider. Prepared for disconnecting due to problems with anchor winch no.2.
23:59	Ready to disconnect. Repaired anchor winch #2. Inspected winch #3 to #8.

Daily report no : 27 **Date:** 2005-04-11
Midnight depth : 1936 m MD **Estimated PP:** 1,03 sg **Mud weight:** 1,30 sg

Stop time	Description
01:00	Ready to disconnect. Repaired anchor winch#2. Inspected winch #3 to #8.
02:00	Repairs and inspection finished. Locked the diverter and installed the hydraulic jumper. Laid down the diverter retrieval tool and the riser spider. Installed the master bushing.
03:30	Made up the 12 1/4" drilling assembly. Displaced the riser to 1.30 s.g. mud.
08:30	Ran in hole with the 12 1/4" drilling assembly on 5 1/2" drill pipe from 127 m to 1746 m.
09:30	Function tested the BOP on yellow pod from the drillers panel and on blue pod from the auxilary panel.

DAILY REPORT

Well: 35/11-13 **PO:** 1

Daily report no : 27 **Date:** 2005-04-11
Midnight depth : 1936 m MD **Estimated PP:** 1,03 sg **Mud weight:** 1,30 sg

Stop time	Description
10:00	Established circulation in steps and washed down from 1746 m to 1776 m.
10:30	Washed and logged with the MWD tool from 1776 m to TD at 1794 m.
23:59	Drilled 12 1/4" hole from 1794 m to 1936 m

Daily report no : 28 **Date:** 2005-04-12
Midnight depth : 1979 m MD **Estimated PP:** 1,10 sg **Mud weight:** 1,30 sg

Stop time	Description
02:00	Drilled 12 1/4" hole from 1936 m to 1945 m.
03:30	Circulated bottom up and flow checked the well.
04:30	Pulled out of the hole with the 12 1/4" bottom hole assembly on 5 1/2" pipe from TD at 1945 m to the shoe at 1751 m. Worked tight spot at 1801 m with max 25 ton over pull. Flow checked and held kick drill.
07:30	Pulled out of the hole with the 12 1/4" bottom hole assembly on 5 /5 172" pipe from 1751 m to 265 m. Flow checked prior to pull the bottom hole assembly through the BOP.
09:00	Pulled out of the hole with the 12 1/4" bottom hole assembly.
09:30	Dumped data from the MWD tool.
11:00	Removed clay from balled up stabilizers. Cleaned the bottom hole assembly and the bit. Changed bit and diverter insert packer.
12:00	Inspected and serviced topdrive and pipe handling equipment.
14:00	Run in the hole with the 12 1/4" bottom hole assembly to 265 m.
17:30	Ran in the hole with the 12 1/4" bottom hole assembly on 5" - 5 1/2" drill pipe from 265 m to 1746 m.
19:00	Performed planned maintenance on the top drive.
20:00	Slipped and cut drilling line.
20:30	Ran in the hole with the 12 1/4" bottom hole assembly on 5 1/2" drill pipe from 1746 m to 1923 m.
21:30	Established circulation in steps and washed down from 1923 m to 1945 m.
23:59	Drilled 12 1/4" hole from 1945 m to 1979 m.

Daily report no : 29 **Date:** 2005-04-13
Midnight depth : 2220 m MD **Estimated PP:** 1,10 sg **Mud weight:** 1,30 sg

Stop time	Description
06:00	Drilled 12 1/4" hole from 1979 m to 2019 m.
23:59	Drilled 12 1/4" hole from 2019 m to 2220 m.

Daily report no : 30 **Date:** 2005-04-14
Midnight depth : 2565 m MD **Estimated PP:** 1,10 sg **Mud weight:** 1,30 sg

Stop time	Description
03:30	Drilled 12 1/4" hole from 2220 m to2276 m.
04:30	Lost power to the MWD unit due to loss of air pressure. Resat all systems.
22:30	Drilled 12 1/4" hole from 2276 m to 2543 m.
23:00	Recorded slow pump rates, changed out mud in the trip tank and flushed kill and choke line. Changed wire on depth line system..
23:59	Drilled 12 1/4" hole from 2543 m to 2565 m.

Daily report no : 31 **Date:** 2005-04-15
Midnight depth : 2813 m MD **Estimated PP:** 1,10 sg **Mud weight:** 1,30 sg

Stop time	Description
18:30	Drilled 12 1/4" hole from 2565 m to 2809 m.
19:00	Re-established overpressure in the MWD unit. Restarted all systems. Circulated the well and reciprocated the drill string.
20:00	Circulated the well. Attempt to read signals from the MWD tool. No success.
20:30	Drilled 12 1/4" hole from 2809 m to 2813 m. Unable to read signals from the MWD tool.
22:30	Circulated the well clean.
23:59	Pulled out of the hole with the 12 1/4" bottom hole assembly on 5 1/2" drill pipe from TD at 2813 m to 2450 m. Worked tight hole from 2689 m to 2660 m with up to 20 ton over pull.

DAILY REPORT

Well: 35/11-13 **PO:** 1

Daily report no : 32 **Date:** 2005-04-16

Midnight depth : 2813 m MD **Estimated PP:** 1,10 sg **Mud weight:** 1,30 sg

Stop time	Description
02:00	Pulled out of the hole with the 12 1/4" bottom hole assembly on 5 1/2" drill pipe from 2450 m to the 13 3/8" shoe at 1751 m. Worked tight spots at 2230 m, 2217 m and 1897 m. max. over pull 20 ton.
02:30	Flow checked and held kick drill in the 13 3/8" shoe. Well Static.
05:00	Pulled out of the hole with the 12 1/4" bottom hole assembly on 5 1/2" x 5" drill pipe from 1751 m to 584 m. Flow checked prior to pull the bottom hole assembly through the BOP. Well static
05:30	Changed broken hydraulic hose on the iron roughneck.
06:00	Pulled out of the hole with the 12 1/4" bottom hole assembly on 5" drill pipe from 584 m to 265 m.
11:00	Pulled out of the hole with the 12 1/4" bottom hole assembly from 265 m to surface. Laid out the ontrack, stop sub, motor and bit.
13:30	Made up the BOP test tool with the jet sub 3 stands below. Run in the hole and washed the wellhead area. Landed the BOP test tool in the wellhead.
17:30	Pressure tested the BOP to 35/372 bar on the blue pod. Function tested the BOP on the yellow pod from the auxillary panel. Simultaneously pressure tested the top drive hose and valves to 35/345 bar.
20:30	Pulled out of the hole with the BOP test tool and the jet sub. Laid out the jet sub.
23:59	Made up new 12 1/4" bottom hole assembly. Changed the motor and the MWD tool. Re-run bit # 10.

Daily report no : 33 **Date:** 2005-04-17

Midnight depth : 2926 m MD **Estimated PP:** 1,10 sg **Mud weight:** 1,30 sg

Stop time	Description
01:00	Function tested the MWD tool. Made up the scribe line.
03:30	Changed out the non-magnetic drill collar. Ran in the hole with the 12 1/4" bottom hole assemby to 273 m.
06:00	Ran in the hole with the 12 1/4" bottom hole assembly on the 5" drill pipe from 273 m to 1282 m.
06:30	Filled the string and function tested the MWD tool.
09:00	Performed planned maintenance.
13:30	Ran in the hole with the 12 1/4" bottom hole assemby on the 5 1 /2" drill pipe from 1282 m to 2632 m. Filled the pipe and broke the circulation in the 13 3/8" shoe at 1741 m and at 2372 m. Took weight at 2632 m.
14:30	Reamed tight hole from 2632 m to 2696 m.
15:00	Ran in the hole with the 12 1/4" bottom hole assemby on the 5 1 /2" drill pipe from 2696 m to 2788 m.
17:00	Made up the drilling stand and washed down from 2788 m to TD at 2813 m. Pulled out and re-logged the well from 2800 m to 2813 m.
23:59	Drilled 12 1/4" hole from 2813 m to 2926 .

Daily report no : 34 **Date:** 2005-04-18

Midnight depth : 2932 m MD **Estimated PP:** 1,10 sg **Mud weight:** 1,30 sg

Stop time	Description
00:30	Drilled 12 1/4" hole from 2926 m to 2932 m.
02:30	Circulated the well clean. Flow checked, Well static.
04:30	Pulled out of the hole with the 12 1/4" bottom hole assembly on 5 1/2" drill pipe from 2932 m to 2608 m.
05:30	Ran in the hole with the 12 1/4" bottom hole assembly on 5 1/2" drill pipe from 2608 m to TD at 2932 m.
08:00	Circulated the well clean and conditioned the mud.
13:00	Pulled out of the hole with the 12 1/4" bottom hole assembly on 5 1/2" drill pipe from 2932 m to 1723 m.
13:30	Flow checked the well. Well static. Inspected the top drive, intermediate racking arm and upper racking arm.
16:30	Pulled out of the hole with the 12 1/4" bottom hole assembly on 5 1/2" x 5" drill pipe from 1723 m to 274 m.
20:00	Pulled out of the hole with the 12 1/4" bottom hole assembly. Laid down the non-magnetic drill collar and string stabilizer. Drained the mud motor and flushed with sea water.
20:30	Dumped data from the MWD tool.
21:30	Laid down the MWD tool, mud motor and bit.
22:30	Rearranged stands in the derrick. Prepared to run the wear bushing retrieving tool.
23:59	Ran in the hole with the wear bushing retrieving tool on the 5 1/2" heavy weight landing string to 375 m.

Daily report no : 35 **Date:** 2005-04-19

Midnight depth : 2932 m MD **Estimated PP:** 1,10 sg **Mud weight:** 1,30 sg

Stop time	Description
00:30	Circulated through the wear bushing retrieving tool jet sub and landed in the wear bushing. Sat down 5 ton and performed index line measurement.

DAILY REPORT

Well: 35/11-13 **PO:** 1

Daily report no : 35 **Date:** 2005-04-19
Midnight depth : 2932 m MD **Estimated PP:** 1,10 sg **Mud weight:** 1,30 sg

Stop time	Description
02:00	Pulled the wear bushing loose with 30 ton overpull. Pulled out of the hole with the wear bushing. Released the wear bushing from the retrieving tool and laid both down on deck.
03:00	Installed the remote operated casing tong.
04:30	Made up and racked the cement stand in the derrick
05:30	Rigged up the casing handling equipment.
22:30	Ran in the hole with the 9 5/8" casing to 1751 m. Filled every 5. joint with 1,30 sg mud.
23:30	Ran in the hole with the 9 5/8" casing to from 1751 m to 2040 m. Filled every 5. joint with 1,30 sg mud.
23:59	Repaired the 13 3/8" casing power slips.

Daily report no : 36 **Date:** 2005-04-20
Midnight depth : 2932 m MD **Estimated PP:** 1,10 sg **Mud weight:** 1,30 sg

Stop time	Description
00:30	Repaired the 13 3/8" casing power slips.
07:00	Ran in the hole with the 9 5/8" casing from 2040 m to to 2534 m. Filled every 5. joint with 1,30 sg. mud.
11:00	Picked up the 9 5/8" casing hanger and ran in the hole with the 9 5/8" casing on 5 1/2" HWDP. Broke the circulation and landed the 9 5/8" casing hanger in the well head. Verified correct depth of the hanger with the index line.
13:00	Circulated the casing with the mud pumps. Increased the pump pressure in steps from 200 LPM to 2000 LPM.
13:30	Changed from 345 bar to 517 bar cement hose.
18:00	Pressure tested the surface lines to 375 bar. Pumped a 5 m3 soap wash pill, followed by 10 m3 spacer, with the rig pumps. Launched the bottom ball. Mixed and pumped 13,2 m3 1,8 sg cement slurry. Launched the top dart and displaced the dart with 3000 litre drill water. Continued to displace the cement with the rig pumps. Bumped the plug with 70 bar after 5710 strokes. Pressure tested the casing to 370 bar.
18:30	Unable to reset the overpressure shut down system on the cement unit.
19:00	Sat the 9 5/8" seal assembly and pressure tested to 370 bar.
22:00	Pressure tested the BOP to 370/241 bar on the blue pod.
22:30	Released the 9 5/8" casing running tool with 30 ton overpull. Pulled out 3 m and flushed the wellhead area. Slacked of and landed the running tool in the wellhead. Re-tested the 9 5/8" seal assembly to 370 bar
23:59	Pulled out of the hole with the 9 5/8" casing running tool.

Daily report no : 37 **Date:** 2005-04-21
Midnight depth : 2932 m MD **Estimated PP:** 1,10 sg **Mud weight:** 1,30 sg

Stop time	Description
01:00	Pulled out of the hole and laid down the 9 5/8" casing running tool.
03:00	Laid down the cement head and the casing tong.
06:00	Ran in the hole with the jet sub on 5 1/2" drill pipe to 384 m. Flushed the wellhead. Installed the 9 5/8" wear bushing running tool on the drill string.
07:00	Attempt to install the 9 5/8" wear bushing on the wear bushing running tool.
10:00	Ran in the hole and sat the wear bushing. Pulled out of the hole with the wear bushing running tool.
23:59	Laid out 176 joints 5 1/2" drill pipe.

Daily report no : 38 **Date:** 2005-04-22
Midnight depth : 2932 m MD **Estimated PP:** 1,10 sg **Mud weight:** 1,30 sg

Stop time	Description
02:30	Laid out 36 joints 5 1/2" drill pipe.
06:00	Performed planned maintenance.
07:00	Assembled and pressure tested the top drive I-BOP.
12:00	Made up the 8 1/2" bottom hole assembly.
16:00	Ran in the hole with the 8 1/2" bottom hole assembly on 5" drill pipe from 209 m to 1005 m. Picked up 83 joints 5" drill pipe.
16:30	Filled the pipe and function tested the MWD tool.
18:30	Ran in the hole with the 8 1/2" bottom hole assembly on 5" drill pipe from 1005 m to 1533 m. Picked up 55 joints 5" drill pipe.
20:00	Performed choke drill with both crews.
23:59	Ran in the hole with the 8 1/2" bottom hole assembly on 5" drill pipe from 1533 m to 1800 m. Picked up 3 joints 5" drill pipe.

DAILY REPORT

Well: 35/11-13 **PO:** 1

Daily report no : 39 **Date:** 2005-04-23

Midnight depth : 2950 m MD **Estimated PP:** 1,10 sg **Mud weight:** 1,30 sg

Stop time	Description
00:30	Made up 5" drilling pup and installed depth measuring line.
01:30	Washed down from 2800 m. Tagged float at 2881 m with 3 tons.
07:00	Drilled plugs, float, shoe track and shoe.
08:30	Cleaned rat hole in steps from 2924 m to 2932 m.
09:30	Drilled 8 1/2" hole from 2932 m to 2935 m.
10:30	Performed formation integrity test with 1,30 sg mud weight equivalent to 1,70 sg. Pressured up to 115 bar, monitored the pressure for 10 minutes.
14:00	Drilled 8 1/2" hole from 2935 m to 2946 m.
16:00	Circulated the well while attempting to decode signals from the MWD tool.
16:30	Drilled 8 1/2" hole from 2946 m to 2950 m.
18:00	Circulated the well while attempth to decode signals from the MWD tool.
23:30	Pulled out of the hole with the 8 1/2" bottom hole assembly on 5" drill pipe from 2950 m to 126 m.
23:59	Pulled out of the hole with the 8 1/2" bottom hole assembly.

Daily report no : 40 **Date:** 2005-04-24

Midnight depth : 2950 m MD **Estimated PP:** 1,10 sg **Mud weight:** 1,30 sg

Stop time	Description
00:30	Pulled out of the hole with the 8 1/2" bottom hole assembly from 126 m to 16 m.
03:00	Made up new 8 1/2" MWD tool. Changed bit.
04:00	Ran in the hole with the 8 1/2" bottom hole assembly to 209 m
09:00	Ran in the hole with the 8 1/2" bottom hole assembly on 5" drill pipe from 209 m to 2887 m.
09:30	Rigged up circulating hose to circulate the well.
11:00	Slipped and cut drilling line. Rigged down the circulation hose.
11:30	Established drilling parameters and washed from 2887 m to 2932 m.
12:30	Experienced problems to decode signals from the MWD tool. Pulled back in to the 9 5//8" shoe.
13:00	Reamed / relogged the hole from 2935 m to 2950 m.
16:00	Drilled 8 1/2" hole from 2950 m to 2992 m
17:30	Circulated bottom up for samples.
20:00	Drilled 8 1/2" hole from 2992 m to 3033 m
20:30	Circulated for samples.
23:59	Drilled 8 1/2" hole from 3033 m to 3062 m.

Daily report no : 41 **Date:** 2005-04-25

Midnight depth : 3100 m MD **Estimated PP:** 1,10 sg **Mud weight:** 1,30 sg

Stop time	Description
04:00	Drilled 8 1/2" hole from 3062 m to 3100 m.
05:30	Circulated for samples and continued to circulate the well clean.
06:30	Recorded reference pump pressure and flow checked the well.
07:30	Pulled out of 8 1/2" hole and into the 9 5/8" casing with the 8 1/2" bottom hole assembly (BHA) from 3100 m to 2910 m.
08:30	Flow checked the well, and pumped slug before pulling out of the 9 5/8" casing with the 8 1/2" BHA.
09:30	Pulled out of the 9 5/8" casing with the 8 1/2" BHA from 2910 m to 2715 m.
10:00	Repaired the torque wrench on the top drive.
12:00	Pulled out of the 9 5/8" casing with the 8 1/2" BHA from 2715 m to 209 m.
14:00	Racked back the 8 1/2" BHA in the derrik.
14:30	Dumped th MWD data, and racked back the MWD in the derrik.
18:00	Made up the 8 1/2" coring assembly, including a 60 ft core barrel.
23:00	Ran in hole with the core barrel from 217 m to 2900 m.
23:59	Repaired the torque wrench on the top drive.

Daily report no : 42 **Date:** 2005-04-26

Midnight depth : 3115 m MD **Estimated PP:** 1,10 sg **Mud weight:** 1,30 sg

Stop time	Description
02:00	Repaired the torque wrench on the top drive.

DAILY REPORT

Well: 35/11-13 **PO:** 1

Daily report no : 42 **Date:** 2005-04-26
Midnight depth : 3115 m MD **Estimated PP:** 1,10 sg **Mud weight:** 1,30 sg

Stop time	Description
04:00	Ran in hole to TD from 2890 m to 3100 m.
04:30	Circulated one string volume, dropped the ball and circulated the ball down to ballseat.
06:00	Cored from 3100 m to 3115 m.
08:30	Flow checked and pulled out of the hole from 3115 m to 2870 m.
10:00	Flow checked, pumped slug and pulled out of the hole from 2870 m to 1485 m.
10:30	Changed elevator due to failure.
15:00	Pulled out of the hole from 2180 m to 217 m.
16:30	Pulled the core barrel to surface.
17:00	Held pre job meeting before braking down the core barrel.
18:00	Laid down core barrel # 1.
21:00	Made up the 8 1/2" coring assembly, including a 90 ft core barrel.
23:59	Ran in hole with the core barrel from 217 m to 1630 m.

Daily report no : 43 **Date:** 2005-04-27
Midnight depth : 3142 m MD **Estimated PP:** 1,10 sg **Mud weight:** 1,30 sg

Stop time	Description
01:30	Ran in hole with the core barrel from 1630 m to 2400 m.
02:00	Changed elevator due to failure.
03:00	Ran in hole with the core barrel from 2400 m to 2924 m
04:00	Ran in hole with the core barrel from 2924 m to 3108 m
06:30	Circulated bottoms up, and dropped ball prior to cut core #2.
09:30	Cored from 3115 m to 3142 m.
11:00	Flow checked and pulled out of the hole from 3115 m to 2874 m.
20:00	Flow checked, pumped slug and pulled out of the hole from 2874 m to 220 m.
22:00	Pulled the core barrel to surface.
23:59	Laid down core barrel # 2.

Daily report no : 44 **Date:** 2005-04-28
Midnight depth : 3204 m MD **Estimated PP:** 1,10 sg **Mud weight:** 1,30 sg

Stop time	Description
02:30	Made up the 8 1/2" coring assembly, including a 90 ft core barrel.
03:30	Laid out the 8 1/2" coring assembly.
04:00	Held pre job meeting before running in with the 8 1/2" bottom hole assembly.
05:30	Made up the 8 1/2" bottom hole assembly (BHA).
11:00	Ran in hole with the 8 1/2" BHA on 5" drillpipe from 226 m to 2915 m.
12:30	Performed planned maintenance stop.
13:00	Function tested the BOP.
14:30	Ran in hole with the 8 1/2" BHA on 5" drillpipe from 2915 m to 3117 m.
15:30	Broke circulation, and washed down/reamed down from 3117 m to TD at 3142 m.
18:30	Relogged the cored interval from 3142 m up to 3087 m, and ran back in to 3144,5.
23:59	Drilled 8 1/2" hole from 3142 m to 3204 m.

Daily report no : 45 **Date:** 2005-04-29
Midnight depth : 3292 m MD **Estimated PP:** 1,10 sg **Mud weight:** 1,30 sg

Stop time	Description
03:00	Drilled 8 1/2" hole from 3204 m to 3229 m.
04:00	Shutdown in the MWD unit.
15:30	Drilled 8 1/2" hole from 3229 m to TD at 3291,5 m.
17:30	Circulated the well clean.
19:00	Flow checked and pulled out of 8 1/2" hole and into the 9 5/8" casing with the 8 1/2" bottom hole assembly from 3292,6 m to 2916 m.
23:59	Flow checked and pumped slug before pulling out of the 9 5/8" casing with the 8 1/2" BHA from 2916 m to 160 m.

DAILY REPORT

Well: 35/11-13 **PO:** 1

Daily report no : 46 **Date:** 2005-04-30
Midnight depth : 3292 m MD **Estimated PP:** 1,10 sg **Mud weight:** 1,30 sg

Stop time	Description
02:00	Laid down the 8 1/2" bottom hole assembly.
02:30	Inspected the derrick for loose objects
04:00	Rigged up to run the wireline logs.
05:30	Made up the wireline toolstring, SP-DSI-HRLA-PEX-ECS.
08:30	Ran in hole with the wireline logging tools, SP-DSI-HRLA-PEX-ECS. Logged from 1748 m to TD at 3291,5 m.
09:30	Performed SP-DSI-HRLA-PEX-ECS logging from 3291,5 m to 2953 m.
10:00	Could not pass the the area below the 9 5/8" casing shoe.
11:30	Pulled out of the hole with the logging string from 2953 m to 170 m.
13:00	Laid down the SP-DSI-HRLA-PEX-ECS logging tools.
14:00	Made up the wireline toolstring, MDT pressure recorder.
23:00	Ran in the hole and performed pressure point surveys. Made 29 surveys from 3205 m to 3097 m, where 28 tests were good and 1 was dry.
23:30	Laid down the MDT logging tool.
23:59	Made up the wireline toolstring, VSP.

Daily report no : 47 **Date:** 2005-05-01
Midnight depth : 3292 m MD **Estimated PP:** 1,10 sg **Mud weight:** 1,30 sg

Stop time	Description
02:00	Ran in hole with the VSP logging string, and prepared the seismic guns.
09:00	Ran in hole from surface with the logging tools and performed VSP logging between 1700 m and 3291,5 m.
10:30	Laid down the VSP logging tools.
12:00	Made up the wireline toolstring, MDT sample catcher.
23:59	Ran in hole with the MDT tool, took 11 samples of fluid.

Daily report no : 48 **Date:** 2005-05-02
Midnight depth : 3292 m MD **Estimated PP:** 1,10 sg **Mud weight:** 1,30 sg

Stop time	Description
12:30	Performed MDT logging for samples, took 2 samples of fluid. Pulled out of the hole from 3137 m to surface.
14:00	Laid down the MDT logging tools.
15:00	Made up the wireline toolstring, MSCT sidewall coring.
23:59	Ran in hole with the MSCT tool, took 43 sidewall cores.

Daily report no : 49 **Date:** 2005-05-03
Midnight depth : 3292 m MD **Estimated PP:** 1,10 sg **Mud weight:** 1,30 sg

Stop time	Description
02:00	Performed MSCT logging for sidewall cores, took 2 sidewall cores. Pulled out of the hole from 2960 m to surface.
03:00	Laid down the MSCT logging tools.
05:30	Made up the 8 1/2" bottom hole assembly (BHA).
13:30	Ran in hole with the 8 1/2" BHA from 200 m to 3272 m.
16:30	Washed down last stand from 3272 m to 3291,5 m. Circulated bottoms up through kill and choke lines at 3291,5 m.
18:00	Circulated the riser while scraping the liner packer setting area.
18:30	Flow checked and pumped slug in the hole.
23:00	Pulled out of the hole from 3291,5 m to 200 m with the 8 1/2" BHA.
23:59	Rack back the 8 1/2" BHA in the derrick.

Daily report no : 50 **Date:** 2005-05-04
Midnight depth : 3292 m MD **Estimated PP:** 1,10 sg **Mud weight:** 1,30 sg

Stop time	Description
01:00	Laid down the 8 1/2" bottom hole assembly.
03:30	Rigged up to run 7" liner.
04:30	Made up the 7" liner shoe track.
09:30	Ran the 7" liner from 48 m to 451 m.

DAILY REPORT

Well: 35/11-13 **PO:** 1

Daily report no : 50 **Date:** 2005-05-04
Midnight depth : 3292 m MD **Estimated PP:** 1,10 sg **Mud weight:** 1,30 sg

Stop time	Description
10:30	Installed the 7" liner hanger and changed to 5" handling equipment.
11:00	Circulated one liner volume.
12:00	Ran the 7" liner on 5" HWDP from 467 m to 575 m.
16:00	Ran the 7" liner on 5" DP from 575 m to 1614 m.
16:30	Made up the cement head, and laid it out on the catwalk.
22:00	Ran the 7" liner on 5" DP from 1614 m to 2924 m.
23:59	Ran the 7" liner on 5" DP from 2924 m to 3245 m.

Daily report no : 51 **Date:** 2005-05-05
Midnight depth : 3292 m MD **Estimated PP:** 1,08 sg **Mud weight:** 1,30 sg

Stop time	Description
01:00	Ran the 7" liner on 5" DP from 3245 m to 3291,5 m, and picked up 1 m.
02:00	Dropped the liner hanger setting ball and activated the liner hanger.
03:30	Circulated one bottoms up.
04:00	Pumped soap wash spacer prior to the 7" liner cement job
05:00	Circulated the riser to monitor gas trends.
06:30	Cemented the 7" liner according to programme.
07:30	Displaced the cement, bumped the plug, and pressure tested the liner to 280 bar.
08:30	Set the liner packer and pressure tested the liner packer to 280 bar.
10:00	Pulled out of the liner top from 2825 m to 2750 while cirulating out excess cement.
15:30	Pulled out of the hole with the liner hanger running tool from 2750 m to surface.
16:00	Checked the derrick, top drive and greased the traveling block.
17:30	Made up the 7" clean-out assembly.
18:00	Ran in hoe with the clean-out assembly on 3 1/2" DP from 70 m to 377 m.
20:00	Ran in hoe with the clean-out assembly on 5" DP from 377 m to 955 m.
21:00	Installed a 9 5/8" retrievable packer in the 7" clean-out assembly.
22:30	Ran in hoe with the clean-out assembly on 5" DP from 955 m to 1363 m, and set the packer.
23:59	Tested the BOP.

Daily report no : 52 **Date:** 2005-05-06
Midnight depth : 3292 m MD **Estimated PP:** 1,08 sg **Mud weight:** 1,10 sg

Stop time	Description
00:30	Tested the BOP.
01:00	Disconnected the hurricane valve from the packer and pulled out above the BOP.
03:00	Continued testing the BOP to 35/370 bar.
04:00	Ran in hole from 349 m to 406 m and connected to the retrievable packer.
05:00	Pulled out of the hole from 1363 m to 839 m, and laid down the retrievable packer.
08:30	Installed a circulation valve in the string and ran in hole with the 7" liner clean-out assembly from 839 m to 2800 m.
10:30	Entered the 7" liner PBR at 2825 m, and ran in hole with the 7" liner clean out assembly from 2825 m to 3080 m.
11:30	Scraped the area from 3080 m to 3200 m.
13:30	Circulated one and a half bottoms up.
17:30	Displaced the well to 1,10 sg packer fluid.
21:30	Pulled out of the hole from 2819 m to 1361m.
23:00	Attempted to pressure test well test line from the rig stand pipe.
23:59	Dropped 2" ball and activated circulation valve in the clean-out string. Jetted the BOP.

Daily report no : 53 **Date:** 2005-05-07
Midnight depth : 3292 m MD **Estimated PP:** 1,08 sg **Mud weight:** 1,10 sg

Stop time	Description
01:30	Jetted and cleaned the BOP.
02:00	Circulated to clean the riser while installing test hub on the flow line.
04:30	Pulled out of the hole from 1361 m to 375m
06:00	Changed to 3 1/2" handling equipment and pulled out of the hole from 375 m to 70 m with the 7" clean out assembly.

DAILY REPORT

Well: 35/11-13 **PO:** 1

Daily report no : 53 **Date:** 2005-05-07

Midnight depth : 3292 m MD **Estimated PP:** 1,08 sg **Mud weight:** 1,10 sg

Stop time	Description
06:30	Pulled out of the hole and laid down the 7" clean-out assembly
07:30	Cleared and cleaned the drill floor. Checked the drilling equipment.
08:30	Performed planned rig maintenance.
12:00	Rigged up the CBL/VDL/CET/GR/CCL logging string.
13:00	Ran in hole with the CBL/VDL/CET/GR/CCL tools on wireline from surface to 3200 m.
14:00	Performed CBL/VDL/CET/GR/CCL logging from 3200 m to 2811 m, and pulled out of the hole with the logging string .
15:00	Laid down the wireline tool string.
19:00	Hooked up the coflex hose to the flow line.
20:00	Performed planned rig maintenance.
23:59	Made up and ran in hole with the dummy fluted hanger from surface to 70 m on 4 1/2" tubing.

Daily report no : 54 **Date:** 2005-05-08

Midnight depth : 3292 m MD **Estimated PP:** 1,08 sg **Mud weight:** 1,10 sg

Stop time	Description
04:00	Ran in hole with the dummy fluted hanger from 70 m to 420 m on 4 1/2" tubing. Landed the fluted hanger in the 9 5/8" wear bushing at 384,7 m.
06:00	Pulled out of the hole with the dummy fluted hanger from 420 m to surfase.
07:00	Picked up and changed damaged pup on lubricator valve.
09:00	Made up and ran the perforating guns from surface to 36 m.
14:30	Made up and ran the bottom hole assembly (BHA) from 36 to 266 m.
15:30	Ran in hole with the BHA on 3 1/2" tubing from 266 m to 296 m.
16:30	Pressure tested the the test string to 80 / 370 bar.
23:59	Continued running in hole with the BHA on 3 1/2" tubing from 296 m to 1513 m.

Daily report no : 55 **Date:** 2005-05-09

Midnight depth : 3292 m MD **Estimated PP:** 1,08 sg **Mud weight:** 1,10 sg

Stop time	Description
06:30	Ran in the hole with the bottom hole assembly on 3 1/2" tubing from 1513 m to 2741 m.
08:00	Rigged up and performed reverse circulation prior to pressure test of the string.
09:00	Changed handling equipment and pressure tested the string to 370 bar / 10 min.
13:00	Changed to 4 1/2" tubing handling equipment, picked up and repainted on the dummy hanger. Ran in the hole from 2741 m to 3133 m. Landed the dummy hanger in the well head, closed and opened the lower pipe ram to mark the hanger.
13:30	Rigged up the GR/CCL logging string.
15:30	Ran in the hole and performed logging to confirm the depth of the radioactive marker in the test string and the pip tag in the 7" liner.
17:00	Laid down the wireline tool string and rigged down the wireline equipment.
19:00	Performed planned rig maintenance.
22:00	Pulled out of the hole and laid down the dummy hanger. Measured the length from the landing point in the wearbushing to to the center of the lower pipe ram.
23:00	Changed to 3 1/2" handling equipment. Spaced out the test string with two 3 1/2" tubing pup joints. Cleaned the drill floor.
23:59	Performed pre job / HAZID meeting prior to pick up and run in the hole with the subsea test tree.

Daily report no : 56 **Date:** 2005-05-10

Midnight depth : 3292 m MD **Estimated PP:** 1,08 sg **Mud weight:** 1,10 sg

Stop time	Description
02:00	Picked up subsea test tree (SSTT) from the deck and changed dies in the casing power. Verified the ability to close lower pipe rams.
03:30	Tested the SSTT.
04:00	Lowered the SSTT through the rotary.
05:30	Closed upper annular preventor and reverse circulated 2 m3 prior to pressure test. Pressure tested the string to 370 bar / 10 min against Tubing tester valve (TST).
09:00	Ran in the hole with the SSTT on 4 1/2" tubing from 2751 m to 3084 m.
11:30	Picked up lower lubricator valve. Flushed and hooked up control lines. Picked up upper lubricator valve and ran in the hole from 3084 m to 3098 m. Performed function test.
12:00	Picked up two pup joints and ran in the hole from 3098 m to 3113 m.

DAILY REPORT

Well: 35/11-13 **PO:** 1

Daily report no : 56 **Date:** 2005-05-10

Midnight depth : 3292 m MD **Estimated PP:** 1,08 sg **Mud weight:** 1,10 sg

Stop time	Description
14:00	Pressure tested the string to 370 bar / 10 min. Inflow tested lower and upper sub-sea lubricator valves. Pressure tested the chemical injection lines.
15:30	Ran in the hole from 3113 m to 3122 m. Changed handling equipment and prepared to pick up the surface test tree (STT).
20:00	Rigged up STT and connected lines. Landed the assembly in the wearbushing. Made loop on the kill hoose.
21:00	Connected and tested the hydraulic control hoses to the STT.
23:59	Pressure tested the kill valve, choke manifold, flow wing valve, swab valve, surface safety valve and upper sub-sea lubricator valve.

Daily report no : 57 **Date:** 2005-05-11

Midnight depth : 3292 m MD **Estimated PP:** 1,08 sg **Mud weight:** 1,10 sg

Stop time	Description
00:30	Pressure tested valves.
03:30	Attempted to set the retrievable test packer.
04:00	Set the retrievable test packer.
05:00	Applied 10 bar on the lower outer choke valve to confirm correct uplining. Pressure tested the retrievable test packer.
06:30	Performed pre job meeting prior to diplace the tubing to baseoil. Cycled the Omni valve to the circulating position.
07:30	Displaced the tubing to baseoil.
08:30	Cycled the Omni valve to welltest position. Performed pre job meeting prior to perforation and test. Equalized pressure across kill wing valve.
09:30	Function tested production shutdown (PSD1) at the choke manifold, drill floor, outside the company mans office, at the test seperator and in the scan lab. Walked up the lines.
10:00	Waited for inbound helicopter for arrival and depature prior to start the initial clean up flow.
12:30	Pressured up the tubing to 350 bars to fire the guns. Performed initial clean-up flow.
21:30	Shut in the well for build up period.
23:59	Opened the well for main flow period.

Daily report no : 58 **Date:** 2005-05-12

Midnight depth : 3292 m MD **Estimated PP:** 1,08 sg **Mud weight:** 1,10 sg

Stop time	Description
21:30	Main flow period.
23:59	Main build-up.

Daily report no : 59 **Date:** 2005-05-13

Midnight depth : 3292 m MD **Estimated PP:** 1,08 sg **Mud weight:** 1,10 sg

Stop time	Description
23:59	Main build-up.

Daily report no : 60 **Date:** 2005-05-14

Midnight depth : 3292 m MD **Estimated PP:** 1,08 sg **Mud weight:** 1,10 sg

Stop time	Description
09:30	Main build-up
11:30	Bled off the test string pressure to choke and gas flare. Pumped base oil from pit to separator and gas flare, cleaned up surface lines.
12:00	Closed the flow valve, opened the master valve and filled the tubing with 1.1 sg brine. Pressured up the annulus and opened the tester valve.
17:30	Performed Mini Frac.
19:00	Flow checked the well, 15 min. Pressured up and sheared the rupture disk in the circulation valve. Circulated 15 m3 1,1 sg brine down the tubing. Opened the lower pipe ram and flowchecked for 15 min.
22:30	Pick up and unseat the retrievable test packer.
23:59	Spaced out the string and closed the lower pipe ram prior to bullhead. Pumped 85 lpm and the formation broke at 248 bar. Bullheaded 2 m3 with 1,1 sg brine into the formation.

DAILY REPORT

Well: 35/11-13 **PO:** 1

Daily report no : 61 **Date:** 2005-05-15

Midnight depth : 3292 m MD **Estimated PP:** 1,08 sg **Mud weight:** 1,10 sg

Stop time	Description
02:00	Lined up to circulate the long way. Pumped 17 m3. Flowchecked for 15 min. Continued to circulate the bottom up. No gas. Opened the lower pipe ram and lined up to circulate the riser.
03:30	Circulated the riser volume over the shaker. Total pumped 115 m3.
04:00	Flowchecked the well.Performed pre-job meeting pior to rig down the surface test tree. Pumped slug.
07:00	Rigged down the surface test tree.
08:00	Changed bails and installed 4 1/2" slips and elevator. Performed pre-job/safety meeting prior to pull out of the hole with the test string.
12:00	Pulled out of the hole with the test string from 3122 m to 3084 m. Laid out the lubricator assembly. Continued to pull out of the hole from 3084 m to 2800 m.
13:00	Flow checked and laid down 2 stands from the derrick. Continued to pull out of the hole from 2800 m to 2751m.
14:00	Laid out the sub-sea test tree and changed to 3 1/2" tubing handling equipment.
20:30	Continued to pull out of the hole from 2741 m to 1770 m.
21:30	Function tested the BOP at the yellow pod from the drillers panel and the blue pod from the toolpushers panel.
22:30	Repaired hydraulic leakege at casing tong.
23:59	Pulled out of the hole with the test string from 1770 m to 1527 m.

Daily report no : 62 **Date:** 2005-05-16

Midnight depth : 3292 m MD **Estimated PP:** 1,08 sg **Mud weight:** 1,10 sg

Stop time	Description
04:00	Continued to pull out of the hole with the test string from 1527 m to 686 m. Performed flowcheck.
06:00	Pulled out of the hole from 686 to 260 m.
10:30	Performed pre-job meeting and chsnged handling equipment prior to lay out bottom hole assembly (BHA). Continued to lay out BHA.
11:30	Pulled out and laid down the fire guns.
12:30	Laid out tubing equipment. Greased and checked the top drive for loose objects. Performed Hazid and pre-job meeting prior to run wireline.
17:00	Rigged up for wireline with cement retainer and CCL log, ran in the hole and set the cement retainer at 3094 m.
18:00	Pulled out of the hole with the CCL and cement retainer setting tool. Rigged doewn the wireline equipment.
18:30	Pressure tested the cement retainer to to 270 bar / 10 min, meanwhile prepared to run in the hole with retainer stinger on 3 1/2" and 5 " drillpipe.
23:59	Ran in the hole with the stinger to 2303 m.

Daily report no : 63 **Date:** 2005-05-17

Midnight depth : 3292 m MD **Estimated PP:** 1,08 sg **Mud weight:** 1,30 sg

Stop time	Description
02:00	Ran in the hole with the cement stinger on 3 1/2" and 5" drillpipe from 2297 m to 3080 m.
03:30	Performed pre-job meeting prior to sting into the cement retainer and do the injectivity test. Pumped 6 m3 pre-wash flush down the string and left 1,5 m3 in the string. Stung into the cement retainer and sat down 10 ton.
04:00	Attempted to make an injectivity test. Pumped a total of 1200 litre, 85 lpm, gained 900 litre on the trip tank. Stopped pumping and the pressure bled back to 4 bar.
07:00	Waiting on the weather prior to make a new attempt to sting in and do the injectivity test.
09:00	Stripped the pipe through the annular with 50 bar pressure and without any pressure in the annulus.
10:30	Pumped down 2 m3 of prewash flush and 29,8 m3 1,1 sg brine. Pressure tested the cement hose to 300 bar.
11:00	Closed the lower annular preventor (LAP), pressured up annulus to 50 bar and attempted to strip down. Bled off the pressure and opened LAP. Landed the stinger in the cement retainer and set down 17 ton.
12:00	Attempted to make an injectivity test. Pumped a total of 1390 litre, 85 lpm, gained 410 litre on the trip tank.
12:30	Pulled the stinger 2,5 m out of the retainer and cleaned the cement unit.
14:30	Performed pre-job meeting and closed LAP. Pumped 6 m3 freshwater, 5 m3 1,8 sg cement slurry and 2,1 m3 freshwater from the cement unit. Displaced the cement with 21,1 m3 1,1 sg brine.
15:30	Pulled out with the cement stinger from 3091 m to 2818 m.
16:30	Reverse circulated 40 m3.
18:00	Pressure tested the cement hose to 300 bar. Closed the LAP. Pumped 6 m3 freshwater, 5 m3 1,8 sg cement slurry and 0,9 m3 freshwater from the cement unit. Displaced the cement with 20,4 m3 1,1 sg brine.
19:00	Pulled out with the cement stinger from 2818 m to 2672 m and lined up to reverse circulate.
21:00	Reverse circulated 40,5 m3, 1500 lpm - 110 bar. Opened the bag and pulled out to 2650 m. Circulated 146 m3 the long way, 1500 lpm - 60 bar.
21:30	Jet washed the top drive and flushed all the lines at the drill floor. Laid out the cement hose.
23:59	Performed pre-job meeting. Displaced the well from 1,10 sg brine to 1,30 sg KCl mud.

DAILY REPORT

Well: 35/11-13 **PO:** 1

Daily report no : 64 **Date:** 2005-05-18

Midnight depth : 3292 m MD **Estimated PP:** 1,08 sg **Mud weight:** 1,30 sg

Stop time	Description
00:30	Displaced the well from 1,10 sg brine to 1,30 sg KCl mud. Flowcheked for 15 min.
02:30	Pumped slug and pulled out of the hole with cement stinger from 2650 m to 1570 m.
03:30	Changed dies on the iron roughneck.
07:00	Continued to pull out of the hole from 1570 m to surface.
08:00	Checked and greased the top drive, intermediate and upper racking arm. Changed to 5" drillpipe handling equipment.
13:30	Made up 8 1/2" bottom hole assembly and ran in hole to 2626 m. Broke circulation at 1246 m and 2000 m.
14:30	Washed down from 2626 m and tagged hard cement at 2690 m. Sat down 10 ton.
16:00	Pulled out of the hole from 2690 m to 2674 m. Flushed and pressure tested the surface lines to 250 bar / 5 min. Pressure tested the cement plug to 35 bar / 5 min and 220 bar / 10 min.
21:30	Pumped slug and racked one stand in the derrick. Performed pre-job meeting. Pulled out of the hole from 2655 m to 1648 m. Laid down 5" drillpipe to deck.
23:59	Pulled out of the hole with 8 1/2" bottom hole assembly from 1648 to 95 m.

Daily report no : 65 **Date:** 2005-05-19

Midnight depth : 3292 m MD **Estimated PP:** 1,08 sg **Mud weight:** 1,30 sg

Stop time	Description
00:30	Checked the derrick and drilling equipment for falling objects prior to manual handling of bottom hole assembly.
02:00	Laid down 6 1/2" drill collars and jar. Broke out the bit.
02:30	Cleaned the rig floor and performed pre-job meeting prior to make up bottom hole assembly (BHA) for punching hole in the 9 5/8" casing.
08:30	Drifted 5 1/2" HWDP, 5" drillpipe and cross-overs to 2 1/4". Changed handling equipment. Ran in the hole to 398 m with the BHA for punching hole. Changed to long bails on the elevator and rigged up for wireline. Pressure tested the surface lines to 220 bar and function tested wireline equipment. Armed guns and stabbed toolstring into drillpipe.
09:30	Opened compensator, spaced out drill pipe, closed middle pipe ram and performed 20 ton overpull test. Continued to run in with wireline, correlated punch depth to 405 meter. Performed pressure test to 200 bar against middle pipe ram and the grease head. Bled off pressure to 40 bar and observed. Lost communication with casing collar locator tool (CCL). Bled off the pressure to 0 bar and obtained communication.
12:00	Pressured up to 20 bar. Punched hole at second attempt and observed a pressure drop from 20 bar to 0 bar. Circulated 5 m3 mud down drillpipe and through the choke. Flow checked for 10 min. Pulled the wireline to 100 m and opened the middle pipe ram. Flowchecked. Pulled out of the hole with the wireline and recovered tool string.
15:00	Rigged down wireline equipment, changed bails and elevator. Pulled the drillstring out of hole to surface.
18:00	Performed pre job meeting, rigged down 10 K koflex hose, meanwhile tested the derrick drilling machine to 220 bar.
21:00	Rigged up and ran in hole with the BOP test tool to 384 meter. Washed the wellhead area several times.
23:59	Pressure tested the BOP.

Daily report no : 66 **Date:** 2005-05-20

Midnight depth : 3292 m MD **Estimated PP:** 1,08 sg **Mud weight:** 1,30 sg

Stop time	Description
01:00	Pulled back to surface with the BOP test tool.
01:30	Laid down the BOP test tool and racked back 3 stands 5 1/2" heavy weight drill pipe.
02:00	Picked up Multi-Purpose Tool (MPT) and changed to 5" handling equipment.
03:00	Ran in the hole with the MPT on 5" drill pipe to 384 m. Sat down 10 ton. Released the wear bushing with 45 ton overpull .
04:00	Pulled out of the hole with the wear bushing. Released the wear bushing from the MPT. Dressed the MPT for pulling the seal assembly and greased one single for stripping through the annular.
05:30	Ran in the hole with the MPT for pulling the seal assembly. Latched to the seal assembly and closed the annular. Pulled the seal assembly free with 40 ton overpull. Monitored the well.
06:00	Pulled out of the hole with the seal assembly.
08:00	Made up 9 5/8" casing cutter assembly and flow tested. Red Baron representative checked cutting tool.
11:00	Ran in the hole with casing cutter assembly on 5" drill pipe to 1261 m. Laid down 1 singel 5" drillpipe, made up 5" pup and marine swivel. Took up/down weights and continued to ran in the hole to 1642 m. Installed diverter insert.
11:30	Continued to run in the hole, landed the marin swivel in the wellhead with the cutters at 1651,2 m and sat down 6 tons. Broke circulation and pumped with 570 lpm - 55 bar. Stopped pumping. Rotated with 120 rpm, 5 Kft-lbs. Increased the pump rate to 570 lpm - 55 bar while rotating with 120 rpm to cut the 9 5/8" casing. Increased the pump rate to 630 lpm - 68 bar and cut the casing. Observed a pressure drop to 30 bar.
12:00	Flowchecked and pumped slug.
13:30	Pulled out of the hole with the cutter assembly fro 1651 m to 1270 m. Removed the diverter insert, racked the marin swivel assembly on 5" drill pipe stand. Installed diverter insert, laid down 5" pup and made up 1 singel of 5" drill pipe.
16:30	Continued to pull out of the hole from 1270 m to surface. Laid down the casing cutter assembly and cleared the drillfloor. Installed casing tong and made up casing retrieving tool to 1 stand 8" drill collar.

DAILY REPORT

Well: 35/11-13 **PO:** 1

Daily report no : 66 **Date:** 2005-05-20

Midnight depth : 3292 m MD **Estimated PP:** 1,08 sg **Mud weight:** 1,30 sg

Stop time	Description
18:30	Ran in the hole with casing retrieving tool on 5" drillpipe to 387 m and landed the stop sub in the well head at 384 m. Pulled the casing free with 10 ton overpull. Pulled out 3 m, closed the upper annular preventor and circulated out casing.
19:00	Opened the upper annular, flow checked and pumped slug.
21:00	Started to pull out of the hole with 9 5/8" casing. Casing hanger hung up in the lower annular. Worked up and down. Closed upper annular with 500 psi. The hanger slided through. Pulled out 3 meter and hung up in the upper annular. Tried to centralize the casing with lower annular and by moving the rig to center. Verified the riser angle with the ROV. Moved the rig 10 m aft, attempted to go up and down with the string.
23:59	Moved the rig 10 meter forward and 5 meter port. Turned string 1/2" turn to left. Made several attempts to pull the casing. Moved the rig several times and attempted to pull out with the casing. Landed the casing hanger in the wellhead and released the casing retrieving tool.

Daily report no : 67 **Date:** 2005-05-21

Midnight depth : 3292 m MD **Estimated PP:** 1,08 sg **Mud weight:** 1,30 sg

Stop time	Description
01:30	Pulled out of the hole with the casing retrieving tool.
03:30	Rigged up the casing retrieving tool with a hang-off tool above. Ran in the hole to 39 m.
06:00	Changed to 5" handling equipment and ran in the hole with the casing retrieving tool from 39 to 387 m. Landed the stop sub in the well head at 384 m. Pulled the casing free with 10 ton overpull. Worked the casing hanger through the BOP.
09:00	Pulled out of hole to surface. Pumped slug, broke out crossover, racked 8" drill collars in the derrick and changed to 9 5/8" casing handling equipment. Released and laid down spear assembly to deck. Performed pre job meeting prior to lay out the 9 5/8" casing.
17:00	Laid down 9 5/8 casing according to casing tally. Laid down 9 5/8" casing slips, elevator and cleaned drill floor.
20:30	Performed planned maintenance.
23:59	Made up and ran in the hole with 12 1/4" bit and 9 5/8" casing scraper to 1652 m. Worked the scraper up and down three times around 420 m, 635 m and 1650 m.

Daily report no : 68 **Date:** 2005-05-22

Midnight depth : 3292 m MD **Estimated PP:** 1,08 sg **Mud weight:** 1,30 sg

Stop time	Description
01:30	Circulated one annulus and one string volume at 1650 m.
02:00	Flowchecked and pumped slug.
04:00	Pulled out of the hole with 12 1/4" bit and scraper assembly from 1650 m to 114 m.
05:00	Racked back heavy weight drillpipe and drill collars. Laid down 12 1/4" bit and scraper assembly. Performed pre-job meeting prior to make up and run in the hole with 13 3/8" bridge plug.
11:30	Made up and ran in to hole to 1644 m with 13 3/8" bridge plug on 3 1/2" and 5" drillpipe. Performed pre job meeting. Continued to run in the hole to 1650 m and sat the 13 3/8" bridge plug.
12:00	Flushed, closed MPR and performed pressure test on surface lines to 150 bar.
13:00	Pressure tested the bridge plug to 144 bar for 10 min.
15:00	Pumped 15 m3 fresh water as spacer followed by 10 m3 of 1.9 sg cement slurry. Pumped 1.84 m3 of fresh water as spacer followed by 10.7 m3 mud.
16:00	Pulled drill the string from 1647 m to 1491 m and reverse circulated 2000 strokes. Observed some cement and fresh water spacer in retur.
16:30	Dropped wiper balls in the drillpipe and pumped two times string volume.
17:00	Pumped slug and racked one stand drillpipe in the derrick. Cleaned the topdrive inside with jet nozzle.
20:30	Pulled out of the hole from 1463 m to 579 m. Laid down 60 joints with drill pipe.
22:00	Continued to pull out of the hole from 579 m to 173 m. Broke out crossover and changed to 3 1/2" pipe handling equipment. Racked 3 1/2" drill pipes and laid down the running tool for the bridge plug.
23:30	Cut and slip drill line.
23:59	Changed to 5" drill pipe handling equipment. Performed pre-job meeting prior to make up and run in hole with the bridge plug.

Daily report no : 69 **Date:** 2005-05-23

Midnight depth : 3292 m MD **Estimated PP:** 1,08 sg **Mud weight:** 1,30 sg

Stop time	Description
02:00	Ran in the hole with the 13 3/8" bridge plug on 5" drill pipe to 625 m. Broke circulation at 500 m
04:00	Circulated one string volume. Made several attempts to set the bridge plug. Sat it at the fifth attempt. Up/down weights before setting the plug: 52 ton / 52 ton. Had to pressure the string to 200 bar and pull fast to set the bridge plug.

DAILY REPORT

Well: 35/11-13 **PO:** 1

Daily report no : 69 **Date:** 2005-05-23

Midnight depth : 3292 m MD **Estimated PP:** 1,08 sg **Mud weight:** 1,30 sg

Stop time	Description
05:00	Pumped slug and pulled out of the hole with the running tool for the 13 3/3" bridge plug from 635 m to surface. Laid down the running tool.
06:00	Made up 13 3/8" casing cutter assembly and flow tested. Red Baron representative checked the cutting tool.
08:00	Ran in the hole with the casing cutting assebly to 560 m and cut the 13 3/8" casing.
11:00	Pumped slug and pulled out of the hole to 178 m. Laid down the marine swivel. Continued to pull out of the hole to surface. Rebuild the casing cutting assembly for 20"/30" casing and laid it down on the deck.
13:00	Cleaned the drill floor and made up the 13 3/8" casing spear assembly. Changed from 9 5/8" grapple and pack off to 13 3/8" grapple and pack off.
14:00	Ran in the hole with the 13 3/8" casing spear assembly to 387 m.
15:00	Made several attempts to engage the 13 3/8" casing spear with no success.
16:00	Pulled out of the hole with the 13 3/8" casing spear assembly to surface.
16:30	Changed from 12,184" to 12,555" grapple.
17:30	Ran in the hole with the 13 3/8" casing spear assembly to 387 m.
18:00	Engaged the 13 3/8" casing spear and attempted to pull the 13 3/8" casing free with 15 ton overpull. No success.
19:30	Released the spear and pulled out of the hole with the 13 3/8" casing spear assembly to surface. Laid down the 13 3/8" casing spear assembly.
21:00	Made up the Dril-Quip multi purpose tool and ran in the hole to 387 m.
22:30	Engaged the multi purpose tool and pulled the 13 3/8" seal assembly loose with 55 ton overpull. Pulled out of the hole with the 13 3/8" seal assembly.
23:59	Picked up the 13 3/8" casing spear assembly and ran in the hole to 387 m.

Daily report no : 70 **Date:** 2005-05-24

Midnight depth : 3292 m MD **Estimated PP:** 1,08 sg **Mud weight:** 1,30 sg

Stop time	Description
01:30	Engaged the 13 3/8" casing spear and attempted to pull the 13 3/8" casing free with 33 ton overpull. Staged up the mud pumps in steps and circulated the casing while keeping 33 ton overpull. Released and re-engaged the spear. Circulated the casing and pulled the casing free with 73 ton overpull.
03:00	Pulled out of the hole with the 13 3/8" casing.
04:30	Landed the 13 3/8" casing hanger in the rotary and released the 13 3/8" casing spear. Laid the spear assembly down on deck. Installed casing handling equipment.
06:30	Laid down the 13 3/8" casing. Cleared the rig floor.
07:30	Ran in the hole with the 5" open ended drill pipe and tagged the 13 3/8" bridge plug with 3 ton weight.
09:00	Displaced the kill line, choke line and the riser from 1,30 sg mud to sea water.
10:30	Sat a balanced cement plug from 635 m to 405 m. Pressure tested the surface lines to 100 bar. Pumped 3 m3 sea water ahead of 32,5 m3 1,95 sg cement slurry, followed by 2 m2 sea water.
11:30	Pulled slowly out of the hole with the 5" drill pipe from 635 m to 405 m.
12:00	Circulated the hole clean. Observed cement contaminated sea water in returns at bottms up.
13:00	Pulled out of the hole to 393 m and washed the well head and BOP area. Continued to flush the riser through the kill and choke lines while cleaning the top drive I-BOP.
15:00	Pulled out of the hole from 405 m to surface. Laid down the 5" driill pipe.
16:00	Disconnected and laid down the casing tong and accessories to deck.
17:00	Laid down 12 joints 5" heavy weight drill pipe.
19:30	Broke and laid down the 13 3/8" casing spear assembly, including equipment used for guiding.
23:00	Laid down excess drill pipe from the derrick.
23:59	Laid down excess 8" drill collar from the derrick.

Daily report no : 71 **Date:** 2005-05-25

Midnight depth : 3292 m MD **Estimated PP:** 1,08 sg **Mud weight:** 1,30 sg

Stop time	Description
00:30	Laid down excess drill collar from the derrick
02:30	Ran in the hole with 12 1/4" BHA on 5" drill pipe to 404 m.
03:30	Washed down slowly to 430 m. Circulated bottoms up and observed cement contaminated sea water in return. Washed down slowly to 436 m and weight tested the cement plug with 12 ton.
05:00	Pulled out of the hole with the 12 1/4" bottom hole assembly on 5" drill pipe from 436 m to surface.
06:00	Cleared the rig floor and prepared to pull the BOP.
09:00	Pulled and laid down the diverter. Installed the slip joint handling pipe and collapsed the slip joint inner barrel. Activated the hydraulic locking device between the slip joint inner and outer barrel. Positioned the ROV and unlatched the BOP at 09:00 hours.

DAILY REPORT

Well: 35/11-13 **PO:** 1

Daily report no : 71 **Date:** 2005-05-25

Midnight depth : 3292 m MD **Estimated PP:** 1,08 sg **Mud weight:** 1,30 sg

Stop time	Description
12:00	Mooved the rig 30 m off the location. Removed the riser tension wire number 3. Hung off and secured the support ring. Dismanteled the suspension for the pod hoses. Disconnected and hung off the kill and choke lines.
14:00	Removed the slip joint handling pipe and laid down the slip joint.
23:59	Pulled the BOP and riser.

Daily report no : 72 **Date:** 2005-05-26

Midnight depth : 3292 m MD **Estimated PP:** 1,08 sg **Mud weight:** 1,30 sg

Stop time	Description
02:00	Pulled the BOP and riser. Secured the BOP in the BOP capture device. Landed the 15 feet riser joint in the riser spider. Pulled the guide wires to surface. Moved the BOP carrier to the well centre and prepared to carry out planned maintenance on the well head connector.
04:00	Performed planned maintenance on the BOP well head connector.
08:00	Landed and secured the BOP on the BOP carrier. Laid down 2 x 50 ft riser joints and 1 x 15 ft riser joint. Laid out riser handling equipment. Cleared the rig floor.
13:30	Made up and function tested the 20" x 30" casing cutting and retrieval equipment.
15:30	Ran in to the top of the well head at 384m with the 20" x 30" casing cutting and retrieval equipment. Positioned the rig. Stung in the well head, actuated the collet grapple and verified correct landing with 10 ton overpull.
22:30	Applied 7 ton weight on the well head and cut the 20" x 30" casing at 393,13 m. Attempted to pull the well head free with 40 ton over pull at 14:00 hrs.
23:59	Attempted to pull the well head free. The collet grapple slipped at 35 ton overpull. Pulled the casing cutter above the well head and inspected the knives. Adjusted the rig position. Slacked off and engaged the collet grapple, circulating at low speed. Made several attempts to pull the well head free with 150 ton overpull.

Daily report no : 73 **Date:** 2005-05-27

Midnight depth : 3292 m MD **Estimated PP:** 1,08 sg **Mud weight:** 1,30 sg

Stop time	Description
00:30	Attempted to pull the casing free with 150 ton overpull.
03:00	Applied 7 ton weight on the well head and cut the 20" x 30" casing at 393,13 m.
05:30	Attempted to latch the collet grapple several times with no success. Got stuck with the collet grapple approx. 1 m above the landing point. Attempted to work the string free using from 10 ton down weight to 65 ton overpull. Pumped 4000 LPM and rotated both clockwise and anti-clockwise. Pulled the string free and out of the well head.
06:00	Inspected topdrive and derrick for potential falling objects.
07:00	Pulled out with the 20" x 30"casing cutting and retrieval equipment.
10:00	Laid down the 20" x 30" casing cutting and retrieval equipment.
14:30	Rebuild the 20" x 30" casing cutting assembly from motor to rotation assembly.
16:30	Ran in with the 20" x 30" casing cutting equipment to 374 m. Positioned the rig and landed the marine swivel in the well head.
21:00	Applied 6 ton weight on the well head and cut the 20" x 30" casing at 390,36 m.
22:00	Pulled the 20" x 30" casing cutting equipment to surface.
23:59	Made up 18 3/4" spear assembly with bumper sub, fishing jar and accelerator. Ran in to 382 m.

Daily report no : 74 **Date:** 2005-05-28

Midnight depth : 3292 m MD **Estimated PP:** 1,08 sg **Mud weight:** 1,30 sg

Stop time	Description
00:30	Positioned the rig and stab in the 18 3/4" spear, assisted by the ROV.
01:30	Jarred and pulled the 20" x 30" casing and guidebase free with 213 ton overpull. Pulled out to 365 m.
02:00	Inspected the top drive and derrick for potential falling objects after jarring.
04:00	Pulled the 20" x 30" casing and permanent guide base to the cellar deck and secured on the guide base trolley
23:59	Anchor and chain number 8 secured onboard the Norman Mariner at 07:26 hrs. Anchor and chain number 4 secured onboard the Scandi Admiral at 08:02 hrs. Anchor and chain number 7 secured onboard the Norman Mariner at 13:36 hrs. Anchor and chain number 3 secured onboard the Scandi Admiral at 13:30 hrs. Anchor and chain number 5 on bolster at 22:35 hrs. Anchor number 9 secured onboard the Norman Mariner. The chain, attached to the pennant wire, secured onboard the rig at 23:05 hrs.

DAILY REPORT

Well: 35/11-13 **PO:** 1

Daily report no :	75	**Date:**	2005-05-29		
Midnight depth :	3292 m MD	**Estimated PP:**	1,08 sg	**Mud weight:**	1,30 sg

Stop time	Description
05:00	Anchor handling. Anchor number 2 secured onboard the Norman Mariner. The chain attached to the pennant wire and secured onboard the rig at 03:05 hrs. Anchor and chain number 6 on bolster at 0450 hrs. Rig in transit for CCB at 05:02 hrs.
23:59	No activity on the well 35/11-13. Rig in transit to CCB.

Daily report no :	76	**Date:**	2005-05-30		
Midnight depth :	3292 m MD	**Estimated PP:**	1,08 sg	**Mud weight:**	1,30 sg

Stop time	Description
04:30	Off-loaded remaining back load to Tor Viking at CCB.
23:59	The rig moored at quay number 11 at CCB.

TIME DISTRIBUTION

Well: 35/11-13 **PO:** 1 **Rig:** DEEPSEA TRYM **Depth:** 3291,9 **m MD**

All sections

Operations	Hours	%	Hours	%	Acc. total
MOBILIZATION					
MOVING	16,5	0,93			
MOORING; RUNNING ANCHORS	36,0	2,02			
MOORING; PULLING ANCHORS	25,0	1,41			
Sum.			77,5	4,36	77,5
DRILLING					
BHA HANDLING/TESTING	51,0	2,87			
EQUIPMENT TEST	0,5	0,03			
MWD HANDLING/TESTING/SURVEYING	5,0	0,28			
TRIPPING IN CASED HOLE	68,5	3,85			
TRIPPING IN OPEN HOLE	34,5	1,94			
DRILLING	268,5	15,10			
OTHER	7,5	0,42			
WELLHEAD EQUIPMENT INSTALLATION	7,0	0,39			
REAMING	14,0	0,79			
CIRC. AND COND. MUD/HOLE	35,0	1,97			
WIPER TRIP	14,0	0,79			
CASING HANDLING/TESTING	29,5	1,66			
RUNNING CASING IN CASED HOLE	25,5	1,43			
RUNNING CASING IN OPEN HOLE	34,0	1,91			
PRIMARY CEMENTING	33,5	1,88			
TRIPPING FOR CEMENT JOB	3,5	0,20			
DRILLING OUT CEMENT PLUG	11,5	0,65			
FORMATION STRENGTH TESTING	3,0	0,17			
BOP HANDLING	7,5	0,42			
BOP RUNNING/RETRIEVING	31,5	1,77			
BOP TESTING	19,5	1,10			
WELLHEAD EQUIPMENT HANDLING	10,5	0,59			
CONDUCTOR CLEAN OUT	2,5	0,14			
RIG MAINTENANCE	15,5	0,87			
SLIP AND CUT DRILLING LINE	2,5	0,14			
Sum.			735,5	41,37	813,0
FORMATION EVALUATION MWD					
LOGGING WITH MWD	3,0	0,17			
Sum.			3,0	0,17	816,0
FORMATION EVALUATION LOGGING					
LOGGING	22,0	1,24			
LOGGING EQUIPMENT HANDLING/TESTING	14,5	0,82			
FORMATION TESTER	24,5	1,38			
SIDEWALL CORING	11,0	0,62			
Sum.			72,0	4,05	888,0
FORMATION EVALUATION CORING					
BHA HANDLING/TESTING	12,0	0,67			
CIRCULATING FOR SAMPLE	1,5	0,08			
MWD HANDLING/TESTING/SURVEYING	0,5	0,03			
TRIPPING IN CASED HOLE	28,5	1,60			
CORING EQUIPMENT/CORE HANDLING	7,0	0,39			
TRIPPING IN OPEN HOLE	8,0	0,45			
CORING	4,5	0,25			

TIME DISTRIBUTION

Well: 35/11-13 **PO:** 1 **Rig:** DEEPSEA TRYM **Depth:** 3291,9 **m MD**

All sections

Operations	Hours	%	Hours	%	Acc. total
FORMATION EVALUATION CORING					
CIRC. AND COND. MUD/HOLE	5,0	0,28			
Sum.			67,0	3,77	955,0
TESTING (PRODUCTION TEST)					
INFLOW TEST	1,0	0,06			
RIG UP TO PERFORATE	2,0	0,11			
RUN LOGS FOR CORRELATION	2,0	0,11			
BHA HANDLING/TESTING	7,5	0,42			
TRIPPING IN CASED HOLE	10,0	0,56			
OTHER	7,5	0,42			
CIRC. AND COND. MUD/HOLE	7,5	0,42			
WIPER TRIP	22,0	1,24			
CASING HANDLING/TESTING	2,5	0,14			
RUNNING CASING IN CASED HOLE	20,5	1,15			
RUNNING CASING IN OPEN HOLE	2,0	0,11			
PERFORM SCRAPER RUN/CASING CLEANING	26,0	1,46			
PRIMARY CEMENTING	13,5	0,76			
CEMENT EVALUATION	2,0	0,11			
BOP TESTING	10,0	0,56			
PULLING OUT OF HOLE W/PRODUCTION STRING	34,5	1,94			
PRESSURE TESTING OF DOWNHOLE EQUIPMENT	11,5	0,65			
INSTALLATION OF PRODUCTION STRING	41,0	2,31			
RIG MAINTENANCE	2,0	0,11			
RIG UP OR DOWN WIRELINE EQUIPMENT	6,5	0,37			
FLOW PERIOD	28,5	1,60			
KILL WELL/MINIFRAC	12,5	0,70			
SHUT IN PERIOD	45,0	2,53			
Sum.			317,5	17,86	1272,5
PLUG AND ABANDONMENT					
BHA HANDLING/TESTING	2,0	0,11			
TRIPPING IN CASED HOLE	58,5	3,29			
OTHER	3,0	0,17			
CIRC. AND COND. MUD/HOLE	16,0	0,90			
CASING HANDLING/TESTING	3,5	0,20			
TRIPPING FOR CEMENT JOB	14,5	0,82			
BOP HANDLING	4,0	0,22			
BOP RUNNING/RETRIEVING	21,0	1,18			
BOP TESTING	7,5	0,42			
WELLHEAD EQUIPMENT HANDLING	7,5	0,42			
SET CEMENT PLUG	9,5	0,53			
PERFORATING	13,0	0,73			
SET/RELEASE MECHANICAL PLUG	7,0	0,39			
TRIPPING OF CASING CUTTING EQUIPMENT	31,5	1,77			
CUT CASING/WELLHEAD	18,5	1,04			
CASING RETRIEVING	51,5	2,90			
RIG MAINTENANCE	5,5	0,31			
SLIP AND CUT DRILLING LINE	1,5	0,08			
Sum.			275,5	15,49	1548,0
DOWNTIME DRILLING					
EQUIPMENT FAILURE AND REPAIR	135,5	7,62			

TIME DISTRIBUTION

Well: 35/11-13 **PO:** 1 **Rig:** DEEPSEA TRYM **Depth:** 3291,9 **m MD**

All sections

Operations	Hours	%	Hours	%	Acc. total
DOWNTIME DRILLING					
WAITING	24,0	1,35			
FISHING	50,0	2,81			
OTHER	6,5	0,37			
Sum.			216,0	12,15	1764,0
DOWNTIME FORM. EVAL. MWD					
EQUIPMENT FAILURE AND REPAIR	1,0	0,06			
Sum.			1,0	0,06	1765,0
DOWNTIME FORM. EVAL. LOGGING					
STICKING/GOING STUCK WITH EQUIPMENT	0,5	0,03			
Sum.			0,5	0,03	1765,5
DOWNTIME FORM. EVAL. CORING					
EQUIPMENT FAILURE AND REPAIR	4,5	0,25			
Sum.			4,5	0,25	1770,0
DOWNTIME TESTING (PROD. TEST)					
EQUIPMENT FAILURE AND REPAIR	3,5	0,20			
OTHER	0,5	0,03			
Sum.			4,0	0,22	1774,0
DOWNTIME PLUG AND ABANDONMENT					
EQUIPMENT FAILURE AND REPAIR	1,0	0,06			
WAITING	3,0	0,17			
Sum.			4,0	0,22	1778,0
Reported time (100,0 % of well total 1778,0 hours) :					1778,0

Norsk Hydro

2005-12-07

HOLE DEVIATION

Well: 35/11-13 **PO:** 1 **Reference point:** RKB ; 25,0 **m** ABOVE MSL

Waterdepth: 361,7 **m** **Vertical to:** 386,6 **m** **Total Depth:** 3291,5 **m MD**

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

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

Wellhead Coordinates, UTM: **North :** 6781139,00 **m,** **East :** 529019,00 **m**

Official Surveys: Y **Track :**

Coordinates are measured from the wellhead centre.

Depth MD [m]	Incli-nation [Deg]	Direc-tion [Deg]	Tool Type	#	Depth TVD [m]	Coordinates North [m]	Coordinates East [m]	Vert. Sect [m]	Dogleg [D/30m]	Build [D/30m]	Turn [D/30m]
396,73	0,52	319,72	MWD		396,73	0,00	0,00	0,00	0,00	0,00	0,00
409,60	0,66	55,60	MWD		409,60	0,09	0,02	0,09	2,05	0,33	223,50
419,20	0,72	145,33	MWD		419,20	0,07	0,10	0,12	3,05	0,19	280,41
429,20	0,75	160,34	MWD		429,20	-0,05	0,16	0,17	0,58	0,09	45,03
439,20	1,21	116,53	MWD		439,20	-0,15	0,28	0,32	2,54	1,38	-131,43
448,70	1,26	100,67	MWD		448,69	-0,22	0,47	0,52	1,09	0,16	-50,08
459,60	1,41	112,69	MWD		459,59	-0,29	0,71	0,77	0,87	0,41	33,08
464,50	1,74	101,52	MWD		464,49	-0,33	0,84	0,90	2,75	2,02	-68,39
484,50	1,54	104,46	MWD		484,48	-0,46	1,40	1,47	0,33	-0,30	4,41
516,00	1,93	76,94	MWD		515,97	-0,44	2,32	2,37	0,86	0,37	-26,21
544,70	1,04	48,94	MWD		544,66	-0,16	2,99	3,00	1,17	-0,93	-29,27
573,30	1,11	72,96	MWD		573,25	0,09	3,45	3,45	0,47	0,07	25,20
603,30	1,75	92,69	MWD		603,24	0,15	4,19	4,19	0,80	0,64	19,73
632,40	2,05	72,96	MWD		632,33	0,28	5,13	5,14	0,74	0,31	-20,34
663,70	1,82	64,80	MWD		663,61	0,66	6,11	6,15	0,34	-0,22	-7,82
686,20	1,59	50,73	MWD		686,10	1,01	6,68	6,75	0,63	-0,31	-18,76
721,10	0,85	17,04	MWD		720,99	1,56	7,13	7,30	0,86	-0,64	-28,96
750,50	1,30	340,24	MWD		750,39	2,09	7,08	7,38	0,82	0,46	-37,55
779,20	1,84	335,37	MWD		779,08	2,81	6,78	7,34	0,58	0,56	-5,09
809,60	2,00	336,10	MWD		809,46	3,74	6,36	7,38	0,16	0,16	0,72
837,90	2,05	341,88	MWD		837,74	4,67	6,00	7,61	0,22	0,05	6,13
867,80	2,05	337,74	MWD		867,62	5,67	5,63	8,00	0,15	0,00	-4,15
898,80	1,69	331,33	MWD		898,61	6,59	5,20	8,40	0,40	-0,35	-6,20
927,50	1,44	327,94	MWD		927,30	7,27	4,81	8,71	0,28	-0,26	-3,54
956,20	1,34	316,84	MWD		955,99	7,82	4,39	8,96	0,30	-0,10	-11,60
987,20	0,99	305,44	MWD		986,98	8,24	3,92	9,12	0,40	-0,34	-11,03
1016,20	0,86	306,56	MWD		1015,98	8,51	3,54	9,22	0,14	-0,13	1,16
1044,60	0,77	302,74	MWD		1044,37	8,74	3,21	9,31	0,11	-0,10	-4,04
1074,90	0,61	317,21	MWD		1074,67	8,97	2,93	9,44	0,23	-0,16	14,33
1104,00	0,51	319,20	MWD		1103,77	9,18	2,74	9,58	0,10	-0,10	2,05
1134,60	0,50	341,26	MWD		1134,37	9,41	2,61	9,77	0,19	-0,01	21,63
1162,70	0,27	290,30	MWD		1162,47	9,55	2,51	9,87	0,42	-0,25	-54,41
1192,40	0,47	288,48	MWD		1192,17	9,61	2,33	9,89	0,20	0,20	-1,84
1223,40	0,45	296,21	MWD		1223,17	9,71	2,10	9,93	0,06	-0,02	7,48
1252,60	0,53	267,48	MWD		1252,37	9,75	1,86	9,93	0,26	0,08	-29,52
1280,70	0,62	283,68	MWD		1280,47	9,78	1,58	9,91	0,20	0,10	17,30

Norsk Hydro

2005-12-07

HOLE DEVIATION

Well: 35/11-13 **PO:** 1 **Reference point:** RKB ; 25,0 **m** ABOVE MSL

Waterdepth: 361,7 **m** **Vertical to:** 386,6 **m** **Total Depth:** 3291,5 **m MD**

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

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

Wellhead Coordinates, UTM: **North :** 6781139,00 **m,** **East :** 529019,00 **m**

Official Surveys: Y **Track :**

Coordinates are measured from the wellhead centre.

Depth MD [m]	Incli-nation [Deg]	Direc-tion [Deg]	Tool Type	#	Depth TVD [m]	Coordinates North [m]	Coordinates East [m]	Vert. Sect [m]	Dogleg [D/30m]	Build [D/30m]	Turn [D/30m]
1310,90	0,41	274,91	MWD		1310,66	9,83	1,32	9,92	0,22	-0,21	-8,71
1340,70	0,42	296,22	MWD		1340,46	9,89	1,11	9,95	0,15	0,01	21,45
1370,30	0,46	301,92	MWD		1370,06	10,00	0,91	10,04	0,06	0,04	5,78
1400,70	0,47	303,73	MWD		1400,46	10,13	0,71	10,16	0,02	0,01	1,79
1429,90	0,37	305,86	MWD		1429,66	10,25	0,53	10,27	0,10	-0,10	2,19
1459,30	0,51	296,37	MWD		1459,06	10,37	0,34	10,37	0,16	0,14	-9,68
1488,70	0,35	314,51	MWD		1488,46	10,49	0,15	10,49	0,21	-0,16	18,51
1517,30	0,48	305,27	MWD		1517,06	10,62	-0,01	10,62	0,15	0,14	-9,69
1548,00	0,39	313,86	MWD		1547,76	10,77	-0,19	10,77	0,11	-0,09	8,39
1574,80	0,36	306,52	MWD		1574,56	10,88	-0,32	10,88	0,06	-0,03	-8,22
1605,40	0,38	307,30	MWD		1605,16	11,00	-0,48	11,01	0,02	0,02	0,76
1634,70	0,46	294,72	MWD		1634,46	11,11	-0,66	11,13	0,12	0,08	-12,88
1663,70	0,59	296,08	MWD		1663,45	11,22	-0,90	11,26	0,13	0,13	1,41
1676,40	0,57	303,77	MWD		1676,15	11,28	-1,01	11,33	0,19	-0,05	18,17
1700,50	0,64	297,54	MWD		1700,25	11,41	-1,23	11,48	0,12	0,09	-7,76
1723,30	0,67	307,96	MWD		1723,05	11,55	-1,45	11,64	0,16	0,04	13,71
1733,00	0,65	299,07	MWD		1732,75	11,61	-1,54	11,72	0,32	-0,06	-27,49
1760,80	0,70	325,96	MWD		1760,55	11,83	-1,78	11,96	0,34	0,05	29,02
1789,20	0,86	317,65	MWD		1788,95	12,13	-2,02	12,30	0,21	0,17	-8,78
1818,80	0,85	333,51	MWD		1818,54	12,49	-2,26	12,70	0,24	-0,01	16,07
1848,40	0,77	331,83	MWD		1848,14	12,87	-2,46	13,10	0,08	-0,08	-1,70
1877,50	0,70	316,80	MWD		1877,24	13,17	-2,67	13,44	0,21	-0,07	-15,49
1907,40	0,70	322,89	MWD		1907,13	13,45	-2,90	13,76	0,07	0,00	6,11
1928,40	0,51	320,42	MWD		1928,13	13,62	-3,04	13,96	0,27	-0,27	-3,53
1964,70	0,58	317,03	MWD		1964,43	13,88	-3,27	14,26	0,06	0,06	-2,80
1992,10	0,63	313,41	MWD		1991,83	14,09	-3,47	14,51	0,07	0,05	-3,96
2024,70	0,57	317,14	MWD		2024,43	14,33	-3,71	14,80	0,07	-0,06	3,43
2054,30	0,91	298,79	MWD		2054,03	14,55	-4,02	15,09	0,42	0,34	-18,60
2083,00	0,72	300,89	MWD		2082,72	14,75	-4,37	15,39	0,20	-0,20	2,20
2112,80	0,63	301,71	MWD		2112,52	14,93	-4,67	15,65	0,09	-0,09	0,83
2140,70	0,75	295,55	MWD		2140,42	15,09	-4,97	15,89	0,15	0,13	-6,62
2171,30	0,64	301,12	MWD		2171,02	15,27	-5,30	16,16	0,13	-0,11	5,46
2202,20	0,63	290,79	MWD		2201,91	15,42	-5,60	16,40	0,11	-0,01	-10,03
2231,20	0,48	283,04	MWD		2230,91	15,50	-5,87	16,57	0,17	-0,16	-8,02
2261,30	0,42	298,59	MWD		2261,01	15,58	-6,09	16,73	0,13	-0,06	15,50
2289,40	0,36	276,96	MWD		2289,11	15,64	-6,27	16,85	0,17	-0,06	-23,09

Norsk Hydro

2005-12-07

HOLE DEVIATION

Well: 35/11-13 **PO:** 1 **Reference point:** RKB ; 25,0 **m** ABOVE MSL

Waterdepth: 361,7 **m** **Vertical to:** 386,6 **m** **Total Depth:** 3291,5 **m MD**

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

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

Wellhead Coordinates, UTM: **North :** 6781139,00 **m,** **East :** 529019,00 **m**

Official Surveys: Y **Track :**

Coordinates are measured from the wellhead centre.

Depth MD [m]	Incli-nation [Deg]	Direc-tion [Deg]	Tool Type	#	Depth TVD [m]	Coordinates North [m]	Coordinates East [m]	Vert. Sect [m]	Dogleg [D/30m]	Build [D/30m]	Turn [D/30m]
2318,40	0,25	269,81	MWD		2318,11	15,65	-6,42	16,92	0,12	-0,11	-7,40
2348,90	0,20	306,74	MWD		2348,61	15,68	-6,53	16,99	0,15	-0,05	36,32
2408,10	0,31	118,97	MWD		2407,81	15,67	-6,47	16,95	0,26	0,06	87,28
2467,00	0,38	108,23	MWD		2466,71	15,53	-6,15	16,70	0,05	0,04	-5,47
2526,10	0,66	103,45	MWD		2525,81	15,39	-5,63	16,39	0,14	0,14	-2,43
2584,40	0,75	100,27	MWD		2584,10	15,24	-4,93	16,02	0,05	0,05	-1,64
2642,50	0,80	111,41	MWD		2642,20	15,03	-4,18	15,60	0,08	0,03	5,75
2702,30	0,70	105,00	MWD		2701,99	14,78	-3,44	15,17	0,07	-0,05	-3,22
2761,70	0,66	109,40	MWD		2761,39	14,57	-2,76	14,83	0,03	-0,02	2,22
2819,50	0,84	117,78	MWD		2819,18	14,26	-2,07	14,42	0,11	0,09	4,35
2878,50	0,91	120,40	MWD		2878,18	13,83	-1,29	13,89	0,04	0,04	1,33
2908,80	0,86	117,50	MWD		2908,47	13,60	-0,88	13,63	0,07	-0,05	-2,87
2966,00	0,89	166,42	MWD		2965,67	12,97	-0,39	12,98	0,38	0,02	25,66
3024,30	1,75	144,28	MWD		3023,95	11,81	0,23	11,81	0,51	0,44	-11,39
3080,20	1,66	141,30	MWD		3079,83	10,48	1,24	10,55	0,07	-0,05	-1,60
3139,90	1,43	133,80	MWD		3139,50	9,29	2,32	9,58	0,15	-0,12	-3,77
3196,20	1,32	130,34	MWD		3195,79	8,39	3,32	9,02	0,07	-0,06	-1,84
3253,50	0,75	103,17	MWD		3253,08	7,87	4,18	8,92	0,39	-0,30	-14,23
3284,00	0,53	80,39	MWD		3283,58	7,85	4,52	9,06	0,33	-0,22	-22,41

Norsk Hydro

2005-12-07

MAIN CONSUMPTION OF CASING/TUBING

Well: 35/11-13 **PO:** 1

Size	Casing string	Grade	Weight [kg/m]	Weight [lb/ft]	Threads type	Length [m]	No. of joints
30"	CONDUCTOR	X-52	460,86	309,70	SL-60	86,5	8
20"	SURFACE	X-52	192,46	129,33	E60MT	310,6	23
13 3/8"	INTERMEDIATE	P-110	107,14	72,00	D-60MT	1366,3	110
9 5/8"	PRODUCTION	P-110	79,61	53,50	VAM TOP	2538,9	198
7"	PRODUCTION LINER	L-80	47,62	32,00	NS-CC	37,4	4
7"	PRODUCTION LINER	L-80	47,62	32,00	VAM TOP	11,0	1
7"	PRODUCTION LINER	L-80	47,62	32,00	NS-CC	416,7	36

Norsk Hydro

2005-12-12

BITRECORD

Well: 35/11-13 **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	Pull Cause
1			ISRT	17,50	HTC	MXT305HDX2	6009501	415	16,18,18,18	0,942	1	474	88	10,20	8,6	1/111	48421	0/103	931/4005	2,7/100,7				TD
2			ISRT	26,00	HTC	GTXCM03	E68DW	415	14,22,22,22	1,264	2	476	2	2,50	0,8	96/96	2212	49/39	4000/4000	95/95				BHA
3			MITO	9,87	HTC	MX3	5049014	117	18,18,18	0,746	3	701	225	10,50	21,4	48/139	83257	10/234	624/3986	11,1/100,8		I		TD
2		1	ISRT	26,00	HTC	GTXCM03	E68DW	415	14,22,22,22	1,264	4	701	237	18,50	12,8	77/206	102989	0/124	709/4486	25,1/154,9	1 - 1 - WT - A - E	I	BT	TD
4			BIT	17,50	HTC	HCR606Z	7202899		12,12,12,12,12,	1,055	5	1152	451	21,90	20,6	0/284	295203	0/224	0/4937	0/198,4	0 - 1 - BU - A - X	I	BT	PR
5			ISRT	17,50	HTC	MXST303DX	6032943	415	18,18,18,18	0,994	6	1757	605	19,40	31,2	0/284	288519	0/242	0/4408	0/406,7	1 - 1 - WT - A - E	I	NO	TD
6			BIT	12,25	HTC	HCR606Z	1094582		15,15,15,15,15,	1,035	7	1760	3	0,10	30,0	0/52	18090	0/4	0/3500	0/262	1 - 2 - CT - S - X	2	NO	BHA
7			PDC	12,25	HTC	HCR606	7003762		15,15,15,15,15,	1,111	8	1782	22	3,20	6,9	0/265	10891	0/120	0/3516	0/215,5	7 - 3 - JD - S - X	1	NR	WC
8			MITO	12,25	HTC	ATJG8	6034903	347		0,000	10	1794	12		0,0									TD
9			ISRT	12,25	HTC	MXC09DX	6033824	437	18,18,18	0,746	11	1945	151	12,90	11,7	0/234	140461	0/144	0/3531	0/220,6	1 - 1 - NO - A - E	I	NO	PR
10			PDC	12,25	HTC	HCR606	7003762		14,14,14,14,14,	1,052	12	2813	868	46,10	18,8	162/324	652896	10/196	2896/4023	143,1/332	1 - 1 - CT - A - X		BU	DTF
10		1	PDC	12,25	HTC	HCR606	7003762		14,14,14,14,14,	1,052	13	2932	119	5,70	20,9	0/300	94532	0/99	0/3690	0/290,1	1 - 2 - CT - N - X		BU	TD
11			BIT	8,50	HTC	MX18DX	6034077	445	18,18,18	0,746	14	2950	18	9,40	1,9	0/144	27463	0/168	0/3091	0/306	1 - 1 - WT - A - E	I	NO	DTF
12			PDC	8,50	HTC	HCR607	7002661	M323	11,11,11,11,11,	0,650	15	3100	150	9,70	15,5	60/175	92429	2/137	2657/2698	256,3/279,4	1 - 1 - NO - A - X	I	NO	CP
13			CORE	8,50	HTC	BHC606	7202943			0,000	16	3115	15	1,60	9,4	0/169	6645	0/241	0/3099	0/271,9	1 - 1 - NO - A - X	I	NO	CJ
13		1	CORE	8,50	HTC	BHC606	7202943			0,000	17	3142	27	2,80	9,6	0/265	13449	0/155	0/1030	0/95,1	1 - 1 - NO - A - X	I	PN	TD
12		1	PDC	8,50	HTC	HCR607	7002661	M323	11,11,11,11,11,	0,650	18	3292	150	15,60	9,6	0/179	138576	0/139	0/2766	0/284,2	1 - 1 - NO - A - X	I	NO	TD
10		1	BIT	8,50	HTC	MX18DX	6034077	445	18,18,18	0,746	19	3292	0		0,0	0/0	0	0/0	0/0	0/0				

BOTTOM HOLE ASSEMBLIES

Well: 35/11-13 PO: 1

BHA no. 1: No. / Element / Body OD(in) / Length(m) Depth In: 386 m MD Out: 474 m MD

1	MXT305HDX2	17,5	0,39	8	NON MAG. COLLAR	8,0	9,30
2	TWOSTEP	36,0	3,94	9	DRILL COLLAR STEEL	8,0	54,57
3	BIT SUB	9,31	0,91	10	JAR	7,87	9,58
4	X-OVER	9,37	0,56	11	DRILL COLLAR STEEL	8,0	27,33
5	MEASUREMENT WHILE DRILLING	8,12	11,05	12	X-OVER	7,62	0,89
6	SAVER SUB	7,87	0,78	13	HWDP	5,5	82,07
7	STEEL STAB	8,25	1,99				

Reason pulled: TOTAL DEPTH/CASING DEPTH Total Length: 203,36 m

BHA no. 2: No. / Element / Body OD(in) / Length(m) Depth In: 474 m MD Out: 476 m MD

1	GTXCM03	26,0	0,50	8	DRILL COLLAR STEEL	8,0	9,30
2	BIT SUB	9,25	0,87	9	DRILL COLLAR STEEL	8,0	54,57
3	STEEL STAB	24,75	2,18	10	JAR	7,87	9,58
4	X-OVER	9,31	0,56	11	DRILL COLLAR STEEL	8,0	27,33
5	MEASUREMENT WHILE DRILLING	8,12	11,05	12	X-OVER	8,0	0,89
6	SAVER SUB	7,87	0,78	13	HWDP	5,5	137,70
7	STEEL STAB	23,75	1,99				

Reason pulled: CHANGE BOTTOMHOLE ASSEMBLY Total Length: 257,30 m

BHA no. 3: No. / Element / Body OD(in) / Length(m) Depth In: 476 m MD Out: 701 m MD

1	MX3	9,87	0,25	8	DRILL COLLAR STEEL	8,0	54,57
2	BIT SUB	8,0	0,75	9	JAR	9,87	9,58
3	X-OVER	8,0	0,38	10	DRILL COLLAR STEEL	8,0	27,33
4	MEASUREMENT WHILE DRILLING	8,25	5,00	11	X-OVER	8,0	0,89
5	MEASUREMENT WHILE DRILLING	8,25	11,17	12	HWDP	5,5	138,51
6	SAVER SUB	8,25	0,67	13	DRILL PIPE	5,5	500,00
7	DRILL COLLAR STEEL	8,25	8,62				

Reason pulled: TOTAL DEPTH/CASING DEPTH Total Length: 757,72 m

BHA no. 4: No. / Element / Body OD(in) / Length(m) Depth In: 464 m MD Out: 701 m MD

1	GTXCM03	26,0	0,50	9	NON MAG. STAB	23,75	1,99
2	BIT SUB	9,25	0,87	10	NON MAG. COLLAR	8,0	9,30
3	STEEL STAB	23,75	2,18	11	DRILL COLLAR STEEL	8,0	54,57
4	X-OVER	9,31	1,01	12	JAR	7,75	12,65
5	NON MAG. X-OVER	8,125	0,51	13	DRILL COLLAR STEEL	8,0	27,33
6	MULTIPLE PROPAGATION RESIST	8,25	3,66	14	X-OVER	7,625	0,89
7	MEASUREMENT WHILE DRILLING	8,25	1,70	15	HWDP	5,5	138,51
8	SAVER SUB	7,87	0,78	16	DRILL PIPE	5,5	600,00

Reason pulled: TOTAL DEPTH/CASING DEPTH Total Length: 856,45 m

BHA no. 5: No. / Element / Body OD(in) / Length(m) Depth In: 701 m MD Out: 1152 m MD

1	HCR606Z	17,5	0,49	11	SAVER SUB	8,0	0,78
2	DOWNHOLE MOTOR	12,75	10,41	12	STEEL STAB	16,75	2,49
3	NON MAG. STAB	17,0	1,91	13	NON MAG. COLLAR	8,0	9,30
4	X-OVER	11,25	1,01	14	DRILL COLLAR STEEL	8,0	54,57
5	NON MAG. X-OVER	8,12	0,51	15	JAR	7,75	9,58
6	MEASUREMENT WHILE DRILLING	8,25	1,24	16	DRILL COLLAR STEEL	8,0	27,33
7	MULTIPLE PROPAGATION RESIST	8,25	3,58	17	X-OVER	7,625	0,89
8	MEASUREMENT WHILE DRILLING	8,25	1,48	18	HWDP	5,5	138,51
9	PIN-PIN SUB	8,25	0,47	19	DRILL PIPE	5,5	1413,40
10	MEASUREMENT WHILE DRILLING	8,25	9,11				

Reason pulled: PENETRATION RATE Total Length: 1687,06 m

BOTTOM HOLE ASSEMBLIES

Well: 35/11-13 PO: 1

BHA no. 6: No. / Element / Body OD(in) / Length(m) Depth In: 1152 m MD Out: 1757 m MD

1	MXST303DX	17,5	0,41	11	SAVER SUB	8,0	0,78
2	DOWNHOLE MOTOR	12,75	10,41	12	STEEL STAB	0,66	2,49
3	STEEL STAB	0,67	1,91	13	NON MAG. COLLAR	8,0	9,30
4	X-OVER	11,25	1,01	14	DRILL COLLAR STEEL	8,0	54,57
5	NON MAG. X-OVER	8,12	0,35	15	JAR	7,75	9,58
6	MEASUREMENT WHILE DRILLING	8,25	1,37	16	DRILL COLLAR STEEL	8,0	27,33
7	MULTIPLE PROPAGATION RESIST	8,25	3,71	17	X-OVER	8,0	0,89
8	MEASUREMENT WHILE DRILLING	8,25	1,53	18	HWDP	5,5	138,51
9	PIN-PIN SUB	8,25	0,47	19	DRILL PIPE	5,5	1413,40
10	MEASUREMENT WHILE DRILLING	8,25	9,11				

Reason pulled: TOTAL DEPTH/CASING DEPTH Total Length: 1687,13 m

BHA no. 7: No. / Element / Body OD(in) / Length(m) Depth In: 1757 m MD Out: 1760 m MD

1	HCR606Z	12,25	0,39	8	DRILL COLLAR STEEL	8,0	54,57
2	DOWNHOLE MOTOR	9,5	8,91	9	JAR	8,12	9,62
3	NON MAG. STAB	8,0	1,67	10	DRILL COLLAR STEEL	8,0	27,33
4	DRILL COLLAR STEEL	8,0	9,15	11	X-OVER	7,625	0,89
5	DRILL COLLAR STEEL	8,0	8,90	12	HWDP	5,5	138,51
6	NON MAG. STAB	8,0	2,41	13	DRILL PIPE	5,5	1413,40
7	NON MAG. COLLAR	8,0	9,30				

Reason pulled: CHANGE BOTTOMHOLE ASSEMBLY Total Length: 1685,05 m

BHA no. 8: No. / Element / Body OD(in) / Length(m) Depth In: 1760 m MD Out: 1782 m MD

1	HCR606	12,25	0,37	9	NON MAG. COLLAR	8,0	9,30
2	DOWNHOLE MOTOR	9,5	8,93	10	DRILL COLLAR STEEL	8,0	54,57
3	NON MAG. STAB	8,0	1,66	11	JAR	8,125	9,62
4	STOP SUB	9,5	0,60	12	DRILL COLLAR STEEL	8,0	27,33
5	ONTRAK, RESISTIVITY, GAMMA R/	9,5	5,49	13	X-OVER	7,62	0,89
6	BI-DIRECTIONAL COMMUNICATIOI	9,5	3,68	14	HWDP	5,5	138,51
7	STOP SUB	9,5	0,59	15	X-OVER	6,5	0,56
8	STEEL STAB	8,0	2,41	16	DRILL PIPE	5,0	1009,37

Reason pulled: WEATHER CONDITIONS Total Length: 1273,88 m

BHA no. 9: No. / Element / Body OD(in) / Length(m) Depth In: 1782 m MD Out: 1782 m MD

1	JUNK BASKET	10,75	1,65	6	JAR	8,125	9,62
2	NEAR BIT STAB	8,0	0,88	7	DRILL COLLAR STEEL	8,0	9,26
3	X-OVER	8,0	0,48	8	X-OVER	7,625	0,62
4	BIT SUB	8,0	0,84	9	HWDP	5,5	138,51
5	DRILL COLLAR STEEL	8,0	36,27				

Total Length: 198,13 m

BHA no. 10: No. / Element / Body OD(in) / Length(m) Depth In: 1782 m MD Out: 1794 m MD

1	ATJG8	12,25	0,29	8	DRILL COLLAR STEEL	8,0	9,05
2	JUNK SUB	9,5	0,74	9	JAR	8,125	9,62
3	NEAR BIT STAB	6,65	3,63	10	DRILL COLLAR STEEL	8,0	9,26
4	DRILL COLLAR STEEL	8,0	9,24	11	X-OVER	7,625	0,62
5	DRILL COLLAR STEEL	8,0	8,88	12	HWDP	5,5	138,51
6	NON MAG. STAB	10,75	2,34	13	DRILL PIPE	5,5	1413,40
7	DRILL COLLAR STEEL	8,0	9,10				

Reason pulled: TOTAL DEPTH/CASING DEPTH Total Length: 1614,68 m

BOTTOM HOLE ASSEMBLIES

Well: 35/11-13 PO: 1

BHA no. 11: No. / Element / Body OD(in) / Length(m) Depth In: 1794 m MD Out: 1945 m MD

1	MXC09DX	12,25	0,27	9	NON MAG. COLLAR	8,0	9,30
2	DOWNHOLE MOTOR	9,5	8,91	10	DRILL COLLAR STEEL	8,0	54,57
3	NEAR BIT STAB	8,0	1,67	11	JAR	8,12	9,62
4	STOP SUB	9,5	0,60	12	DRILL COLLAR STEEL	8,0	27,33
5	ONTRAK, RESISTIVITY, GAMMA R/	9,5	5,49	13	X-OVER	7,62	0,89
6	BI-DIRECTIONAL COMMUNICATIOI	9,5	3,68	14	HWDP	5,5	138,51
7	STOP SUB	9,5	0,59	15	DRILL PIPE	5,5	1413,40
8	NON MAG. STAB	8,0	2,41				

Reason pulled: PENETRATION RATE Total Length: 1677,24 m

BHA no. 12: No. / Element / Body OD(in) / Length(m) Depth In: 1945 m MD Out: 2813 m MD

1	HCR606	12,25	0,33	9	NON MAG. COLLAR	8,0	9,30
2	DOWNHOLE MOTOR	9,5	8,91	10	DRILL COLLAR STEEL	8,0	54,57
3	NEAR BIT STAB	8,0	1,67	11	JAR	8,125	9,62
4	STOP SUB	9,5	0,60	12	DRILL COLLAR STEEL	8,0	27,33
5	ONTRAK, RESISTIVITY, GAMMA R/	9,5	5,49	13	X-OVER	7,62	0,89
6	BI-DIRECTIONAL COMMUNICATIOI	9,5	3,68	14	HWDP	5,5	138,51
7	STOP SUB	9,5	0,59	15	DRILL PIPE	5,5	1413,40
8	NON MAG. STAB	8,0	2,41				

Reason pulled: DOWNHOLE TOOL FAILURE Total Length: 1677,30 m

BHA no. 13: No. / Element / Body OD(in) / Length(m) Depth In: 2813 m MD Out: 2932 m MD

1	HCR606	12,25	0,37	8	NON MAG. COLLAR	8,0	8,66
2	DOWNHOLE MOTOR	9,5	10,91	9	DRILL COLLAR STEEL	8,0	54,57
3	NON MAG. STAB	8,0	1,66	10	JAR	8,0	9,62
4	MULTIPLE PROPAGATION RESIST	8,25	5,55	11	DRILL COLLAR STEEL	8,0	27,33
5	ANNULAR PRESSURE WHILE DRIL	8,25	1,13	12	X-OVER	7,62	0,89
6	MEASUREMENT WHILE DRILLING	8,0	11,51	13	HWDP	5,5	138,51
7	STEEL STAB	8,0	2,41	14	DRILL PIPE	5,5	1413,40

Reason pulled: TOTAL DEPTH/CASING DEPTH Total Length: 1686,52 m

BHA no. 14: No. / Element / Body OD(in) / Length(m) Depth In: 2932 m MD Out: 2950 m MD

1	MX18DX	8,5	0,24	8	STEEL STAB	6,5	1,57
2	NEAR BIT STAB	6,44	2,05	9	FLOAT SUB	7,0	0,49
3	STOP SUB	6,87	0,47	10	DRILL COLLAR STEEL	6,5	73,38
4	ONTRAK, RESISTIVITY, GAMMA R/	6,75	5,04	11	JAR	6,75	9,64
5	BI-DIRECTIONAL COMMUNICATIOI	6,87	3,21	12	DRILL COLLAR STEEL	6,5	27,65
6	STOP SUB	6,87	0,44	13	HWDP	5,0	82,53
7	DRILL COLLAR STEEL	6,37	2,81	14	DRILL PIPE	5,0	1324,33

Reason pulled: DOWNHOLE TOOL FAILURE Total Length: 1533,85 m

BHA no. 15: No. / Element / Body OD(in) / Length(m) Depth In: 2950 m MD Out: 3100 m MD

1	HCR607	8,5	0,39	8	NEAR BIT STAB	6,5	1,57
2	NEAR BIT STAB	6,44	2,05	9	FLOAT SUB	7,0	0,49
3	STOP SUB	6,87	0,47	10	DRILL COLLAR STEEL	6,5	73,38
4	ONTRAK, RESISTIVITY, GAMMA R/	6,75	5,04	11	JAR	6,75	9,64
5	BI-DIRECTIONAL COMMUNICATIOI	6,87	3,10	12	DRILL COLLAR STEEL	6,5	27,65
6	STOP SUB	6,87	0,44	13	HWDP	5,0	82,53
7	DRILL COLLAR STEEL	6,37	2,81	14	DRILL PIPE	5,0	3150,00

Reason pulled: CORE POINT Total Length: 3359,56 m

BOTTOM HOLE ASSEMBLIES

Well: 35/11-13 PO: 1

BHA no. 16: No. / Element / Body OD(in) / Length(m) Depth In: 3100 m MD Out: 3115 m MD

1	BHC606	8,5	0,43	6	DRILL COLLAR STEEL	6,5	64,00
2	CORE BARREL	8,5	21,31	7	JAR	6,75	9,64
3	FLOAT SUB	7,0	0,49	8	DRILL COLLAR STEEL	6,5	27,65
4	DRILL COLLAR STEEL	6,5	9,38	9	HWDP	5,0	82,53
5	STEEL STAB	8,37	1,57	10	DRILL PIPE	5,0	3000,00

Reason pulled: CORE JAMMED Total Length: 3217,00 m

BHA no. 17: No. / Element / Body OD(in) / Length(m) Depth In: 3115 m MD Out: 3142 m MD

1	BHC606	8,5	0,43	12	CORE BARREL	7,25	1,04
2	CORE BARREL	6,75	1,22	13	FLOAT SUB	7,25	0,45
3	CORE BARREL	8,5	3,35	14	FLOAT SUB	7,0	0,49
4	CORE BARREL	6,75	1,22	15	DRILL COLLAR STEEL	6,5	9,38
5	CORE BARREL	6,75	3,36	16	STEEL STAB	8,37	1,57
6	CORE BARREL	6,75	1,22	17	DRILL COLLAR STEEL	6,5	64,00
7	X-OVER	7,25	0,31	18	JAR	6,75	9,64
8	CORE BARREL	7,25	8,36	19	DRILL COLLAR STEEL	6,5	27,65
9	CORE BARREL	7,25	0,79	20	HWDP	5,0	82,53
10	CORE BARREL	7,25	8,36	21	DRILL PIPE	5,0	3000,00
11	CORE BARREL	7,25	0,78				

Reason pulled: TOTAL DEPTH/CASING DEPTH Total Length: 3226,15 m

BHA no. 18: No. / Element / Body OD(in) / Length(m) Depth In: 3142 m MD Out: 3292 m MD

1	HCR607	8,5	0,39	8	STEEL STAB	8,37	1,57
2	NEAR BIT STAB	6,438	2,05	9	FLOAT SUB	7,0	0,49
3	STOP SUB	6,87	0,47	10	DRILL COLLAR STEEL	6,5	73,38
4	ONTRAK, RESISTIVITY, GAMMA R/	6,75	5,04	11	JAR	6,75	9,64
5	BI-DIRECTIONAL COMMUNICATIOI	6,87	3,10	12	DRILL COLLAR STEEL	6,5	27,65
6	STOP SUB	6,87	0,44	13	HWDP	5,0	82,53
7	DRILL COLLAR STEEL	6,375	2,81	14	DRILL PIPE	5,0	3150,00

Reason pulled: TOTAL DEPTH/CASING DEPTH Total Length: 3359,56 m

BHA no. 19: No. / Element / Body OD(in) / Length(m) Depth In: 3292 m MD Out: 3292 m MD

1	MX18DX	8,5	0,24	8	JAR	6,75	9,64
2	NEAR BIT STAB	6,33	2,26	9	DRILL COLLAR STEEL	6,5	27,89
3	DRILL COLLAR STEEL	6,37	2,81	10	HWDP	5,0	82,42
4	STEEL STAB	8,37	1,57	11	DRILL PIPE	5,0	230,79
5	FLOAT SUB	7,0	0,49	12	CASING SCRAPER	9,25	1,05
6	DRILL COLLAR STEEL	6,5	9,38	13	DRILL PIPE	5,0	2879,00
7	DRILL COLLAR STEEL	6,5	64,00				

Total Length: 3311,54 m

Norsk Hydro

2005-12-07

CEMENT SLURRY REPORT

Well: 35/11-13 **PO:** 1

Date	CsgSize	Jobtype	Slurry Type	Pumped Volume [m3]	Density [sg]	BHCT [DegC]	Yield [l/100 kg]	Additive	Unit	Additives [../100 kg Cement]	Additives [../m3 Slurry]
2005-03-20	30"	CASING CEMENTING	LEAD	26,00	1,56	7,00	129,56	A-3L	l	3,50	
								FP16LG	l	0,10	
			TAIL SLURRY	28,00	1,95	7,00	74,71	A-7L	l	3,50	
								FP16LG	l	0,10	
			DISPLACEMENT		1,00	7,00					
			DISPLACEMENT			7,00					
2005-03-25	20"	CASING CEMENTING	WEIGHTED SPACER	10,00	1,53	17,00		BARITC	kg		699,00
								FP16LG	l		10,00
								GW-22	kg		2,00
								SODAA	kg		8,00
			LEAD	67,00	1,56	17,00	129,65	A-3L	l	3,50	
								FP16LG	l	0,20	
								R-15L	l	0,30	
			TAIL SLURRY	31,00	1,95	17,00	76,25	BA-58L	l	8,00	
								CD-34L	l	1,00	
								FL-67L	l	2,50	
								FP16LG	l	0,20	
			DISPLACEMENT			17,00					
2005-04-04	13 3/8"	CASING CEMENTING	PREFLUSH	10,00	1,00	54,00		FP16LG	l		10,00
								MCS-J	l		26,00
			WEIGHTED SPACER	15,00	1,60	54,00		BARITC	kg		783,00
								FP16LG	l		10,00
								GW-22	kg		2,00
								SODAA	kg		8,00
			TAIL SLURRY	29,20	1,90	54,00	76,72	FP16LG	l	0,10	
								R-12L	l	0,70	
			DISPLACEMENT	101,00	1,34	54,00					
2005-04-20	9 5/8"	CASING CEMENTING	CHEMICAL WASH (UNWEIGHTED)		1,00	87,00		FP16LG	l		10,00
								MCS-J	l		26,00
			WEIGHTED SPACER		1,60	87,00		FP16LG	l		10,00
								GW-22	kg		2,00
								SODAA	kg		8,00

Norsk Hydro

2005-12-07

CEMENT SLURRY REPORT

Well: 35/11-13 **PO:** 1

Date	CsgSize	Jobtype	Slurry Type	Pumped Volume [m3]	Density [sg]	BHCT [DegC]	Yield [l/100 kg]	Additive	Unit	Additives [../100 kg Cement]	Additives [../m3 Slurry]
2005-04-20	9 5/8"	CASING CEMENTING	TAIL SLURRY	13,20	1,80	87,00	109,61	BA-58L	l	22,00	
								CD-34L	l	2,75	
								FL-67L	l	4,50	
								FP16LG	l	0,20	
								R-12L	l	0,55	
			DISPLACEMENT		1,00	87,00					
			DISPLACEMENT		1,30	87,00					
			DISPLACEMENT			87,00					
2005-05-05	7"	LINER CEMENTING	CHEMICAL WASH (UNWEIGHTED)	5,00	1,00	102,00		FP16LG	l		10,00
								MCS-J	l		52,00
			WEIGHTED SPACER	10,00	1,60	102,00		BARITC	kg		782,00
								FP16LG	l		10,00
								GW-22	kg		2,50
								SODAA	kg		8,00
			TAIL SLURRY	19,30	1,80	102,00	109,61	CD-34L	l	2,75	
								FL-67L	l	4,50	
								FP16LG	l	0,20	
								R-15L	l	0,35	
								SL-1	l	26,50	
			DISPLACEMENT		1,00	102,00					
			DISPLACEMENT		1,30	102,00					
			DISPLACEMENT			102,00					
2005-05-17	9 5/8"	PLUG IN CASED HOLE	CHEMICAL WASH (UNWEIGHTED)	6,00	1,00	95,00		D-4GB	l		26,00
								FP16LG	l		10,00
								MCS-J	l		26,00
			SPACER	6,00	1,00	95,00					
			TAIL SLURRY	5,00	1,80	95,00	113,71	CD-34L	l	2,75	
								FL-67L	l	1,75	
								FP16LG	l	0,20	
								R-15L	l	0,40	
								SL-1	l	26,50	
			DISPLACEMENT	2,10	1,00	95,00					

Norsk Hydro

2005-12-07

CEMENT SLURRY REPORT

Well: 35/11-13 **PO:** 1

Date	CsgSize	Jobtype	Slurry Type	Pumped Volume [m3]	Density [sg]	BHCT [DegC]	Yield [l/100 kg]	Additive	Unit	Additives [../100 kg Cement]	Additives [../m3 Slurry]
2005-05-17	9 5/8"	PLUG IN CASED HOLE	DISPLACEMENT	21,00	1,10	95,00					
			DISPLACEMENT			95,00					
2005-05-17	9 5/8"	PLUG IN CASED HOLE	SPACER	6,00	1,00	95,00					
			TAIL SLURRY	5,00	1,80	95,00	113,71	CD-34L	l	2,75	
								FL-67L	l	1,75	
								FP16LG	l	0,20	
								R-15L	l	0,40	
								SL-1	l	26,50	
			DISPLACEMENT	2,10	1,00	95,00					
			DISPLACEMENT	21,00	1,10	95,00					
			DISPLACEMENT			95,00					
2005-05-22	13 3/8"	PLUG IN CASED HOLE	SPACER	15,00	1,00	56,00					
			TAIL SLURRY	10,00	1,90	56,00	76,70	FP16LG	l	0,20	
								R-12L	l	0,75	
			DISPLACEMENT	1,85	1,00	56,00					
			DISPLACEMENT	10,50	1,10	56,00					
			DISPLACEMENT			56,00					
2005-05-23	20"	PLUG IN CASED HOLE	SPACER	3,00	1,03	15,00					
			TAIL SLURRY	32,50	1,95	15,00	73,64	FP16LG	l	0,20	
			DISPLACEMENT			15,00					
			DISPLACEMENT	2,03	1,03	15,00					
			DISPLACEMENT			15,00					
2005-05-24	20"	PLUG IN CASED HOLE	SPACER	3,00	1,03	15,00					
			TAIL SLURRY	32,50	1,95	15,00	73,64	FP16LG	l	0,20	
			DISPLACEMENT			15,00					
			DISPLACEMENT	2,03	1,03	15,00					
			DISPLACEMENT			15,00					

CEMENT CONSUMPTION PER JOB

Well: 35/11-13 **PO:** 1

Date	CsgSize	Job Type	Cement/ Additive	Description	Unit	Actual Amount Used
2005-03-20	30"	CASING CEMENTING	G	API CLASS G	MT	58
			FP16LG	SPECIAL ADDITIVE: DEFOAMER FP-16LG	l	300
			A-3L	EXTENDER: LIQUID LODENSE	l	693
			A-7L	ACCELERATOR: LIQUID CACL2	l	1323
2005-03-25	20"	CASING CEMENTING	G	API CLASS G	MT	95
			CD-34L	DISPERSANT: CD-34L LIQUID	l	420
			FL-67L	FL-67LE	l	1030
			SODAA	SODA ASH	kg	100
			FP16LG	SPECIAL ADDITIVE: DEFOAMER FP-16LG	l	282
			GW-22	GW-22 VISCOSIFIER	kg	45
			A-3L	EXTENDER: LIQUID LODENSE	l	1750
			BA-58L	BA-58L ANTI-GAS	l	3300
			R-15L	RETARDER: HIGH TEMP. BETWEEN 93 AND 149 DE	l	175
2005-04-04	13 3/8"	CASING CEMENTING	G	API CLASS G	MT	42
			SODAA	SODA ASH	kg	200
			GW-22	GW-22 VISCOSIFIER	kg	50
			R-12L	RETARDER: LIQUID LIGNOSULFONATE UP TO 93 D	l	350
			MCS-J	MCS-J	l	260
			FP16LG	SPECIAL ADDITIVE: DEFOAMER FP-16LG	l	340
2005-04-20	9 5/8"	CASING CEMENTING	G	API CLASS G	MT	12
			BA-58L	BA-58L ANTI-GAS	l	4000
			R-12L	RETARDER: LIQUID LIGNOSULFONATE UP TO 93 D	l	105
			GW-22	GW-22 VISCOSIFIER	kg	50
			MCS-J	MCS-J	l	208
			SODAA	SODA ASH	kg	450
			FP16LG	SPECIAL ADDITIVE: DEFOAMER FP-16LG	l	177
			FL-67L	FL-67LE	l	830
			CD-34L	DISPERSANT: CD-34L LIQUID	l	508
2005-05-05	7"	LINER CEMENTING	G	API CLASS G	MT	19
			BARITC	WEIGHT MATERIAL: BARITE	kg	18
			R-15L	RETARDER: HIGH TEMP. BETWEEN 93 AND 149 DE	l	90
			GW-22	GW-22 VISCOSIFIER	kg	50
			MCS-J	MCS-J	l	1200
			SODAA	SODA ASH	kg	125
			FP16LG	SPECIAL ADDITIVE: DEFOAMER FP-16LG	l	380
			SL-1	SL-1	l	6450
			FL-67L	FL-67LE	l	1170
			CD-34L	DISPERSANT: CD-34L LIQUID	l	663
2005-05-17	9 5/8"	PLUG IN CASED HOLE	G	API CLASS G	MT	5
			R-15L	RETARDER: HIGH TEMP. BETWEEN 93 AND 149 DE	l	25
			MCS-J	MCS-J	l	300
			FP16LG	SPECIAL ADDITIVE: DEFOAMER FP-16LG	l	115
			SL-1	SL-1	l	9500
			FL-67L	FL-67LE	l	90
			CD-34L	DISPERSANT: CD-34L LIQUID	l	125
			D-4GB	D-4GB	l	260
2005-05-17	9 5/8"	PLUG IN CASED HOLE	G	API CLASS G	MT	5
			SL-1	SL-1	l	1200
			FL-67L	FL-67LE	l	90
			R-15L	RETARDER: HIGH TEMP. BETWEEN 93 AND 149 DE	l	25
			FP16LG	SPECIAL ADDITIVE: DEFOAMER FP-16LG	l	15

Norsk Hydro

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CEMENT CONSUMPTION PER JOB

Well: 35/11-13 **PO:** 1

Date	CsgSize	Job Type	Cement/ Additive	Description	Unit	Actual Amount Used
2005-05-17	9 5/8"	PLUG IN CASED HOLE	CD-34L	DISPERSANT: CD-34L LIQUID	l	125
2005-05-22	13 3/8"	PLUG IN CASED HOLE	G	API CLASS G	MT	14
			FP16LG	SPECIAL ADDITIVE: DEFOAMER FP-16LG	l	15
			R-12L	RETARDER: LIQUID LIGNOSULFONATE UP TO 93 D	l	145
2005-05-23	20"	PLUG IN CASED HOLE	G	API CLASS G	MT	43
			FP16LG	SPECIAL ADDITIVE: DEFOAMER FP-16LG	l	90
2005-05-24	20"	PLUG IN CASED HOLE	G	API CLASS G	MT	43
			FP16LG	SPECIAL ADDITIVE: DEFOAMER FP-16LG	l	90

TOTAL CONSUMPTION OF CEMENT ADDITIVES

Well: 35/11-13 **PO:** 1

Section	Cement/Additive	Unit	Total Amount Used
36"	EXTENDER: LIQUID LODENSE	l	693,00
	ACCELERATOR: LIQUID CACL2	l	1323,00
	SPECIAL ADDITIVE: DEFOAMER FP-16LG	l	300,00
	API CLASS G	MT	58,00
Section	**Cement/Additive**	**Unit**	**Total Amount Used**
26"	EXTENDER: LIQUID LODENSE	l	1750,00
	BA-58L ANTI-GAS	l	3300,00
	DISPERSANT: CD-34L LIQUID	l	420,00
	FL-67LE	l	1030,00
	SPECIAL ADDITIVE: DEFOAMER FP-16LG	l	282,00
	API CLASS G	MT	95,00
	GW-22 VISCOSIFIER	kg	45,00
	RETARDER: HIGH TEMP. BETWEEN 93 AND 149 DEGC	l	175,00
	SODA ASH	kg	100,00
Section	**Cement/Additive**	**Unit**	**Total Amount Used**
20"	SPECIAL ADDITIVE: DEFOAMER FP-16LG	l	180,00
	API CLASS G	MT	86,00
Section	**Cement/Additive**	**Unit**	**Total Amount Used**
17 1/2"	SPECIAL ADDITIVE: DEFOAMER FP-16LG	l	340,00
	API CLASS G	MT	42,00
	GW-22 VISCOSIFIER	kg	50,00
	MCS-J	l	260,00
	RETARDER: LIQUID LIGNOSULFONATE UP TO 93 DEGC	l	350,00
	SODA ASH	kg	200,00
Section	**Cement/Additive**	**Unit**	**Total Amount Used**
12 1/4"	BA-58L ANTI-GAS	l	4000,00
	DISPERSANT: CD-34L LIQUID	l	508,00
	FL-67LE	l	830,00
	SPECIAL ADDITIVE: DEFOAMER FP-16LG	l	177,00
	API CLASS G	MT	12,00
	GW-22 VISCOSIFIER	kg	50,00
	MCS-J	l	208,00
	RETARDER: LIQUID LIGNOSULFONATE UP TO 93 DEGC	l	105,00
	SODA ASH	kg	450,00
Section	**Cement/Additive**	**Unit**	**Total Amount Used**
8 1/2"	WEIGHT MATERIAL: BARITE	kg	18,00
	DISPERSANT: CD-34L LIQUID	l	913,00
	D-4GB	l	260,00
	FL-67LE	l	1350,00
	SPECIAL ADDITIVE: DEFOAMER FP-16LG	l	510,00
	API CLASS G	MT	29,00
	GW-22 VISCOSIFIER	kg	50,00
	MCS-J	l	1500,00
	RETARDER: HIGH TEMP. BETWEEN 93 AND 149 DEGC	l	140,00
	SL-1	l	17150,00
	SODA ASH	kg	125,00
Section	**Cement/Additive**	**Unit**	**Total Amount Used**
P&A	SPECIAL ADDITIVE: DEFOAMER FP-16LG	l	15,00
	API CLASS G	MT	14,00

TOTAL CONSUMPTION OF CEMENT ADDITIVES

Well: 35/11-13 **PO:** 1

Section	Cement/Additive	Unit	Total Amount Used
P&A	RETARDER: LIQUID LIGNOSULFONATE UP TO 93 DEGC	l	145,00

DAILY MUD PROPERTIES:RHEOLOGY PARAMETERS

Well: 35/11-13 **PO:** 1

Hole section : 36" **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]
2005-03-18	441	441	SPUD MUD	110,0	1,05	0,0	0	0	0	0	0	0	0	0	0,0	0,0	0,0	0,0	0,0
2005-03-19 23:59	474	474	SPUD MUD	130,0	1,05	0,0	0	0	0	0	0	0	0	0	0,0	0,0	0,0	0,0	0,0

Hole section : 26" **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]
2005-03-20 23:59	474	474	SPUD MUD	120,0	1,50	0,0	0	0	0	0	0	0	0	0	0,0	0,0	0,0	0,0	0,0
2005-03-21	599	599	SPUD MUD	120,0	1,05	0,0	0	0	0	0	0	0	0	0	0,0	0,0	0,0	0,0	0,0
2005-03-21 23:59	599	599	SPUD MUD	120,0	1,05	0,0	0	0	0	0	0	0	0	0	0,0	0,0	0,0	0,0	0,0
2005-03-22 23:59	701	701	SPUD MUD	120,0	1,05	0,0	0	0	0	0	0	0	0	0	0,0	0,0	0,0	0,0	0,0
2005-03-23 23:59	701	701	SPUD MUD	130,0	1,05	0,0	0	0	0	0	0	0	0	0	0,0	0,0	0,0	0,0	0,0
2005-03-24 23:59	701	701	SPUD MUD	0,0	1,50	0,0	0	0	0	0	0	0	0	0	0,0	0,0	0,0	0,0	0,0
2005-03-25 23:59	701	701	SPUD MUD	0,0	1,22	0,0	56	44	37	27	0	0	9	8	50,0	12,0	15,0	4,0	7,0
2005-03-26 23:59	701	701	SPUD MUD	75,0	1,20	0,0	59	46	38	28	0	0	9	8	50,0	13,0	16,0	4,0	7,0

Hole section : 17 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]
2005-03-27 23:59	701	701	SPUD MUD	75,0	1,20	0,0	59	46	38	28	0	0	9	8	50,0	13,0	16,0	4,0	7,0
2005-03-28 23:59	923	923	AQUA-DRILL	68,0	1,20	24,0	57	45	36	26	0	0	10	8	50,0	12,0	16,0	4,0	6,0
2005-03-29 23:59	1152	1152	AQUA-DRILL	66,0	1,30	0,0	66	48	42	32	0	0	11	9	50,0	18,0	14,0	5,0	9,0
2005-03-30 23:59	1190	1190	AQUA-DRILL	69,0	1,30	0,0	64	48	40	29	0	0	10	8	50,0	16,0	15,0	5,0	9,0
2005-03-31 23:59	1681	1681	AQUA-DRILL	72,0	1,30	32,0	72	52	44	33	0	0	11	9	50,0	20,0	15,0	6,0	12,0
2005-04-01 23:59	1757	1757	AQUA-DRILL	75,0	1,34	0,0	66	49	41	30	0	0	11	8	50,0	17,0	15,0	5,0	13,0
2005-04-02 23:59	1757	1757	AQUA-DRILL	69,0	1,34	31,0	72	53	44	33	0	0	12	10	50,0	19,0	16,0	6,0	13,0
2005-04-03 23:59	1757	1757	AQUA-DRILL	72,0	1,34	0,0	67	50	41	31	0	0	11	9	50,0	17,0	16,0	5,0	13,0
2005-04-04 23:59	1757	1757	AQUA-DRILL	0,0	1,34	0,0	67	50	41	31	0	0	11	9	50,0	17,0	16,0	5,0	13,0

Hole section : 12 1/4" **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]
2005-04-05 23:59	1757	1757	AQUA-DRILL	66,0	1,30	0,0	62	46	36	26	0	0	8	7	50,0	16,0	14,0	3,0	6,0
2005-04-06 23:59	1760	1760	AQUA-DRILL	65,0	1,30	0,0	62	45	35	25	0	0	8	6	50,0	17,0	13,0	4,0	8,0
2005-04-07 23:59	1781	1781	AQUA-DRILL	72,0	1,30	0,0	62	46	39	30	0	0	11	8	50,0	16,0	14,0	5,0	11,0

DAILY MUD PROPERTIES:RHEOLOGY PARAMETERS

Well: 35/11-13 **PO:** 1

Hole section : 12 1/4" **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]
2005-04-08 23:59	1781	1781	AQUA-DRILL	70,0	1,30	0,0	58	43	36	27	0	0	10	7	50,0	15,0	13,0	4,0	9,0
2005-04-10 23:59	1795	1795	AQUA-DRILL	71,0	1,30	0,0	60	46	38	29	0	0	11	8	50,0	14,0	15,0	4,0	10,0
2005-04-11	1935	1935	AQUA-DRILL	68,0	1,30	26,7	60	46	35	25	0	0	10	7	50,0	14,0	15,0	4,0	9,0
2005-04-12	1970	1970	AQUA-DRILL	68,0	1,30	0,0	58	45	36	26	0	0	10	7	50,0	13,0	15,0	4,0	9,0
2005-04-13	2219	2219	AQUA-DRILL	69,0	1,30	28,3	57	44	35	26	0	0	10	7	50,0	13,0	15,0	4,0	11,0
2005-04-14	2555	2554	AQUA-DRILL	70,0	1,30	34,0	61	46	38	28	0	0	10	9	50,0	15,0	15,0	5,0	15,0
2005-04-15	2814	2813	AQUA-DRILL	68,0	1,30	35,5	59	45	35	26	0	0	10	8	50,0	14,0	15,0	4,0	13,0
2005-04-16	2814	2813	AQUA-DRILL	73,0	1,30	0,0	57	43	34	25	0	0	10	7	50,0	14,0	14,0	4,0	14,0
2005-04-17	2927	2926	AQUA-DRILL	68,0	1,30	34,0	60	43	36	25	0	0	10	8	50,0	17,0	12,0	5,0	16,0
2005-04-18	2932	2932	AQUA-DRILL	63,0	1,30	0,0	53	38	30	21	0	0	6	5	50,0	15,0	11,0	4,0	10,0
2005-04-19	2932	2932	AQUA-DRILL	54,0	1,30	0,0	51	36	28	20	0	0	7	5	50,0	15,0	10,0	4,0	12,0
2005-04-20	2932	2932	AQUA-DRILL	49,0	1,30	0,0	53	37	29	20	0	0	7	5	50,0	16,0	10,0	4,0	12,0
2005-04-21	2932	2932	AQUA-DRILL	49,0	1,30	0,0	53	37	29	20	0	0	7	5	50,0	16,0	10,0	4,0	12,0
2005-04-22	2932	2932	AQUA-DRILL	48,0	1,30	0,0	53	37	28	20	0	0	7	5	50,0	16,0	10,0	4,0	12,0

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]
2005-04-23	2950	2950	AQUA-DRILL	48,0	1,30	0,0	46	33	26	19	0	0	7	5	50,0	13,0	10,0	4,0	10,0
2005-04-24	3062	3062	AQUA-DRILL	51,0	1,30	34,0	48	33	27	18	0	0	7	5	50,0	15,0	9,0	4,0	11,0
2005-04-25 23:59	3100	3100	AQUA-DRILL	52,0	1,30	31,0	51	36	26	20	0	0	7	5	50,0	15,0	10,0	4,0	9,0
2005-04-26 23:59	3115	3115	AQUA-DRILL	49,0	1,30	29,0	50	35	28	19	0	0	7	5	50,0	15,0	10,0	4,0	9,0
2005-04-27 23:59	3142	3142	AQUA-DRILL	54,0	1,30	31,0	54	37	30	21	0	0	7	5	50,0	17,0	10,0	3,0	9,0
2005-04-28 23:59	3204	3204	AQUA-DRILL	55,0	1,30	30,0	55	38	30	21	0	0	7	5	50,0	17,0	10,0	3,0	8,0
2005-04-29 23:59	3291	3291	AQUA-DRILL	55,0	1,30	0,0	59	41	33	23	0	0	7	5	50,0	18,0	11,0	3,0	9,0
2005-04-30	3291	3291	AQUA-DRILL	55,0	1,30	0,0	59	41	33	23	0	0	7	5	50,0	18,0	11,0	3,0	9,0
2005-05-01 23:59	3291	3291	AQUA-DRILL	56,0	1,30	0,0	60	42	33	23	0	0	7	5	50,0	18,0	11,0	3,0	8,0
2005-05-02 23:59	3291	3291	AQUA-DRILL	56,0	1,30	0,0	59	41	33	23	0	0	7	5	50,0	18,0	11,0	3,0	8,0
2005-05-03 23:59	3291	3291	AQUA-DRILL	55,0	1,30	0,0	61	42	33	23	0	0	7	5	50,0	19,0	11,0	3,0	9,0
2005-05-04 23:59	3291	3291	AQUA-DRILL	56,0	1,30	0,0	60	42	33	23	0	0	7	5	50,0	18,0	11,0	3,0	8,0
2005-05-05 23:59	3290	3290	AQUA-DRILL	56,0	1,30	0,0	58	40	32	22	0	0	6	5	50,0	18,0	11,0	3,0	9,0
2005-05-06 23:50	3290	3290	NACL BRINE	0,0	1,10	0,0	0	0	0	0	0	0	0	0	0,0	0,0	0,0	0,0	0,0
2005-05-07 23:59	3290	3290	NACL BRINE	0,0	1,10	0,0	0	0	0	0	0	0	0	0	0,0	0,0	0,0	0,0	0,0
2005-05-08 23:59	3290	3290	NACL BRINE	0,0	1,10	0,0	0	0	0	0	0	0	0	0	0,0	0,0	0,0	0,0	0,0

Norsk Hydro

2005-12-07

DAILY MUD PROPERTIES:RHEOLOGY PARAMETERS

Well: 35/11-13 **PO:** 1

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]
2005-05-17	2682	2682	AQUA-DRILL	0,0	1,30	0,0	49	34	27	19	0	0	5	4	50,0	15,0	9,0	4,0	12,0
2005-05-18	2690	2690	AQUA-DRILL	52,0	1,30	0,0	38	27	21	15	0	0	4	3	50,0	11,0	8,0	2,0	4,0
2005-05-19	2690	2690	AQUA-DRILL	49,0	1,30	0,0	36	24	20	14	0	0	4	3	50,0	12,0	6,0	2,0	4,0
2005-05-20	2690	2690	AQUA-DRILL	48,0	1,30	0,0	36	25	20	14	0	0	4	3	50,0	11,0	7,0	2,0	5,0
2005-05-21	2690	2690	AQUA-DRILL	48,0	1,30	0,0	35	24	19	13	0	0	3	2	50,0	11,0	6,0	2,0	3,0
2005-05-22	1500	1500	AQUA-DRILL	48,0	1,30	0,0	35	24	19	13	0	0	3	2	50,0	11,0	6,0	2,0	4,0
2005-05-23	635	635	AQUA-DRILL	47,0	1,30	0,0	33	23	18	12	0	0	3	2	50,0	10,0	6,0	2,0	3,0
2005-05-24	635	635	AQUA-DRILL	0,0	0,00	0,0	0	0	0	0	0	0	0	0	0,0	0,0	0,0	0,0	0,0

DAILY MUD PROPERTIES : OTHER PARAMETERS

Well: 35/11-13 **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]
2005-03-18	441	441	SPUD MUD	1,05	0,0	0,0	0	0	0 / 0	0,0	0,0	0,0	0,0	0	0	0	0	0	0	0,0	0,0	0,0	0	0,0	0
2005-03-19 23:59	474	474	SPUD MUD	1,05	0,0	0,0	0	0	0 / 0	0,0	0,0	0,0	0,0	0	0	0	0	0	0	0,0	0,0	0,0	0	0,0	0

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]
2005-03-20 23:59	474	474	SPUD MUD	1,50	0,0	0,0	0	0	0 / 0	0,0	0,0	0,0	0,0	0	0	0	0	0	0	0,0	0,0	0,0	0	0,0	0
2005-03-21	599	599	SPUD MUD	1,05	0,0	0,0	0	0	0 / 0	0,0	0,0	0,0	0,0	0	0	0	0	0	0	0,0	0,0	0,0	0	0,0	0
2005-03-21 23:59	599	599	SPUD MUD	1,05	0,0	0,0	0	0	0 / 0	0,0	0,0	0,0	0,0	0	0	0	0	0	0	0,0	0,0	0,0	0	0,0	0
2005-03-22 23:59	701	701	SPUD MUD	1,05	0,0	0,0	0	0	0 / 0	0,0	0,0	0,0	0,0	0	0	0	0	0	0	0,0	0,0	0,0	0	0,0	0
2005-03-23 23:59	701	701	SPUD MUD	1,05	0,0	0,0	0	0	0 / 0	0,0	0,0	0,0	0,0	0	0	0	0	0	0	0,0	0,0	0,0	0	0,0	0
2005-03-24 23:59	701	701	SPUD MUD	1,50	0,0	0,0	0	0	0 / 0	0,0	0,0	0,0	0,0	0	0	0	0	0	0	0,0	0,0	0,0	0	0,0	0
2005-03-25 23:59	701	701	SPUD MUD	1,22	3,0	0,0	1	0	0 / 0	8,1	0,0	0,0	0,6	181	95000	85000	0	0	620	4,3	0,0	0,0	5	4,0	1
2005-03-26 23:59	701	701	SPUD MUD	1,20	3,2	0,0	1	0	0 / 0	8,2	0,0	0,0	0,6	183	96000	86000	0	0	640	3,7	0,0	0,0	5	3,9	1

Hole section : 17 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]
2005-03-27 23:59	701	701	SPUD MUD	1,20	3,2	0,0	1	0	0 / 0	8,2	0,0	0,0	0,6	183	96000	86000	0	0	640	3,7	0,0	0,0	5	3,9	1
2005-03-28 23:59	923	923	AQUA-DRILL	1,20	3,4	0,0	1	0	0 / 0	8,4	0,0	0,0	1,0	177	93000	89000	0	0	720	6,7	0,0	0,6	34	2,6	7
2005-03-29 23:59	1152	1152	AQUA-DRILL	1,30	3,6	0,0	1	0	0 / 0	8,3	0,0	0,0	0,6	187	98000	88000	0	0	800	9,4	0,0	0,9	35	3,2	6
2005-03-30 23:59	1190	1190	AQUA-DRILL	1,30	3,7	0,0	1	0	0 / 0	8,2	0,0	0,0	0,7	187	98000	88000	0	0	800	9,4	0,0	0,9	35	3,2	6
2005-03-31 23:59	1681	1681	AQUA-DRILL	1,30	3,3	0,0	1	0	0 / 0	8,2	0,0	0,0	0,7	179	94000	86000	0	0	800	9,5	0,0	0,5	42	3,2	6
2005-04-01 23:59	1757	1757	AQUA-DRILL	1,34	3,4	0,0	1	0	0 / 0	8,2	0,0	0,0	0,6	181	95000	87000	0	0	840	10,0	0,0	0,5	56	3,5	4
2005-04-02 23:59	1757	1757	AQUA-DRILL	1,34	3,5	0,0	1	0	0 / 0	8,3	0,0	0,0	0,7	174	91000	87000	0	0	800	10,5	0,0	0,4	52	3,4	5
2005-04-03 23:59	1757	1757	AQUA-DRILL	1,34	3,5	0,0	1	0	0 / 0	8,3	0,0	0,0	0,8	175	92000	87000	0	0	840	10,5	0,0	0,4	52	3,4	5
2005-04-04 23:59	1757	1757	AQUA-DRILL	1,34	3,5	0,0	1	0	0 / 0	8,4	0,0	0,0	0,7	175	92000	87000	0	0	800	10,5	0,0	0,4	52	3,4	5

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]
2005-04-05 23:59	1757	1757	AQUA-DRILL	1,30	3,8	0,0	2	0	0 / 0	10,0	0,3	0,2	0,9	160	84000	80000	0	0	1000	8,3	0,0	0,0	43	3,6	3
2005-04-06 23:59	1760	1760	AQUA-DRILL	1,30	4,0	14,6	1	1	35 / 120	9,9	1,4	0,1	0,6	164	86000	87000	0	0	800	8,0	0,0	0,5	43	3,6	3

DAILY MUD PROPERTIES : OTHER PARAMETERS

Well: 35/11-13 **PO:** 1

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

Date	Depth [m]		Mud Type	Dens	Filtrate		Filtcake		HPHT	pH	Alcalinity			Inhib	K+	CL-	Ca++	Mg++	Tot	Percentage			CEC	ASG	LGS
	MD	TVD		[sg]	API [ml]	HPHT [ml]	API [mm]	HPHT [mm]	Press/Temp [bar/DegC]		Pm [ml]	Pf [ml]	Mf [ml]	Chem [Kg/m3]	[mg/l]	[mg/l]	[mg/l]	[mg/l]	hard [mg/l]	Solid [%]	Oil [%]	Sand [%]	[Kg/m3]	[sg]	[Kg/m3]
2005-04-07 23:59	1781	1781	AQUA-DRILL	1,30	3,6	14,0	1	1	35 / 120	9,1	0,6	0,0	0,7	160	84000	85000	0	0	760	8,9	0,0	0,5	43	3,4	5
2005-04-08 23:59	1781	1781	AQUA-DRILL	1,30	3,6	14,0	1	2	35 / 120	9,0	0,2	0,1	0,5	156	82000	86000	0	0	800	8,8	0,0	0,6	46	3,4	4
2005-04-10 23:59	1795	1795	AQUA-DRILL	1,30	3,6	0,0	1	0	0 / 0	9,0	0,1	0,0	0,6	160	84000	86000	0	0	800	8,9	0,0	0,5	43	3,4	4
2005-04-11	1935	1935	AQUA-DRILL	1,30	3,8	0,0	1	0	0 / 0	8,8	0,1	0,1	0,7	156	82000	82000	0	0	800	8,9	0,0	5,0	45	3,4	4
2005-04-12	1970	1970	AQUA-DRILL	1,30	3,8	12,0	1	2	35 / 120	8,8	0,1	0,1	0,7	151	79000	82000	0	0	600	9,0	0,0	0,5	46	3,4	4
2005-04-13	2219	2219	AQUA-DRILL	1,30	3,8	14,0	1	2	350 / 120	8,7	0,0	0,0	0,7	172	90000	83000	0	0	960	9,0	0,0	0,5	50	3,4	4
2005-04-14	2555	2554	AQUA-DRILL	1,30	4,2	14,2	1	2	35 / 120	8,1	0,0	0,0	0,7	168	88000	80000	0	0	820	9,2	0,0	0,6	54	3,4	5
2005-04-15	2814	2813	AQUA-DRILL	1,30	3,8	14,5	1	2	350 / 120	8,0	0,0	0,0	0,6	162	85000	84000	0	0	800	9,1	0,0	0,3	53	3,4	5
2005-04-16	2814	2813	AQUA-DRILL	1,30	3,6	13,4	1	2	35 / 120	8,0	0,0	0,0	0,6	162	85000	84000	0	0	680	9,0	0,0	0,3	53	3,4	5
2005-04-17	2927	2926	AQUA-DRILL	1,30	3,8	14,6	1	2	350 / 120	8,0	0,0	0,0	0,6	164	86000	85000	0	0	800	9,1	0,0	0,5	45	3,4	5
2005-04-18	2932	2932	AQUA-DRILL	1,30	3,0	13,0	1	2	350 / 120	8,2	0,0	0,0	0,8	153	80000	80000	0	0	680	9,3	0,0	0,3	53	3,3	5
2005-04-19	2932	2932	AQUA-DRILL	1,30	3,0	12,0	1	2	350 / 120	8,2	0,0	0,0	0,9	149	78000	80000	0	0	640	9,3	0,0	0,3	55	3,3	5
2005-04-20	2932	2932	AQUA-DRILL	1,30	3,4	10,4	1	2	350 / 120	8,2	0,0	0,0	0,9	145	76000	114000	0	0	600	7,9	0,0	0,3	57	3,3	4
2005-04-21	2932	2932	AQUA-DRILL	1,30	3,4	10,4	1	2	350 / 120	8,2	0,0	0,0	0,8	156	82000	86000	0	0	1280	9,0	0,0	0,2	59	3,4	5
2005-04-22	2932	2932	AQUA-DRILL	1,30	3,2	10,0	1	2	350 / 120	8,2	0,0	0,0	0,7	156	82000	90000	0	0	1280	8,8	0,0	0,2	59	3,4	4

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

Date	Depth [m]		Mud Type	Dens	Filtrate		Filtcake		HPHT	pH	Alcalinity			Inhib	K+	CL-	Ca++	Mg++	Tot	Percentage			CEC	ASG	LGS
	MD	TVD		[sg]	API [ml]	HPHT [ml]	API [mm]	HPHT [mm]	Press/Temp [bar/DegC]		Pm [ml]	Pf [ml]	Mf [ml]	Chem [Kg/m3]	[mg/l]	[mg/l]	[mg/l]	[mg/l]	hard [mg/l]	Solid [%]	Oil [%]	Sand [%]	[Kg/m3]	[sg]	[Kg/m3]
2005-04-23	2950	2950	AQUA-DRILL	1,30	3,4	10,0	1	2	350 / 120	8,5	0,0	0,0	1,1	153	80000	101000	0	0	1080	8,1	0,0	0,2	59	3,4	4
2005-04-24	3062	3062	AQUA-DRILL	1,30	3,2	10,0	1	2	350 / 120	8,6	0,0	0,0	1,4	149	78000	103000	0	0	960	8,0	0,0	0,3	59	3,4	4
2005-04-25 23:59	3100	3100	AQUA-DRILL	1,30	3,0	9,6	1	2	350 / 120	8,4	0,0	0,0	1,1	156	82000	102000	0	0	1000	8,1	0,0	0,2	59	3,4	4
2005-04-26 23:59	3115	3115	AQUA-DRILL	1,30	2,8	7,6	1	2	350 / 120	8,3	0,0	0,0	0,9	154	81000	102000	0	0	960	8,1	0,0	0,2	59	3,4	4
2005-04-27 23:59	3142	3142	AQUA-DRILL	1,30	3,2	8,0	1	2	350 / 120	8,3	0,0	0,0	0,8	160	84000	101000	0	0	920	8,1	0,0	0,1	59	3,4	4
2005-04-28 23:59	3204	3204	AQUA-DRILL	1,30	3,0	7,8	1	2	35 / 120	8,3	0,0	0,0	0,9	154	81000	100000	0	0	880	8,7	0,0	0,1	48	3,3	5
2005-04-29 23:59	3291	3291	AQUA-DRILL	1,30	2,8	7,4	1	2	35 / 120	8,8	0,0	0,0	1,2	160	84000	103000	0	0	940	8,5	0,0	0,2	49	3,3	5
2005-04-30	3291	3291	AQUA-DRILL	1,30	2,8	7,4	1	2	35 / 120	8,7	0,0	0,0	1,0	158	83000	100000	0	0	900	8,7	0,0	0,2	48	3,3	5
2005-05-01 23:59	3291	3291	AQUA-DRILL	1,30	3,0	7,8	1	2	35 / 120	8,8	0,0	0,0	0,9	160	84000	102000	0	0	900	8,6	0,0	0,1	49	3,3	5
2005-05-02 23:59	3291	3291	AQUA-DRILL	1,30	3,0	7,8	1	2	35 / 120	8,7	0,0	0,0	1,0	158	83000	103000	0	0	920	8,5	0,0	0,1	48	3,3	5
2005-05-03 23:59	3291	3291	AQUA-DRILL	1,30	3,0	7,8	1	2	35 / 120	8,7	0,0	0,0	1,0	158	83000	103000	0	0	900	8,5	0,0	0,2	48	3,3	5
2005-05-04 23:59	3291	3291	AQUA-DRILL	1,30	3,0	7,8	1	2	35 / 120	8,5	0,0	0,0	0,9	158	83000	102000	0	0	860	8,6	0,0	0,1	48	3,3	5
2005-05-05 23:59	3290	3290	AQUA-DRILL	1,30	2,6	0,0	1	0	0 / 0	8,8	0,0	0,0	1,0	156	82000	102000	0	0	940	8,6	0,0	0,1	46	3,3	5
2005-05-06 23:50	3290	3290	NACL BRINE	1,10	0,0	0,0	0	0	0 / 0	0,0	0,0	0,0	0,0	0	0	0	0	0	0	0,0	0,0	0,0	0	0,0	0

DAILY MUD PROPERTIES : OTHER PARAMETERS

Well: 35/11-13 **PO:** 1

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

Date	Depth [m]		Mud Type	Dens [sg]	Filtrate		Filtcake		HPHT	pH	Alcalinity			Inhib	K+	CL-	Ca++	Mg++	Tot	Percentage			CEC	ASG	LGS
					API	HPHT	API	HPHT	Press/Temp		Pm	Pf	Mf	Chem					hard	Solid	Oil	Sand			
	MD	TVD			[ml]	[ml]	[mm]	[mm]	[bar/DegC]		[ml]	[ml]	[ml]	[Kg/m3]	[mg/l]	[mg/l]	[mg/l]	[mg/l]	[mg/l]	[%]	[%]	[%]	[Kg/m3]	[sg]	[Kg/m3]
2005-05-07 23:59	3290	3290	NACL BRINE	1,10	0,0	0,0	0	0	0 / 0	0,0	0,0	0,0	0,0	0	0	0	0	0	0	0,0	0,0	0,0	0	0,0	0
2005-05-08 23:59	3290	3290	NACL BRINE	1,10	0,0	0,0	0	0	0 / 0	0,0	0,0	0,0	0,0	0	0	0	0	0	0	0,0	0,0	0,0	0	0,0	0

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

Date	Depth [m]		Mud Type	Dens [sg]	Filtrate		Filtcake		HPHT	pH	Alcalinity			Inhib	K+	CL-	Ca++	Mg++	Tot	Percentage			CEC	ASG	LGS
					API	HPHT	API	HPHT	Press/Temp		Pm	Pf	Mf	Chem					hard	Solid	Oil	Sand			
	MD	TVD			[ml]	[ml]	[mm]	[mm]	[bar/DegC]		[ml]	[ml]	[ml]	[Kg/m3]	[mg/l]	[mg/l]	[mg/l]	[mg/l]	[mg/l]	[%]	[%]	[%]	[Kg/m3]	[sg]	[Kg/m3]
2005-05-17	2682	2682	AQUA-DRILL	1,30	0,0	0,0	0	0	0 / 0	0,0	0,0	0,0	0,0	0	0	0	0	0	0	0,0	0,0	0,0	0	0,0	0
2005-05-18	2690	2690	AQUA-DRILL	1,30	5,4	0,0	1	0	0 / 0	10,0	3,2	0,1	1,3	118	62000	85000	0	0	600	8,5	0,0	0,3	52	3,5	4
2005-05-19	2690	2690	AQUA-DRILL	1,30	5,8	0,0	1	0	0 / 0	10,0	3,0	0,1	1,2	107	56000	84000	0	0	560	8,5	0,0	0,3	43	3,5	4
2005-05-20	2690	2690	AQUA-DRILL	1,30	5,8	0,0	1	0	0 / 0	9,8	2,6	0,1	1,0	105	55000	85000	0	0	440	8,5	0,0	0,3	42	3,5	4
2005-05-21	2690	2690	AQUA-DRILL	1,30	6,2	0,0	1	0	0 / 0	9,8	2,4	0,1	0,8	118	62000	87000	0	0	560	8,4	0,0	0,3	43	3,5	4
2005-05-22	1500	1500	AQUA-DRILL	1,30	6,2	0,0	1	0	0 / 0	9,9	2,4	0,1	0,8	109	57000	84000	0	0	480	8,5	0,0	0,3	43	3,5	4
2005-05-23	635	635	AQUA-DRILL	1,30	6,2	0,0	1	0	0 / 0	10,4	3,0	0,2	1,2	105	55000	83000	0	0	400	8,6	0,0	0,3	43	3,5	4
2005-05-24	635	635	AQUA-DRILL	0,00	0,0	0,0	0	0	0 / 0	0,0	0,0	0,0	0,0	0	0	0	0	0	0	0,0	0,0	0,0	0	0,0	0

Norsk Hydro

2005-12-07

TOTAL CONSUMPTION OF MUD ADDITIVES

Well: 35/11-13 **PO:** 1

Section	Product/ Additive	Unit	Total Amount Used
36"	BARITE	kg	96000,00
	BENTONITE	kg	14000,00
	CMC EHV	kg	1050,00
	LIME	kg	125,00
	SODA ASH	kg	175,00
	XANTHAN GUM	kg	550,00

Section	Product/ Additive	Unit	Total Amount Used
26"	AQUADRILL	l	192000,00
	BARITE	kg	35000,00
	BENTONITE	kg	6000,00
	CMC EHV	kg	200,00
	LIME	kg	50,00
	SODA ASH	kg	100,00
	UNDEFINED	xx	213,00
	XANTHAN GUM	kg	50,00

Section	Product/ Additive	Unit	Total Amount Used
17 1/2"	AQUACOL D	kg	15950,00
	AQUADRILL	l	386000,00
	BARITE	kg	83000,00
	CITRIC ACID	kg	175,00
	KCL BRINE	l	305000,00
	KCL BRINE/AQUACOL D	l	120000,00
	KCL POWDER	kg	1000,00
	MIL-PAC	kg	4325,00
	PERMALOSE HT	kg	2950,00
	SODA ASH	kg	150,00
	SODIUM BICARBONATE	kg	325,00
	UNDEFINED	xx	502,00
	XANTHAN GUM	kg	1950,00

Section	Product/ Additive	Unit	Total Amount Used
12 1/4"	AQUACOL D	kg	6000,00
	BARITE	kg	28000,00
	CITRIC ACID	kg	375,00
	KCL BRINE	l	180000,00
	KCL BRINE/AQUACOL D	l	25000,00
	KCL POWDER	kg	8000,00
	LIME	kg	50,00
	MIL-PAC	kg	4975,00
	PERMALOSE HT	kg	3300,00
	SODA ASH	kg	125,00
	SODIUM BICARBONATE	kg	700,00
	XANTHAN GUM	kg	1425,00

Section	Product/ Additive	Unit	Total Amount Used
8 1/2"	AQUACOL D	kg	7000,00
	AQUAPAC LV	kg	816,00
	BARITE	kg	16000,00

Norsk Hydro

2005-12-07

TOTAL CONSUMPTION OF MUD ADDITIVES

Well: 35/11-13 **PO:** 1

Section	Product/ Additive	Unit	Total Amount Used
8 1/2"	CITRIC ACID	kg	325,00
	KCL BRINE	l	100000,00
	KCL POWDER	kg	1000,00
	LIME	kg	150,00
	MIL-PAC	kg	875,00
	PERMALOSE HT	kg	1500,00
	SODA ASH	kg	125,00
	SODIUM BICARBONATE	kg	450,00
	UNDEFINED	xx	905,00
	W-333N	l	150,00
	XANTHAN GUM	kg	575,00

Section	Product/ Additive	Unit	Total Amount Used
P&A	AQUAPAC LV	kg	272,00
	BARITE	kg	62000,00
	CITRIC ACID	kg	600,00
	PERMALOSE HT	kg	750,00
	SODIUM BICARBONATE	kg	1175,00
	XANTHAN GUM	kg	350,00

Section	Product/ Additive	Unit	Total Amount Used
COMP.	BAKERCLEAN 5	l	1500,00
	BAKERCLEAN 6	l	1000,00
	CITRIC ACID	kg	125,00
	LIME	kg	25,00
	NACL BRINE	l	300000,00
	SODIUM BICARBONATE	kg	525,00
	W-333N	l	100,00
	XANTHAN GUM	kg	200,00

LOGGING INFORMATION

Well: 35/11-13 **PO:** 1 **RKB:**25,0 **m** **Rig:** DEEPSEA TRYM

WL Logging Contractor: SCHLUMBERGER **LWD Contractor:** BHI

Official Data: ☑

Max. Well Deviation: 2,05 [Deg]

Bit Run	LWD Run	WL Run	Run Char	Hole Section	Track	Drilled Top [m MD]	Drilled Bottom [m MD]	Log Suite	Log Tool Offset [m]	Logging Start	End Last Logging	Measured Temp [Deg C]	Circ. Prior to Log [min]	Time Since Circulation [min]
		1	A	8 1/2"		2925,2	3286,0	DSI- ECS- HGNS- PEX- SP		2005-04-30 08:45	2005-04-30 10:45	100,0	90	935
		1	A	8 1/2"		3097,0	3205,5	GR- MDT		2005-04-30 16:00	2005-04-30 21:20	105,0	90	1380
		1	A	8 1/2"		1611,5	3290,0	GR- VSP		2005-05-01 03:55	2005-05-01 08:00	105,0	90	1885
		1	B	8 1/2"		3097,0	3157,5	GR- MDT		2005-05-01 14:00	2005-05-02 21:05	110,0	90	3535
		1	A	8 1/2"		2960,0	3151,0	GR- MSCT		2005-05-02 17:15	2005-05-03 00:15	112,0	90	4350
		2		8 1/2"		2815,0	3200,0	CBL- CCL- CET- GR- VDL		2005-05-07 08:30	2005-05-07 15:00			
		3		8 1/2"		2964,0	3071,0	CCL- GR		2005-05-09 13:00	2005-05-09 17:00			

DOWNTIME REPORT All installations

Installation: DST **Well:** 35/11-13 **PO:** 1

Startdate	#	Sum hrs	Downtime Type	Responsible Contractor	Manufacturer	Short description	Equipment Type	Activity	Service Type	NSFI Code	NSFI Type	Serial Number
2005-03-18	1	0,5	Equipment failure	OCEANEERINC A/S	OCEANEERINC A/S	Had to repaire the ROV system due to failure on the TMS spool.	SERVICE EQUIPMENT/SYS	DRILLING	ROV	370.00	Other Service Equipment/Sy	
2005-03-18	2	1,0	Equipment failure	ODFJELL DRILLING BERGEN A/S	ODFJELL DRILLING BERGEN A/S	Communication problem with the transponder.	MISCELLANEOUS EQUIPMENT/SYS	DRILLING	DRILLING CONTRACTOI	384.00	Misc. Instrumentatic and Auxilery	
2005-03-20	3	1,0	Equipment failure	ODFJELL DRILLING BERGEN A/S	ODFJELL DRILLING BERGEN A/S	Had to remake loose 5 1/2" FH connection in the conductor landing string wile running conductor.	DRILLSTRING/DO EQUIPMENT	CASING	DRILLING CONTRACTOI	351.00	Drillpipe	
2005-03-23	4	4,0	Equipment failure	ODFJELL DRILLING BERGEN A/S	ODFJELL DRILLING BERGEN A/S	Repaired loose bolts on the pipe handling system.	PIPE HANDLING EQUIPMENT/SYS	DRILLING	DRILLING CONTRACTOI	341.00	Vertical Pipe Handling	
2005-03-26	5	6,5	Other	DRIL-QUIP		Had to retrieve the preinstalled boreprotector to perform BOP connector test		BOP INSTALLATIOI AND TESTING				
2005-03-29	7	24,5	Equipment failure	BAKER HUGHES INTEQ	BAKER HUGHES INTEQ	Washout in the MPR resistivity gamma tool	DRILLSTRING/DO EQUIPMENT	DRILLING	MWD/LWD	357.02	MWD/LWD	10027515
2005-03-30	6	0,5	Equipment failure	ODFJELL DRILLING BERGEN A/S	HYDRALIFT	Damage on bracket on guideroller for lower fastline sleeve.	HOISTING EQUIPMENT	DRILLING	DRILLING CONTRACTOI	305.00	Other Hoisting Equipment	
2005-04-01	8	1,5	Equipment failure	ODFJELL DRILLING BERGEN A/S	HYDRALIFT	Repaired torque settings on the Iron Roughneck torque wrench	PIPE HANDLING EQUIPMENT/SYS	DRILLING	DRILLING CONTRACTOI	342.00	Drillfloor Tubular Handling	
2005-04-05	9	20,0	Equipment failure	BAKER HUGHES INTEQ	BAKER HUGHES INTEQ	Broken threads on the MPR and DCP tools	DRILLSTRING/DO EQUIPMENT	DRILLING	MWD/LWD	357.02	MWD/LWD	8081, 8015
2005-04-06	10	0,5	Equipment failure	BAKER HUGHES INTEQ	BAKER HUGHES INTEQ	Lost the power supply from the MWD unit. Unit shut down.	MISCELLANEOUS EQUIPMENT/SYS	DRILLING	MWD/LWD	650.00	Rig Power Supply	

DOWNTIME REPORT All installations

Installation: DST **Well:** 35/11-13 **PO:** 1

Startdate	#	Sum hrs	Downtime Type	Responsible Contractor	Manufacturer	Short description	Equipment Type	Activity	Service Type	NSFI Code	NSFI Type	Serial Number
2005-04-07	13	18,0	Equipment failure	ODFJELL DRILLING BERGEN A/S	NATIONAL OILWELL	Noticed sudden overspeed on DDM when string came loose after stalling out. This occured several times . Combined with heave up to 4 m, it was impossible to drill ahead. Includes trip out and trip back to bottom prior to restart drilling.	HOISTING EQUIPMENT	DRILLING	DRILLING CONTRACTOI	313.02	Top Drive	TBA
2005-04-07	12	27,0	Waiting on weather					DRILLING				
2005-04-08	14	12,5	Other	ODFJELL DRILLING BERGEN A/S		Waiting on fishing equipment. Reverse circulation junk basket and junk sub not onboard. Had to be mobilized from shore and Deep Sea Delta.		DRILLING				
2005-04-09	15	14,5	Other	BAKER HUGHES CHRISTENSEN		Run in hole with Reverse Circulating junk basket to fish lost piece of rib from bit. Serial no.:....		DRILLING				
2005-04-09	15.1	23,0	Other	BAKER HUGHES CHRISTENSEN		Ran in hole with Junk Bit and Junk Sub to crush and recover remaining junk after Reverse Circulating Junk Basket run.		DRILLING				
2005-04-10	16	4,5	Equipment failure	ODFJELL DRILLING BERGEN A/S	NORWINCH	Lost tension on Anchorwinch number 2. Chain rushed out approx. 50 m when attempting to tension up the chain. Found all 12 bolts between kabelar and gearwheel missing.	MISCELLANEOUS EQUIPMENT/SYS	DRILLING	DRILLING CONTRACTOI	380.00	Miscellaneous equipment, systems and services	

DOWNTIME REPORT All installations

Installation: DST **Well:** 35/11-13 **PO:** 1

Startdate	#	Sum hrs	Downtime Type	Responsible Contractor	Manufacturer	Short description	Equipment Type	Activity	Service Type	NSFI Code	NSFI Type	Serial Number
2005-04-14	17	1,0	Equipment failure	BAKER HUGHES INTEQ	BAKER HUGHES INTEQ	Lost power to the MWD unit due to loss of air pressure. The unit shut down. Resat all systems.	MISCELLANEOUS EQUIPMENT/SYS	DRILLING	MWD/LWD	380.00	Miscellaneous equipment, systems and services	10080206
2005-04-15	18	0,5	Equipment failure	BAKER HUGHES INTEQ	BAKER HUGHES INTEQ	Re-established the overpressure on the MWD unit.	SERVICE EQUIPMENT/SYS	DRILLING	MUD LOGGING	373.00	Mud Logging	10080206
2005-04-15	20	33,0	Equipment failure	BAKER HUGHES INTEQ	BAKER HUGHES INTEQ	Unable to read signals from the MWD tool.	DRILLSTRING/DO EQUIPMENT	DRILLING	MWD/LWD	357.02	MWD/LWD	10080206
2005-04-16	19	0,5	Equipment failure	ODFJELL DRILLING BERGEN A/S	VARCO BJ OIL TOOLS	Changed broken hydraulic hose on the iron roughneck.	PIPE HANDLING EQUIPMENT/SYS	DRILLING	DRILLING CONTRACTOI	342.00	Drillfloor Tubular Handling	
2005-04-19	21	1,0	Equipment failure	ODFJELL WELL SERVICES	ODFJELL WELL SERVICES	Found the lower part of 3 hinge pins broken and 4 hinge pins bent on the 13 3/8" casing power slips. Changed the damaged hinge pins and inspected the slips for further damage.	PIPE HANDLING EQUIPMENT/SYS	CASING	CASING/TUBI RUNNING	344.00	Slips and Spider	
2005-04-20	23	0,5	Equipment failure	ODFJELL DRILLING BERGEN A/S	COFLEXIP (UK) LTD.	Changed from 345 bar to 517 bar cement hose	MUD AND BULK SYSTEMS	CEMENTING	DRILLING CONTRACTOI	328.00	Hp Equipment	
2005-04-20	22	0,5	Equipment failure	BJ SERVICES	HALLIBURTON OILFIELD SERVICES NORWAY INC.	Unable to reset the overpressure shut down system on the cement unit.	SERVICE EQUIPMENT/SYS	WELLHEAD AND GUIDEBASE OPERATIONS	WELLHEAD	371.01	Cement: Unit/pipe	
2005-04-21	24	1,0	Equipment failure	DRIL-QUIP	DRIL-QUIP	When installing the wear bushing running tool in to the wear bushing, it was observed that the cup tester did not pass through the wearbushing. The cup tester was then removed from the running tool.	SERVICE EQUIPMENT/SYS	WELLHEAD AND GUIDEBASE OPERATIONS	WELLHEAD	376.01	Wellhead	
2005-04-22	25	1,0	Equipment failure	ODFJELL DRILLING BERGEN A/S	HYDRALIFT	The top drive I-BOP leaked during pressure testing. Assembled and pressure tested the I-BOP.	HOISTING EQUIPMENT	DRILLING	DRILLING CONTRACTOI	313.02	Top Drive	

DOWNTIME REPORT All installations

Installation: DST **Well:** 35/11-13 **PO:** 1

Startdate	#	Sum hrs	Downtime Type	Responsible Contractor	Manufacturer	Short description	Equipment Type	Activity	Service Type	NSFI Code	NSFI Type	Serial Number
2005-04-23	26	20,5	Equipment failure	BAKER HUGHES INTEQ	BAKER HUGHES INTEQ	Unable to decode signals from the MWD tool	DRILLSTRING/DO EQUIPMENT	DRILLING	MWD/LWD	357.02	MWD/LWD	
2005-04-25	27	3,5	Equipment failure	ODFJELL DRILLING BERGEN A/S	NATIONAL OILWELL	Repaired torque wrench on topdrive.	PIPE HANDLING EQUIPMENT/SYS	CORING	RIG UTILITIES	347.00	Other Pipe Handling Equipment	
2005-04-26	28	1,0	Equipment failure	ODFJELL DRILLING BERGEN A/S	ODFJELL DRILLING BERGEN A/S	Changed 5" elevator due to failure.	PIPE HANDLING EQUIPMENT/SYS	CORING	DRILLING CONTRACTOI	345.00	Elevator	
2005-04-29	29	1,0	Equipment failure	BAKER HUGHES INTEQ	BAKER HUGHES INTEQ	Shutdown in the MWD unit due to weather conditions, (wind direction)	SERVICE EQUIPMENT/SYS	DRILLING	MWD/LWD	374.15	Other logging equipment	
2005-04-30	30	0,5	Other	NORSK HYDRO A/S		Went stuck with the logging string due to washout below the 9 5/8" casing shoe.		LOGGING				
2005-05-06	31	1,5	Equipment failure	HALLIBURTON OILFIELD SERVICES NORWAY INC.	HALLIBURTON OILFIELD SERVICES NORWAY INC.	Unable to tie in to the rig stand pipe due to wrong equipment ordered out to the rig. X-over has wrong dimensions.	DRILL FLOOR EQUIPMENT/SYS	DRILL STEM TEST	PRODUCTION TESTING	317.00	Other Drill Floor Eq./Syst.	
2005-05-08	32	1,0	Equipment failure	HALLIBURTON OILFIELD SERVICES NORWAY INC.	HALLIBURTON OILFIELD SERVICES NORWAY INC.	Damaged threads on pup in the lubricator valve	WELLCONTROL EQUIPMENT/SYS	DRILL STEM TEST	PRODUCTION TESTING	335.01	Lubricators/O etc.	
2005-05-11	33	0,5	Other	NORSK HYDRO A/S		Waited for inbound helicopter for arrival and departure.		DRILL STEM TEST				
2005-05-15	34	1,0	Equipment failure	ODFJELL WELL SERVICES	ODFJELL WELL SERVICES	Hydraulic leakage	PIPE HANDLING EQUIPMENT/SYS	OTHER ACTIVITY	CASING/TUBI RUNNING	342.00	Drillfloor Tubular Handling	
2005-05-18	35	1,0	Equipment failure	ODFJELL DRILLING BERGEN A/S	HYDRALIFT	Changed dies on the iron roughneck	PIPE HANDLING EQUIPMENT/SYS	PLUG AND ABANDONME	DRILLING CONTRACTOI	342.00	Drillfloor Tubular Handling	
Sum:		230,0										

Total Sum: 230,0

AFE report period: / 8

Norsk Hydro a.s.

Date.....: 07.09.2005 / 14:33:18

	Current period	Year to date	AFE	Accum. cost
Employee relat. costs	677 115	8 673 017		8 673 017
Employee relat. costs	**677 115**	**8 673 017**		**8 673 017**
Rig costs	1 647 205	62 372 715		62 372 715
Rig costs		**62 372 715**		**62 372 715**
Rig support costs		479 609		479 609
Rig support costs		**479 609**		**479 609**
Fuel/luboil	181 988	3 005 067		3 005 067
Bits	625 569	1 527 840		1 527 840
Casing/casing equipment	-212 111	4 357 996		4 357 996
Wellhead		1 305 457		1 305 457
Cement/cement addit.	271 161	945 326		945 326
Mud/mud chemicals		2 760 758		2 760 758
Consumable costs	**866 607**	**13 902 444**		**13 902 444**
Other transport	1 476	677 151		677 151
Standby vessel	5 103 184	5 284 997		5 284 997
Helicopter transport		2 493 742		2 493 742
Supplyboat		20 877 954		20 877 954
Transportation costs	**5 104 660**	**29 333 844**		**29 333 844**
Coring	235 400	1 002 509		1 002 509
Drilling		3 220 747		3 220 747
Cutting of casing		715 012		715 012
Completion costs		188 024		188 024
MWD-services		3 433 861		3 433 861
Casing operations		214 664		214 664
Mud logging		1 931 426		1 931 426
Cementing/press.test	877 947	2 067 280		2 067 280
El.logging	64 192	6 719 789		6 719 789
Prod.testing	859 387	2 408 943		2 408 943
Rov/diving		2 176 199		2 176 199
Misc.rental & op.costs	311 660	4 910 764		4 910 764
Service contracts	**2 348 586**	**28 989 219**		**28 989 219**
Site survey		14 518		14 518
Rig positioning		542 538		542 538
Survey costs		**557 056**		**557 056**
Warehouse costs	15 583	2 211 733		2 211 733
Warehouse costs	**15 583**	**2 211 733**		**2 211 733**
Total	**10 659 755**	**146 519 638**		**146 519 638**

JVP3 - Testing 35/11-13

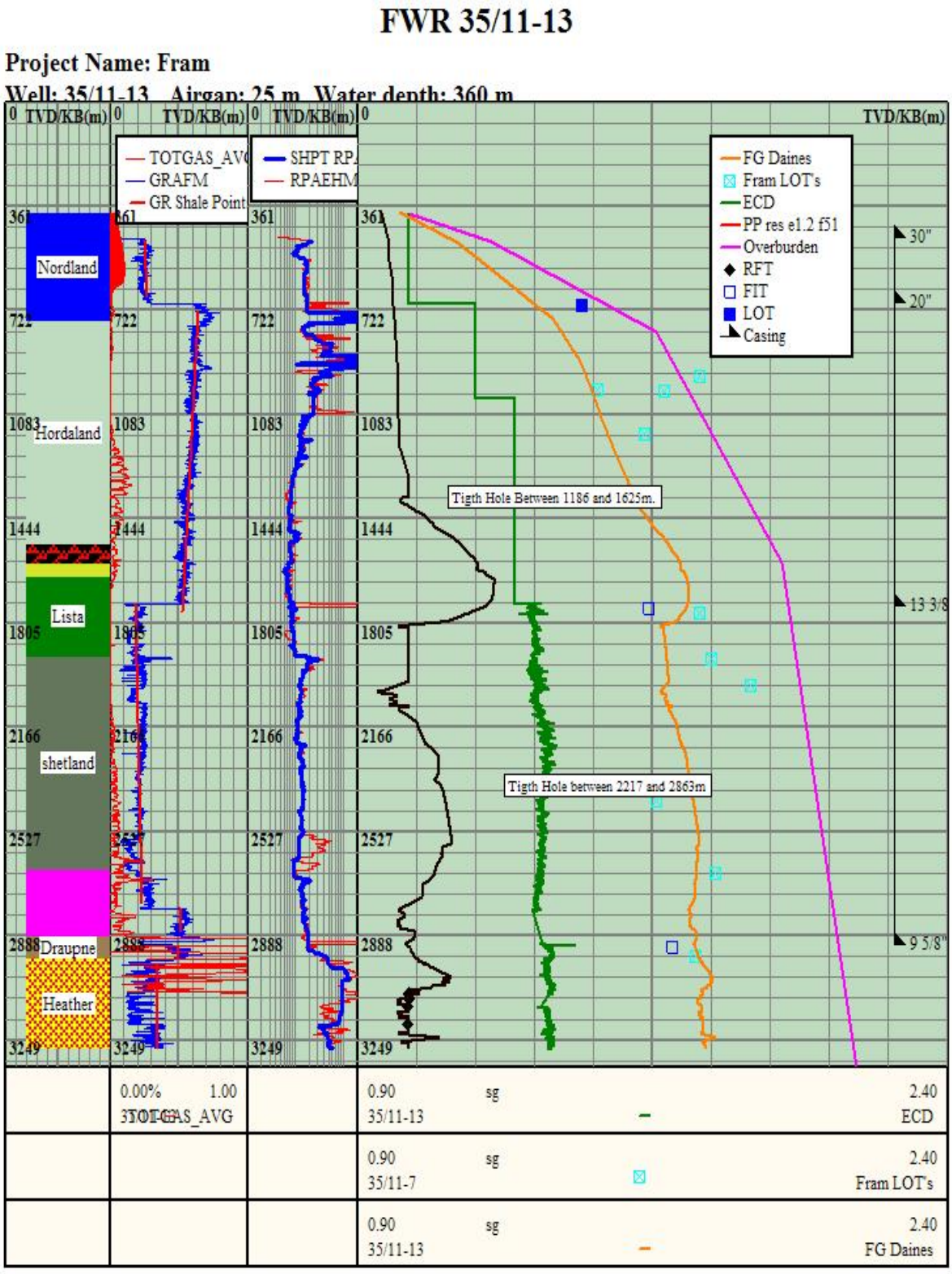
AFE report period: / 8

Norsk Hydro a.s.

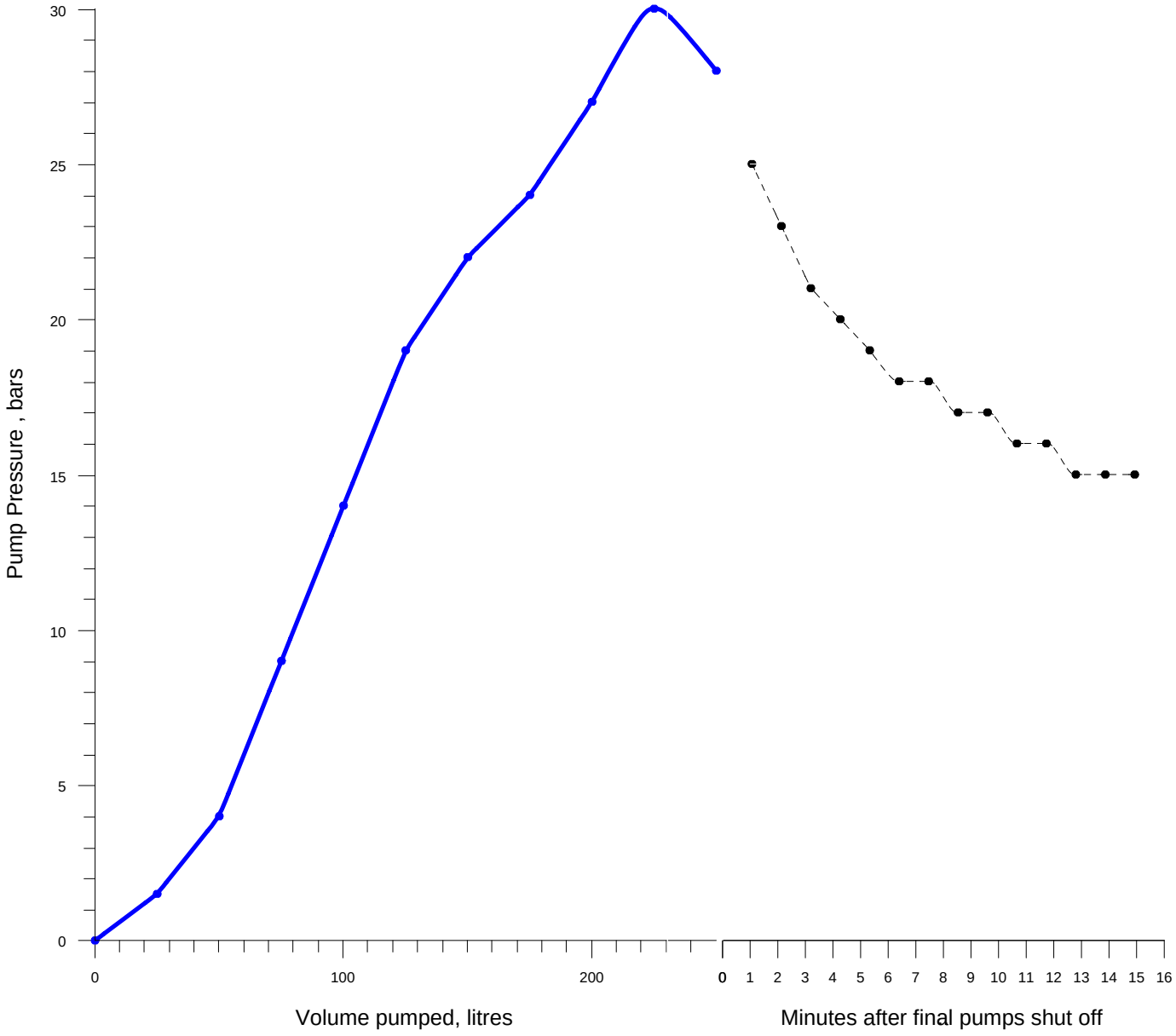
Date.....: 07.09.2005 / 14:33:18

	Current period	Year to date	AFE	Accum. cost
Employee relat. costs	174 251	2 825 921		2 825 921
Employee relat. costs	**174 251**	**2 825 921**		**2 825 921**
Rig costs		14 182 479		14 182 479
Rig costs		**14 182 479**		**14 182 479**
Rig support costs		261 621		261 621
Rig support costs		**261 621**		**261 621**
Fuel/luboil		10 680		10 680
Bits		40 133		40 133
Cement/cement addit.		3 014		3 014
Mud/mud chemicals	94 013	477 274		477 274
Consumable costs	**94 013**	**531 101**		**531 101**
Helicopter transport		587 503		587 503
Supplyboat	44 589	6 825 445		6 825 445
Transportation costs	**44 589**	**7 412 948**		**7 412 948**
Completion costs		228 464		228 464
Mud logging		248 490		248 490
Cementing/press.test	317 855	317 855		317 855
El.logging	-221	467 987		467 987
Prod.testing	1 002 117	6 128 879		6 128 879
Rov/diving		374 069		374 069
Misc.rental & op.costs		590 368		590 368
Service contracts	**1 319 751**	**8 356 112**		**8 356 112**
Warehouse costs		584 566		584 566
Warehouse costs		**584 566**		**584 566**
Total	**1 632 605**	**34 154 748**		**34 154 748**

Figure 1 Pore Pressure, Mud Density, Fracture and Overburden gradients

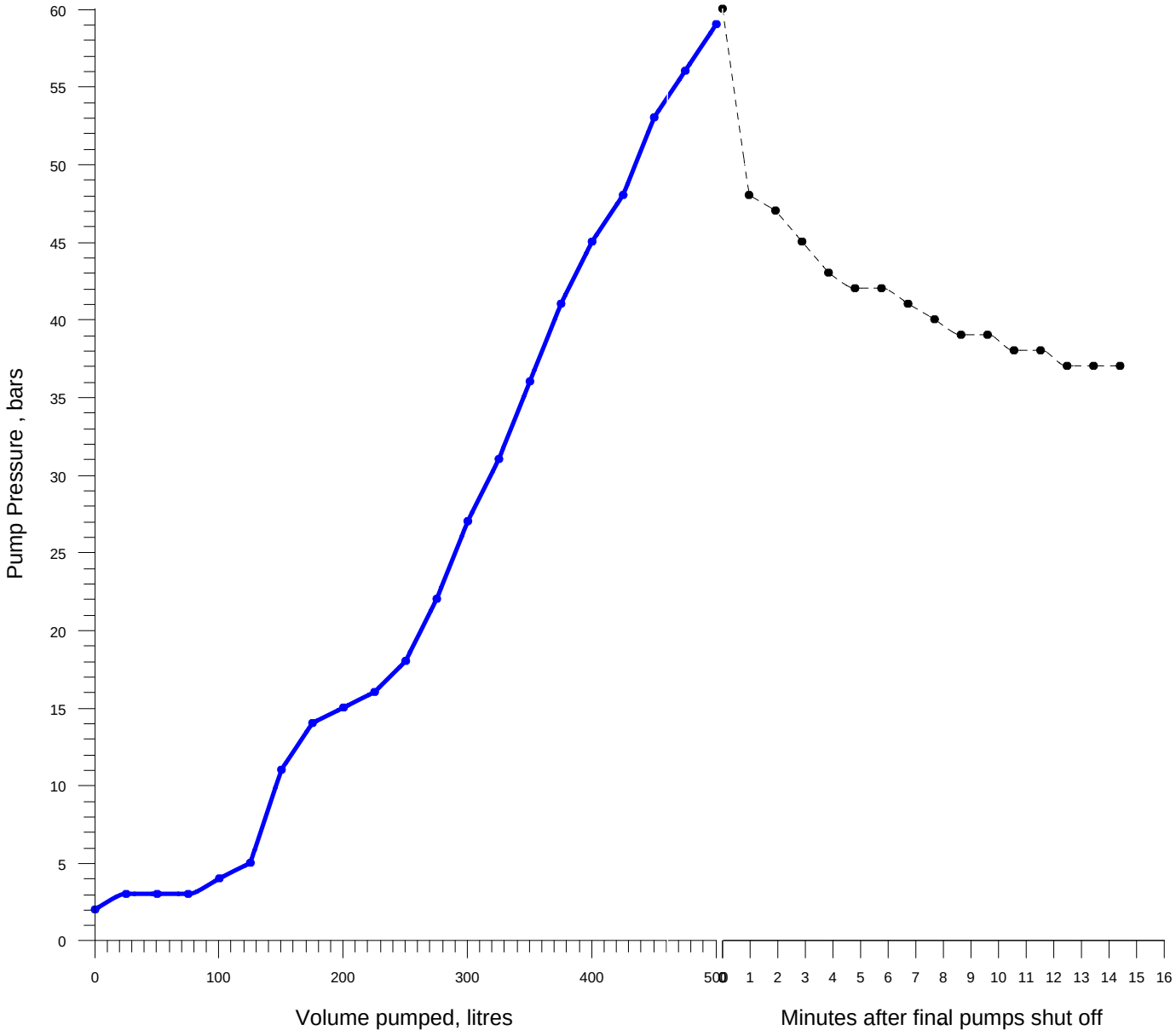


Well	**35/11-13**	Test type :	**LOT**	Test date :	2005-03-28
Rig DEEPSEA TRYM	Airgap (m) 25,00	Water depth (m)	361,68	CsgOd" 20,000	Hole angle (deg) 2
Csg Shoe (mMD/mTVD)	694,63 / 694,53	OH depth (mMD/mTVD)	704,00 / 703,90	Lithology :	Clst
Dens1,20	API WL(ml/30min)	PV (cp)	14,00	YP (Pa) 15,00	Gel0/Gel10 4,00 / 6,00
Pump Rate (l/min)	50,00	Vol pumped (l.)	250,00	Vol bled back (l.)	100,00
Leakoff Pressure (bar)	19,00	Max pressure (bar)	30,00	Propagation press (bar)	
Test result (sg EMD)	1,47	Shut-in pressure			
Comments					



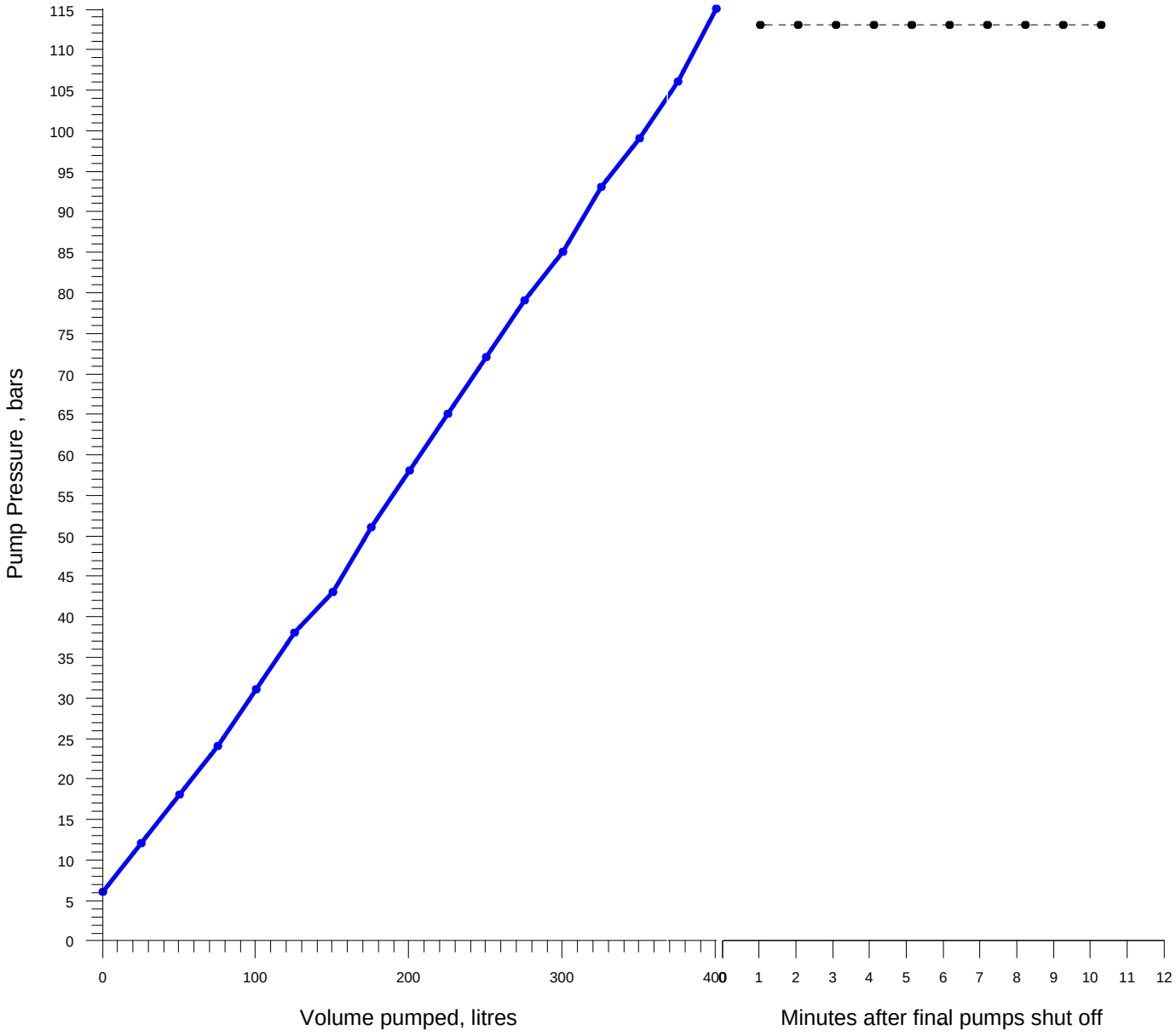
End of Well Report **35/11-13**	Fig.: **2**	LOT at 20" shoe	**HYDRO**

Well	**35/11-13**	Test type :	**FIT**	Test date :	2005-04-06
Rig DEEPSEA TRYM	Airgap (m) 25,00	Water depth (m)	361,68	CsgOd" 13,375	Hole angle (deg) 1
Csg Shoe (mMD/mTVD)	1751,30 / 1751,05	OH depth (mMD/mTVD)	1760,00 / 1759,75	Lithology :	
Dens1,30	API WL(ml/30min) 3,80	PV (cp)	7,00	YP (Pa) 16,00	Gel0/Gel10 3,00 / 6,00
Pump Rate (l/min)	50,00	Vol pumped (l.)	500,00	Vol bled back (l.)	200,00
Leakoff Pressure (bar)	60,00	Max pressure (bar)	60,00	Propagation press (bar)	
Test result (sg EMD)	1,64	Shut-in pressure	60,00		
Comments					



End of Well Report **35/11-13**	Fig.: **3**	FIT at 13 3/8" shoe	**HYDRO**

Well	**35/11-13**	Test type :	**FIT**	Test date :	2005-04-23
Rig DEEPSEA TRYM	Airgap (m) 25,00	Water depth (m)	361,68	CsgOd" 9,625	Hole angle (deg) 1
Csg Shoe (mMD/mTVD)	2924,39 / 2924,06	OH depth (mMD/mTVD)	2935,00 / 2934,67	Lithology :	Clst
Dens1,30	API WL(ml/30min) 3,40	PV (cp)	13,00	YP (Pa) 9,20	Gel0/Gel10 3,50 / 11,00
Pump Rate (l/min)	50,00	Vol pumped (l.)	400,00	Vol bled back (l.)	400,00
Leakoff Pressure (bar)	115,00	Max pressure (bar)	115,00	Propagation press (bar)	
Test result (sg EMD)	1,70	Shut-in pressure	113,00		
Comments					



End of Well Report **35/11-13**	Fig.: **4**	FIT at 9 5/8" shoe	**HYDRO**

2005-11-01

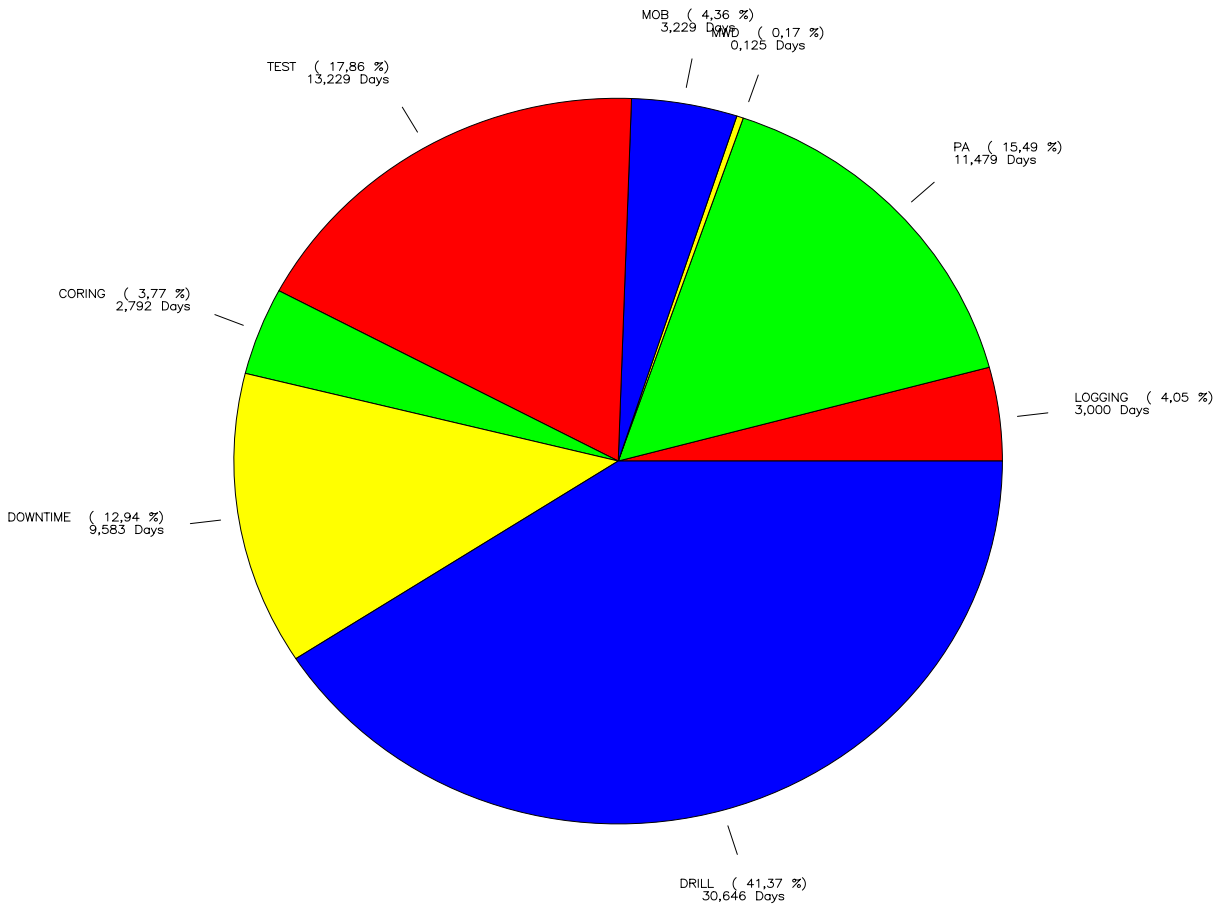
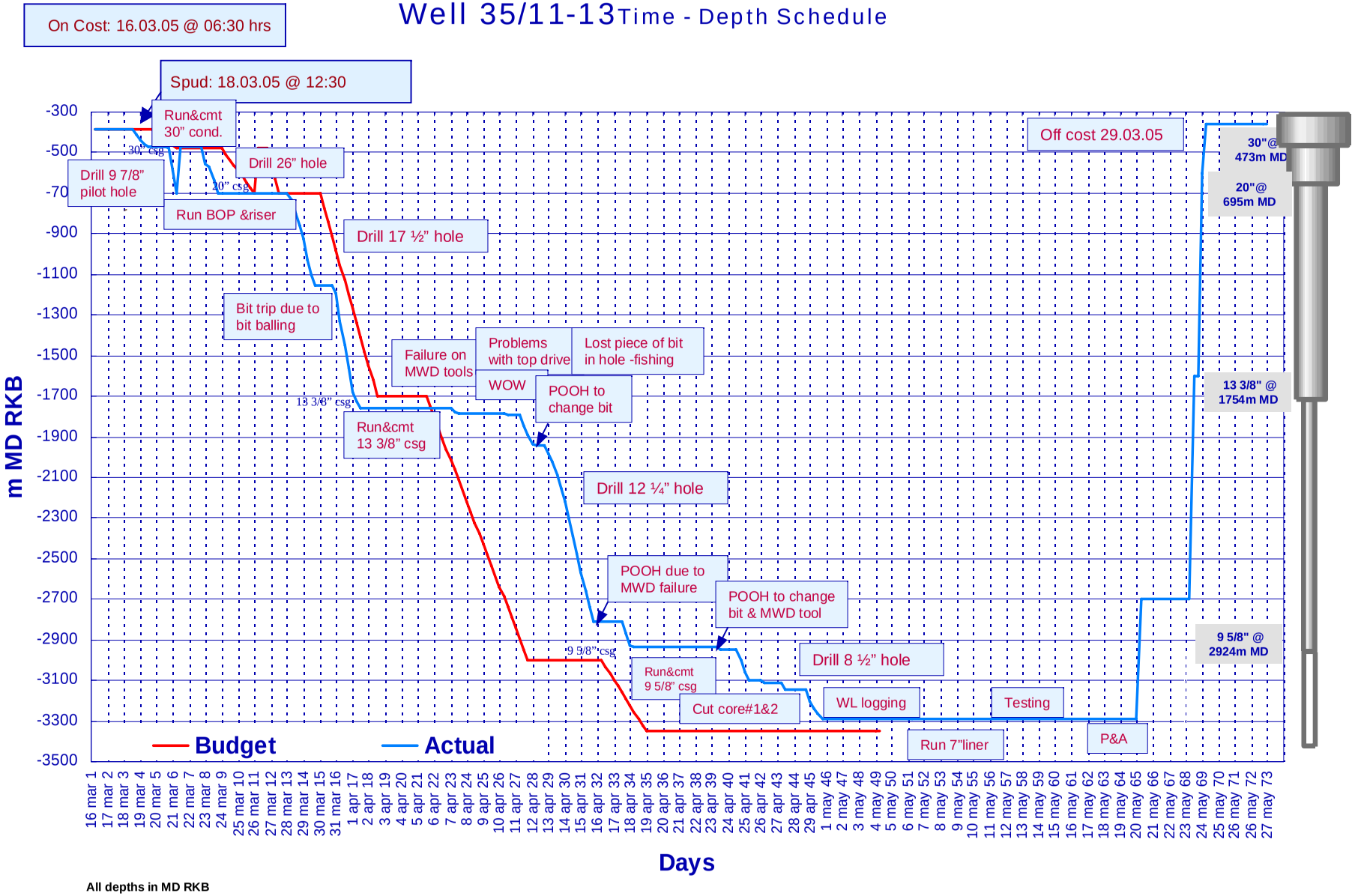
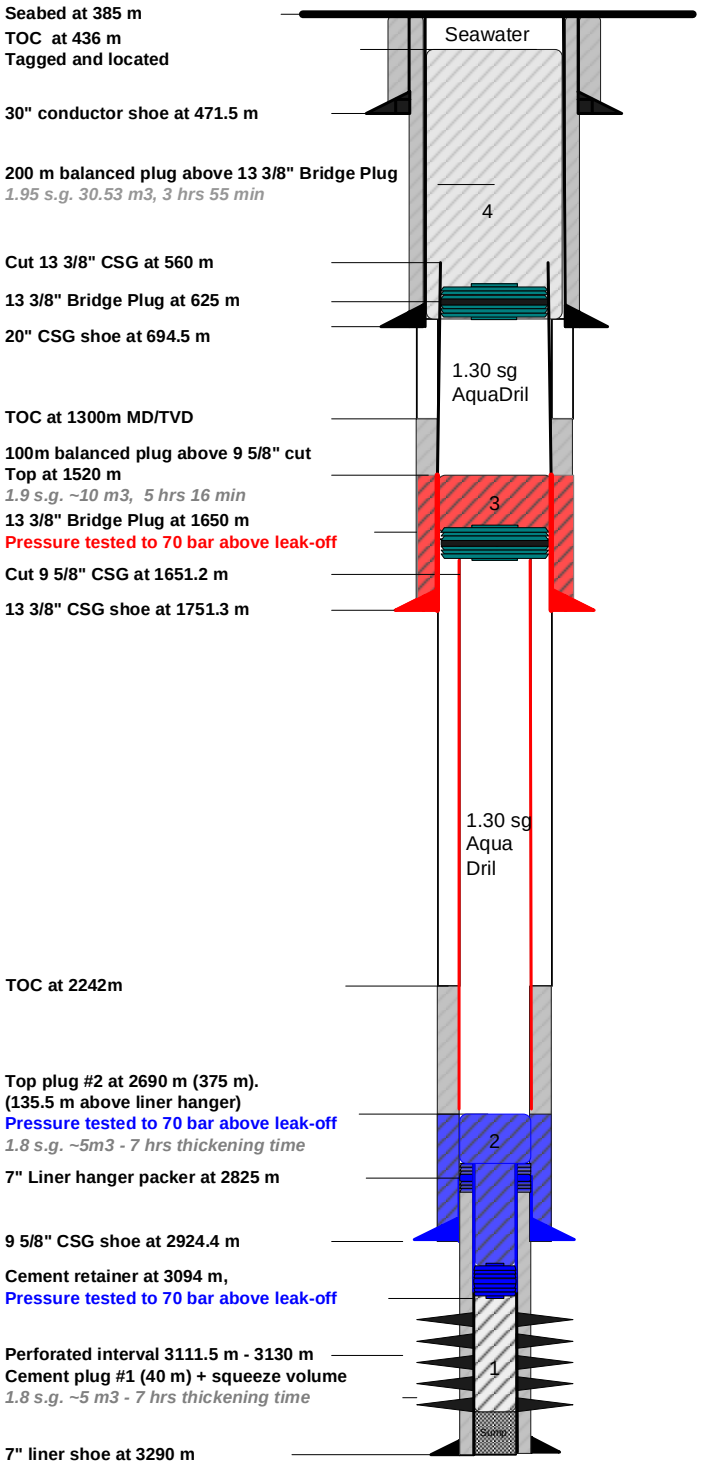


Figure 5		Time Distribution 35/11-13	**HYDRO**

Figure 6
Well 35/11-13 Time - Depth Schedule

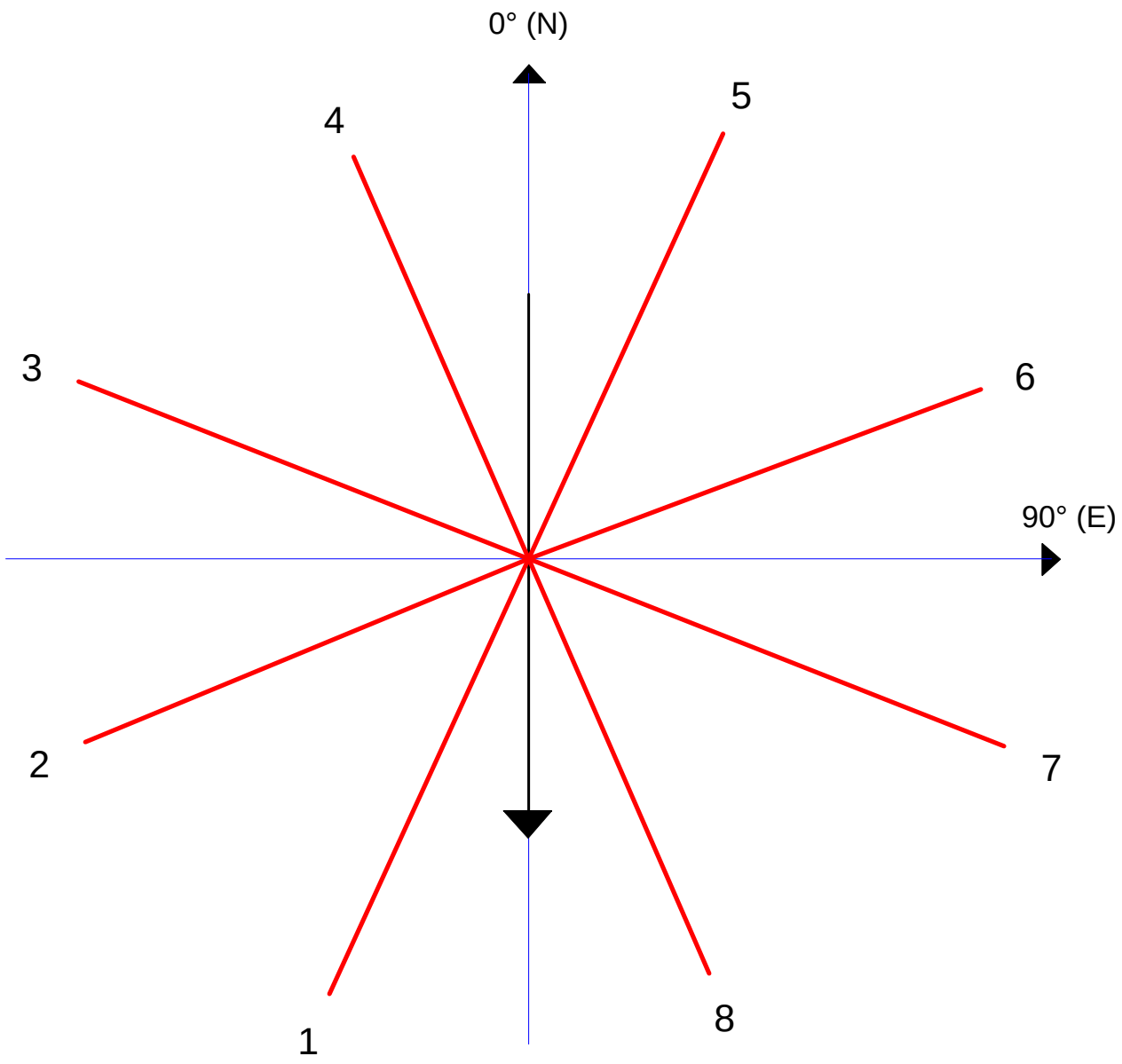


All depths in MD RKB



	DESCRIPTION OF BARRIER ELEMENTS	MONITORING OF BARRIER ELEMENTS
BARRIER # 1	Production casing and cement Plug in liner above perforations Liner between liner hanger and plugs Liner hanger seals Cement plug on top of mechanical plug Cemented production casing shoe	N/A after initial acceptance

	DESCRIPTION OF BARRIER ELEMENTS	MONITORING OF BARRIER ELEMENTS
BARRIER # 2	Intermediate casing and cement Cement plug in intermediate casing	N/A after initial acceptance



RIGHEADING 180 DEG.

ANCHOR NO	DIRECTION (DEG.)	LENGTH (m)
1	203	1868
2	246	1781
3	293	1794
4	338	1714
5	23	1826
6	68	1789
7	113	1895
8	158	1768

Figure 8		RIG ANCHORS DEEPSEA TRYM 35/11-13	**HYDRO**

WELL TEST OPERATIONS REPORT

WELL 35/11-13

LICENCE PL090

Partners:

Norsk Hydro Production ASA (Operator)	**25%**
ExxonMobil	**25 %**
Statoil A/S	**20%**
Idemitsu	**15%**
Gaz de France	**15%**

Distribution

Qty	ADDRESSES	NAME	PLACE
1	Project Manager	Terje Solli	Kjørbo
1	Formation Evaluation, Sandsli	Jan-Henrik Johnsen	Sandsli
1	Testing, Sandsli	Helge Fimreite	Sandsli
1	Central Archive	Documentum	Sandsli
1	Well Archive	Projectplace.com	Sandsli
1	Drilling Superintendent	Svein Dybdahl	Sandsli
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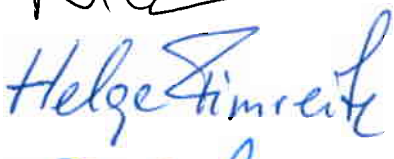
1	Idemitsu	Masanori Okamoto masanori.okamoto@idemitsu.no	
1	Gaz de France	Mats Ris mats.ris@gazdefrance.no	
1	NPD	Jan Stenløkk jan.stenlokk@npd.no	

Approved for distribution by:

Prepared by Well Test Engineer	Nick Jensen-Visser	Sign.	
Verified by Testing Manager	Helge Fimreite	Sign.	
Approved by Drilling Superintendent	Svein Dybdahl	Sign.	

Executive Summary

The Astero exploration well was drilled and tested using the Deepsea Trym Semi submersible rig. The well was spudded on 18 March 2005(12:30) and reached TD of 3292 m MDRT on 29 April 2005(17:30). After running 7" liner, the well was tested during the period 7 May to 16 May 2005.

A Drill Stem Test (DST) was undertaken in the oil-bearing zone, the Oxfordian Formation sands. The well was tested using conventional DST tools with a retrievable packer run on 3 ½" tubing, a 4-½" landing string and perforated underbalance using tubing conveyed perforating guns.

The interval for the Drill Stem Test was perforated from 3111.5 to 3130 m MDRKB with an estimated 50 bar underbalance, using 4 5/8" TCP guns.

After good indication at surface of the guns firing, the well was then opened for the initial flow period. The well was beaned up fairly quickly to a 58/64" adjustable choke and left on this choke size for approximately 30 minutes to establish representative flow rates. The base oil (used as the underbalance fluid) was flared off and the interface between the base oil and the test / packer fluid was diverted to the Surge tank / calibration tank. The total flowing time was 2 hrs and 15 minutes. This was followed by 9-hour build up using the LPR-N downhole tester valve.

The well was then opened up for the main flow period of 24 hours as directed by the reservoir department. A choke size of 32/64" fixed was selected for the main flow period achieving average flow rates of 500-m^3/d oil and 78,000-m^3/d of gas maintaining critical flow (A total of 2.7 m^3 produced water was recorded). A maximum of 2.5 ppm H_2S and 6 % CO_2 was measured during this period.

The well was shut in downhole for a 36-hour build up period followed by a mini frac operation. (See attachment for mini frac data and plots)

After evaluation of the flowing data of the Main flow period it was not believed that the bottom hole samples (BHS) would give representative samples and the BHS run was therefore cancelled.

Testing operations were trouble-free. Total test duration was 12.9 days (from start of 7" liner operations to end of laying down guns). No sand was produced during the testing phase.

The production test of well 35/11-13 was successful and all test objectives were met and was completed within budget. The well was permanently plugged and abandoned.

This report covers testing operations.

WELL TEST MAIN RESULTS

PERIOD	DATE / TIME		DURATION	WHP	WHT	BHP	BHT	OIL RATE	GAS RATE	GOR	OIL API	GAS SG	H2S	CO2	BSW
CHOKE /64"	DD/MM/YY Hr:Min		Hr:min	bar	°C	bar	°C	m3/d	m3/d	m3/m3	@ °C	Air = 1	ppm	%	%
Initial Flow Period															
Final flow on 58/64" Adjustable Choke.	**From :**	11-mai-05 10:14													
	To:	11-mai-05 12:30	02:16	66	13	285,0	114,0	786,9	-	-	0.842 @ 20.6	0,670	0	5	1
Initial Build Up Period															
(Shut In downhole at LPR-N)	**From :**	11-mai-05 12:30													
	To:	11-mai-05 21:30	09:00	-	-	312,2	112,0	-	-	-	-	-	-	-	-
Clean up / Main Flow Period						Final		Final	Final	Final					
Flow on 32/64" Fixed Choke.	**From :**	11-mai-05 21:31													
	To:	12-mai-05 21:41	24:10:00	94	21	286,5	117,0	498,7	79260,0	158,9	0.851 @ 20.6	0,730	2,2	5,2	0
Main Build Up Period															
(Shut In downhole at LPR-N)	**From :**	12-mai-05 21:41													
	To:	14-mai-05 09:41	36:00:00	-	-	308,0	113,0	-	-	-	-	-	-	-	-

NOTES :

The following values are used in the calculations:

MF	0,927
CO_2	5,20 %
H_2S	2.2 ppm
Gas gravity	0.73 SG (air = 0)
Oil density	0.851 g/cc (@ 15 deg C)

Table of Contents

1 Introduction

Well 35/11-13 is an exploration well and will test the Astero prospect in PL090/PL248. Astero is located north of the Fram Vest field, in northern part of the 35/11-block .The target of the well was the Middle Oxfordian Turbidite sand derived from the Sognefjord delta in the East.

The primary objectives were as follows:

- Test the presence- and type of hydrocarbons in the Oxfordian Turbidites in the Astero prospect.
- Test the Astero prospect within structural closure, close to the top of the structure.
- Test an area of the Astero prospect with thick J52 reservoir sand thickness.
- Test the Astero prospect where there is good HC indication
- Test the stratigraphic trap component of the Astero prospect
- Leave acceptable up dip volumes

The well was tested using conventional DST tools with a retrievable packer run on 3 ½" tubing, 4 ½" landing string including SSTT and two SSLV's (water depth of 362 m MD) and perforated underbalance using tubing conveyed perforating guns (Gun type used - Millennium HMX 12spf $30^o/150^o$ Phasing). Four memory gauges were run, all ported to read tubing pressure / temperature and placed below the tester valve.

The data acquired during the production test, and associated interpretation, can be found in the Formation Evaluation Report for well 35/11-13.

Details of the operational procedures and results of the test may be found in the reference documents used for this report, namely:

- Well Testing Report submitted by Power Well Services
- MDT Data
- Astero Well Testing program
- Well Prognosis and Proposal.

This report covers well testing operations only.

2 MDT Survey

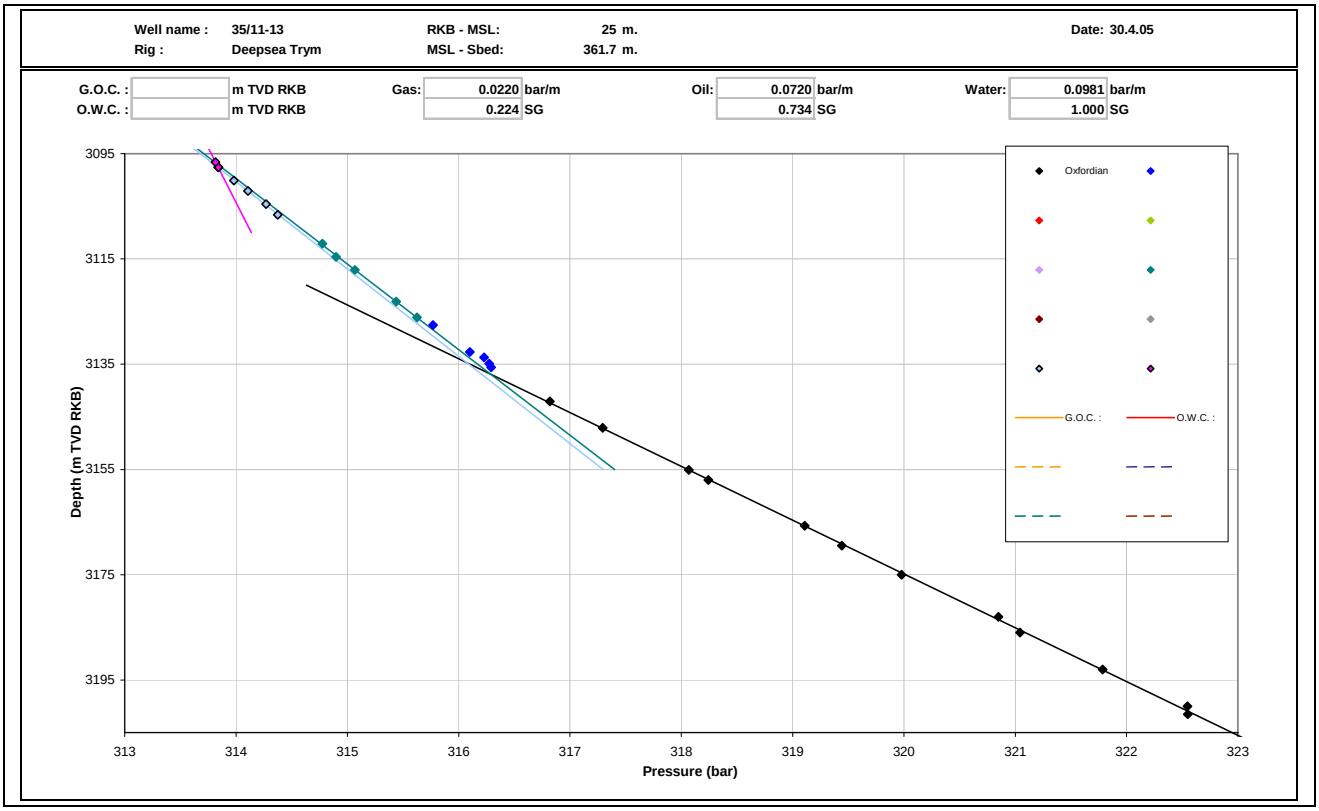
An MDT survey was undertaken. Pre-tests were taken in the J sands.

Figure 2.1 shows the pressure plot for the Oxfordian Formation with a good fit to an oil gradient of 0.62 bar/m, indicating the presence of typical Fram Vest crude. Initial reservoir pressure at a datum of 3112.5 m MDRKB (3112.1 m TVDRKB) was 314.8 bar.

OWC was indicated at 3137 m MDRKB with the GOC coming in at 3097.5 m MDRKB

Figure 2.1 – Astero 35/11-13 MDT Data

Figure 2.1



3 Production Test (3111.5 – 3130.0 m MDRKB)

A 9 5/8" 54.5 # L-80 production casing was set at 2924.4 m MDRKB and a 8 ½"hole was drilled to 3292 m MDRKB. A 7" liner was run and set one meter off TD with the TOL at 2825 m MD. A full BOP test was conducted prior to testing operations.

A clean out string was run with a Flat bottom mill and 7" Scraper in the assembly. The packer setting area of 3080 to 3095 m MDRKB was scraped several times. Continued to run in hole and tagged possible cement at 3200 m MD with 5 tons. Prior to circulating soap pill circulated 1.5 times bottoms up. Pumped 14-m3 soap pill ahead of the 1.1 SG NaCl brine packer fluid. Circulated on times bottoms up from when the end of the wash train hit surface.

A 2" ball was dropped to activate the circulation valve in the clean out string and Jetted the BOP area. The riser was circulated out to clean as well.

A CBL/VDL/CET/GR/CCL was run and logging was performed over the area 3200 m MDRKB (where tool stood up) to 2811 m MDRKB. Log indicated a good cement bond.

A dummy run to confirm BOP space out was performed prior to running the TCP guns, Downhole tools, test tubing and landing string.

Note:

The 4 ½" tubing was used on the dummy run and then racked back in stands.

Annulus access was achieved through the BOP choke kill line.

3.1 Operations Summary

Operations (Picking up TCP guns) commenced at 08:15 on May 08. The detailed Sequence of Events (as per PWS well test report) is shown in Appendix B. Test string configurations are included in Appendix E. Detailed test data are tabulated in Appendix C.

The test string was run without problems, included the dummy fluted hanger run and space out correlation run. Ran in hole with the landing string consisting of a SSTT, 2 SSLV's and 4 ½" tubing and landed the test string in the wellhead.. Made up the Surface Test Tree and surface lines. (Kill and flow Coflexip's) and completed final pressure tests on surface lines and Test Tree. The packer was set at 03:55 on May 10. Almost three hours were spent trying to reposition the rig as the string was hanging up in the BOP stack. (Odfjell will issue a full report as to the problem.). A 39 bar packer integrity test was then performed with good results. The string was then displaced to base oil via the OMNI to create the required underbalance (10 m^3).

Pressured up to 350 bar to activate the TDF firing head and bled off to zero bar at the choke manifold. The guns fired at 10:13 May 11 with a good response at surface. (Choke manifold closed). The well was opened on a 16/64" adjustable choke and increased to a final choke setting of 58/64". 8 m^3 of base oil was flared off prior to diverting the flow to the Surge tank to "catch" the interface between the base oil and the brine.

On good indication of clean oil at the choke manifold the flow was then diverted back to the burners. The well was then shut in downhole for a build-up period. The total flowing period was 2 hours and 15 minutes followed by the 9 hours downhole shut in.

After an initial build up the well was opened on a 12/64" adjustable choke and gradually increased to a 36/64" adjustable choke with flow diverted via the steam heat exchanger and Test Separator and out to the burners.

The well was then diverted to a 32/64" fixed choke for the remainder of the main flow period. (BS&W at this stage was zero) An oil rate of around 500 m^3/d was achieved on a 32/64" fixed choke at a Test Separator GOR of around 160m^3/ m^3.

Four sets of pressurised separator samples were collected (PVT). One set was taken early in the flow period thru the separator and 3 more sets were taken towards the end of the flow period.

Figure 3.1 shows a plot of WHP and WHT versus time for the main flow period.

Figure 3.1 – Astero 35/11-13 Main Flow Period WHP and WHT vs. Time

Figure 3.1

Cleanup & Main Flow
11 May to 12 May 2005

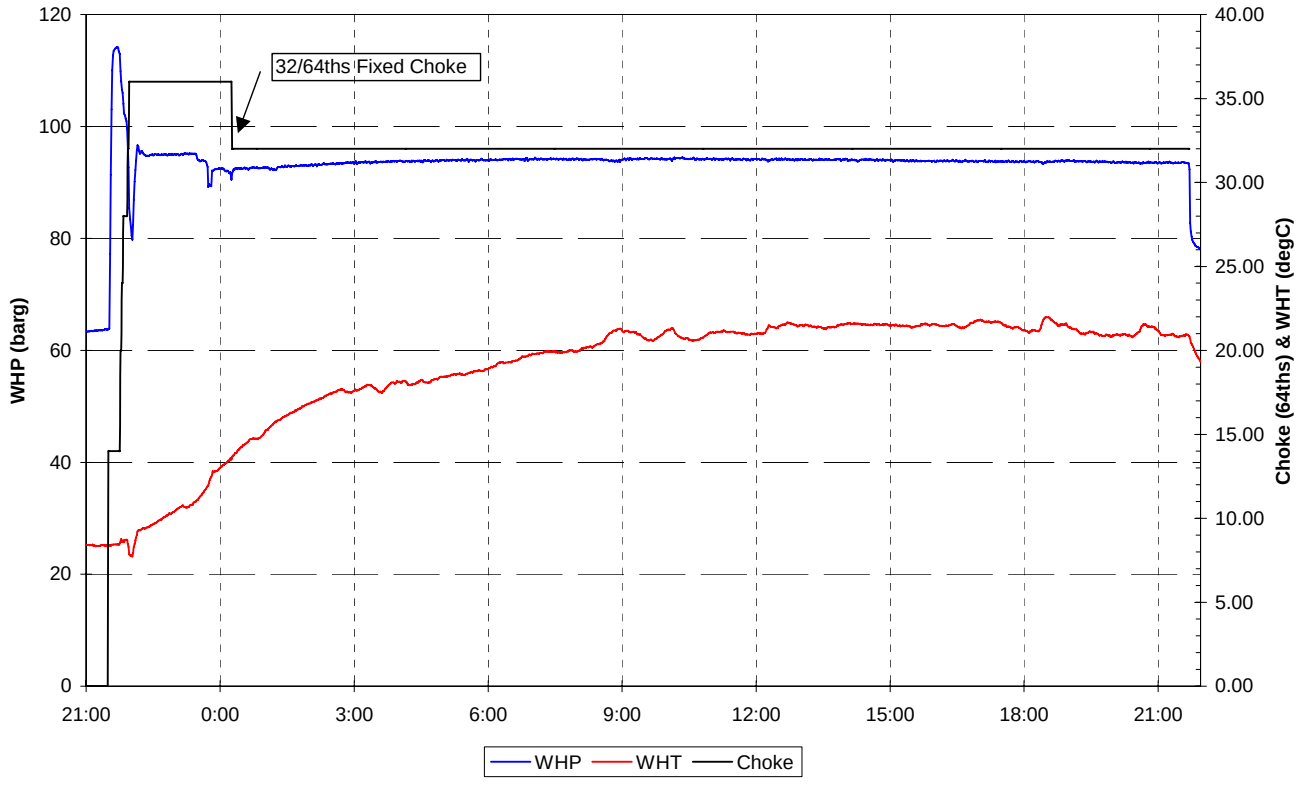


Figure 3.2 shows oil and gas rates and GOR versus time.

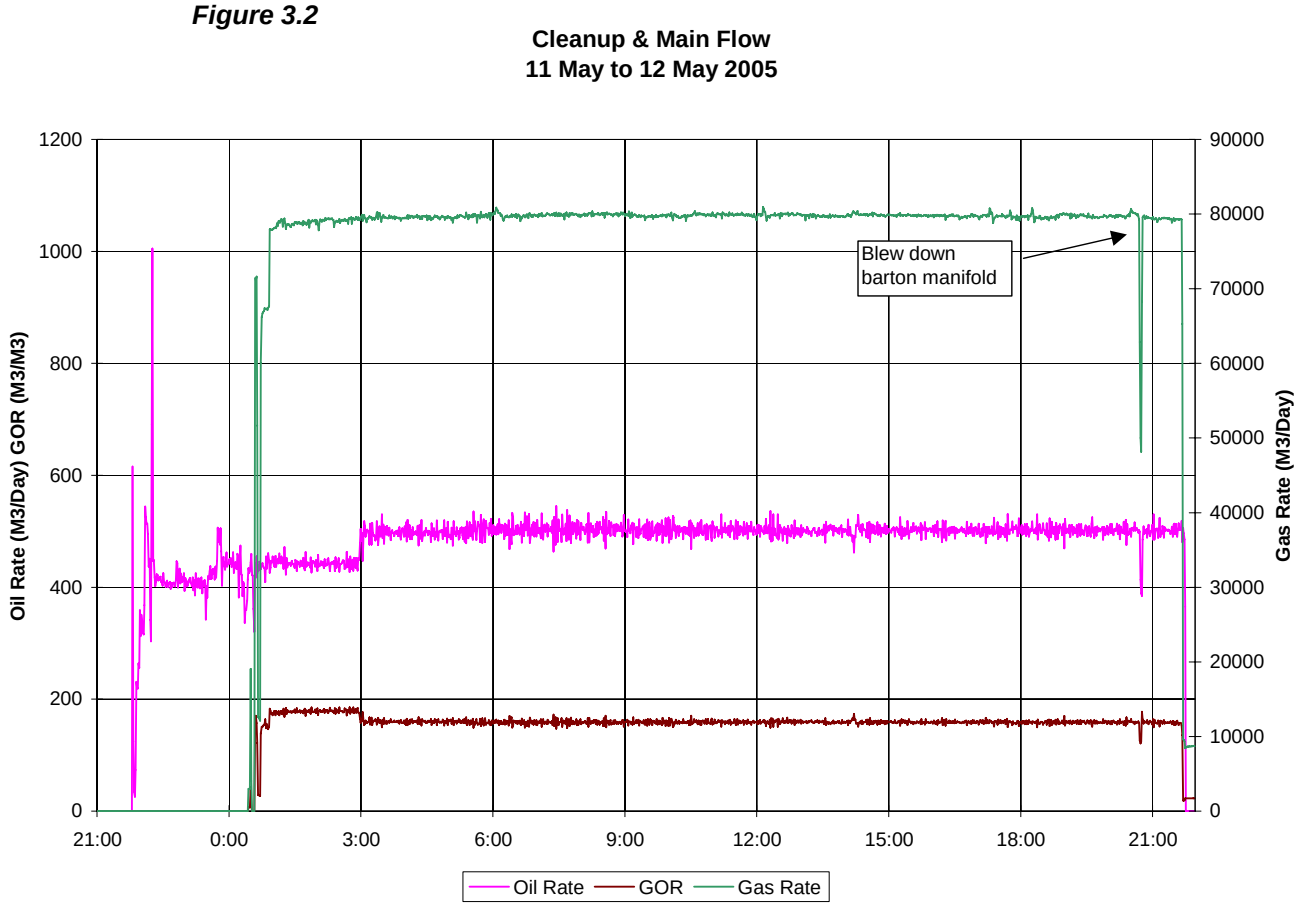
CO_2 concentration measured during the main flow was 5.2 mol%. H_2S was stable at 2 to 2.5 ppm. BS&W was zero. Oil gravity, corrected to 15°C, was 36° API.

The well was shut in at the tester valve for the main build-up at 21:41 on May 12.

Following the planned 36-hour shut in a mini frac was performed.

Figure 3.2 – Astero 35/11-13 Main Flow Period Qo, Qg and GOR vs. Time

Figure 3.2



The pressure was bled off via the testing choke manifold to gas flare and transferred the remaining base oil to the surge tank from the pits. The string was then filled with 1.1 SG brine. Pressured up the annulus to open the downhole tester valve and pumped 4.4 m3 brine and saw pressure increase as brine hit perforations. A mini-frac was completed with four cycles at 80 l/m, 100 l/m, 115 l/m and 360 l/m. Surface data plots can be seen in Appendix C.

At the end of the mini frac, the well was flow checked. (Open LPR-N). The string was pulled to attempt to unseat the packer(straight pull to unseat packer). This was problematic due to the string hanging up in the BOP riser connection. It was eventually corrected by repositioning the rig and closing the lower annular to assist in centring the SSTT (2 ton overpull). Observed good indication of pulling free, and unseated the packer by pulling back to position the SSTT above the BOP stack.

Note:

> The above problem occurred when attempting to set the packer as well. A full report is to be issued by Odfjell Drilling on completion of investigation.

Spaced out the string and closed the LPR-N on the 3 ½" joint just below the fluted hanger. Bull-headed the volume below the packer (2 m3) at 85 l/m with formation indicating breaking at 248 bar. Pumped a total of 3.6 m3 and bled back 900l. Lined up to circulate the long way. (17 m3). Flow checked the well for 15 minutes and continued to circulate on bottoms up. No gas was seen during this operation. The LPR-N was then opened and the riser contents were circulated out to 1.1 SG brine. (Total pumped was 115 m3). Maximum gas reading was 10.9%. Flow checked the well prior to pulling the landing string, test tubing, BHA and TCP guns to surface. Laid out the 4½" tubing in singles and landing string in assemblies. Continued pulling the 3 ½" test tubing laying out in singles. The four gauges were recovered, with only two gauges recording data. All shots had fired.

Note:

> A kick drill was performed while pulling out of hole with the rig crew.

Total duration of Production test was 5.9 days (From picking up TCP to unseating the packer).

The well was then permanently plugged and abandoned.

Figures 3.3 plot shows bottom hole pressure only and 3.4 shows plot of bottom hole pressure and temperature versus time. Just before the LPR-N (tester valve) was closed, final rate during the main flow was 498.7 m^3/d at flowing BHP of 286.5 bar. Estimated, final drawdown was around 25.7 bar (Initial BU pressure 312.2 bar), giving a productivity index of 19.4 m^3/d/bar.

Figure 3.3 – Astero 35/11-13 BHP vs. Time. Initial flow and BU / Main flow and Main BU

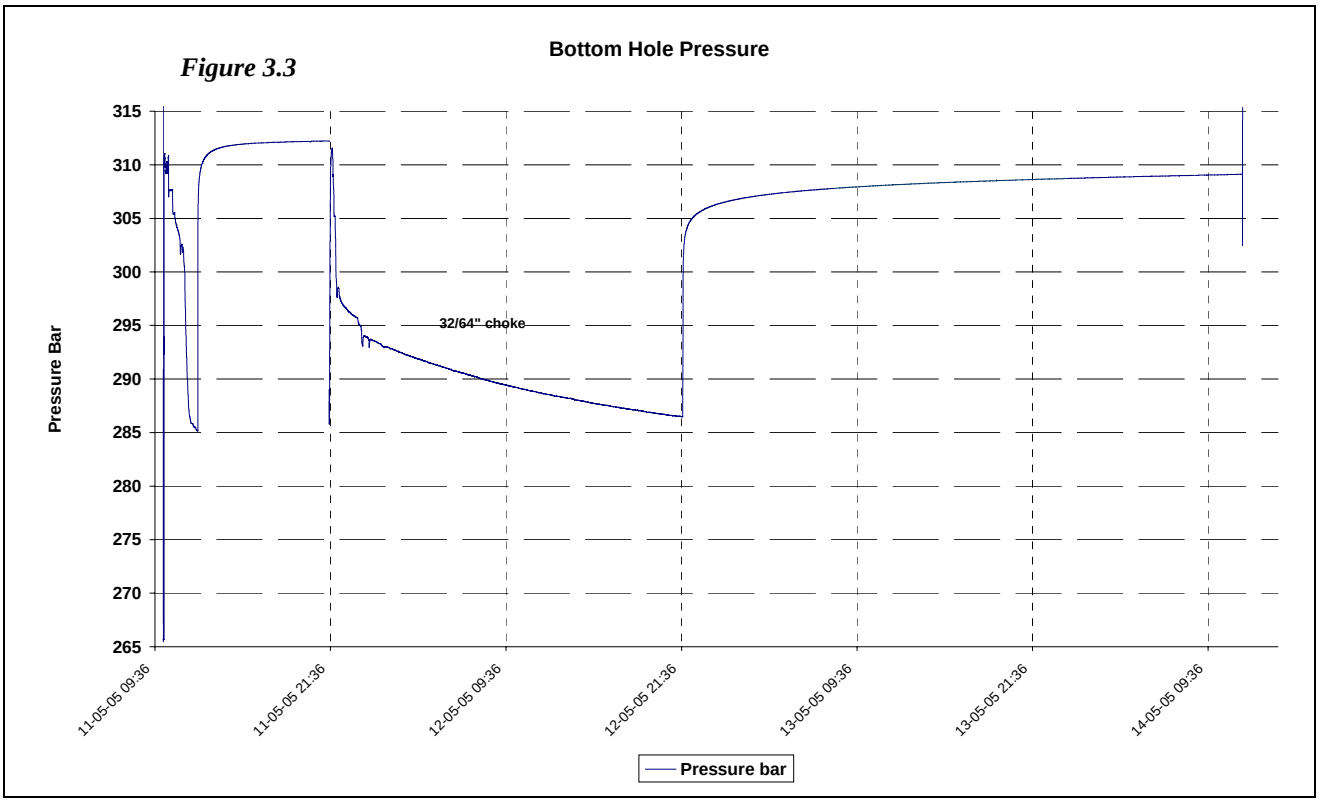


Figure 3.4 – Astero 35/11-13 BHP and Temperature vs. Time – Initial Flow and Build-up

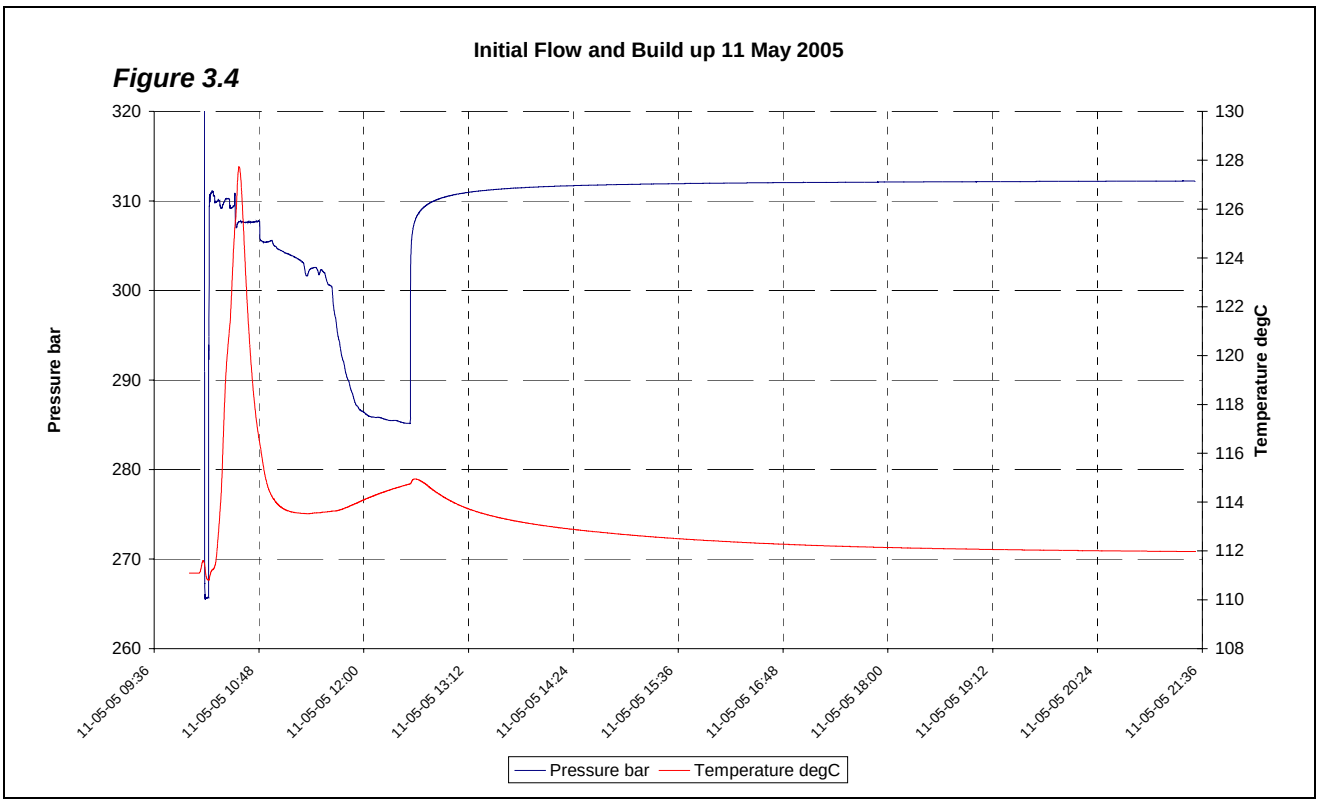
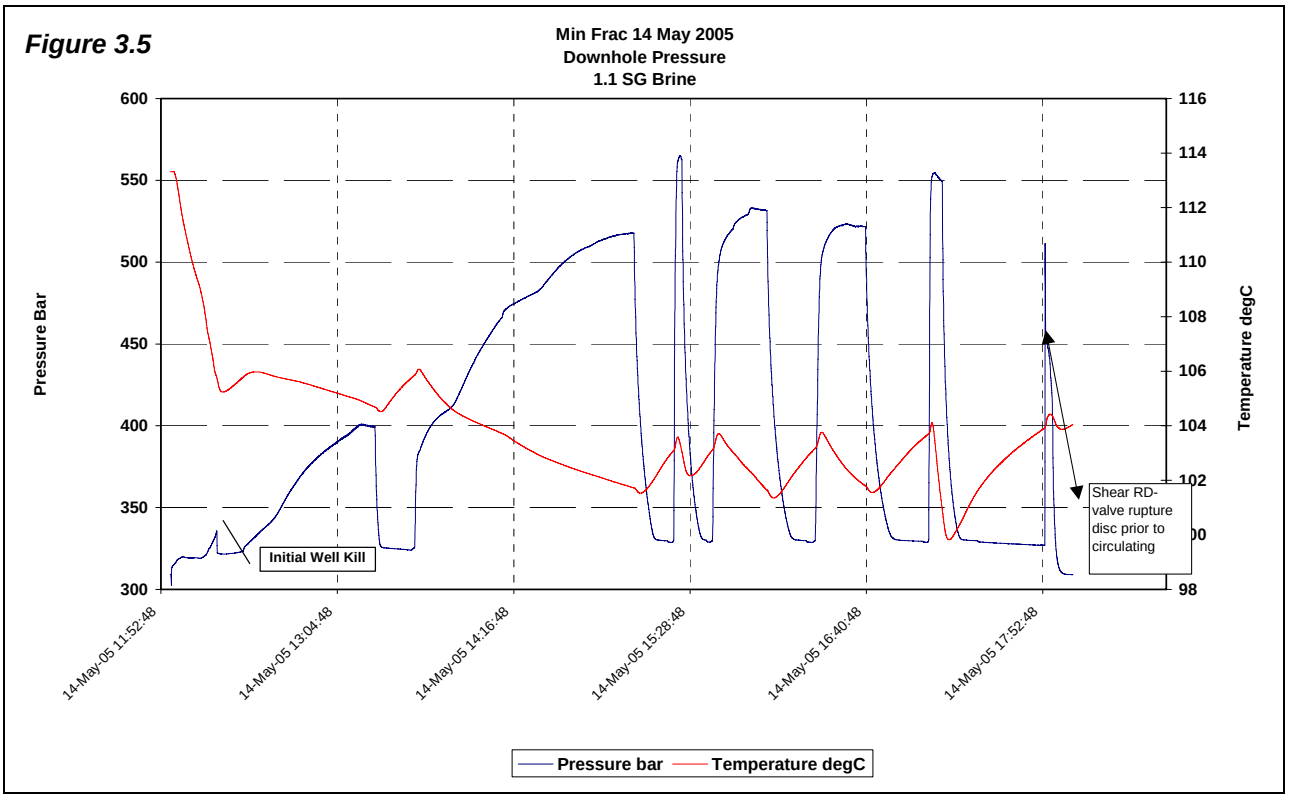


Figure 3.5 – Astero 35/11-13 BHP vs. Time – Well kill and Mini Frac



4 Service Company Evaluation

4.1 Odfjell Drilling

Odfjell personnel and equipment generally performed in a satisfactory manner. Senior staff on the rig ensured all pre test checks had been completed. Good co ordination between town office and the rig.

For future testing operations on the pre test rig visits a more detail visit should be made. Not only should the testing company note things for their equipment rig up, but notice should also be given to status of rig equipment that will be used for the test phase and included in the rig visit report. (e.g. for this test the rig flexible hoses to the booms had been overlooked by the initial rig visit team. One of the SDSV picked up on the state of these hoses on a rig walk around. They were sent into town for inspection and subsequently failed to pass the required test. Fixed pipe work was used to rig up from the rigs fixed pipe to the rig booms.)

4.2 PowerWell Service surface testing

The PWS testing surface equipment was in good condition and functioned as designed. Due to key personnel looking ahead and being pro active, also operating performance was very good.

4.3 Maritime Well Services Wireline

Maritime equipment was not used for the Test phase. Bottomhole sampling was cancelled. Even though they were not used they were well prepared equipment in good shape and very pro active.

Note:

MWS was used to set the cement retainer for the P&A operation and this went without hitch.

4.4 PowerWell Services Subsea.

The operation went without hitch, but personnel issues were present. PWS had sent out one senior operator and an inexperienced trainee. It was fortunate that things worked out on the rig, but had the potential for shutting down to allow the senior operator time to rest.

4.5 Halliburton DHT and TCP.

Both the TCP and the DHT operators performed very well. All equipment worked as planned. Initial equipment shortage was present during the late stages of mobilising for the rig, but things fell into place prior to the actual start of the job. (Some back up equipment arrived one day prior to RIH with primary equipment.).

A brief mention about lack of personnel, only one experienced DHT person offshore, with the second man being purely a “hot” body. No issues as he was replaced in time. This once again was in Hydro’s favour, but results could have been different if things had not gone smoothly.

4.6 Halliburton / PWS Data acquisition.

Surface data acquisition worked well. Insite system was set up and worked as planned. Issues regarding reporting format were due to the fact that no pre test format was specified and this caused confusion offshore for both the Data Acquisition Engineer and the Hydro Test Engineer. “Insite Anywhere” data transmission system had been set up for onshore monitoring by the PETEK group and therefore no emphasis was put on the data format requirements.

For future well tests it MUST be made clear and be understood by both parties as to what data is required and reporting format. Data is essentially what the test is about and this needs high priority.

It is also recommended that a back up computer system be taken offshore for ALL future jobs.

4.7 Schlumberger Wireline

Overall impression well performed jobs. The service was used for logging the cement job after running the 7” liner, and for GR/CCL depth correlation of perforation depth. No problems experienced on these jobs.

4.8 Petrotech surface sampling

Overall impression of service is good. Surface samples were collected as per program without hitch. Bottom hole sampling was cancelled so no evaluation or comment can be made on this matter.

4.9 Odfjell Well Services running tubing

Overall performance of equipment and personnel was good. No torque turn computer was used to record the make up of all the tubing. Casing tong was used.

Note:

> A torque turn computer MUST be used as standard. This is to monitor make up and break out to avoid re-cuts on tubing.

Selection of pup joints was not good enough. Ensure larger range and quantity of pup joints to be available. This caused the SSTT and SSLV’s from PWS being made up with short pups making handling on the rig difficult.

Appendix A

Problems and Recommendations

PWS Data Reporting

Reporting tended to be a bit on the slow side. No agreed reporting format had been agreed on prior to the test phase, this had been an oversight by Hydro. The main confusion came in due to the fact that the Insite Anywhere system was being used and the format was stipulated by the PETEK department. Different units were used for reporting the gas rates, Sm3/d for the Insite system and m3/d for the daily reports offshore. This had caused some initial confusion.

The reporting format presented offshore was of poor standard and when question about this it was indicated that this was the “standard” format given to clients offshore. This as stated before should be cleared up prior to testing activities to avoid unwanted conflicts offshore.

A power failure in the offshore lab cabin caused the computer to crash. On attempting to reboot the system it could not be accessed. No spare computer or data acquisition system was onboard and a back up had to be flown in prior to the job actually starting. It is highly recommended that a back up system is on board.

All data was collected without incident.

PWS Ocean Floor Package (OFP – SSTT, SSLV’s)

The package worked well during the test however a few problems getting a pressure test on the primary SSTT on deck (All assemblies were pressure tested prior to be shipped out to the Rig and witnessed by a Hydro Representative). A damaged thread on the handling pup was the cause of the leak. It was noticed that the back up SSTT was not made up in an assembly, it was required to break out the damaged pup on the critical path causing 1.5 hrs lost time. This is an unavoidable incident and in future all OFP to come out as assemblies. This should be standard practice. An RUI was raised and follow up from PWS had not been completed at the time of writing this report but needs to be closed out and be made part of a checklist.

Furthermore the handling pups on the Assemblies were to short, the minimum length of the handling pups should be 2.5 meters. RUI was raised and recommendations made to this effect. This should form part of an internal checklist for Hydro for pre Testing operations.

Halliburton Downhole Tools, TCP and Memory gauges

The only observation made was that no fill disk was present in the Fill disk subs run. This apparently is not common in Norway according to the TCP hand. It is highly recommended that a disc is inserted into the fill disk sub to help prevent debris falling on top of the firing head and possibly causing a miss run.

Once again this should be part of an internal checklist for pre job preparation. (This may seem like a bit of an overkill, but as testing operations are not frequent, checklists are a good way to capture these things.)

As good practice the downhole tester valve run should have a “lock open” feature. This should be a standard requirement.

Guns and downhole tools all performed as designed and no problems encountered.

With respect to the downhole memory gauges, 2 SPARTEK and 2 Metrolog quartz gauges were run. Only the SPARTEK gauges worked. It is strongly recommended not to run Metrolog quartz gauges as they have a poor track record and have limited memory capacity compared to a lot of gauges on the market today.

Note:

> At the time of writing this report no feedback from Halliburton had as such been issued to Hydro as to the problem with the two Metrolog gauges.

Odfjell Well Services

It is essential for tubing to be cleaned, this should DEFINATELY be done without question. No assumptions should be made here.

It is also recommended that tubing get pre strapped prior to sending out. Tubing to come out pre doped with the specified running dope. This would save a lot of time offshore with respect to cleaning and strapping.

All specification sheets for tubing type (weight, thread etc) must be supplied to Hydro prior to load out. (This should be included in the pre job checklist)

Torque turn unit to be used as standard practice.

Hydro / Mongstad supply base

Better tracking of equipment is essential. Items were not loaded on or “lost”. Fortunately no downtime occurred. A combinations of issues contributed to this being;

1. Not detailed enough checklist / load out lists from the vendors.
2. Infrequency of testing activities
3. A lot of equipment from different vendors.

The Hydro representatives are to insist on detailed shipping lists to avoid confusion as equipment. Vendors also to send shipping details, not only with shipping agent, but also to the Hydro representative for tracking purposes.

General Comments

Testing operations were efficient with zero pollution to the sea.

It is recommended that the same test procedures be adopted for future testing of oil zones with the following pointers to be considered:

1. As a standard the downhole tester valve should have the “lock open” facility.
2. A check valve SHOULD be standard item on the kill valve on the Testing Flowhead.
3. Use clear brines / seawater for testing fluid.
4. Use of base oil as cushion for underbalance perforating. (Safer than diesel, burns better, less restriction as to handling)
5. Thermal tubing to be used as part of the landing string in winter months in “shallow” water (300 to 500 meters).
6. Flowline Coflexip hoses should be connected during the phase one installation of surface package equipment if operationally possible.
7. Tubing to pre strapped.
8. Additional time should be allocated for “planned” maintenance during the test phase.
9. Additional time should be allocated for flushing lines at the end of the test.
10. Gauge selection to be carefully considered and the use of an additional gauge carrier below the packer should be a consideration as well.
11. Hydro’s general Testing guidelines in document Drilling and Well Activities, Testing Requirements and Requirements (ODUN-SB10-P01-H03)`should be reviewed as testing equipment and philosophies have changed over the last years.

Appendix B

Sequence of Events

Customer Hydro
Start Date 11.05.05

HYDRO

PowerWell SERVICES

Field Astero
Well no. 35/11-13

Date	Time	Sequence of Events
08-mai-05	01:30:00	**********
08-mai-05	01:30:00	**** ASTERO 35/11-13 ****
08-mai-05	01:30:00	**********
08-mai-05	01:30:00	Start Spartek gauge 20397
08-mai-05	01:35:00	Start Spartek gauge 20398
08-mai-05	02:00:00	Start Metrolog gauge 7401
08-mai-05	02:04:00	Start Metrolog gauge 7443
08-mai-05	03:00:00	Installed gauges into gauge carrier.
08-mai-05	03:45:00	Pressure tested gauge carrier to 370 bar.
08-mai-05	08:15:00	Start to RIH with TCP guns
08-mai-05	08:50:00	Perform Toolbox talk prior to RIH with BHA
08-mai-05	09:30:00	Change elevator. Lift X-overs to rig floor
08-mai-05	09:46:00	Lift Champ Packer assembly to rig floor
08-mai-05	10:10:00	RIH with Champ packer assembly
08-mai-05	10:30:00	RIH with LPR-N and gauge carrier
08-mai-05	10:57:00	Make up 1st joint of drill collar
08-mai-05	11:10:00	RIH with OMNI, RD and RA-sub
08-mai-05	11:30:00	Start to RIH with 18 joints of 4 3/4"" drill collars
08-mai-05	13:30:00	Pick up Slip joint # 1 and 2
08-mai-05	14:10:00	Finish BHA. BHA weight = 13 tons
08-mai-05	15:04:00	Make up 1st joint of tubing
08-mai-05	15:54:00	Start to pressure test BHA against TST-valve to 70/370 bar for 5/15 min
08-mai-05	16:15:00	Good test. Bleed off pressure
08-mai-05	16:20:00	Continue RIH
09-mai-05	07:27:00	Pressure up line to 17 Bar to check line-up to annulus
09-mai-05	07:30:00	Line-up OK
09-mai-05	07:33:00	Start to reverse circulate with 158 l/min and 3 bar
09-mai-05	07:41:00	Increase circulating rate to 400 l/min
09-mai-05	08:04:00	Finish reverse circulating. Total pumped 11,3 m3 (704 strokes). Open MPR
09-mai-05	08:10:00	Dummy hanger to drill floor
09-mai-05	08:25:00	Start to pressure test tubing to 370 bar/15 min. Pump 1150 litres
09-mai-05	08:43:00	Good test. Bleed off pressure
09-mai-05	09:12:00	Stabbed dummy hanger onto tubing
09-mai-05	09:40:00	Start RIH with dummy hanger
09-mai-05	19:00:00	Start POOH with dummy hanger
09-mai-05	19:56:00	Start calibration check of separator differential recorders
09-mai-05	21:00:00	Finish calibration check
09-mai-05	21:30:00	Hanger at surface
09-mai-05	21:58:00	Broke out dummy hanger
09-mai-05	22:05:00	Laid out dummy hanger
10-mai-05	00:04:00	Lifted subsea reel to drill floor
10-mai-05	00:25:00	Lifted SSTT to drill floor
10-mai-05	00:51:00	Stabbed SSTT onto tubing
10-mai-05	01:10:00	Restarted scan lab with purge system activated
10-mai-05	01:30:00	Problem with power supply in lab. Rig electrician working on problem
10-mai-05	01:55:00	SSTT through rotary table
10-mai-05	02:30:00	Start function testing latch
10-mai-05	02:41:00	Finish function testing latch
10-mai-05	02:45:00	Start test on balance line
10-mai-05	02:59:00	Good test. Start test on control line
10-mai-05	03:10:00	Good test
10-mai-05	04:35:00	Start pressure testing string to 370 bar. Function tested chemical injection line on SSTT
10-mai-05	04:58:00	Inflow tested check valve on chemical injection line
10-mai-05	05:00:00	Closed SSTT
10-mai-05	05:02:00	Good test on string. Bled down pressure to 50 bar to inflow test SSTT
10-mai-05	05:11:00	Equalize pressure across SSTT to 370 bar and opened SSTT
10-mai-05	05:20:00	Continue RIH with landing string
10-mai-05	05:30:00	Problem with power supply fixed
10-mai-05	08:53:00	Pick up lower lubricator valve
10-mai-05	10:12:00	Pick up upper lubricator valve
10-mai-05	12:08:00	Pressure test lock line LSSLV to 275 bar
10-mai-05	12:14:00	Good test. Pressure test control line to 206 bar
10-mai-05	12:19:00	Good test. Pressure test lock line on USSLV to 275 bar
10-mai-05	12:27:00	Good test. Open USSLV. Pressure test string to 310 bar
10-mai-05	12:43:00	Good test. Close LSSLV. Inflow test LSSLV
10-mai-05	12:51:00	Good test. Equalize pressure across LSSLV to 385 bar. Release lock line pressure
10-mai-05	12:53:00	Close USSLV. Start inflow test on USSLV to 30 bar
10-mai-05	13:02:00	Good test.

Processed: 2005-06-06 Sequence Of Events Page: 1

Customer Hydro
Start Date 11.05.05

HYDRO

PowerWell SERVICES

Field Astero
Well no. 35/11-13

Date	Time	Sequence of Events
10-mai-05	13:20:00	Pressure test chemical injection on LSSLV to 370 bar
10-mai-05	13:25:00	Good test. Bleed down pressure to 50 bar to inflow test check valve on chemical injection line
10-mai-05	13:29:00	Good test
10-mai-05	13:30:00	Bleed off pressure on string. Closed USSLV
10-mai-05	13:26:00	Start pressure USSLV to 300 bar from above.
10-mai-05	13:45:00	Good test. Release lock line pressure
10-mai-05	13:47:00	USSLV open. Rig down test line
10-mai-05	13:54:00	Run last joint of landing string
10-mai-05	14:00:00	Start rigging up flow head
10-mai-05	19:00:00	Start rigging up coflexip hoses to flow head
10-mai-05	20:30:00	Function test flow head wing valves and surface panels
10-mai-05	21:00:00	Start flushing surface lines
10-mai-05	21:05:00	Finish flushing
10-mai-05	21:07:00	Close kill valve
10-mai-05	21:14:00	Start pressure testing kill valve
10-mai-05	21:23:00	Good test
10-mai-05	21:28:00	Open kill valve
10-mai-05	21:30:00	Start pressure testing against choke, master and swab valves
10-mai-05	21:55:00	Good test
10-mai-05	22:00:00	Start pressure testing flow wing valve
10-mai-05	22:50:00	Close SSV
10-mai-05	23:05:00	Open flow wing and master valves on flow head
10-mai-05	23:06:00	Start pressure testing USSLV and SSV
10-mai-05	23:45:00	Good test. Close master valve. Bleed down pressure to 70 bar to inflow test master valve
11-mai-05	00:05:00	Good test. Open master valve. Close kill valve. Start pressure testing kill valve
11-mai-05	00:10:00	Good test. Bleed down pressure to 70 bar to inflow test kill valve
11-mai-05	00:25:00	Good test
11-mai-05	00:27:00	Open kill valve. Bleed off pressure
11-mai-05	00:32:00	Open SSV. Close choke
11-mai-05	01:08:00	Open choke
11-mai-05	01:25:00	Problem setting packer. Suspect SSTT hanging up in Hydril.
11-mai-05	03:51:00	Start setting packer
11-mai-05	03:55:00	Packer set at 3090m
11-mai-05	04:21:00	Close choke
11-mai-05	04:25:00	Start pressure testing annulus to 39 bar
11-mai-05	04:47:00	Good test. Bleed off pressure
11-mai-05	05:15:00	Function test PSD1 (button 3) on drill floor
11-mai-05	05:50:00	Start cycling OMNI to circulating position
11-mai-05	06:15:00	OMNI in circulating position
11-mai-05	06:22:00	Close wing valve on flow head
11-mai-05	06:25:00	Start circulating tubing to base oil
11-mai-05	07:03:00	Finish circulating
11-mai-05	07:05:00	Close kill wing valve
11-mai-05	07:25:00	Open flow wing valve on flow head
11-mai-05	07:30:00	Perform toolbox talk prior to perforating the well
11-mai-05	07:46:00	Start cycling OMNI to welltest position
11-mai-05	08:08:00	Start steam to heater
11-mai-05	08:13:00	Put compressors on load to port burner. Lit pilots and jets on burner
11-mai-05	08:24:00	Equalised pressure across kill wing valve to 110 bar
11-mai-05	08:27:00	Open kill wing valve
11-mai-05	08:28:00	Function test PSD1 (button 2) at choke manifold. Wing valve close very slowly
11-mai-05	08:38:00	Function test PSD1 (button 2) at choke manifold. Wing valve close very slowly
11-mai-05	08:40:00	Close kill valve
11-mai-05	08:41:00	Change out surface panel on rig floor
11-mai-05	09:00:00	Open kill valve
11-mai-05	09:05:00	Function test PSD1 (button 2) at choke manifold. Good test
11-mai-05	09:13:00	Function test PSD1 (button 3) on drill floor
11-mai-05	09:16:00	Function test PSD1 (button 5) at company mans office
11-mai-05	09:21:00	Function test PSD1 (button 4) at test separator
11-mai-05	09:27:00	Function test PSD1 in scan lab
11-mai-05	09:30:00	Wait on helicopter before perforating
11-mai-05	09:31:00	Put compressors on standby
11-mai-05	10:00:00	Put compressors on load to port burner. Light pilots and jets on burner
11-mai-05	10:05:00	Tank level = 2.8M3
11-mai-05	10:06:00	Pressure up tubing to 350 bar to fire guns
11-mai-05	10:08:00	Bleed off pressure to 0 bar
11-mai-05	10:12:00	Bleed down kill line pressure to 30 bar
11-mai-05	10:13:00	Indication at surface that guns fired

Customer Hydro
Start Date 11.05.05

HYDRO

PowerWell SERVICES

Field Astero
Well no. 35/11-13

Date	Time	Sequence of Events
11-mai-05	10:13:00	**********
11-mai-05	10:13:00	******* INITIAL FLOW *******
11-mai-05	10:13:00	**********
11-mai-05	10:14:00	Open well on 12/64ths adjustable choke flowing through heater to calibration tank
11-mai-05	10:15:00	Increase choke to 16/64ths adjustable
11-mai-05	10:16:00	Increase choke to 20/64ths adjustable
11-mai-05	10:17:00	Increase choke to 24/64ths adjustable
11-mai-05	10:19:00	Start injecting MEG at SSLV
11-mai-05	10:20:00	Start injecting methanol at choke manifold
11-mai-05	10:21:00	Start injecting MEG at SSTT
11-mai-05	10:28:00	Increase choke to 26/64ths adjustable
11-mai-05	10:32:00	Increase choke to 28/64ths adjustable. Base oil at surface. Fluid returns = 1M3
11-mai-05	10:33:00	Divert flow through test separator flowing through 2"" oil meter
11-mai-05	10:35:00	Bypass tank. Divert flow to port burner
11-mai-05	10:48:00	Increase choke to 30/64ths adjustable
11-mai-05	10:50:00	Divert flow to calibration tank
11-mai-05	11:01:00	Bypass tank. Divert flow to port burner
11-mai-05	11:02:00	Increase choke to 32/64ths adjustable
11-mai-05	11:05:00	Start dumping water from separator to calibration tank
11-mai-05	11:06:00	Stop dumping water
11-mai-05	11:07:00	Start dumping water from separator to calibration tank
11-mai-05	11:13:00	Stop dumping water
11-mai-05	11:19:00	Divert flow to cal. tank. Bypass sep.
11-mai-05	11:29:00	Divert flow trough sep.
11-mai-05	11:33:00	Increase choke to 34/64ths adjustable
11-mai-05	11:34:00	Start dumping water from separator to calibration tank
11-mai-05	11:37:00	BS&W = 30 % Base oil
11-mai-05	11:37:00	CO2 = 4%
11-mai-05	11:39:00	Increase choke to 38/64ths adjustable
11-mai-05	11:41:00	Increase choke to 42/64ths adjustable
11-mai-05	11:41:00	BS&W = 10 % Base oil
11-mai-05	11:42:00	H2S = 0 CO2 = 4.2%
11-mai-05	11:43:00	Stop dumping water
11-mai-05	11:44:00	Increase choke to 46/64ths adjustable
11-mai-05	11:46:00	Increase choke to 50/64ths adjustable
11-mai-05	11:49:00	Increase choke to 54/64ths adjustable
11-mai-05	11:52:00	Increase choke to 58/64ths adjustable
11-mai-05	12:00:00	BS&W = 2 % Water
11-mai-05	12:00:00	H2S = 0 CO2 = 5.0%
11-mai-05	12:00:00	Gas SG = 0.67 Oil SG 0.846 @ 16.3 degC
11-mai-05	12:10:00	H2S = 0 CO2 = 5.0%
11-mai-05	12:12:00	Gas SG = 0.67 Oil SG = 0.842 @ 19.6 degC
11-mai-05	12:15:00	BS&W = 1 % Water
11-mai-05	12:20:00	H2S = 0 CO2 = 5.0%
11-mai-05	12:24:00	Start shrinkage 15 DegC
11-mai-05	12:25:00	Gas SG = 0.67 Oil SG 0.842 @ 20.6 degC
11-mai-05	12:31:00	Close LPR-N
11-mai-05	12:31:00	**********
11-mai-05	12:31:00	********* INITIAL BUILD-UP *********
11-mai-05	12:31:00	**********
11-mai-05	12:34:00	Close Choke
11-mai-05	12:39:00	Stop Chemical inj. SSLV SSTT and at Choke Manifold
11-mai-05	12:40:00	Close burner nozzles
11-mai-05	21:00:00	Held toolbox talk on drill floor
11-mai-05	21:12:00	Start steam to heater
11-mai-05	21:20:00	Compressors on load to burner
11-mai-05	21:27:00	Start injecting MEG at SSTT and LSSV
11-mai-05	21:27:00	**********
11-mai-05	21:30:00	***** CLEANUP AND MAIN FLOW *****
11-mai-05	21:27:00	**********
11-mai-05	21:31:00	Open LPR-N
11-mai-05	21:42:00	Open well on 12/64ths adjustable choke flowing through heater and separator to port burner
11-mai-05	21:46:00	Increase choke to 20/64ths adjustable
11-mai-05	21:47:00	Increase choke to 24/64ths adjustable
11-mai-05	21:50:00	Increase choke to 28/64ths adjustable
11-mai-05	21:55:00	Increase choke to 32/64ths adjustable
11-mai-05	21:57:00	Increase choke to 36/64ths adjustable
11-mai-05	22:00:00	BS&W = 0.2% water

Customer Hydro
Start Date 11.05.05

HYDRO

PowerWell SERVICES

Field Astero
Well no. 35/11-13

Date	Time	Sequence of Events
11-mai-05	22:15:00	BS&W = 0.2% water. Trace of solids. H2S = 0 ppm
11-mai-05	22:30:00	H2S = 0 ppm
11-mai-05	22:45:00	BS&W = 0.1% water
11-mai-05	23:00:00	BS&W = 0.4% water
11-mai-05	23:00:00	Oil SG = 0.845 @ 15 degC
11-mai-05	23:15:00	BS&W = 0.25% water
11-mai-05	23:43:00	Divert flow through 36/64ths fixed choke
11-mai-05	23:50:00	Divert flow through 36/64ths adjustable choke
12-mai-05	00:15:00	Divert flow through 32/64ths fixed choke
12-mai-05	00:19:00	Stop injecting MEG at SSTT and LSSV
12-mai-05	00:26:00	Insert 2.0"" orifice plate
12-mai-05	00:30:00	BS&W = trace of water. Raise 2.0"" orifice plate
12-mai-05	00:35:00	Insert 1.625"" orifice plate. Gas rates are reported in M3/Day. Gas Volumes are reported in M3
12-mai-05	01:00:00	BS&W = 0% water
12-mai-05	01:00:00	Gas SG= 0.724 Oil SG= 0.852 H2S= 1.5 ppm CO2= 5.8 %
12-mai-05	01:15:00	BS&W = 0% water. H2S = 1.5 ppm. CO2 = 5.8%
12-mai-05	01:30:00	BS&W = 0% water
12-mai-05	01:30:00	Gas SG= 0.724 Oil SG= 0.852 H2S= 1.5 ppm CO2= 5.8 %
12-mai-05	02:00:00	BS&W = 0% water
12-mai-05	02:00:00	Gas SG= 0.728 Oil SG= 0.852 H2S= 2 ppm CO2= 5.5 %
12-mai-05	02:30:00	Gas SG= 0.728 Oil SG= 0.852 H2S= 2 ppm CO2= 5.5 %
12-mai-05	02:30:00	BS&W = 0% water
12-mai-05	02:40:00	Start Meter factor . Initial Tank= 4.3 m3 Initial Scan Pulses= 2154420
12-mai-05	02:55:00	Stop Meter factor. Final Tank= 9.6 m3 Final Scan Pulses= 2235728. Tank temp 22.7 DegC
12-mai-05	02:55:00	Combined Meter and Shrinkage factor = 0.925
12-mai-05	03:00:00	BS&W = 0% water
12-mai-05	03:00:00	Gas SG= 0.728 Oil SG= 0.852 H2S= 2 ppm CO2= 5.5 %
12-mai-05	03:13:00	Start Shrinkage 99.5% @ 24 DegC
12-mai-05	03:30:00	Gas SG= 0.728 Oil SG= 0.852 H2S= 2 ppm CO2= 5.5 %
12-mai-05	03:30:00	Petrotech start PVT 1
12-mai-05	03:55:00	Start pump out cal. tank to burner
12-mai-05	03:56:00	Divert sep.oil from burner to cal. tank
12-mai-05	04:00:00	BS&W = 0% water
12-mai-05	04:00:00	Gas SG= 0.728 Oil SG= 0.850 H2S= 2 ppm CO2= 5.5 %
12-mai-05	04:00:00	Petrotech stop PVT 1
12-mai-05	04:01:00	Stop pump out cal. tank to burner.
12-mai-05	04:01:00	Divert sep.oil from cal. tank to burner
12-mai-05	05:00:00	BS&W = 0% water
12-mai-05	05:00:00	Gas SG= 0.728 Oil SG= 0.850 H2S= 2 ppm CO2= 5.5 %
12-mai-05	05:05:00	Start Meter factor . Initial Tank= 1.95 m3 Initial Scan Pulses= 2943906
12-mai-05	05:24:00	Stop Meter factor. Final Tank= 8.80 m3 Final Scan Pulses= 3047673. Tank temp 30 DegC
12-mai-05	05:24:00	Combined Meter and Shrinkage factor = 0.937
12-mai-05	05:30:00	Finish Shrinkage 96% @ 12DegC
12-mai-05	06:00:00	BS&W = 0% water
12-mai-05	06:00:00	Gas SG= 0.729 Oil SG= 0.850 H2S= 2 ppm CO2= 5.5 %
12-mai-05	06:24:00	Start pump out cal. tank to burner
12-mai-05	06:25:00	Divert sep.oil from burner to cal. tank
12-mai-05	06:30:00	Stop pump out cal. tank to burner.
12-mai-05	06:30:00	Divert sep.oil from cal. tank to burner
12-mai-05	07:00:00	Gas SG= 0.729 Oil SG= 0.850 H2S= 2 ppm CO2= 5.2 %
12-mai-05	07:00:00	BS&W = 0% water
12-mai-05	07:30:00	BS&W = 0% water
12-mai-05	08:00:00	BS&W = 0% water
12-mai-05	08:00:00	Gas SG= 0.728 Oil SG= 0.852 H2S= 2.8 ppm CO2= 5.0 %
12-mai-05	08:30:00	BS&W = 0% water
12-mai-05	09:00:00	BS&W = 0% water
12-mai-05	09:00:00	Gas SG= 0.728 Oil SG= 0.852 H2S= 2.0 ppm CO2= 5.5 %
12-mai-05	09:30:00	BS&W = 0% water
12-mai-05	09:40:00	Start Shrinkage 100% @ 26 DegC
12-mai-05	10:00:00	BS&W = 0% water
12-mai-05	10:00:00	Start Meter factor . Initial Tank= 1.70 m3 Initial Scan Pulses= 4553286
12-mai-05	10:28:00	Stop Meter factor. Final Tank= 11.6 m3 Final Scan Pulses= 4706041. Tank temp 32.6 DegC
12-mai-05	10:28:00	Combined Meter and Shrinkage factor = 0.919
12-mai-05	10:30:00	BS&W = 0% water
12-mai-05	10:30:00	Gas SG= 0.727 Oil SG= 0.852 H2S= 2.0 ppm CO2= 5.0 %
12-mai-05	11:00:00	BS&W = 0% water
12-mai-05	11:00:00	Gas SG= 0.730 Oil SG= 0.852 H2S= 2.0 ppm CO2= 5.0 %
12-mai-05	11:30:00	BS&W = 0% water

Customer Hydro
Start Date 11.05.05

HYDRO

PowerWell SERVICES

Field Astero
Well no. 35/11-13

Date	Time	Sequence of Events
12-mai-05	11:43:00	Finish Shrinkage 96% @ 18DegC
12-mai-05	11:39:00	Start fill barrel with sample oil
12-mai-05	12:00:00	BS&W = 0% water
12-mai-05	12:00:00	Gas SG= 0.730 Oil SG= 0.849 H2S= 2.2 ppm CO2= 5.0 %
12-mai-05	12:09:00	Stop fill barrel with sample oil
12-mai-05	12:10:00	Start pump out cal. tank to burner
12-mai-05	12:11:00	Divert sep.oil from burner to cal. tank
12-mai-05	12:16:00	Stop pump out cal. tank to burner. Tank level 5.05 m3
12-mai-05	12:16:00	Divert sep.oil from cal. tank to burner
12-mai-05	12:22:00	Petrotech start PVT samples
12-mai-05	12:45:00	BS&W = 0% water
12-mai-05	13:30:00	BS&W = 0% water
12-mai-05	14:00:00	BS&W = 0% water
12-mai-05	14:00:00	Gas SG= 0.730 Oil SG= 0.853 H2S= 2.4 ppm CO2= 5.0 %
12-mai-05	14:30:00	BS&W = 0% water
12-mai-05	15:00:00	BS&W = 0% water
12-mai-05	15:00:00	Gas SG= 0.734 Oil SG= 0.846 H2S= 2.3 ppm CO2= 5.2 %
12-mai-05	15:23:00	Start Shrinkage 100% @ 29 DegC
12-mai-05	15:30:00	BS&W = 0% water
12-mai-05	16:00:00	BS&W = 0% water
12-mai-05	16:30:00	BS&W = 0% water
12-mai-05	17:00:00	BS&W = 0% water
12-mai-05	17:05:00	Finish Shrinkage 96.5% @ 19DegC
12-mai-05	17:30:00	BS&W = 0% water
12-mai-05	18:00:00	BS&W = 0% water
12-mai-05	18:15:00	Petrotech finish with PVT samples
12-mai-05	18:19:00	Start pump out cal. tank to burner
12-mai-05	18:20:00	Divert sep.oil from burner to cal. tank
12-mai-05	18:20:00	Gas SG= 0.738 Oil SG= 0.847 H2S= 2.5 ppm CO2= 5.0 %
12-mai-05	18:25:00	Stop pump out cal. tank to burner. Tank level 0 m3
12-mai-05	18:25:00	Divert sep.oil from cal. tank to burner
12-mai-05	18:30:00	BS&W = 0% water
12-mai-05	19:00:00	BS&W = 0% water
12-mai-05	19:00:00	Gas SG= 0.728 Oil SG= 0.847 H2S= 2.5 ppm CO2= 5.0 %
12-mai-05	19:30:00	BS&W = 0% water
12-mai-05	19:35:00	Start Meter factor . Initial Tank= 2.05 m3 Initial Scan Pulses= 7685409
12-mai-05	19:51:00	Stop Meter factor. Final Tank= 8.1 m3 Final Scan Pulses= 7772826. Tank temp 34.1 DegC
12-mai-05	19:51:00	Combined Meter and Shrinkage factor = 0.982
12-mai-05	20:00:00	BS&W = 0% water
12-mai-05	20:00:00	Gas SG= 0.730 Oil SG= 0.846 H2S= 2.2 ppm CO2= 5.3 %
12-mai-05	20:34:00	Start pump out cal. tank to burner
12-mai-05	20:34:00	Divert sep.oil from burner to cal. tank
12-mai-05	20:40:00	Stop pump out cal. tank to burner. Tank level 0 m3
12-mai-05	20:40:00	Power supply to ignition system failed due to deluge water
12-mai-05	20:40:00	Bled down barton manifold on separator
12-mai-05	20:53:00	Rig electrician repaired ignition cable
12-mai-05	20:54:00	Divert sep.oil from cal. tank to burner
12-mai-05	21:00:00	BS&W = 0% water
12-mai-05	21:00:00	Gas SG= 0.730 Oil SG= 0.851 H2S= 2.5 ppm CO2= 5.2 %
12-mai-05	21:20:00	Start injecting MEG at SSTT. Turn PSD low low override on
12-mai-05	21:30:00	BS&W = 0% water
12-mai-05	21:40:00	Raise 1.625"" orifice plate. Final flowing wellhead pressure = 93 bar
12-mai-05	21:41:00	Close LPR-N
12-mai-05	21:41:00	**********
12-mai-05	21:41:00	***** MAIN BUILD-UP *****
12-mai-05	21:41:00	**********
12-mai-05	21:43:00	Close choke
12-mai-05	21:45:00	Close burner heads
12-mai-05	21:52:00	Stop injecting MEG at SSTT
12-mai-05	22:57:00	Close in annulus at autochoke on drill floor
13-mai-05	01:34:00	IA real-time data not sending. Data queued at remote PC.
13-mai-05	02:23:00	Start sending IA real-time data.
13-mai-05	04:00:00	Stopped logging data in order to recalculate data with no correction factors applied
13-mai-05	04:28:00	Restarted scan system. Restarted IA data exchange
13-mai-05	13:10:00	Bleed down separator to tank. Flush meters
14-mai-05	09:20:00	Start Methanol injection upstream Choke manifold
14-mai-05	09:28:00	Open Choke. Bleed off to zero
14-mai-05	09:42:00	Stop Methanol injection upstream Choke manifold

Customer Hydro
Start Date 11.05.05

HYDRO

PowerWell SERVICES

Field Astero
Well no. 35/11-13

Date	Time	Sequence of Events
14-mai-05	10:02:00	Close choke
14-mai-05	10:02:00	Close burner heads
14-mai-05	10:07:00	Close Lower Master valve
14-mai-05	10:14:00	Open burner head
14-mai-05	10:14:00	BJ start pump base oil
14-mai-05	10:18:00	Open choke
14-mai-05	10:21:00	BJ stop pumping
14-mai-05	10:22:00	Close choke
14-mai-05	10:22:00	Close burner heads
14-mai-05	10:24:00	Divert flow to cal. tank
14-mai-05	10:25:00	BJ start pump base oil
14-mai-05	10:25:00	Open choke
14-mai-05	10:32:00	BJ stop pumping
14-mai-05	10:32:00	Close choke
14-mai-05	11:04:00	Open choke
14-mai-05	11:04:00	BJ start pump base oil / sea water to cal. tank
14-mai-05	11:25:00	BJ stop pumping
14-mai-05	11:25:00	Close choke
14-mai-05	11:26:00	Close wing valve on flow head
14-mai-05	11:28:00	Open Lower Master
14-mai-05	11:28:00	Start fill string with base oil/ brine
14-mai-05	11:40:00	Open wing valve
14-mai-05	11:57:00	Open Tester Valve
14-mai-05	11:58:00	Start pump to minifrac and kill well
14-mai-05	12:16:00	**********
14-mai-05	12:16:00	******** MINIFRAC *******
14-mai-05	12:16:00	**********
14-mai-05	12:16:00	Start minifrac cycle 1
14-mai-05	13:14:00	Stop pumping WHP starts to drop
14-mai-05	13:23:00	Pressure starts to stabilize below 2 bar
14-mai-05	13:35:00	Start minifrac Cycle 2
14-mai-05	15:05:00	Stop pumping WHP starts to drop
14-mai-05	15:14:00	Pressure starts to stabilize around 2 bar
14-mai-05	15:21:00	Start minifrac cycle 3
14-mai-05	15:25:00	Stop pumping WHP starts to drop
14-mai-05	15:34:00	Pressure starts to stabilize around 2 bar
14-mai-05	15:37:00	Start minifrac cycle 4
14-mai-05	15:59:00	Stop pumping WHP starts to drop
14-mai-05	16:11:00	Pressure starts to stabilize around 2 bar
14-mai-05	16:17:00	Start minifrac cycle 5
14-mai-05	16:40:00	Stop pumping WHP starts to drop
14-mai-05	16:51:00	Pressure starts to stabilize around 2 bar
14-mai-05	17:06:00	Start minifrac cycle 6
14-mai-05	17:11:00	Stop pumping WHP starts to drop
14-mai-05	17:20:00	Pressure starts to stabilize around 2 bar
14-mai-05	17:29:00	Close kill valve
14-mai-05	17:30:00	Open choke. Line up to PWS calibration tank to monitor well
14-mai-05	17:48:00	Close choke
14-mai-05	17:50:00	Pump up annulus to shear RD-valve
14-mai-05	17:54:00	Shear RD-valve
14-mai-05	18:13:00	Start circulating long way
14-mai-05	18:35:00	Finish circulating
14-mai-05	18:36:00	Start 15 min flow check
14-mai-05	19:15:00	Attempt to unseat Champ SSTT hang up in rig BOP. Reposition rig using anchors
14-mai-05	22:30:00	Packer unseated
14-mai-05	22:42:00	Start bullheading kill fluid into formation
14-mai-05	23:45:00	Commence circulate down tubing 1.5 times well volume
15-mai-05	03:30:00	Finish circulating
15-mai-05	04:00:00	Commence rigging down surface tree
15-mai-05	08:05:00	Tool box talk on rig floor prior to pull test string
15-mai-05	08:10:00	Start pull landing string
15-mai-05	09:00:00	Upper SSLV OOH and laid out
15-mai-05	09:30:00	Lower SSLV OOH and laid out
15-mai-05	13:05:00	SSTT OOH
15-mai-05	13:30:00	SSTT laid out

Appendix C

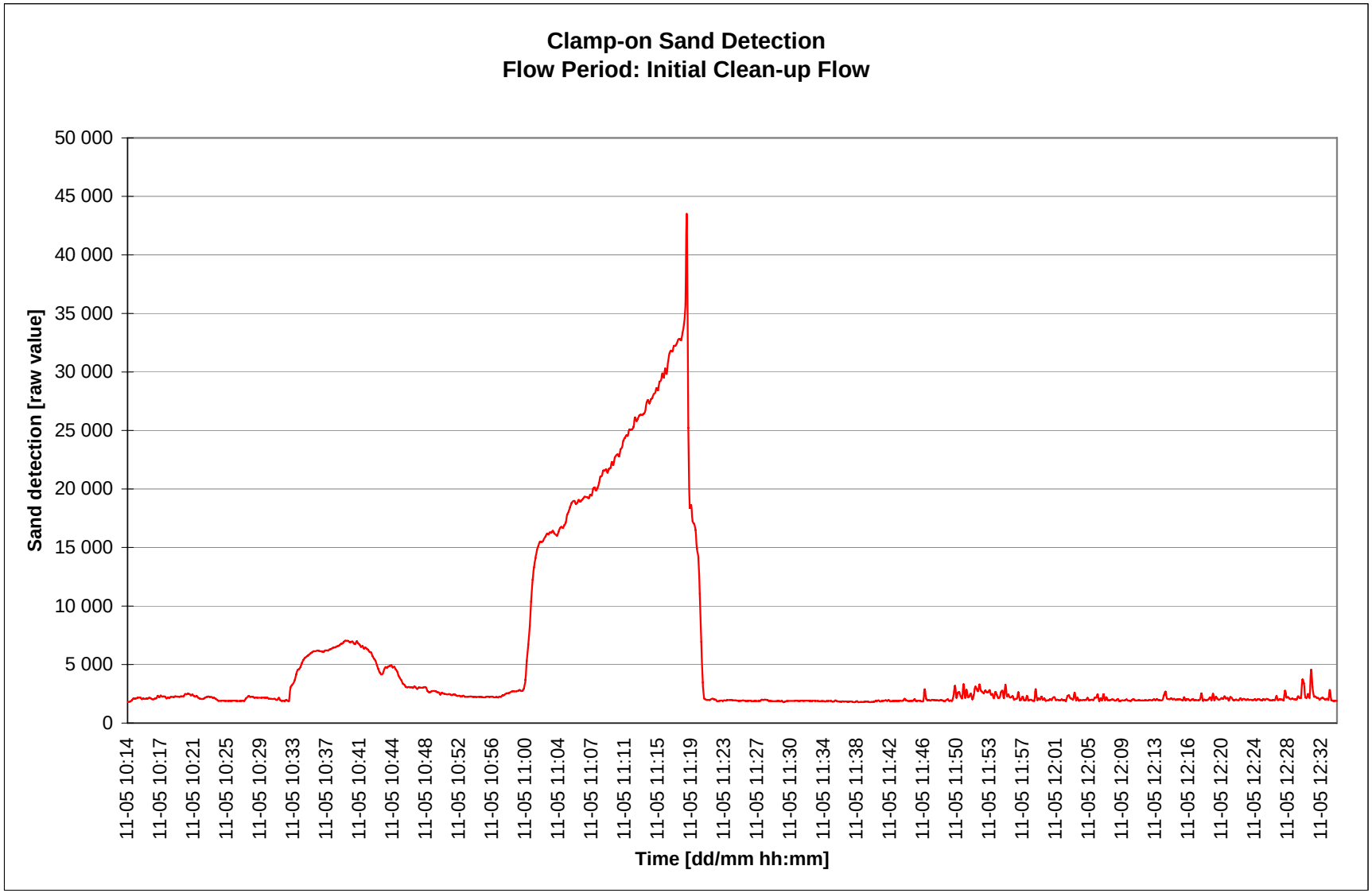
Test Data Sheets

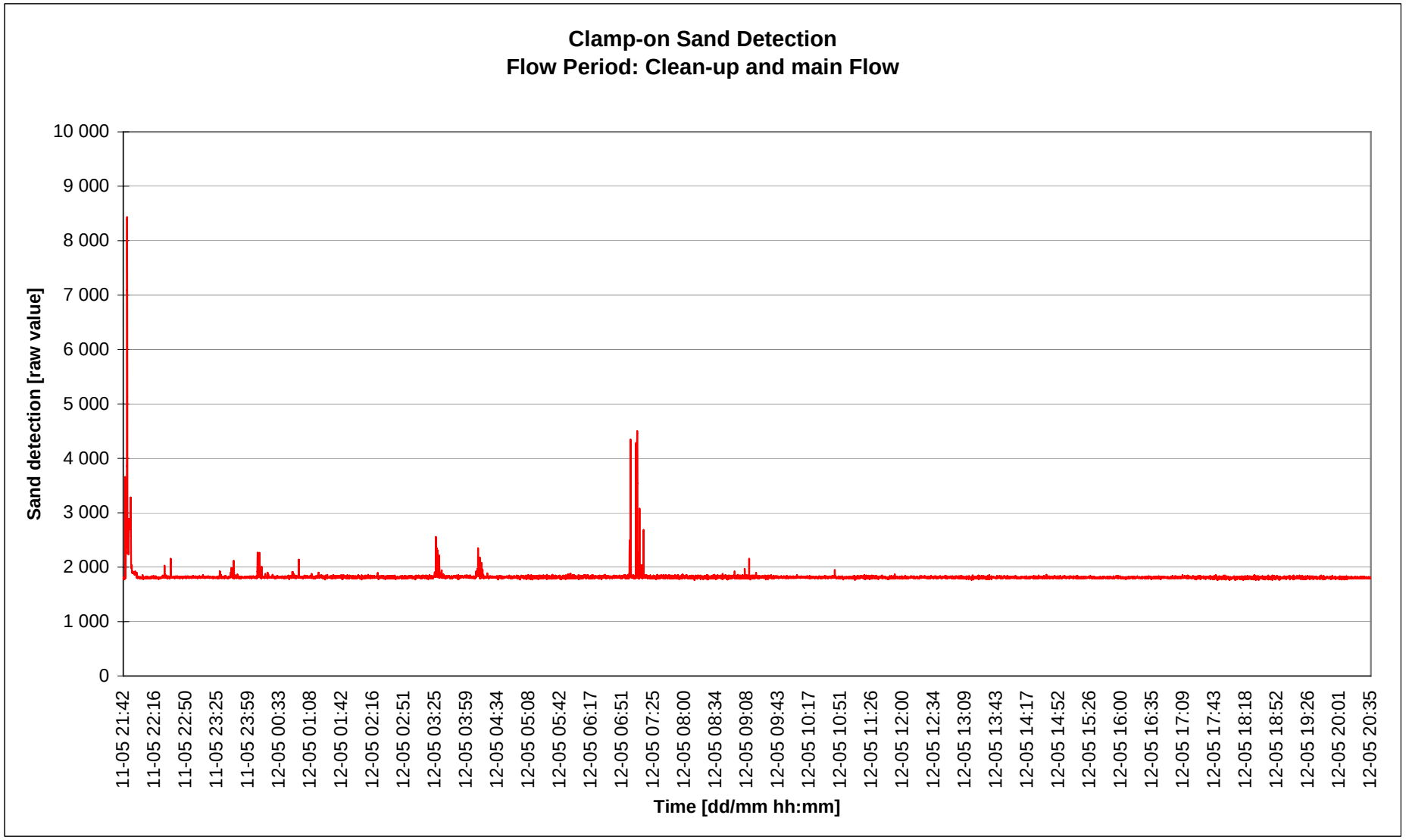
Time & Date	Well Head Press BARg	Well Head Temp (C)	Annulus Pressure BARg	Choke Size 64ths	WHDSP BARg	WHDST (C)	OIL MTR Cf	HOT (C)	Gas P BARg	Oil Flow M3/Day	Total Oil M3	Oil T (C)	Gas Flow M3/Day (Gas)	Total Gas M3 (Gas)	GasT (C)	Water Flow M3/Day	Total Water M3	GOR M3/M3
Intial fow period																		
2005-05-11 10:00	106.96	9.36	94.28	32.00	0.48	8.36	0.82	32.25	9.39			10.88			8.31	0.00	0.00	
2005-05-11 10:15	46.72	9.67	97.89	32	0.55	9.77	0.82	70.77	9.39			9.57			8.54		0.00	
2005-05-11 10:30	45.53	9.87	99.62	26	0.60	10.48	0.82	30.57	10.25			9.12			8.72		0.00	
2005-05-11 10:45	47.3	10.12	101.13	28	13.03	11.44	0.82	72.52	17.60			9.17			9.55		0.00	
2005-05-11 11:00	53.13	10.42	103.33	30	17.98	11.51	1.00	18.55	15.10	98.74	1.03	28.90			10.63		0.00	
2005-05-11 11:15	72.57	10.14	104.98	32	15.65	12.18	1.00	43.75	12.41	261.29	3.75	22.05			10.05	93.38	0.97	
2005-05-11 11:30	101.58	10.26	102.26	32	23.71	9.53	1.00	42.92	28.49	112.40	4.92	25.45			12.51		0.97	
2005-05-11 11:45	81.62	9.34	103.3	46	42.65	6.55	1.00	36.26	37.61	336.70	8.43	20.23			17.86	94.20	1.95	
2005-05-11 12:00	66.14	10.63	102.05	58	44.75	9.14	1.00	36.93	36.54	680.42	15.52	22.97			24.82		1.95	
2005-05-11 12:15	65.82	11.9	105.49	58	44.46	10.38	1.00	17.43	36.55	1068.19	26.64	26.40			24.27		1.95	
2005-05-11 12:30	66.24	13.07	103.18	58	44.97	11.49	1.00	28.86	33.58	718.09	34.12	21.07			21.25		1.95	
2005-05-11 12:45	55.44	13.1	0.87		0.23	9.42	1.00	41.73	32.20	207.65	36.29	23.22			23.78		1.95	
Clean up / Main Flow Period																		
2005-05-11 21:30	63.83	8.4	0	14	26.25	11.73	1.00	41.22	26.22		36.32	10.16			8.31		1.96	
2005-05-11 21:45	112.98	8.49	106	14	26.90	10.27	1.00	51.52	19.45		36.32	9.77			8.28		1.96	
2005-05-11 22:00	82.01	7.76	97.45	36	23.73	2.10	1.00	11.81	17.65	204.49	38.45	24.34			21.89		1.96	
2005-05-11 22:15	95.58	9.37	96.89	36	25.57	5.96	1.00	45.29	18.76	479.84	43.45	11.85			15.18		1.96	
2005-05-11 22:30	94.84	9.65	109.86	36	26.18	5.99	1.00	58.12	19.02	414.11	47.76	34.24			40.21		1.96	
2005-05-11 22:45	95.02	10.06	105.8	36	25.31	6.40	1.00	55.53	18.75	405.29	51.99	45.96			42.37		1.96	
2005-05-11 23:00	94.94	10.46	95.33	36	26.26	6.91	1.00	55.44	18.87	417.28	56.33	44.16			42.16		1.96	
2005-05-11 23:15	95.17	10.66	96.27	36	25.98	7.43	1.00	56.69	18.99	407.20	60.57	44.94			43.41		1.96	
2005-05-11 23:30	94.08	11.1	95.01	36	26.88	8.07	1.00	55.33	19.62	400.33	64.74	45.27			44.65		1.96	
2005-05-11 23:45	89.7	12.11	103.1	36	27.56	9.06	1.00	51.44	19.28	434.84	69.27	45.47			44.33		1.96	
12-May-2005 0:00																		
2005-05-12 0:00	92.38	13	99.72	36	27.62	10.00	1.00	54.45	19.53	453.63	74.00	43.17			43.41		1.96	
2005-05-12 0:15	90.48	13.5	107.68	36	26.64	10.54	1.00	52.55	18.92	441.73	78.60	44.46			44.66	10.03	2.06	
2005-05-12 0:30	92.41	14.31	100.36	32	26.97	10.94	1.00	56.23	19.18	405.24	82.82	44.91	17291	180	45.57	47.41	2.55	42.67
2005-05-12 0:45	92.65	14.77	97.12	32	27.05	11.45	1.00	55.92	19.20	422.44	87.22	45.78	67375	882	46.56	14.00	2.70	159.49
2005-05-12 1:00	92.73	15.11	103.6	32	27.08	11.85	1.00	56.51	19.35	441.86	91.83	47.05	78748	1702	48.37		2.70	178.22
2005-05-12 1:15	92.22	15.77	99.55	32	28.21	12.53	1.00	56.94	19.33	447.19	96.48	47.42	78650	2522	49.53		2.70	175.88
2005-05-12 1:30	92.77	16.14	105.52	32	27.65	12.89	1.00	57.76	19.36	441.04	101.08	47.93	78896	3343	50.37		2.70	178.89
2005-05-12 1:45	92.94	16.49	99.83	32	27.38	13.22	1.00	58.13	19.41	441.83	105.68	48.21	78964	4166	50.89		2.70	178.72
2005-05-12 2:00	93.06	16.84	95.14	32	28.29	13.51	1.00	58.75	19.44	441.06	110.27	48.83	79020	4989	51.18		2.70	179.16
2005-05-12 2:15	93.13	17.1	100.34	32	27.90	13.84	1.00	59.06	19.48	443.20	114.89	48.86	79344	5816	51.08		2.70	179.03
2005-05-12 2:30	93.25	17.42	105.12	32	27.66	14.14	1.00	59.16	19.52	441.20	119.49	49.51	79207	6641	51.55		2.70	179.53
2005-05-12 2:45	93.45	17.66	97.03	32	27.49	14.43	1.00	59.68	19.57	443.04	124.10	49.25	79356	7467	52.00		2.70	179.12
2005-05-12 3:00	93.29	17.57	101.57	32	28.25	14.58	0.93	59.75	19.61	494.95	129.26	49.10	79492	8295	52.09		2.70	160.61
2005-05-12 3:15	93.8	17.87	95.86	32	28.07	14.88	0.93	59.95	19.59	495.80	134.42	49.67	79540	9124	52.51		2.70	160.43
2005-05-12 3:30	93.55	17.68	99.91	32	28.23	14.94	0.93	60.20	19.62	497.67	139.61	49.56	79703	9954	51.54		2.70	160.15
2005-05-12 3:45	93.8	17.89	103.84	32	27.85	15.10	0.93	59.79	19.61	497.25	144.79	50.35	79488	10782	52.73		2.70	159.86
2005-05-12 4:00	93.84	18.11	96.49	32	28.05	15.30	0.93	60.30	19.65	497.56	149.97	49.86	79577	11611	53.04		2.70	159.94
2005-05-12 4:15	93.62	17.93	100.23	32	28.27	15.37	0.93	60.39	19.70	498.37	155.16	51.05	79790	12442	53.02		2.70	160.10
2005-05-12 4:30	93.9	18.25	103.53	32	27.42	15.47	0.93	60.58	19.71	497.10	160.34	51.70	79521	13271	54.42		2.70	159.97
2005-05-12 4:45	93.94	18.23	99.32	32	27.89	15.69	0.93	60.89	19.74	496.91	165.51	51.41	79568	14099	54.59		2.70	160.13

Time & Date	Well Head Press BARg	Well Head Temp (C)	Annulus Pressure BARg	Choke Size 64ths	WHDSP BARg	WHDST (C)	OIL MTR Cf	HOT (C)	Gas P BARg	Oil Flow M3/Day	Total Oil M3	Oil T (C)	Gas Flow M3/Day (Gas)	Total Gas M3 (Gas)	GasT (C)	Water Flow M3/Day	Total Water M3	GOR M3/M3

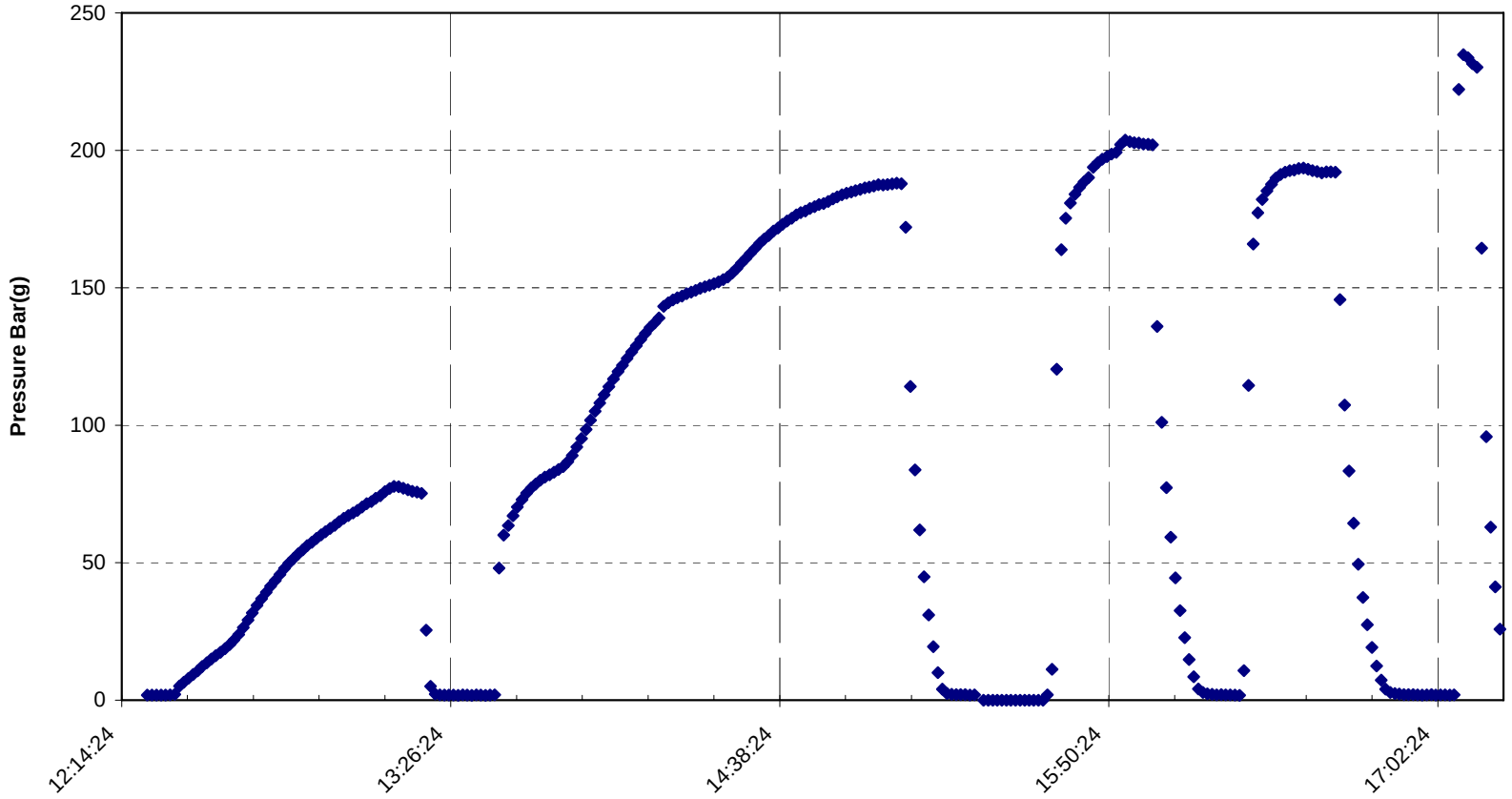
2005-05-12 5:00	93.98	18.42	102.54	32	27.85	15.85	0.93	61.35	19.76	498.46	170.71	51.82	79501	14927	54.84		2.70	159.49
2005-05-12 5:15	93.98	18.6	105.57	32	28.19	15.93	0.93	61.57	19.80	496.45	175.88	51.88	79725	15758	55.15		2.70	160.59
2005-05-12 5:30	93.97	18.6	97.03	32	28.17	15.98	0.94	61.27	19.86	503.46	181.12	52.02	79791	16589	55.18		2.70	158.49
2005-05-12 5:45	94.01	18.78	100.51	32	28.16	16.14	0.94	61.91	19.88	503.30	186.37	52.20	79773	17420	55.59		2.70	158.50
2005-05-12 6:00	94.01	18.9	103.1	32	27.94	16.26	0.94	62.00	19.58	504.80	191.62	52.20	80085	18254	55.48		2.70	158.65
2005-05-12 6:15	94.06	19.28	105.34	32	28.00	16.28	0.94	62.08	19.88	503.79	196.87	52.54	79702	19085	55.91		2.70	158.21
2005-05-12 6:30	94.06	19.3	91.99	32	28.83	16.39	0.94	62.26	19.91	501.17	202.09	52.55	79669	19914	55.89		2.70	158.97
2005-05-12 6:45	94.12	19.63	94.4	32	28.57	16.50	0.94	61.72	19.96	504.42	207.35	52.64	79840	20746	55.52		2.70	158.28
2005-05-12 7:00	94.09	19.79	96.79	32	28.44	16.55	0.94	62.45	19.99	504.19	212.60	52.74	79887	21578	55.85		2.70	158.45
2005-05-12 7:15	94.18	19.9	99.15	32	28.28	16.55	0.94	62.37	20.01	502.82	217.84	52.77	79935	22411	55.72		2.70	158.98
2005-05-12 7:30	94.16	19.94	101.37	32	28.27	16.55	0.94	62.55	20.03	503.70	223.08	52.89	79874	23243	55.89		2.70	158.57
2005-05-12 7:45	94.22	19.92	103.49	32	27.93	16.58	0.94	62.51	20.04	503.82	228.33	52.75	79926	24075	55.66		2.70	158.64
2005-05-12 8:00	94.22	19.94	105.33	32	28.79	16.78	0.94	62.38	20.07	502.78	233.57	53.06	79919	24908	56.11		2.70	158.95
2005-05-12 8:15	94.02	20.19	107.44	32	28.79	16.80	0.94	63.05	20.11	502.90	238.81	53.16	79998	25741	56.01		2.70	159.07
2005-05-12 8:30	94.16	20.41	100.54	32	28.33	16.99	0.94	63.30	20.12	504.26	244.06	53.03	80002	26575	55.72		2.70	158.65
2005-05-12 8:45	93.93	21.05	102.58	32	28.57	17.12	0.94	63.40	20.14	503.58	249.31	53.57	80023	27408	56.45		2.70	158.91
2005-05-12 9:00	93.98	21.18	104.33	32	28.00	17.17	0.94	63.25	20.14	504.29	254.56	53.83	79893	28240	56.60		2.70	158.43
2005-05-12 9:15	94.22	21.11	106.19	32	28.27	17.25	0.94	63.28	20.10	502.14	259.79	54.00	79712	29071	56.73		2.70	158.74
2005-05-12 9:30	94.32	20.69	107.63	32	28.05	17.34	0.94	63.00	20.14	503.38	265.03	54.07	79694	29901	57.03		2.70	158.32
2005-05-12 9:45	94.17	20.69	100.64	32	28.19	17.37	0.94	63.12	20.20	500.07	270.24	54.21	79760	30732	57.38		2.70	159.50
2005-05-12 10:00	94.05	21.19	102.09	32	28.27	17.48	0.94	64.02	20.22	502.53	275.48	54.46	79770	31563	57.41		2.70	158.74
2005-05-12 10:15	94.41	20.88	103.78	32	28.45	17.58	0.94	63.48	20.20	504.06	280.73	54.44	79703	32393	57.66		2.70	158.12
2005-05-12 10:30	94.16	20.62	105.22	32	28.56	17.53	0.92	63.80	20.01	500.26	285.94	54.22	79992	33226	57.95		2.70	159.90
2005-05-12 10:45	94.2	20.7	106.6	32	27.66	17.51	0.92	63.85	19.94	503.85	291.19	54.32	79924	34059	58.06		2.70	158.63
2005-05-12 11:00	94.1	21.06	108.01	32	28.15	17.59	0.92	64.14	19.98	500.99	296.41	54.87	79920	34891	58.31		2.70	159.52
2005-05-12 11:15	94.02	21.12	99.68	32	28.31	17.79	0.92	64.35	20.00	501.73	301.63	54.97	79932	35724	58.49		2.70	159.31
2005-05-12 11:30	94.01	21.12	101.49	32	28.67	17.75	0.92	64.27	20.02	502.57	306.87	54.90	79954	36557	58.32		2.70	159.09
2005-05-12 11:45	94.21	20.96	102.46	32	28.28	17.73	0.92	64.01	20.01	502.17	312.10	54.29	79774	37388	58.46		2.70	158.86
2005-05-12 12:00	94.13	21	103.9	32	28.35	17.81	0.92	64.26	19.90	502.40	317.33	53.83	79987	38221	58.56		2.70	159.21
2005-05-12 12:15	93.88	21.3	105.04	32	28.31	17.93	0.92	64.60	20.06	502.75	322.57	54.43	79826	39052	58.71		2.70	158.78
2005-05-12 12:30	94.25	21.42	106.25	32	28.37	17.96	0.92	64.49	20.13	500.73	327.78	55.10	79913	39885	58.54		2.70	159.59
2005-05-12 12:45	94.18	21.63	107.44	32	28.53	18.02	0.92	64.17	20.06	499.67	332.99	54.97	80010	40718	58.09		2.70	160.13
2005-05-12 13:00	94.13	21.5	105.96	32	28.00	18.03	0.92	64.32	19.92	500.09	338.20	54.88	79790	41549	58.66		2.70	159.55
2005-05-12 13:15	94.02	21.41	101.51	32	28.40	18.18	0.92	64.58	19.92	499.24	343.40	54.94	79738	42380	58.77		2.70	159.72
2005-05-12 13:30	93.97	21.33	102.74	32	28.55	18.17	0.92	64.68	19.93	499.71	348.60	54.37	79733	43211	58.85		2.70	159.56
2005-05-12 13:45	94.06	21.37	103.62	32	28.43	18.22	0.92	64.67	19.96	503.43	353.85	55.06	79711	44041	58.94		2.70	158.34
2005-05-12 14:00	94.22	21.56	104.66	32	28.01	18.19	0.92	64.47	20.03	502.07	359.08	55.21	79934	44873	59.07		2.70	159.21
2005-05-12 14:15	93.96	21.59	105.44	32	28.47	18.22	0.92	64.41	19.99	495.47	364.24	55.45	79962	45706	59.18		2.70	161.39
2005-05-12 14:30	94.1	21.54	106.61	32	28.39	18.26	0.92	64.46	20.00	505.80	369.51	55.46	79948	46539	59.00		2.70	158.06
2005-05-12 14:45	94.01	21.56	107.25	32	28.03	18.22	0.92	64.61	19.99	501.60	374.73	55.58	79825	47371	59.11		2.70	159.14
2005-05-12 15:00	93.93	21.48	108.22	32	28.56	18.23	0.92	64.67	20.03	502.12	379.96	55.54	79856	48203	59.08		2.70	159.04
2005-05-12 15:15	93.9	21.46	99.75	32	28.44	18.24	0.92	64.67	20.06	502.86	385.20	55.47	79874	49035	59.10		2.70	158.84
2005-05-12 15:30	94.01	21.39	100.99	32	28.31	18.19	0.92	64.19	20.07	500.52	390.41	55.43	79796	49866	58.98		2.70	159.43
2005-05-12 15:45	93.82	21.55	102.02	32	28.43	18.29	0.92	64.42	20.08	503.04	395.65	55.33	79778	50697	59.07		2.70	158.59
2005-05-12 16:00	93.73	21.56	102.83	32	28.49	18.16	0.92	64.38	20.11	503.24	400.90	55.39	79801	51528	59.09		2.70	158.58
2005-05-12 16:15	93.76	21.48	103.68	32	28.80	18.21	0.92	64.69	20.15	501.48	406.12	55.34	79727	52359	59.12		2.70	158.98
2005-05-12 16:30	93.82	21.43	104.29	32	28.31	18.30	0.92	64.95	20.10	501.82	411.35	54.35	79661	53188	58.92		2.70	158.75

Time & Date	Well Head Press BARg	Well Head Temp (C)	Annulus Pressure BARg	Choke Size 64ths	WHDSP BARg	WHDST (C)	OIL MTR Cf	HOT (C)	Gas P BARg	Oil Flow M3/Day	Total Oil M3	Oil T (C)	Gas Flow M3/Day (Gas)	Total Gas M3 (Gas)	GasT (C)	Water Flow M3/Day	Total Water M3	GOR M3/M3
2005-05-12 16:45	93.76	21.5	105.24	32	28.61	18.41	0.92	64.64	20.05	500.98	416.57	54.69	79773	54019	59.17		2.70	159.24
2005-05-12 17:00	93.85	21.8	105.75	32	28.41	18.52	0.92	65.03	20.03	502.26	421.80	55.18	79717	54850	59.39		2.70	158.72
2005-05-12 17:15	93.74	21.65	106.84	32	28.37	18.47	0.92	64.95	19.90	499.64	427.00	54.63	79844	55681	59.43		2.70	159.80
2005-05-12 17:30	93.7	21.61	107.48	32	28.28	18.51	0.92	64.85	20.05	502.14	432.23	55.32	79723	56512	59.46		2.70	158.77
2005-05-12 17:45	93.81	21.3	108.05	32	28.31	18.38	0.92	64.80	20.03	501.55	437.46	54.23	79573	57341	59.41		2.70	158.66
2005-05-12 18:00	93.82	21.17	102.66	32	28.51	18.43	0.92	64.94	20.09	504.52	442.71	53.44	79695	58171	59.21		2.70	157.96
2005-05-12 18:15	93.72	21.19	100.89	32	28.00	18.46	0.92	64.91	19.95	503.07	447.95	54.03	79620	59000	59.29		2.70	158.27
2005-05-12 18:30	93.7	21.98	101.57	32	28.21	18.66	0.92	65.14	20.04	503.08	453.19	55.38	79502	59828	59.52		2.70	158.03
2005-05-12 18:45	93.73	21.48	102.06	32	28.61	18.54	0.92	64.74	20.23	500.38	458.41	55.69	79799	60660	59.59		2.70	159.48
2005-05-12 19:00	94	21.38	102.73	32	28.79	18.48	0.92	64.90	20.25	502.21	463.64	55.45	79858	61492	59.39		2.70	159.01
2005-05-12 19:15	93.77	21.02	103.32	32	28.51	18.43	0.92	65.02	20.24	502.22	468.87	54.88	79783	62323	59.25		2.70	158.86
2005-05-12 19:30	93.76	21.07	103.73	32	28.11	18.43	0.92	64.91	20.16	502.32	474.10	54.52	79619	63152	59.30		2.70	158.50
2005-05-12 19:45	93.8	20.88	104.24	32	28.49	18.46	0.92	64.90	20.15	502.34	479.33	53.05	79649	63982	59.31		2.70	158.56
2005-05-12 20:00	93.78	20.88	105.01	32	28.52	18.31	0.98	64.99	20.14	501.66	484.56	55.02	79741	64812	59.23		2.70	158.95
2005-05-12 20:15	93.61	20.98	95.49	32	28.51	18.38	0.98	65.37	20.04	501.82	489.79	55.15	79738	65643	59.29		2.70	158.90
2005-05-12 20:30	93.6	20.96	95.82	32	27.81	18.39	0.98	64.63	19.26	500.79	495.00	54.89	75298	66427	58.95		2.70	150.36
2005-05-12 20:45	93.53	21.48	96.55	32	26.37	18.34	0.98	64.72	19.94	482.24	500.03	54.51	79071	67251	56.95		2.70	163.97
2005-05-12 21:00	93.42	21.15	96.96	32	28.47	18.47	0.98	64.99	19.89	498.80	505.22	54.16	79365	68078	58.99		2.70	159.11
2005-05-12 21:15	93.72	20.93	97.36	32	28.01	18.48	0.98	64.94	19.91	501.79	510.45	54.51	79333	68904	59.12		2.70	158.10
2005-05-12 21:30	93.53	20.83	97.56	32	27.89	18.46	0.98	65.38	19.44	502.33	515.68	53.77	66315	69595	58.43		2.70	132.01
2005-05-12 21:45	80.36	20.4	0.79	32	15.74	17.25	0.98	66.67	15.89	459.08	520.46	54.06						

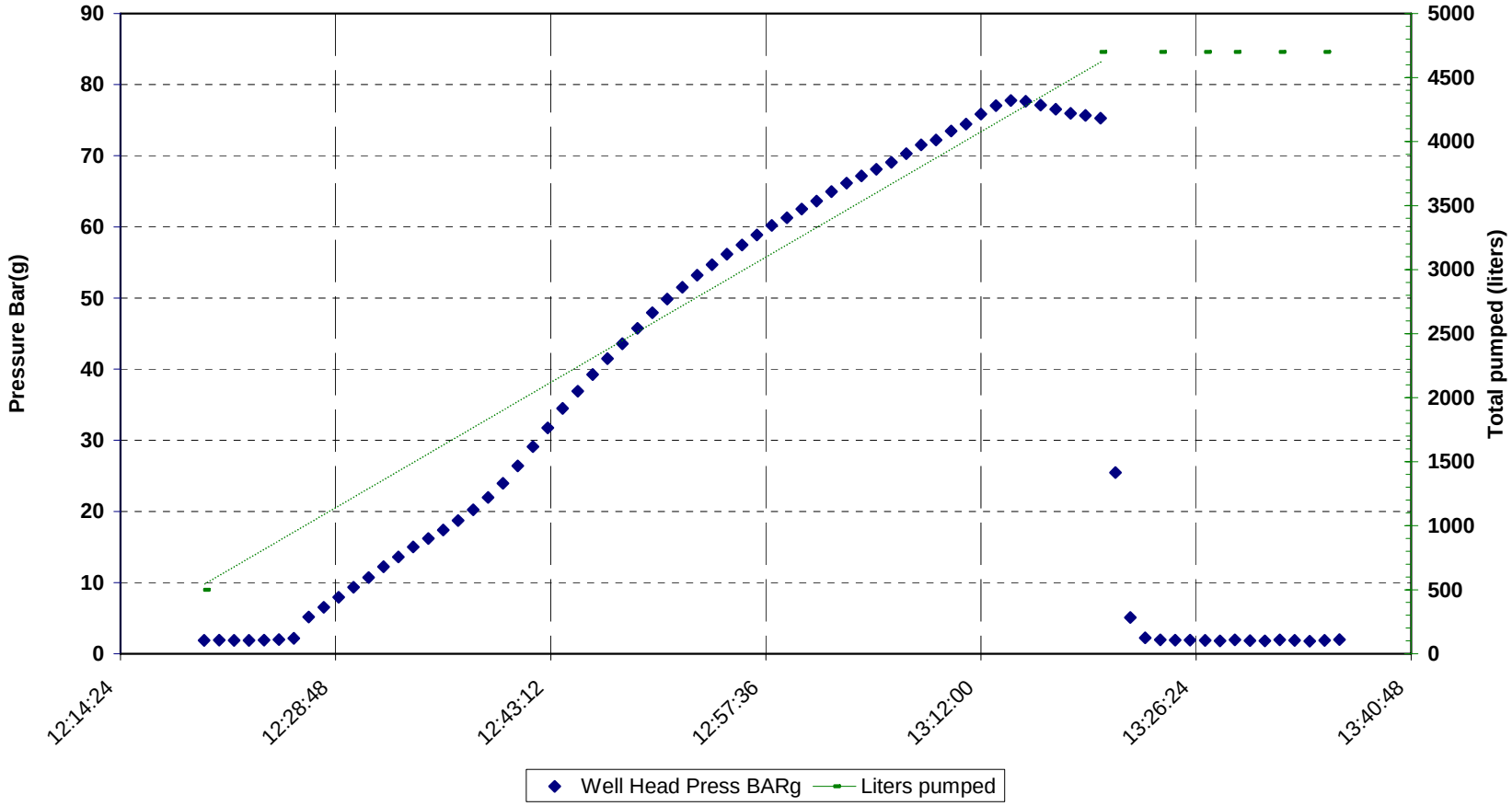

Clamp-on Sand Detection
Flow Period: Initial Clean-up Flow
Sand detection [raw value]
50 000
45 000
40 000
35 000
30 000
25 000
20 000
15 000
10 000
5 000
0
11-05 10:14
11-05 10:17
11-05 10:21
11-05 10:25
11-05 10:29
11-05 10:33
11-05 10:37
11-05 10:41
11-05 10:44
11-05 10:48
11-05 10:52
11-05 10:56
11-05 11:00
11-05 11:04
11-05 11:07
11-05 11:11
11-05 11:15
11-05 11:19
11-05 11:23
11-05 11:27
11-05 11:30
11-05 11:34
11-05 11:38
11-05 11:42
11-05 11:46
11-05 11:50
11-05 11:53
11-05 11:57
11-05 12:01
11-05 12:05
11-05 12:09
11-05 12:13
11-05 12:16
11-05 12:20
11-05 12:24
11-05 12:28
11-05 12:32
Time [dd/mm hh:mm]


Clamp-on Sand Detection
Flow Period: Clean-up and main Flow
Sand detection [raw value]
10 000
9 000
8 000
7 000
6 000
5 000
4 000
3 000
2 000
1 000
0
11-05 21:42
11-05 22:16
11-05 22:50
11-05 23:25
11-05 23:59
12-05 00:33
12-05 01:08
12-05 01:42
12-05 02:16
12-05 02:51
12-05 03:25
12-05 03:59
12-05 04:34
12-05 05:08
12-05 05:42
12-05 06:17
12-05 06:51
12-05 07:25
12-05 08:00
12-05 08:34
12-05 09:08
12-05 09:43
12-05 10:17
12-05 10:51
12-05 11:26
12-05 12:00
12-05 12:34
12-05 13:09
12-05 13:43
12-05 14:17
12-05 14:52
12-05 15:26
12-05 16:00
12-05 16:35
12-05 17:09
12-05 17:43
12-05 18:18
12-05 18:52
12-05 19:26
12-05 20:01
12-05 20:35
Time [dd/mm hh:mm]

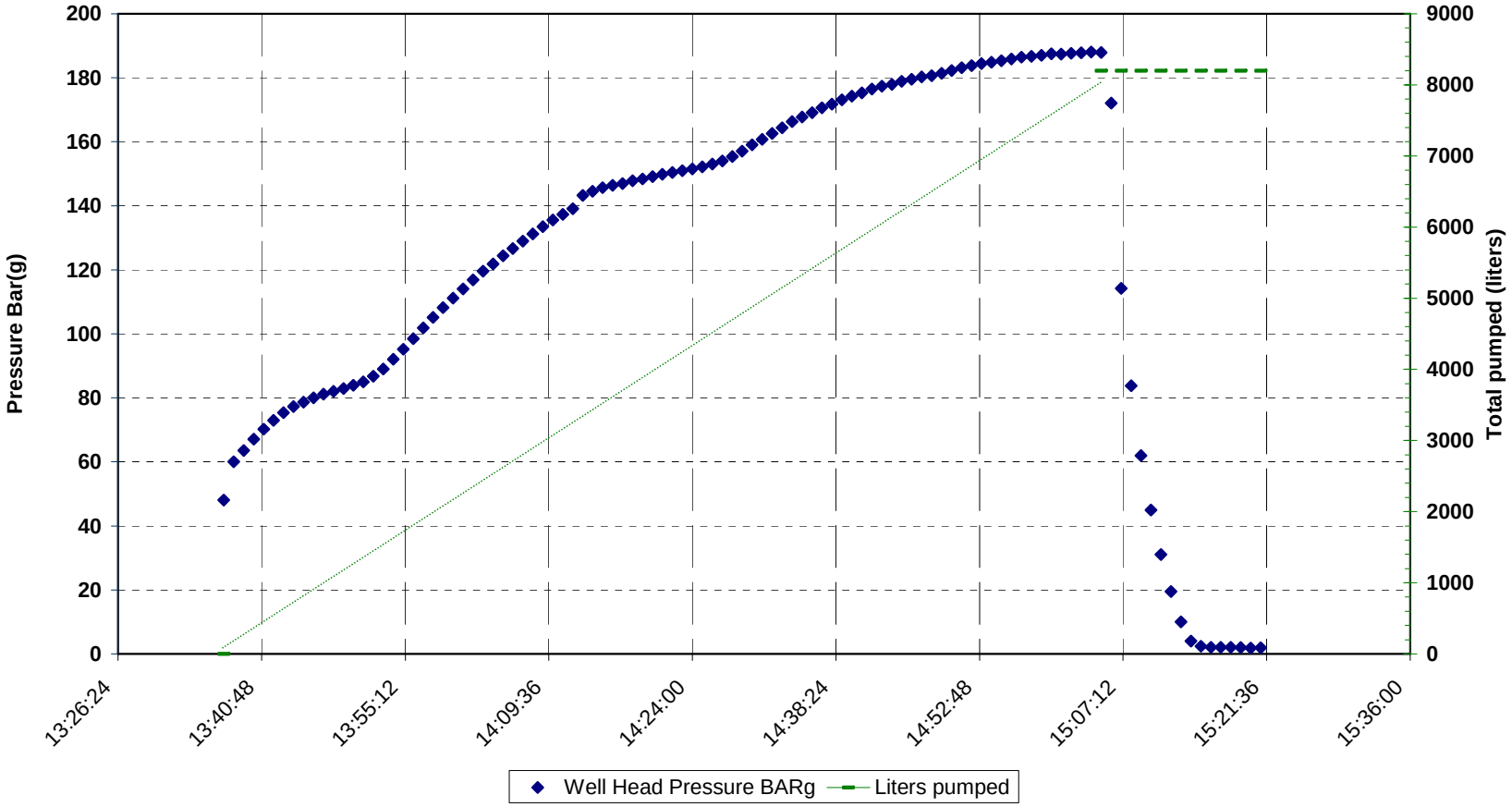
Overview of Mini Frac Cycles
14 May 2005 Astero
1.1 sg NaCl Brine
Top perf at 3111,5 m MD
Hdrostatic at top per 335,7 bar



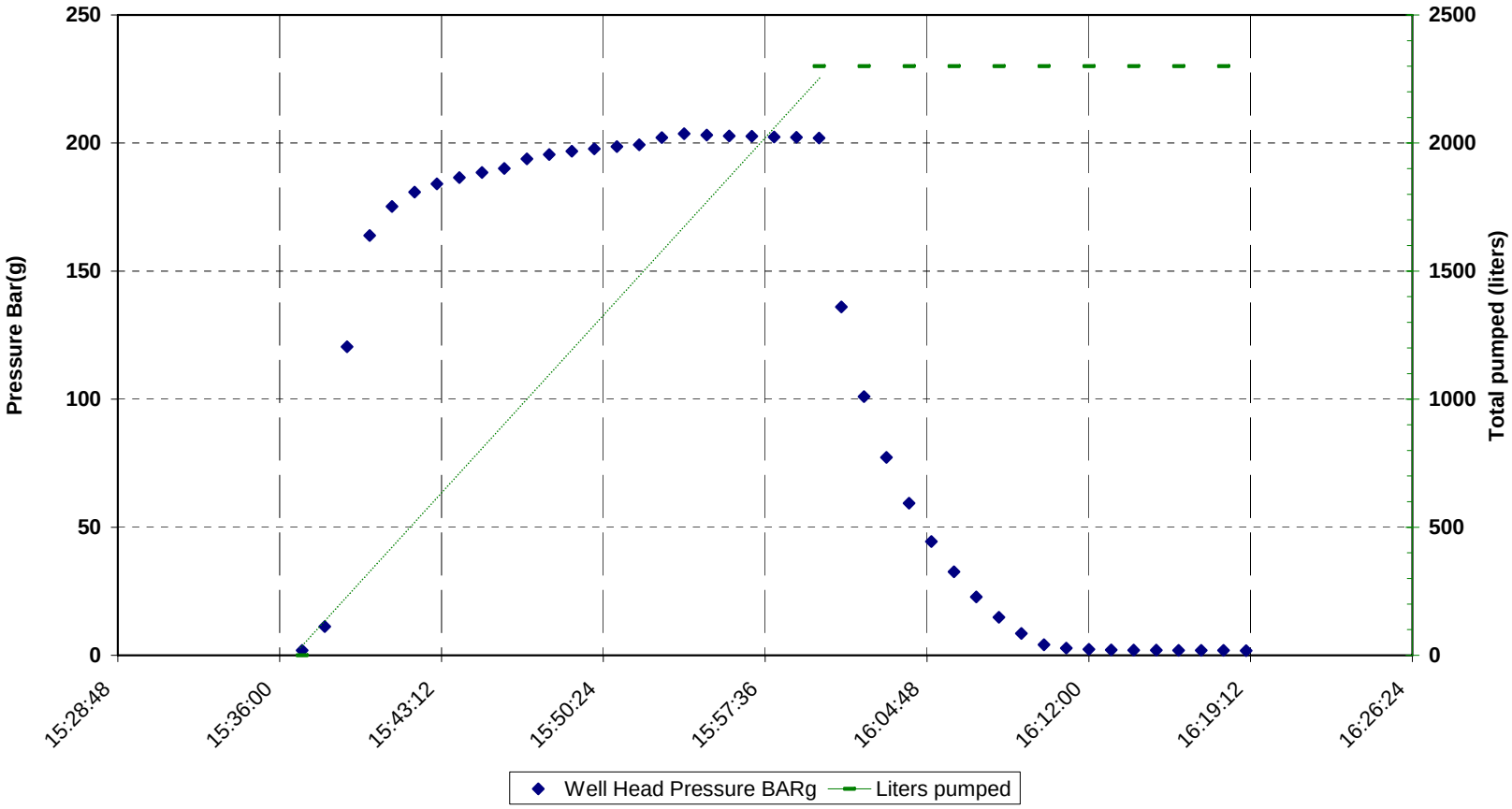
Cycle 1 80 l/m
14 May 2005 Astero
1.1 sg NaCl Brine
Total litres returned when bled back to zero = 30 l



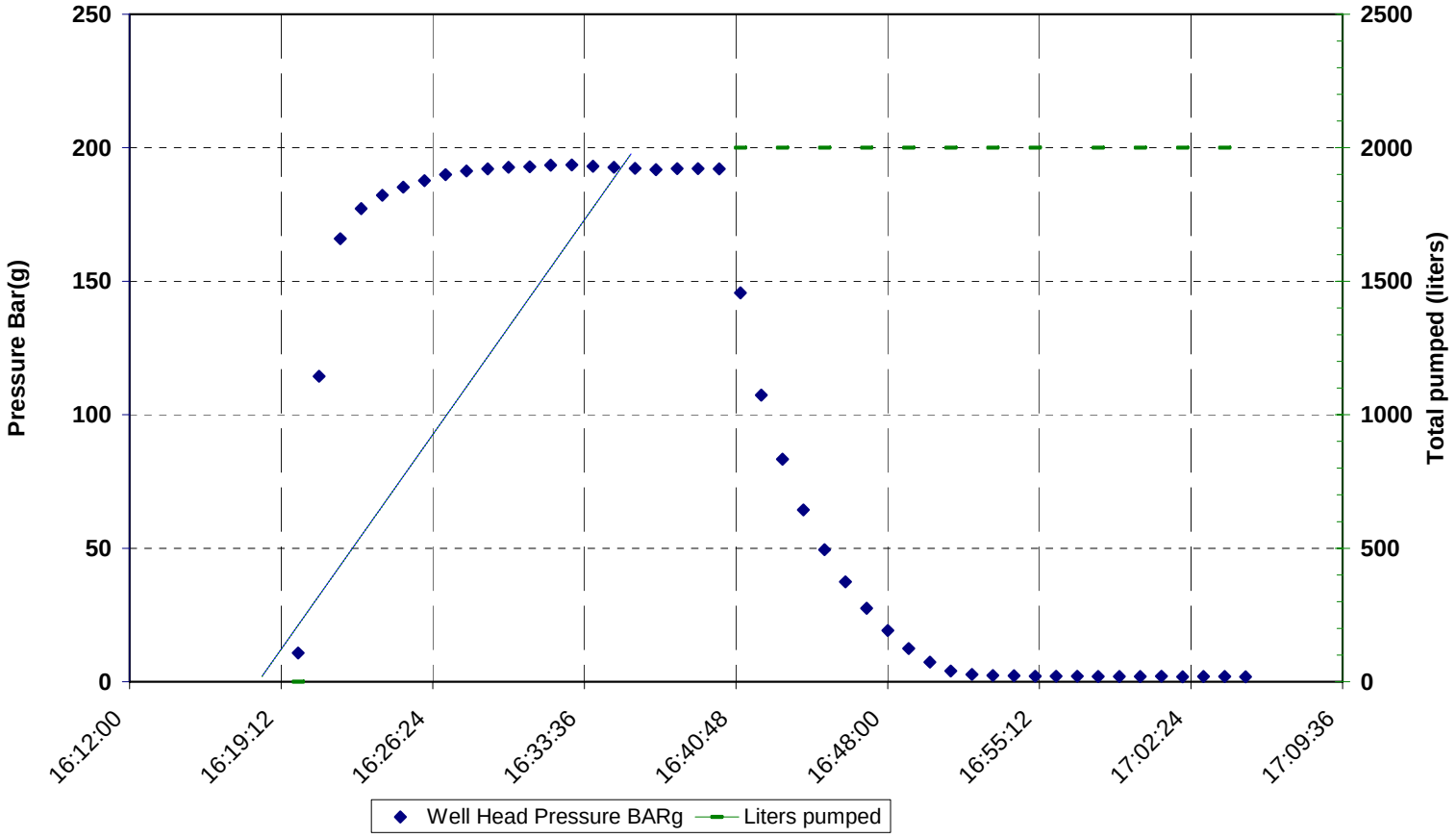
Cycle 2 100 l/m
14 May 2005 Astero
1.1 sg NaCl Brine
Total litres returned when bled back to zero = 80 l



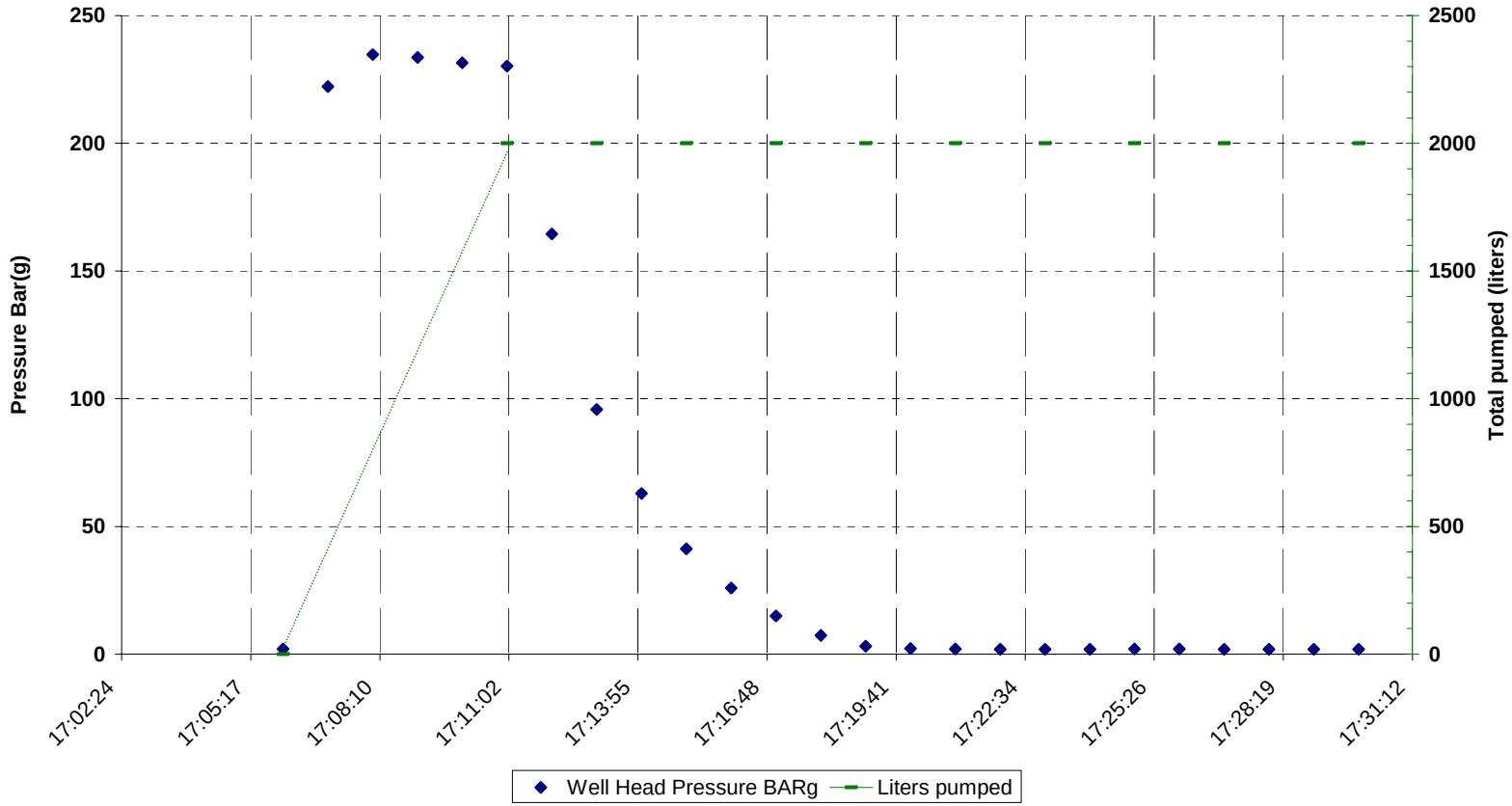
Cycle 3 115 l/m
14 May 2005 Astero
1.1 sg NaCl Brine
Total litres returned when bled back to zero = 90 l



Cycle 4 100 l/m
14 May 2005 Astero
1.1 sg NaCl Brine
Total litres returned when bled back to zero = 60 l



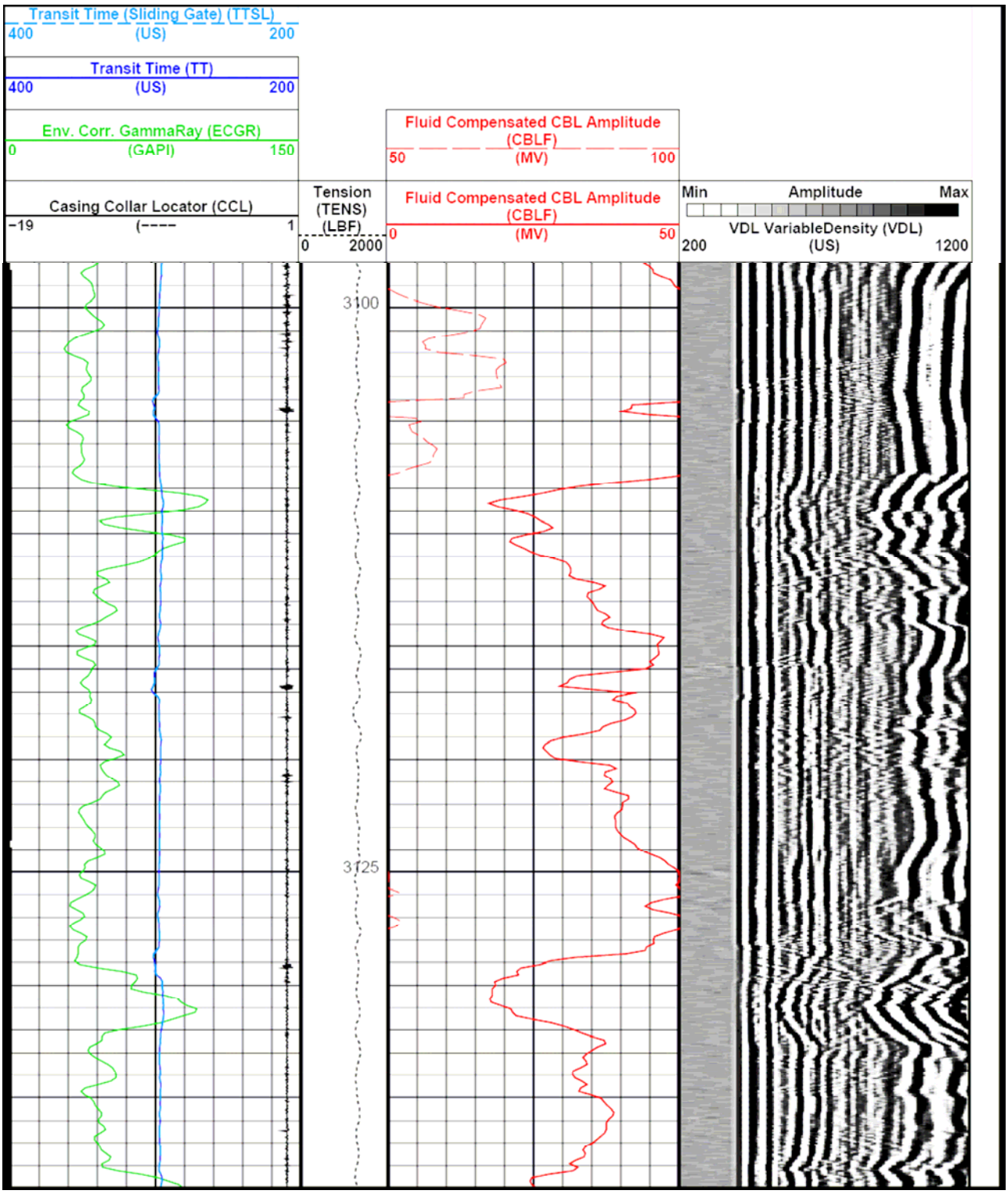
Highrate Injection 360 l/m
14 May 2005 Astero
1.1 sg NaCl Brine
Total litres returned when bled back to zero = 60 l



Appendix D

Logging Data Sheets

Astero 35/11-13 J Sands



Appendix E

String Diagrams and Tally

HALLIBURTON

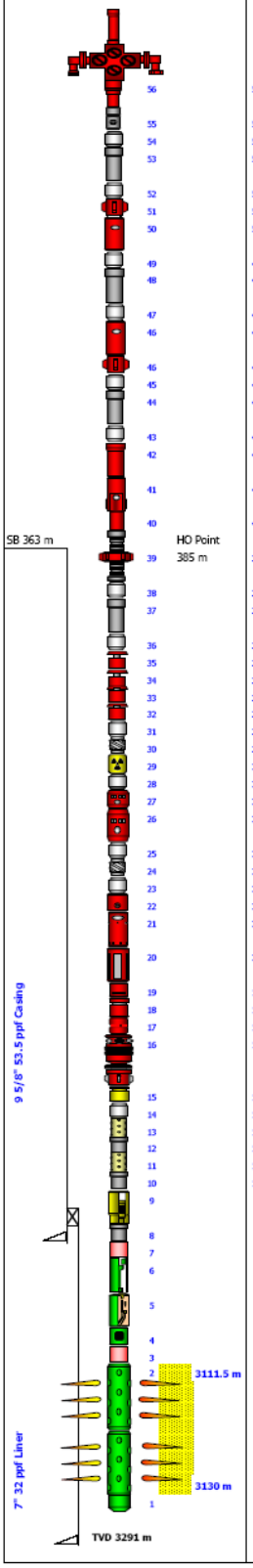
Astero - Downhole Test String Diagram - DST#1

HYDRO

Prepared For:		Company:					Date:	New Well
Nick Jensen Visser		Hydro					1-May-05	Y
Field Name	Well No.		Rig Name				Revision:	1
Astero	35/11-13		Deepsea Trym					
BHP (est) 324 bar		BHT (Max)	122 C	Landing Tubing Size & Thread Type:			4 1/2" 24 ppf L80 PH4	
Casing Size: 9 5/8"	Weight:	53.5	Grade:	Main Tubing Size & Thread Type:			3 1/2" 12.95 #/ft KO-110SS PH6	
Liner Size: 7"	Weight:	32	Grade:					

	Description	Co.	Top Connection	Lower Connection	OD (in)	ID (in)	Length (m)	Depth (m)
56	Surface Test Tree	PWS	5 3/4" Acme Box	5 3/4" Acme Pin	3.06	n/a		
55	LMW	PWS	5 3/4" Acme Box	5" 4th 2G RH Pin	3.06	n/a		-4.84
54	Crossover	Odfjell	5" 4th 2G RH Box	4 1/2" PH4 Pin	8.25	3.38	0.36	-4.84
53	4 1/2" 24 ppf Test Tubing	Odfjell	4 1/2" PH4 Box	4 1/2" PH4 Pin	4.50	3.38	35.31	-4.48
52	Crossover	Odfjell	4 1/2" PH4 Box	4 1/2" 4 Acme Pin	6.25	3.63	0.48	30.83
51	Centraliser	PWS	4 1/2" 4 Acme Box	4 1/2" 4 Acme Pin	16.00	3.00	1.30	31.31
50	Upper Lubricator Valve	PWS	4 1/2" 4 Acme Box	4 1/2" 4 Acme Pin	10.75	3.63	1.82	32.61
49	Crossover	Odfjell	4 1/2" 4 Acme Box	4 1/2" PH4 Pin	6.25	3.63	0.76	34.43
48	4 1/2" 24 ppf Test Tubing	Odfjell	4 1/2" PH4 Box	4 1/2" PH4 Pin	4.50	3.38	2.98	35.19
47	Crossover	Odfjell	4 1/2" PH4 Box	4 1/2" 4 Acme Pin	6.25	3.00	0.56	38.17
46	Lower Lubricator Valve	PWS	4 1/2" 4 Acme Box	4 1/2" 4 Acme Pin	10.75	3.63	1.82	38.73
46	Centraliser	PWS	4 1/2" 4 Acme Box	4 1/2" 4 Acme Pin	16.00	3.00	1.40	40.55
45	Crossover	Odfjell	4 1/2" 4 Acme Box	4 1/2" PH4 Pin	6.25	3.00	0.76	41.95
44	4 1/2" 24 ppf Test Tubing	Odfjell	4 1/2" PH4 Box	4 1/2" PH4 Pin	4.50	3.38	335.16	42.71
43	Cross Over	Odfjell	4 1/2" PH4 Box	4 1/2" 4 Acme Pin	6.25	3.00	0.57	377.87
42	Shearable Handling Sub	PWS	4 1/2" 4 Acme Box	4 1/2" 4 Acme Pin	4.90	3.00	1.54	378.44
			5" 563 Hydr Box					
41	Sub Surface Test Tree	PWS	4 1/2" 4 Acme Box	4 1/2" 4 Acme Pin	13.00	3.00	1.72	379.98
40	Slick Joint	PWS	4 1/2" 4 Acme Box	4 1/2" 4 Acme Pin	5.00	3.00	2.04	381.70
39	Adjustable Mandrel	PWS	4 1/2" 4 Acme Box	4 1/2" 4 Acme Pin	5.00	3.00	1.63	383.74
38	Crossover	Odfjell	4 1/2" 4 Acme Box	3 1/2" 533 Hydr Pin	6.25	2.25	0.81	385.37
37	3 1/2" 12.95 ppf Test Tubing	Odfjell	3 1/2" 533 Hydr Box	3 1/2" 533 Hydr Pin	3.50	2.75	2,482.32	386.18
36	Crossover	Odfjell	3 1/2" 533 Hydr Box	3 7/8" CAS Pin	4.29	2.75	0.73	2,868.50
35	Slip Joint (full open)	Halliburton	3 7/8" CAS Box	3 7/8" CAS Pin	5.03	2.25	6.10	2,869.23
34	Slip Joint (full open)	Halliburton	3 7/8" CAS Box	3 7/8" CAS Pin	5.03	2.25	6.10	2,875.33
33	Slip Joint (full closed)	Halliburton	3 7/8" CAS Box	3 7/8" CAS Pin	5.03	2.25	4.58	2,881.43
32	Slip Joint (full closed)	Halliburton	3 7/8" CAS Box	3 7/8" CAS Pin	5.03	2.25	4.58	2,886.01
31	Crossover	Odfjell	3 1/2" PH6 Box	3 1/2" PH6 Pin	5.00	2.25	0.53	2,890.59
30	4 3/4" Drill Collars	Odfjell	3 1/2" PH6 Box	3 1/2" PH6 Pin	4.75	2.25	167.29	2,891.12
29	RA Marker Sub	Halliburton	3 1/2" PH6 Box	3 1/2" PH6 Pin	4.75	2.25	0.30	3,058.41
28	Crossover	Halliburton	3 1/2" PH6 Box	3-7/8" CAS Pin	5.00	2.25	0.38	3,058.71
27	RD Circulating Valve	Halliburton	3 7/8" CAS Box	3 7/8" CAS Pin	5.03	2.25	1.09	3,059.09
26	OMNI (reversing) Valve	Halliburton	3 7/8" CAS Box	3 7/8" CAS Pin	5.03	2.25	6.52	3,060.18
25	Crossover	Odfjell	3 7/8" CAS Box	3 1/2" PH6 Pin	5.00	2.25	0.38	3,066.70
24	4 3/4" Drill Collar Joint	Odfjell	3 1/2" PH6 Box	3 1/2" PH6 Pin	4.75	2.25	9.35	3,067.08
23	Crossover	Odfjell	3 1/2" PH6 Box	3 7/8" CAS Pin	5.00	2.25	0.39	3,076.43
22	Sliding Sleeve Drain Valve	Halliburton	3 7/8" CAS Box	3 7/8" CAS Pin	5.03	2.25	1.05	3,076.82
21	LPR-N Tester Valve	Halliburton	3 7/8" CAS Box	3 7/8" CAS Pin	5.03	2.25	4.83	3,077.87
20	Instream Gauge Carrier	Halliburton	3 7/8" CAS Box	3 7/8" CAS Pin	5.03	2.25	2.35	3,082.70
19	Tubing String Testing Valve	Halliburton	3 7/8" CAS Box	3 7/8" CAS Pin	5.03	2.25	1.22	3,085.05
18	Big John Jar	Halliburton	3 7/8" CAS Box	3 7/8" CAS Pin	5.03	2.25	1.59	3,086.27
17	Safety Joint	Halliburton	3 7/8" CAS Box	3 7/8" CAS Pin	5.03	2.25	1.04	3,087.86
16	7" Champ Packer (mech set)	Halliburton	3 7/8" CAS Box	3 1/2" IF Pin	5.70	2.25	1.70	3,088.90
	Packer Rubber						1.00	3,090.60
15	5" Vetrical Shock Absorber	Halliburton	3 1/2" IF Box	3 1/2" IF Pin	5.00	2.25	1.49	3,091.60
14	Crossover	Halliburton	3 1/2" IF Box	2 7/8" EUE Pin	5.00	2.25	0.34	3,093.09
13	2 7/8" Perforated Pup	Halliburton	2 7/8" EUE Box	2 7/8" EUE Pin	3.50	2.44	0.22	3,093.43
12	2 7/8" Tubing	Halliburton	2 7/8" EUE Box	2 7/8" EUE Pin	3.67	2.44	3.09	3,093.65
11	2 7/8" Perforated Pup	Halliburton	2 7/8" EUE Box	2 7/8" EUE Pin	3.50	2.44	0.22	3,096.74
10	2 7/8" Tubing	Halliburton	2 7/8" EUE Box	2 7/8" EUE Pin	3.67	2.44	3.07	3,096.96
9	2 7/8" MTR 2,125 Latch	Halliburton	2 7/8" EUE Box	2 7/8" EUE Pin	3.38	2.13	0.52	3,100.03
8	2 7/8" Tubing	Halliburton	2 7/8" EUE Box	2 7/8" EUE Pin	3.67	2.44	6.16	3,100.55
7	Collar	Halliburton	2 7/8" EUE Box	2 7/8" EUE Box	3.67	n/a	0.13	3,106.71
6	Time delay Firing Head	Halliburton	2 7/8" EUE Pin	2 7/8" Acme Box	3.38	n/a	0.76	3,106.84
5	Multi Action Firing Head	Halliburton	2 7/8" Acme Pin	2 7/8" Acme Box	3.38	n/a	1.04	3,107.60
4	3 3/8" DID Safety Sub	Halliburton	2 7/8" Acme Pin	2 7/8" Acme Box	3.38	n/a	0.93	3,108.64
3	Collar	Halliburton	2 7/8" Acme Pin	4 5/8" Acme Box	4.63	n/a	0.13	3,109.57
	Safety Spacer	Halliburton			4.63	n/a	1.80	3,109.70
2	4 5/8" 12 spf 60 deg HMX Millenium Charges	Halliburton	4 5/8" Acme Pin	4 5/8" Acme Box	4.63	n/a	18.50	3,111.50
1	4 5/8" Bull Plug	Halliburton	4 5/8" Acme Pin		4.63	n/a	0.06	3,130.00
	Bottom of BHA							

PREPARED BY: Roeland Kolk
OFFICE: Halliburton Tananger TELEPHONE: 51837751



DST 1 TEST STRING TALLY - Final Spaced Out with Guns on Depth

CLIENT:		Norsk Hydro AS		DATE:	02-Jun-05		
WELL NUMBER:		35/11-13 Astero		RUN NUMBER:	DST 1	J-54 sands	
PREPARED BY:		Nick Visser		REVISION:	2		
		TD, Wireline Depth MD BRT (PBD)	3200.00	m MD	7" Liner RA pip @ 2993.08 m MD / TOL 2825 m MD		
		TD Drillers Depth MD BRT (PBD)	3118.00	m MD	9 5/8 shoe @ 2924.4 m MD	Sea bed 386.68 m	
TOP SHOT, WL Depth MD BRT			3111.50	m MD	Top shot to RA Sub	53.046	
BOTTOM SHOT, WL Depth MD BRT			3130.00	m MD	Datum 384.07 m MD mean tide		
			inch	inch	Item	Bot of item	Depth from END
Assy	Joint #	Item	ID	OD	Length m	Depth m	to top of item
		Bottom of string				3130.06	0.000
		3 3/8" Bull Nose	n/a	3.375	0.060	3130.06	0.060
	# 1	4 5/8" Gun Loaded 16 ft, 12 spf	n/a	4.625	5.090	**3130.00**	5.150
	# 2	4 5/8" Gun Loaded 16 ft, 12 spf	n/a	4.625	5.090	3124.91	10.240
	# 3	4 5/8" Gun Loaded 16 ft, 12 spf	n/a	4.625	5.090	3119.82	15.330
	# 4	4 5/8" Gun Loaded 16 ft, 12 spf	n/a	4.625	3.230	3114.73	18.560
		4 5/8" Safety Spacer	n/a	4.625	1.860	**3111.50**	20.420 →
		3 3/8" DID Safety Sub	n/a	3.375	0.930	3109.64	21.350
		Multi Action Firing Head	n/a	3.375	1.040	3108.71	22.390
		3 3/8" Firing head adaptor	n/a	3.375	0.210	3107.67	22.600
		3 3/8" Time Delay Firing Head	n/a	3.375	0.560	3107.46	23.160
		Collar	n/a	3.668	0.130	3106.90	23.290
		2 7/8" EUE Tubing Joint-10ft (2 off)	2.440	3.668	6.160	3106.77	29.450
		2 7/8" MTR With 2.125 Latch	**2.125**	**3.375**	**0.520**	**3100.61**	**29.970**
		2 7/8" EUE Tubing Joint-10ft	2.440	3.668	3.070	3100.09	33.040
		2 7/8" EUE Ported Sub	2.440	3.500	0.220	3097.02	33.260
		2 7/8" EUE Tubing Joint-10ft	2.440	3.668	3.090	3096.80	36.350
		2 7/8" EUE Ported Sub	2.440	3.500	0.220	3093.71	36.570
		X/Over 3 1/2" IF x 2 7/8" EUE	2.250	5.000	0.340	3093.49	36.910
		5" Vertical Shock Absorber	2.250	5.000	1.490	3093.15	38.400
		7" Mechanical set packer-btm to COE	**2.250**	**5.700**	**1.050**	**3091.66**	**39.450**
						3090.61	
		7" Mechanical set packer-COE to top	**2.250**	**5.700**	**1.700**	**3090.61**	**41.150**
		Safety Joint	2.250	5.030	1.040	3088.91	42.190
	Closed	**Hydraulic Jar (0.254m travel)** →	2.250	5.030	**1.586**	3087.87	**43.776**
		Tubing Tester Valve(TST - 4k R/D)	2.250	5.030	1.220	3086.28	44.996
		Gauge Carrier	2.250	5.030	2.350	3085.06	47.346
		LPR-N (Tester Valve)	2.250	5.030	4.830	3082.71	52.176
		Drain Valve	2.250	5.030	1.050	3077.88	53.226
		x-over	2.250	5.000	0.390	3076.83	53.616
		4 3/4" DC One joint	**2.250**	**4.750**	**9.350**	3076.44	62.966
		x-over	2.250	5.000	0.380	3067.09	63.346
		OMNI (Reversing valve)	2.250	5.030	6.520	3066.71	69.866
		RD (Ann. Operated Reversing Valve) 7K R/D	2.250	5.030	1.090	3060.19	70.956
		x-over	2.250	5.000	0.490	3059.10	71.446
		RA marker Sub. Supplied by Halliburton	2.250	4.750	0.160	3058.61	71.606
		Pip			0.150	**3058.45**	**71.756** →
		4 3/4" DC Six stands (15 jts from deck & one stand)	**2.250**	**4.750**	**167.290**	3058.30	**239.046**
		x-over	2.250	5.030	0.530	2891.01	239.576
8		Slip Joint (100%)	2.250	5.030	6.100	2890.48	245.676
9		Slip Joint (100%)	2.250	5.030	6.100	2884.38	251.776
10		Slip Joint (2%)	2.250	5.030	4.608	2878.28	256.384
11		Slip Joint (0%)	2.250	5.030	4.580	2873.68	260.964
		Tubing x-over	2.750	4.290	0.730	2869.10	261.694
First Stand		3.5" Test Tubing 12.95 ppf Hydril 533 (single)	2.750	3.500	9.438	2868.37	271.132
		3.5" Test Tubing 12.95 ppf Hydril 533 (single)	2.750	3.500	9.438	2858.93	280.569
1	P/T	**3.5" Test Tubing 12.95 ppf Hydril 533 (single)**	**2.750**	**3.500**	**9.408**	2849.49	**289.977**
		3.5" Test Tubing 12.95 ppf Hydril 533 (single)	2.750	3.500	9.488	2840.08	299.464
2		3.5" Test Tubing 12.95 ppf Hydril 533 (single)	2.750	3.500	9.468	2830.60	308.932
		3.5" Test Tubing 12.95 ppf Hydril 533 (single)	2.750	3.500	9.458	2821.13	318.389
		3.5" Test Tubing 12.95 ppf Hydril 533 (single)	2.750	3.500	9.398	2811.67	327.787
3		3.5" Test Tubing 12.95 ppf Hydril 533 (single)	2.750	3.500	9.408	2802.27	337.194
		3.5" Test Tubing 12.95 ppf Hydril 533 (single)	2.750	3.500	9.488	2792.87	346.682
4 - 87		3.5" Test Tubing 12.95 ppf Hydril 533 (single)	2.750	3.500	2381.684	2783.38	2728.366
88		**3.5" Test Tubing 12.95 ppf Hydril 533 (single)**	**2.750**	**3.500**	9.448	401.69	2737.813
		Pup configuration	**2.750**	**5.000**	3.286	392.25	**2741.099**
		Wireline depth correction factor			2.780	388.96	**2743.879**

DST 1 TEST STRING TALLY - Final Spaced Out with Guns on Depth

CLIENT:		Norsk Hydro AS		DATE:	02-Jun-05		
WELL NUMBER:		35/11-13 Astero		RUN NUMBER:	DST 1	J-54 sands	
PREPARED BY:		Nick Visser		REVISION:	2		
		TD, Wireline Depth MD BRT (PBD)	3200.00	m MD	7" Liner RA pip @ 2993.08 m MD / TOL 2825 m MD		
		TD Drillers Depth MD BRT (PBD)	3118.00	m MD	9 5/8 shoe @ 2924.4 m MD	Sea bed 386.68 m	
TOP SHOT, WL Depth MD BRT			3111.50	m MD	Top shot to RA Sub	53.046	
BOTTOM SHOT, WL Depth MD BRT			3130.00	m MD	Datum 384.07 m MD mean tide		
			inch	inch	Item	Bot of item	Depth from END
Assy	Joint #	Item	ID	OD	Length m	Depth m	to top of item
		Two off X-over (4 1/2" 4 ACME B x 3 1/2" Hydril 533 P)	2.25	6.25	0.81	386.18	2744.689
		Adjustable joint	2.90	5.00	0.37	385.37	2745.059
	→	Hang Off point (MST adj 0 / RT to Datum=384.7 m)	0.00	0.00		385.00	2745.059
		Fluted hanger	3.00	11.00		385.00	2745.059
		Adjustable mandrel, top	3.00	5.00	1.26	383.74	2746.319
		5" slick joint	3.00	5.00	2.04	381.70	2748.359
		Sub surface test tree (SSTT)	3.00	13.00	1.72	379.98	2750.079
		Shear handling sub (on SSTT)	3.00	4.90	1.54	378.44	2751.619
		X-over (4 1/2" Hydril PH-4 B x 4 1/2" 4 ACME P)	3.00	6.25	0.57	377.87	2752.189
		1 pup-joint 4 1/2" Hydril PH-4Tubing	3.38	4.50	1.37	376.50	2753.559
1		4.5" Test Tubing 24 ppf PH-4 (single)	3.38	4.50	9.55	366.95	2763.109
		4.5" Test Tubing 24 ppf PH-4 (single)	3.38	4.50	9.54	357.41	2772.649
		4.5" Test Tubing 24 ppf PH-4 (single)	3.38	4.50	9.54	347.87	2782.189
2		4.5" Test Tubing 24 ppf PH-4 (single)	3.38	4.50	9.49	338.38	2791.679
		4.5" Test Tubing 24 ppf PH-4 (single)	3.38	4.50	9.55	328.83	2801.229
		4.5" Test Tubing 24 ppf PH-4 (single)	3.38	4.50	9.55	319.28	2810.779
3		4.5" Test Tubing 24 ppf PH-4 (single)	3.38	4.50	9.54	309.74	2820.319
		4.5" Test Tubing 24 ppf PH-4 (single)	3.38	4.50	9.53	300.21	2829.849
		4.5" Test Tubing 24 ppf PH-4 (single)	3.38	4.50	9.55	290.66	2839.399
4		4.5" Test Tubing 24 ppf PH-4 (single)	3.38	4.50	9.54	281.12	2848.939
		4.5" Test Tubing 24 ppf PH-4 (single)	3.38	4.50	9.54	271.58	2858.479
		4.5" Test Tubing 24 ppf PH-4 (single)	3.38	4.50	9.55	262.03	2868.029
5		4.5" Test Tubing 24 ppf PH-4 (single)	3.38	4.50	9.53	252.50	2877.559
		4.5" Test Tubing 24 ppf PH-4 (single)	3.38	4.50	9.52	242.98	2887.079
		4.5" Test Tubing 24 ppf PH-4 (single)	3.38	4.50	9.54	233.44	2896.619
6		4.5" Test Tubing 24 ppf PH-4 (single)	3.38	4.50	9.55	223.89	2906.169
		4.5" Test Tubing 24 ppf PH-4 (single)	3.38	4.50	9.54	214.35	2915.709
		4.5" Test Tubing 24 ppf PH-4 (single)	3.38	4.50	9.53	204.82	2925.239
7		4.5" Test Tubing 24 ppf PH-4 (single)	3.38	4.50	9.54	195.28	2934.779
		4.5" Test Tubing 24 ppf PH-4 (single)	3.38	4.50	9.53	185.75	2944.309
		4.5" Test Tubing 24 ppf PH-4 (single)	3.38	4.50	9.54	176.21	2953.849
8		4.5" Test Tubing 24 ppf PH-4 (single)	3.38	4.50	9.52	166.69	2963.369
		4.5" Test Tubing 24 ppf PH-4 (single)	3.38	4.50	9.53	157.16	2972.899
		4.5" Test Tubing 24 ppf PH-4 (single)	3.38	4.50	9.55	147.61	2982.449
9		4.5" Test Tubing 24 ppf PH-4 (single)	3.38	4.50	9.55	138.06	2991.999
		4.5" Test Tubing 24 ppf PH-4 (single)	3.38	4.50	9.54	128.52	3001.539
		4.5" Test Tubing 24 ppf PH-4 (single)	3.38	4.50	9.48	119.04	3011.019
10		4.5" Test Tubing 24 ppf PH-4 (single)	3.38	4.50	9.54	109.50	3020.559
		4.5" Test Tubing 24 ppf PH-4 (single)	3.38	4.50	9.54	99.96	3030.099
		4.5" Test Tubing 24 ppf PH-4 (single)	3.38	4.50	9.53	90.43	3039.629
11		4.5" Test Tubing 24 ppf PH-4 (single)	3.38	4.50	9.54	80.89	3049.169
		4.5" Test Tubing 24 ppf PH-4 (single)	3.38	4.50	9.55	71.34	3058.719
		4.5" Test Tubing 24 ppf PH-4 (single)	3.38	4.50	9.55	61.79	3068.269
40		4.5" Test Tubing 24 ppf PH-4 (single)	3.38	4.50	9.54	52.25	3077.809
41		4.5" Test Tubing 24 ppf PH-4 (single)	3.38	4.50	9.54	42.71	3087.349
		X-over (4 1/2" 4 ACME P x 4 1/2" Hydril PH-4 P)	3.00	6.25	0.76	41.95	3088.109
		Centralizer	3.00	16.00	1.40	40.55	3089.509
		Lower lubricator valve	3.63	10.75	1.82	38.73	3091.329
		X-over (4 1/2" Hydril PH-4 B x 4 1/2" 4 ACME P)	3.00	6.25	0.56	38.17	3091.889
		4.5" Test Tubing 24 ppf PH-4 (pup)	3.00	5.50	2.98	35.19	3094.869
		X-over (4 1/2" Hydril PH-4 P x 4 1/2" 4 ACME B)	3.63	6.25	0.76	34.43	3095.629
		Upper lubricator valve	3.63	10.75	1.82	32.61	3097.449
		Centralizer	3.00	16.00	1.30	31.31	3098.749
		X-over (4 1/2" Hydril PH-4 B x 4 1/2" 4 ACME P)	3.63	6.25	0.48	30.83	3099.229
		4.5" Test Tubing 24 ppf PH-4 (pup)	3.380	4.500	1.85	28.98	3101.074
		4.5" PH-4 PUP joints A and D (2,891 & 2,834)	3.380	4.500	5.18	23.81	3106.253
42		4.5" Test Tubing 24 ppf PH-4 (single)	3.380	4.500	9.55	14.26	3115.803
43		4.5" Test Tubing 24 ppf PH-4 (single)	3.380	4.500	9.55	4.71	3125.353
		Flowhead single.4.5" Test Tubing 24 ppf PH-4 (single)	3.380	4.500	9.54	-4.84	
		X-over (5 3/4" stub ACME B x 4 1/2" Hydril PH-4 P)	3.38	8.25	0.36	-5.20	
		Flow Head	3.06	N/A	4.73	-9.93	
		Inner barrel shoe at 20, 5 m RKB at mid stroke.					

Appendix F

Surface Sampling Listing

Petrotech KNOWLEDGE

Sample List (Water/Oil/Gas)

Project no:	55871
Operator:	Norsk Hydro
Rig:	Deep Sea Trym
Well:	35/11-13

Sample no.	Petrotech bottle no.	Date	Time	DST no.	Flow period	Sampling point	Sample type	Volume	Bottle press. Barg	Comments
1.01	N/A	2005-05-11	23:00	1	Main	Test Sep	Water	1L	Atm	
1.02	PT-2075	2005-05-12	03:30-04:00	1	Main	Test Sep	Oil	600cc	11	PVT set-1
1.03	A-1806	2005-05-12	03:30-04:00	1	Main	Test Sep	Gas	20L	20	PVT set-1
1.04	5034A	2005-05-12	03:30-04:00	1	Main	Test Sep	Gas	20L	20	PVT set-1
1.05	N/A	2005-05-12	10:30 - 11:35	1	Main	Calibration ank	Oil	200 l	200 l Drum	Mixing study sample
1.06	N/A	2005-05-12	10:30 - 11:35	1	Main	Calibration ank	Oil	200 l	200 l Drum	Mixing study sample
1.07	PT1123	2005-05-12	12:20-12:45	1	Main	Oil outlet Test Sep.	Oil	600 cc	12	PVT set-2
1.08	A1803	2005-05-12	12:20-12:50	1	Main	Gas outlet Test Sep.	Gas	20 l	20	PVT set-2
1.09	4764 A	2005-05-12	12:20-12:50	1	Main	Gas outlet Test Sep.	Gas	20 l	20	PVT set-2
1.10	TS 11518	2005-05-12	13:26-13:57	1	Main	Oil outlet Test Sep.	Oil	600 cc	12	PVT set-3
1.11	A2456	2005-05-12	13:26-13:58	1	Main	Gas outlet Test Sep.	Gas	20 l	20	PVT set-3
1.12	A 1802	2005-05-12	13:26-13:59	1	Main	Gas outlet Test Sep.	Gas	20 l	20	PVT set-3
1.13	PT 2059	2005-05-12	14:35-15:05	1	Main	Oil outlet Test Sep.	Oil	600 cc	12	PVT set-4
1.14	A 2114	2005-05-12	14:35-15:05	1	Main	Gas outlet Test Sep.	Gas	20 l	20	PVT set-4
1.15	A 0166	2005-05-12	14:35-15:05	1	Main	Gas outlet Test Sep.	Gas	20 l	20	PVT set-4
1.16	Geo 151	2005-05-12	15:15-15:20	1	Main	Gas outlet Test Sep.	Gas	150 cc	20	Gechemical # 1
1.17	PT 226	2005-05-12	15:22-15:25	1	Main	Gas outlet Test Sep.	Gas	150 cc	20	Gechemical # 2
1.18	Geo 150	2005-05-12	15:28 -15:33	1	Main	Gas outlet Test Sep.	Gas	150 cc	20	Gechemical # 3
1.19	N/A	2005-05-12	17:00	1	Main	Oil outlet Test Sep.	Oil	1 l	Atm	Plastic Botle
1.20	N/A	2005-05-12	17:00	1	Main	Oil outlet Test Sep.	Oil	1 l	Atm	Plastic Botle
1.21	N/A	2005-05-12	17:00	1	Main	Oil outlet Test Sep.	Oil	1 l	Atm	Plastic Botle
1.22	N/A	2005-05-12	17:00	1	Main	Oil outlet Test Sep.	Oil	1 l	Atm	Plastic Botle
1.23	N/A	2005-05-12	17:00	1	Main	Oil outlet Test Sep.	Oil	1 l	Atm	Plastic Botle
1.24	N/A	2005-05-12	17:10	1	Main	Oil outlet Test Sep.	Oil	1 l	Atm	Aluminium Botle
1.25	N/A	2005-05-12	17:10	1	Main	Oil outlet Test Sep.	Oil	1 l	Atm	Aluminium Botle
1.26	N/A	2005-05-12	17:15	1	Main	Oil outlet Test Sep.	Oil	0.5	Atm	Aluminium Botle
1.27	N/A	2005-05-12	17:15	1	Main	Oil outlet Test Sep.	Oil	0.5	Atm	Aluminium Botle
1.28	A 2010	2005-05-12	17:00-17:15	1	Main	Oil outlet Test Sep.	Oil	20 l	~4	For Emulsion study
1.29	5308 A	2005-05-12	17:30 - 17:45	1	Main	Oil outlet Test Sep.	Oil	20 l	~4	For Crude Assay
1.30	N/A	2005-05-12	20:30	1	Main	Water outlet Test Sep.	Water	0.5 l	Atm	
1.31	N/A	2005-05-12	20:30	1	Main	Water outlet Test Sep.	Water	0.5 l	Atm	
1.32	N/A	2005-05-12	20:30	1	Main	water outlet Test Sep.	Water	1 l	Atm	
1.33	N/A	2005-05-12	20:30	1	Main	Water outlet Test Sep.	Water	1 l	Atm	
1.34	N/A	2005-05-12	20:30	1	Main	Water outlet Test Sep.	Water	1 l	Atm	
1.35	N/A	2005-05-12	20:30	1	Main	water outlet Test Sep.	Water	1 l	Atm	
1.36	N/A	2005-05-12	20:30	1	Main	Water outlet Test Sep.	Water	1 l	Atm	

Appendix G

Gas, Oil & Water Analysis Data

Petrotech KNOWLEDGE

ON-SITE MEASUREMENTS OF TRACE ELEMENTS IN GAS

Client	Norsk Hydro
License No.	PL090
Formation	
Well	35/11-13 Astero
Sample point	Gas outlet Test separator

Date	Time	Gas Gravity Sg Air =1	H_2S * (ppmv)	CO_2 (vol %)
2005-05-11	11:15		0.0	0.0
"	11:30		0.0	4.0
"	11:35		0.0	4.0
"	11:45		0.0	4,2
"	11:48	0.670		
"	12:00		0.0	5.0
"	12:10		0.0	5,1
"	12:12	0.670		
"	12:20		0.0	5,1
"	12:25	0.670		
"	22:00	0.692	0.0	5.0
"	23:00	0.725	1.0	5.0
2005-05-12	0:00	0.726	1.8	6.0
"	1:00	0.724	1.5	5.8
"	2:00	0.730	2.0	5.5
"	3:00	0.728	2.0	5.5
"	4:00	0.728	2.0	5.5
"	5:00	0.726	2.0	5.5
"	6:00	0.729	2.0	5.5
"	7:00	0.729	2.0	5.2
"	8:00	0.728	2.8	5.0
"	9:00	0.728	2.0	5.5
"	10:00 Meter Factor			
"	10:35	0.727	2 / (5 by Mærsk)	5.0
"	11:00	0.730	2/(4 by Mærsk)	5.0
"	12:00	0.730	2.2	5.0
"	14:00	0.730	2.4	5.0
"	15:00	0.734	2.3	5,2
"	18:20	0.738	2.5	5.0
"	19:00	0.728	2.5	5.0
"	20:00	0.730	2.2	5.3
"	21:00	0.730	2.5	5.2
"				

* In case of temperatures between 0°C and 10 °C, the H2S reading has to be multiplied by 1.5.

Petrotech KNOWLEDGE

ON-SITE MEASUREMENTS OF CONDENSATE

Client	Norsk Hydro
License No.	PL090
Formation	
Well	35/11-13 Astero
Sample point	Oil outlet Test Separator

Date	Time	Density (g/cm^3)	Temp (°C)	Density* (g/cm^3)	Temp (°C)
2005-05-11	11:48	0.846	16.3	0.847	15
"	12:12	0.842	19.6	0.845	15
"	12:25	0.842	20.7	0.846	15
"	22:00	0.853	19.4	0.856	15
"	23:00	0.870	19.4	0.873	15
2005-05-12	0:00	0.861	19.4	0.864	15
"	1:00	0.856	19.0	0.859	15
"	2:00	0.851	19.6	0.854	15
"	3:00	0.848	21.1	0.852	15
"	4:00	0.846	20.0	0.850	15
"	5:00	0.844	19.0	0.847	15
"	6:00	0.848	18.0	0.850	15
"	7:00	0.845	19.4	0.848	15
"	8:00	0.848	20.1	0.852	15
"	9:00	0.848	20.2	0.852	15
"	10:30	0.847	19.7	0.850	15
"	11:00	0.846	20.6	0.850	15
"	12:00	0.844	22.0	0.849	15
"	14:00	0.850	19.1	0.853	15
"	15:00	0.841	21.4	0.846	15
"	18:20	0.842	22.5	0.847	15
"	19:00	0.843	20.5	0.847	15
"	20:00	0.845	17.0	0.846	15
"	21:00	0.849	17.3	0.851	15

*Density at 15 °C is calculated.

Petrotech KNOWLEDGE

WATER ANALYSES

Client	Norsk Hydro
License No.	PL090
Formation	
Well	35/11-13 Astero
Sample point	

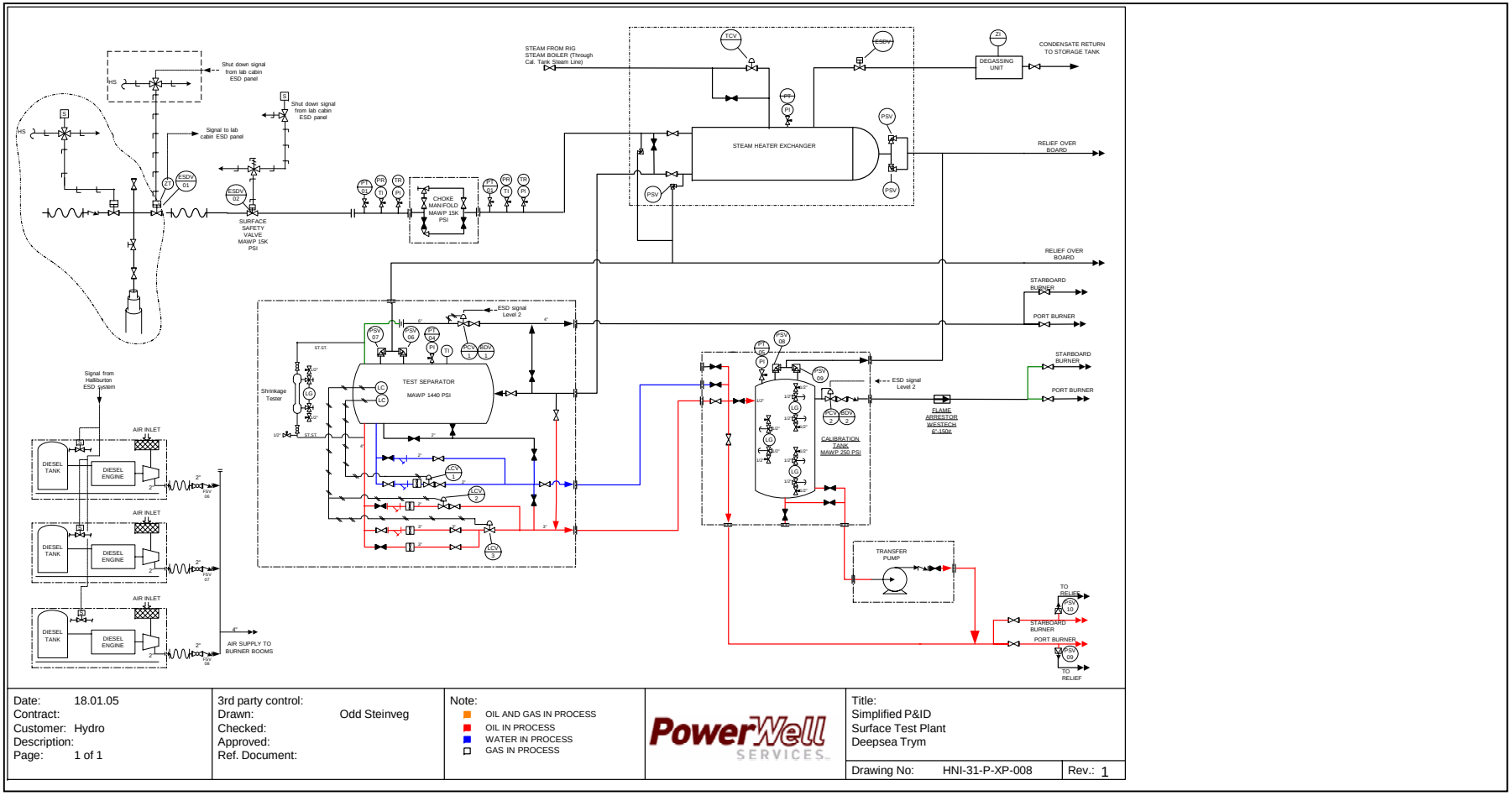
On-site results

Date	Time	Flow period	Chloride mg/l	Alkalinity (titrr. to end point) mg/l HCO_3	CO2 dissolved mg/l	pH	°C	Conductivity mS/cm	°C	Resistivity* Ohm-m	°C	Density g/cm³	°C	SO_4 mg/l	Ba+Sr mg/l
2005-05-11	23:00	Main	69000								20.0				
2005-05-12	20:30	Main	53000	2440	900	6.45	17.8	49.10	15.9	0.1835	20.0	1.081	15.9	550	0

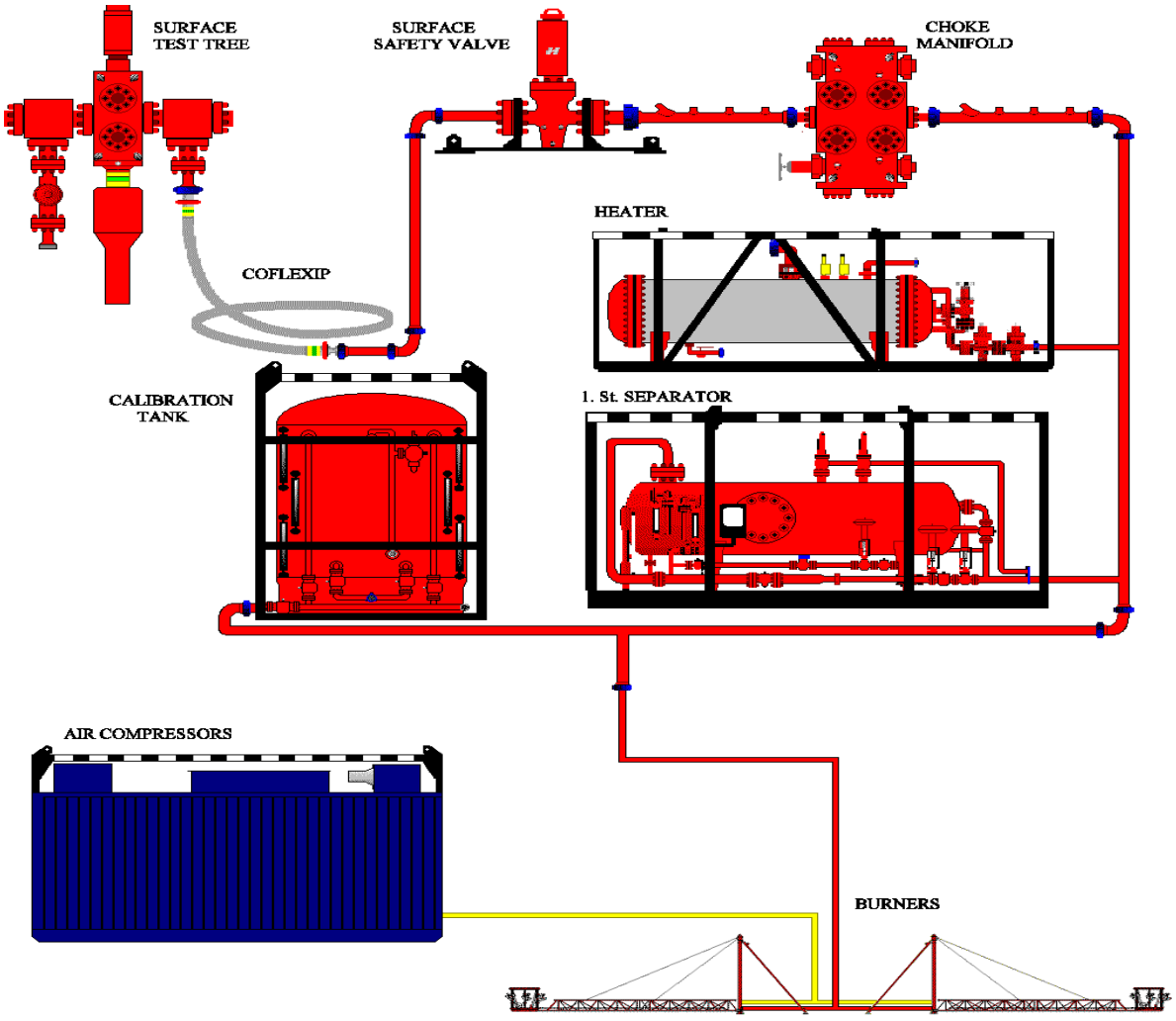
* Resistivity is calculated from conductivity

Appendix H

P&ID – Schematic Layout



Date: 18.01.05 Contract: Customer: Hydro Description: Page: 1 of 1	3rd party control: Drawn: Odd Steinveg Checked: Approved: Ref. Document:	Note: OIL AND GAS IN PROCESS OIL IN PROCESS WATER IN PROCESS GAS IN PROCESS	PowerWell SERVICES	Title: Simplified P&ID Surface Test Plant Deepsea Trym Drawing No: HNI-31-P-XP-008 Rev.: 1


SURFACE TEST TREE
SURFACE SAFETY VALVE
CHOKE MANIFOLD
HEATER
COFLEXIP
CALIBRATION TANK
1. St. SEPARATOR
AIR COMPRESSORS
BURNERS

Appendix I

Time Breakdown

TIME ESTIMATE 35/11-13 Astero Well Test
RIG: Deep Sea Trym
Single Oil zone test
Updated by: Nick Jensen-Visser

Prepared: 01-Jun-2005 11:19

WELL	OPERATION	ACT HRS	Plan Hrs	Budget Hrs		TIME FINISHED (EST)		Status HRS compared to budget
Drill	Complete Drilling & logging well ready for testing		*	*	Tuesday	03-May-2005	5:30	0
Test	RIH to TD	10.0	8.0	10.0	Tuesday	03-May-2005	15:30	0
Test	Circulate to clean hole	2.5	3.0	3.8	Tuesday	03-May-2005	18:00	-1.25
Test	POOH	5.0	7.0	8.8	Tuesday	03-May-2005	23:00	-5
Test	Rack BHA	2.0	2.0	2.5	Wednesday	04-May-2005	1:00	-5.5
Test	Rig up for liner running	2.5	3.0	3.8	Wednesday	04-May-2005	3:30	-6.75
Test	M/U liner (500m)	6.0	4.0	5.0	Wednesday	04-May-2005	9:30	-5.75
Test	M/U liner hgr	0.5	2.0	2.5	Wednesday	04-May-2005	10:00	-7.75
Test	**Run liner to TD**	**14.5**	**10.0**	**12.5**	Thursday	05-May-2005	0:30	-5.75
Test	M/U cement head	0.5	2.0	2.5	Thursday	05-May-2005	1:00	-7.75
Test	Set hgr	1.0	1.0	1.3	Thursday	05-May-2005	2:00	-8
Test	Cement liner	5.5	6.0	7.5	Thursday	05-May-2005	7:30	-10
Test	Set & P/T Liner Top Packer	1.0	2.0	2.5	Thursday	05-May-2005	8:30	-11.5
Test	Reverse out excess cement	1.5	3.0	3.8	Thursday	05-May-2005	10:00	-13.75
Test	Pull the running string	5.0	6.0	7.5	Thursday	05-May-2005	15:00	-16.25
Test	Lay down cement head	0.5	1.0	1.3	Thursday	05-May-2005	15:30	-17
Test	M/U Flat bottom mill and Scraper assembly	1.0	2.0	2.5	Thursday	05-May-2005	16:30	-18.5
Test	RIH 3 1/2" D/P, 5" D/P , and 9 5/8" packer	3.0	2.5	3.1	Thursday	05-May-2005	19:30	-18.625
Test	Test BOP (Full) and install wear bushing (18 3/4" by 9 5/8")	10.0	11.0	13.8	Friday	06-May-2005	5:30	-22.375
Test	RIH remainder 5" DP, scrape packer setting area and tag bottom	6.0	7.0	8.8	Friday	06-May-2005	11:30	-25.125
Test	Clean out Liner / Casing (pump clean up cocktails) / displace well to Test fluid	5.0	6.5	8.1	Friday	06-May-2005	16:30	-28.25
Test	POOH to 1361 m and pressure	5.0	5.0	6.3	Friday	06-May-2005	21:30	-29.5
Test	Pressure test HP flow line to test area	1.5	0.0	0.0	Friday	06-May-2005	23:00	-28
Test	POOH and lay out BHA	9.5	8.0	10.0	Saturday	07-May-2005	8:30	-28.5
Test	Planned Maintenance	1.0	0.0	0.0	Saturday	07-May-2005	9:30	-27.5
Test	Make up and run CBL/VDL	5.5	6.0	7.5	Saturday	07-May-2005	15:00	-29.5
Test	Pick up Coflexips and make up standpipe. (flow)	5.0	4.0	5.0	Saturday	07-May-2005	20:00	-29.5
Test	Planned Maintenance	1.0	0.0	0.0	Saturday	07-May-2005	21:00	-28.5
Test	**Make up Dummy Fluted hanger & RIH with 4 1/2" tubing for BOP space out verification**	**9.0**	**3.0**	**3.8**	Sunday	08-May-2005	6:00	-23.25
Test	**Change out damage pup on lub vlave.**	**1.0**	**0.0**	**0.0**	Sunday	08-May-2005	7:00	-22.25
Test	Toolbox meeting and Make up TCP assembly's (no iron rough neck)	2.0	4.0	5.0	Sunday	08-May-2005	9:00	-25.25
Test	Make up DST BHA inc DC's, on stand of 3 1/2" and Pressure test. (no iron rough neck)	7.5	8.0	10.0	Sunday	08-May-2005	16:30	-27.75
Test	**Run main test string. (max speed 45 sec /stand in 9 5/8" and 105 sec/stand 7" - slip to slip)**	**20.5**	**22.0**	**27.5**	Monday	09-May-2005	13:00	-34.75
Test	Rig up and RIH GR/CCL for TCP correlation.	4.0	6.0	7.5	Monday	09-May-2005	17:00	-38.25
Test	Planned Maintenance	2.0	0.0	0.0	Monday	09-May-2005	19:00	-36.25
Test	Retrieve "dummy" Landing string (Rack back in stands as required)	3.0	3.0	3.8	Monday	09-May-2005	22:00	-37
Test	Space out	1.0	2.0	2.5	Monday	09-May-2005	23:00	-38.5
Test	**M/U SSTT and fluted hanger**	**6.5**	**2.0**	**2.5**	Tuesday	10-May-2005	5:30	-34.5
Test	**Run landing string+ Lub v/v's**	**10.0**	**6.0**	**7.5**	Tuesday	10-May-2005	15:30	-32
Test	**Toolbox meeting and Rig up flow head, and pressure test.**	**9.0**	**5.0**	**6.3**	Wednesday	11-May-2005	0:30	-29.25
Test	Set packer and pressure test packer integrity	3.5	3.0	3.8	Wednesday	11-May-2005	4:00	-29.5
Test	Displace string to base oil cushion	3.0	3.0	3.8	Wednesday	11-May-2005	7:00	-30.25
Test	Hold safety (JSA) meeting and perforate(wait 0,5 hrs for Hellicopter)	3.0	1.5	1.9	Wednesday	11-May-2005	10:00	-29.125
Test	Initial Clean-up flow	2.5	4.5	5.6	Wednesday	11-May-2005	12:30	-32.25
Test	Clean-up flow Build-up	9.0	9.0	11.3	Wednesday	11-May-2005	21:30	-34.5
Test	Main flow period (Surface PVT sampling)	24.0	18.0	22.5	Thursday	12-May-2005	21:30	-33
Test	Main build-up	36.0	27.0	33.8	Saturday	14-May-2005	9:30	-30.75
Test	Rig up Slickline and drop guns	0.0	0.0	0.0	Saturday	14-May-2005	9:30	0
Test	Bottom Hole Sampling flow / rig up e-line and RIH	0.0	10.0	12.5	Saturday	14-May-2005	9:30	-12.49
Test	**Minifrac**	**8.0**	**3.0**	**3.8**	Saturday	14-May-2005	17:30	-8.24
Test	Kill well (addtional time for unseating packeR due to SSTT hanging up)	10.5	8.0	10.0	Sunday	15-May-2005	4:00	-7.74
Test	Repare Casing Tong	1.0	0.0	0.0	Sunday	15-May-2005	5:00	-6.74
Test	Pull test string and lay down singles (No Service breaks DST Tools)(1,5 hrs DT)	31.5	28.0	35.0	Monday	16-May-2005	12:30	-10.24
Test	Clear rig floor, RIH w/ cmt retainer with e-line	6.0	3.0	3.8	Monday	16-May-2005	18:30	-7.99
Test	RIH w /cmt stinger on DP	7.5	0.0	0.0	Tuesday	17-May-2005	2:00	-0.49
Test	Attempt to Squeeze	2.0	0.0	0.0	Tuesday	17-May-2005	4:00	1.51
Test	WOW	3.0	0.0	0.0	Tuesday	17-May-2005	7:00	4.51
Test	Attempt to Squeeze	5.0	0.0	0.0	Tuesday	17-May-2005	12:00	9.51
Test	Pull out of retainer and set 2 cement plugs (400m)	3.5	5.0	6.3	Tuesday	17-May-2005	15:30	6.76
Test	Change out dies on iron roughneck	1.0	0.0	0.0	Tuesday	17-May-2005	16:30	7.76
Test	Circulated clean. Displace to WB mud and POOH work string (lay down DP in singles)	14.5	10.0	12.5	Wednesday	18-May-2005	7:00	9.76
Test	Isolate zone	0.0	0.0	0.0	Wednesday	18-May-2005	7:00	0
	Total time (hours)	361.5	306.0	382.5				
	Total testing time in days	15.1	12.8	15.9				

Operation	Start date / time	Finish date / time	Duration Hrs (gross)	Downtime Hrs	Other Operations Hrs	Duration Hrs (net)
7" Liner (including CBL/VDL& BOP test)	03-May-05 5:30	07-May-05 15:00	105.5		2.5	103.0
Run string (Dummy run,TCP, DHT, singles& Space out)	07-May-05 15:00	09-May-05 23:00	56.0	1	2	53.0
M/U and run Landing String	09-May-05 23:00	10-May-05 15:30	16.5			16.5
Flowhead/Set Packer & displace	10-May-05 15:30	11-May-05 7:00	15.5		1.5	14.0
Perforate / Initial Flow & b/u	11-May-05 7:00	11-May-05 21:30	14.5	0.5		14.0
Clean-up / Main flow	11-May-05 21:30	12-May-05 21:30	24.0			24.0
Main b/u	12-May-05 21:30	14-May-05 9:30	36.0			36.0
Mini Frac	14-May-05 9:30	14-May-05 17:30	8.0			8.0
Kill well (Unseat packer)	14-May-05 17:30	15-May-05 5:00	11.5	1	2	8.5
Pull string	15-May-05 5:00	16-May-05 12:30	31.5			31.5
Zone isolation / P&A	16-May-05 12:30	18-May-05 7:00	39.5	1		38.5
WOW			3.0	3		
		Total:	**361.5**	**6.5**	**8**	**344.0**

Operation	Duration Hrs	% of total
Liner operations	103.0	28.49%
Run string	83.5	23.10%
Perforate & flow / shut in well	74.0	20.47%
Mini Frac	8.0	2.21%
Kill Well	8.5	2.35%
Pull String and lay down	31.5	8.71%
Zone isolation / P&A	38.5	10.65%
Other operations	8	2.21%
Downtime / WOW	6.5	1.80%
Total Hour Operations	**361.5**	**100.00%**

Overveiw of Time breakdown