ExxonMobil Exploration & Production Norway AS

GEOLOGICAL COMPLETION REPORT

WELL 15/9-22 & 15/9-22T2

Drilling Permit L- 1101

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1 GENERAL INFORMATION

1.1 License History and Status

The Wishbone North East (NE) prospect is located in license PL241 in the South Viking Graben (Figure 1.1). PL241 was awarded in 1999 with a drill (1 commitment well) or drop decision to be made within 4 years. The entire work commitment had to be completed by June 4, 2005. This period was subsequently extended to June 4, 2006. Since the license was kept beyond the 4 years, well 15/9-22T2 became a commitment well for the PL241 license.

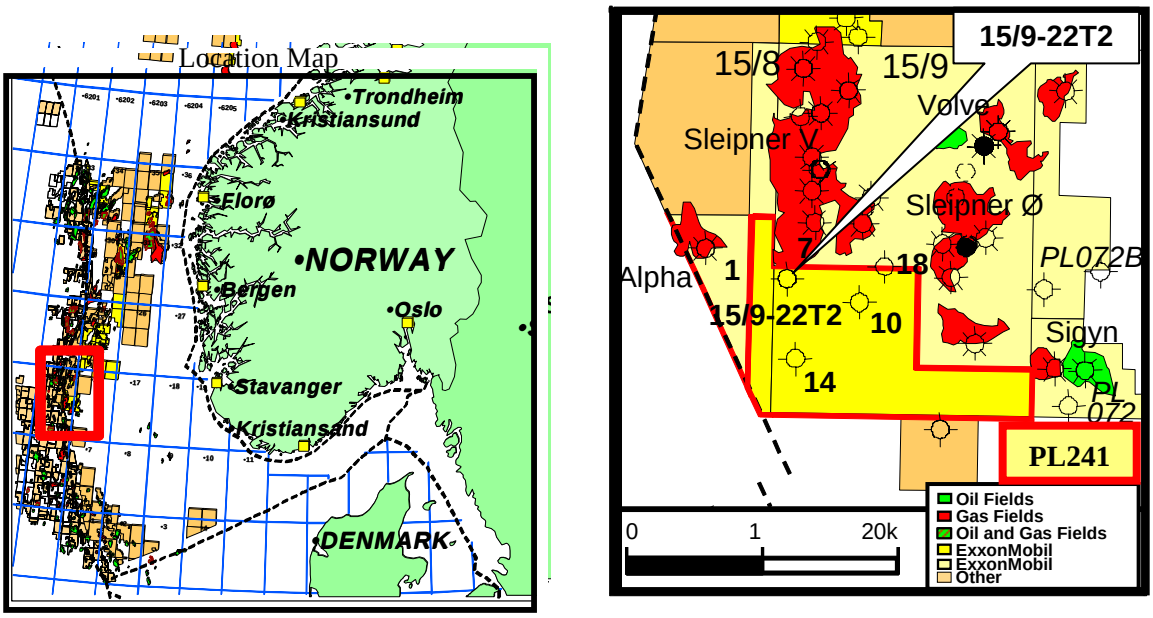


Figure 1.1 Wishbone NE location

1.2 Well Objectives

The primary objective of the 15/9-22T2 well was to test the hydrocarbon potential of the Wishbone NE prospect, which was a stratigraphic pinchout trap (pinchout onto a tilted fault block, Figure 1.2). The key risks for the prospect were reservoir adequacy (Hugin Fm.) and lateral seal. The primary reservoir target was the Upper Hugin Formation (Middle Jurassic Vestland Group), with Middle Jurassic Lower Hugin Formation, Sleipner Formation and Triassic as secondary targets. The anticipated hydrocarbon type was gas with condensate.

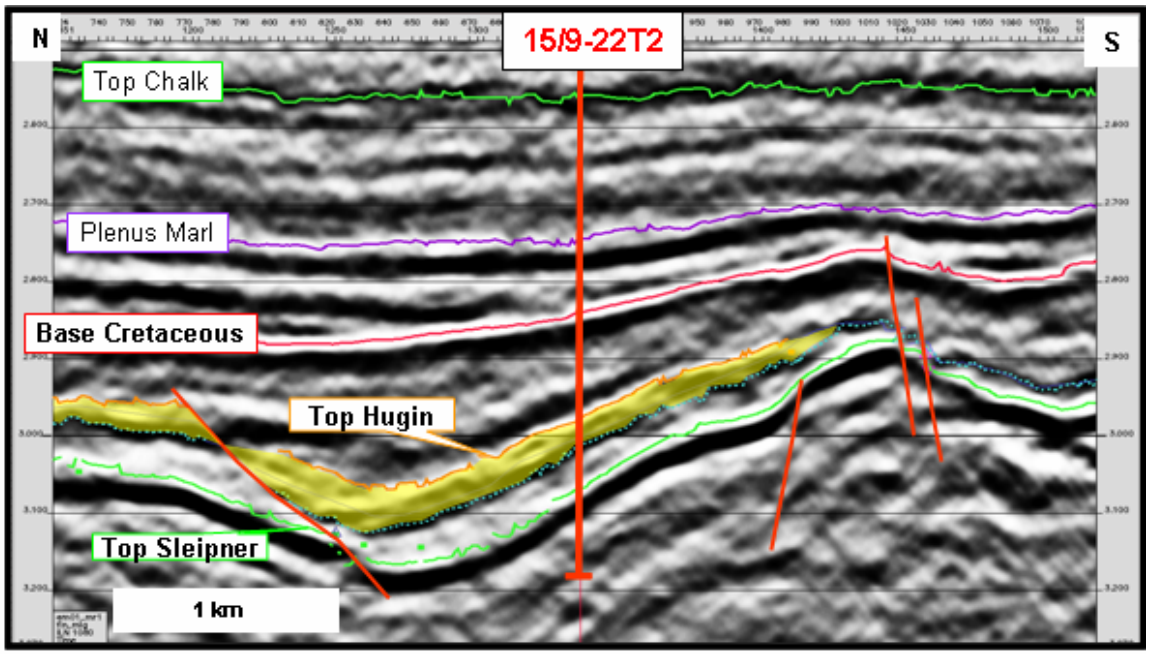


Figure 1.2 Seismic line across Wishbone NE prospect

1.3 Well Results

Well 15/9-22T2 was dry. The well was drilled to a total depth of 3923m (WL logger's depth) in Triassic. No conventional cores or sidewall cores were taken. MDT pressures were taken. Wireline logging was performed before the well was plugged and permanently abandoned.

The rig arrived on location Dec 28, 2005 (Tables 1.1 and 1.2). Well 15/9-22 was spudded on Jan 1, 2006. A 36" hole was drilled and 30" conductor was successfully run and cemented at 201m md. Due to the probability of shallow gas, a 26" hole was drilled to 508m md and a 20"x18 5/8" casing string set at 204m md. The BOP and riser were run and tested after considerable delays for repairs and waiting on weather. The 17 ½" hole was drilled to 1531m md, and no shallow gas was seen. The 13 5/8" surface casing was run and became stuck at a depth of 953m md. The casing was cut and fished out of hole from 601m md and a kick-off plug set from 592m md to inside of the 18 5/8" casing at 410m md.

The hole was sidetracked (15/9-22T2) at 522m md on Jan 31 2006, and a new 17 ½" hole drilled to 1523m md. The 13 5/8" casing was run and cemented at 1517m md. The 12 ¼" hole was drilled to 2948m md. The 9 5/8" casing was run and cemented at 2942m md. The 8 ½" section was drilled to TD of 3923m md (3896m tvdss) on Feb 25, 2006. Wireline logging was performed before the well was plugged and permanently abandoned. Final rig release occurred on March 15, 2006.

Well Name - Class:	**15/9-22 & 15/9-22T2 - Exploration Well**
Prospect Name:	Wishbone NE
Production License:	PL 241
Drilling permit	L-1101
Block:	15/9 and 15/8
Operator:	ExxonMobil Exploration and Production Norway AS (50%)
Partner:	Statoil ASA (50%)
Primary Objective:	Middle Jurassic Upper Hugin Formation
Trap:	Stratigraphic pinchout onto tilted fault block
Key Risks:	Hugin reservoir adequacy & Lateral seal (faults to south)
Secondary Objective:	Middle Jurassic (Lower Hugin & Sleipner Fms) and Triassic
Prognosed TD:	50m into Triassic (prognosis: 3881 –20/+70 m TVDSS)
Wellhead Location:	X: 422 843.02m E Longitude: 01° 40’ 55.124” E Y: 6 468 037.12m N Latitude: 58° 20’ 42.414” N Datum: ED-50 Datum: ED-50 Projection: UTM Zone 31
Seismic Location:	Intersection of inline 1080 with xline 1336 (EM01-MR01 3D)
Drilling Rig:	Ocean Vanguard
RKB to Sea Level:	22 m RKB
Water Depth:	107 m
Top Reservoir (Hugin Fm)	3572 m MDRKB (3548.4 m TVDSS)
Rig on Location	Dec 28, 2005
Spud	Jan 01, 2006
Start technical sidetrack 15/9-22T2	Jan 31, 2006, kicked off cement plug at 522m
Drilled to TD	Feb 25, 2006
Age at TD	Triassic
Plugged and abandoned	March 15, 2006
Total Depth	3923 m mdrkb, 3896 m tvdss WL loggers depth, (Drillers Depth 3915m mdrkb)
TD Location:	X: 422 875.21m E Longitude: 01° 40’ 57.220” E Y: 6 467 939.57m N Latitude: 58° 20’ 39.281” N

Well 15/9-22T2 Hole size Inches	Drillers Depth m MDRKB	Casing size Inches	Drillers Depth m MDRKB	Mud type	weight (s.g.)	LOT/FIT (s.g.)
36	205	30	201	Seawater	1.040	
26	508	18 5/8	504	Seawater	1.040	1.58 @ 504m
17 1/2	1523	13 5/8	1517	Glydril KCL/ Glycol WBM	1.20 -1.25	1.89@1517m 2.03@2951m
12 ¼	2948	9 5/8	2942	As above	1.20- 1.29	
8 ½	3915			As above	1.29-1.37	
Well status:	P&A, Dry Hole					

Table 1.1 Well 15/9-22T2 Summary

Well 15/9-22 (History Before Sidetrack)

Well 15/9-22 Hole size Inches	Depth m MDRKB	Casing size Inches	Depth m MDRKB	Mud type	weight (s.g.)	LOT/FIT (s.g.)
36	205	30	201	WBM	1.040	
26	508	18 5/8	504	WBM	1.040	1.58 @ 504m
17 1/2	1531	13 5/8” was run to 950m See description below		Glydril KCL/ Glycol WBM	1.20	
13 5/8” Casing problem		Casing was run and stopped at 950m in the Utsira Formation, it was possible to circulate around the casing. The casing was cut at 696m, it was possible to circulate, but casing was still stuck. The casing was cut again at 601m, and it was loose, pulled out upper part. From this it is concluded that the casing was mechanically stuck between 601 and 696m. The bit that drilled this 17 ½” section was worn, some teeth were chipped off, but we do not have an explanation of why the casing did not go down. The new sidetrack hole was drilled with a different assembly, motor assembly w/bent sub, mud properties were different, higher rheology, flowrate was meant to be higher, bu was the same, due to one pump was down.				
Well status:		Well 15/9-22 was plugged back to 18 5/8” casing shoe for sidetrack				

Table 1.2 Well 15/9-22 Summary

2 DRILLING SUMMARY

2.1 Introduction

Wishbone NE Exploration Well 15/9-22T2 was drilled in the Sleipner Area, approximately 8 km south of the Sleipner Vest Field. Well 15/9-22T2 was drilled by the semi-submersible drilling unit Ocean Vanguard.

Initial “Shallow Hazard Site Survey” results indicated a “Moderate Probability” of shallow gas. After analysis of the survey, it was decided to eliminate the 9-7/8” shallow gas pilot hole from the program. A 30" conductor, 20" x 18-5/8” surface casing, 13-5/8" intermediate casing and a 9-5/8” production casing design was chosen, and was based on earlier experience in offset wells.

The mobilization operation started December 27, 2005, and the well was spudded January 1, 2006. The Final Rig Release (FRR) occurred on March 15, 2006 after a total of 78.4 days. Of the total spent, there was a total of 32.67 % NPT. The well was drilled, evaluated and permanently plugged and abandoned as a dry hole with the TD 50 m's into the Triassic formation.

2.2 Operations Summary

Operations began on December 27, 2005 at 13:30 when the rig was handed over to ExxonMobil from ENI Norge at latitude 61.23 N. The rig was towed from the ENI well location in block 6406/1 using the AHTS vessels Normand Master and Normand Mariner. The tow began at 09:50 on December 26, 2005 and the first anchor was dropped at the Wishbone NE well location at 14:12 on 28 December 2005.

After mooring up at the Wishbone NE location, drill pipe and BHA was picked up and racked back in the derrick. A 36” hole was drilled and 30” conductor was successfully run and cemented at 201.0 m MD RKB. Due to the medium probability of shallow gas, a 26" hole was drilled to 508 m MD and a 20" x 18-5/8" casing string set at 504 m MD RKB. The BOP and riser were run and tested after considerable delays for repairs and waiting on weather. The 17-1/2” hole was drilled into the Base Skade at 1531 m MD RKB. The 13 5/8” surface casing was run and became stuck at a depth of 953 m MD RKB. The casing was cut and fished out of the hole from 601 m MD RKB and a kick-off plug set from 592 m MD RKB to inside of the 18-5/8" casing at 410 m MD RKB. The hole was sidetracked at 522 m MD RKB and a new 17-1/2" hole drilled to 1523 m MD RKB. The 13-5/8" casing was run and cemented at 1517 m MD RKB.

The 12 1/4” hole was drilled to 2948 m MD RKB (2946.76 m TVD RKB) in the Cretaceous Shetland formation. The 9-5/8” casing was run and cemented at 2942 m MD RKB. The 8-1/2” section was drilled to 3915 m MD RKB (3910.11 m TVD RKB) and was landed within the target box. No hydrocarbons were discovered in the well. The well was logged and then permanently abandoned with the wellhead cut-off approximately 6 m's below the mudline. Anchor recovery operations were complete and FRR occurred on 15 March 2006.

2.2.1 36" Hole Section

Interval: 129.00 m RKB (Seabed) – 205.0 m RKB
Inclination: 1.0 to 1.5 degrees (Anderdrift Tool)
Mud system: Seawater + High viscosity polymer sweeps
Formations: Nordland (claystone with sandstone stringers)
Parameters: 60 - 140 RPM, 1 – 5 tons WOB, 1500 -5000 lpm.
Bit: Bit. No. 1, Smith, 17-1/2" MGSSH, Sn: MM3900, 2-2-WT-A-E-0-NO-TD

The 36" hole section was drilled using a single stage 36” hole opener on top of a three stage (36” x 26” x 22”) hole opener and a 17 ½” bit. Seawater was pumped with a 8 m^3 high-viscosity sweep every 15 meters to clean the hole. At TD, a 20 m^3 high-vis sweep was pumped, before a wiper trip was performed to 9 m below mudline. When back on TD, the hole was displaced to 1.2 s.g. WBM. No boulders were encountered.

Surveys were taken with the Anderdrift tool for directional control while drilling. The final well angle for the 36" hole was 1.0 degrees.

Average ROP during this section: 12.8 m/hr including connections.

The 30” conductor and Low Pressure Housing was then run with the Permanent Drilling Guide Base to 201.0 m MD RKB. The resulting Housing stick up was 2.52 meters above the seafloor.

A total of 60.0 m^3 of 1.92 s.g. Halliburton "Norcem″ G cement was used to cement the 30" conductor casing. A slurry volume of 300% excess was mixed and pumped and cement returns were seen at the seafloor. Full returns were seen during the cement job. No wellhead movement was seen before or during wellhead release. The bullseyes on the permanent guide base showed 0.75 degrees to the port-forward.

2.2.2 26” Hole Section

Interval: 205m MD RKB - 508 m MD RKB (205 m TVD RKB–508 m TVD RKB)
Inclination: 0 to 1-1/2 deg (Anderdrift Tool)
Mud system: Seawater and high viscosity polymer sweeps.
Formations: Nordland shale
Parameters: 80 to 140 RPM, 2 – 15 tons WOB, 4000 to 5200 lpm.
Bit: Bit No. 2 - Smith, 26" MSDSSH, Sn: MM2470, 2-2-NO-A-4-1-NO-TD

The 26” BHA was run in the hole and cement tagged in the 30” casing at 195 m MD RKB, 6 m's above the 30" shoe. The 30” shoe track was drilled and the rat hole cleaned out. The BHA was worked through the 30” shoe several times and then the 26” hole was drilled to section TD of 508 m MD RKB using seawater and pumping a high-viscosity sweep every 15 meters. Each stand was back-reamed. At TD, a 30 m^3 high viscosity sweep was pumped and circulated out of hole. The well was displaced to 1.20 s.g. WBM

and the hole circulated with seawater at 5000 lpm. The hole was filled with 1.20 s.g. WBM and a wiper trip to the 30” shoe was performed and then the bit run back to bottom. Tight spots were observed at 459 and 391 m MD while POOH.

Average ROP during this section: 20.9 m/hr including connections.

Surveys were taken with the Anderdrift tool for directional control while drilling. The final well angle for the 26" hole was 1.5 degrees.

The 18-5/8” x 20” casing and high pressure wellhead were run on the 5-1/2” HWDP landing string to 504 m MD RKB. The wellhead datum was called at 124.586 m MD RKB. A 25 ton over-pull was taken to ensure the high pressure housing was latched into the low pressure housing. The well was circulated with 80 m^3 of seawater prior to cementing. The PEAK Cementing Head was rigged up to drop the ball and drill pipe dart and displace the cement into place.

A total of 103.0 m^3 of 1.40 s.g. lead cement (150% open hole excess) and 30.0 m^3 of 1.92 s.g. tail cement (50% open hole excess) cement was used to cement the 18-5/8” surface casing. The cement was displaced with the rig pumps and the plug bumped with 70 bar. Full returns were seen during the cement job and 25 m^3 of cement returns were observed at the wellhead. No wellhead movement was seen before or during wellhead release and the bullseyes remained at 0.75 degrees.

BOP Running Operation:

In preparation for landing the BOP, the 18 ¾” VX, stainless steel ring gasket was installed on the High Pressure Housing using the ROV and internal ring gasket expander tool.

The BOP was run to depth and the choke and kill lines tested to 690 bar prior to latching. The BOP was landed and latched and the 18-5/8” casing was pressure tested to 14 bar / 52 bar against the shear rams for 5 mins. / 15 mins. The slip joint was stroked out and connected to the diverter housing.

The BOP was not prepared in the time it was on the surface from the previous well until the 18-5/8" casing and HP wellhead were in place and cemented. The BOP was on the surface a total of 15 days at this point. Normal maintenance was planned for the BOP and the rams were configured for the Wishbone well as follows:

- LPR's - 5-1/2" Fixed
- MPR's - 3-1/2" x 5-1/2" VBR's
- UPR's - 3-1/2" x 5-1/2" VBR's

Both annular elements were also required to be changed as they had been damaged while drilling the previous well.

One day prior to being ready to run the stack, Diamond reported that the stack would not be ready and that the LMRP kill line mini-connector was jammed and could not be released from the stack and that both annulars had hydraulic chamber leaks. The mini-connector was removed using a cutting torch and grinder and the damaged components replaced with new parts. It was learned that Diamond had no procedure, nor proper knowledge of how to install, align and operate the Hydril mini-connectors. A risk analysis was performed to ascertain the risk level involved in running the stack with the existing mini-connectors and it was determined that an acceptable level of risk was present to use the stack. A Hydril representative was sent to the rig and supervised the installation of both the choke and kill mini-connectors ensuring proper alignment and space-out. The Hydril representative also instituted the correct procedures for the engage-disengage and lock-unlock functions for the mini-connectors. The annulars were both disassembled and the seals on the hydraulic chambers replaced. The annulars and stack was reassembled, functioned and pressure tested and prepared to run. A total of 11 days were lost waiting for the BOP to be prepared to run. The rig was on "zero rate" during the 11 days of waiting for the stack to be ready to run.

Following the stack being prepared to run, the stack, five joints of buoyed riser, one 15 foot long slick pup joint and the slip joint were installed and connected to the diverter housing. The riser was tensioned to 109 metric tonnes (240,000 lbs). The stack was functioned on both pods and the shears were closed using the acoustic system and the drilling connector and 18-5/8" casing pressure tested. All pressure tests were successful. A total of 30.5 hours were spent running the stack and testing the diverter.

Once the stack and riser were in place, movement was observed on the PGB and stack as follows:

PGB:	Port slope indicator moving 3/4-1 deg mainly forward
	Aft slope indicator moving 1-2 deg mainly forward
BOP:	Slope indicator moving 1-1/2 port forward
LMRP:	Slope indicator moving 1 1/2 -2 deg port forward

Riser angle was reported as 0.8 degrees and the flex joint rotation at 1.0 degrees with the rig over well center.

2.2.3 17 1/2” Hole Section

Interval - Track 1:	508m MD RKB-1531 m MD RKB (508 m TVD RKB–1530.98 m TVD RKB)
Max Inclination:	1.04 deg
Mud system:	Glydril WBM - 1.20 s.g.
Formations:	Nordland shale, Utsira sand, Skade sand and Hordaland shale
Parameters:	Rotary Drilled: 160 RPM,5–15 tons WOB, 3700 lpm, 125–150 bar.
Bit:	Bit. No. 3, Smith, 17-1/2" XRODC, Sn: MR7468, 2-2-WT-A-E-0-BT-TD

Interval - Track 2:	504 m MD RKB-1523 m MD RKB (504 m TVD RKB – 1521.89 m TVD RKB)
Max Inclination:	3.89 deg
Mud system:	Glydril WBM - 1.20 s.g.
Formations:	Nordland shale, Utsira sand, Skade sand and Hordaland shale
Parameters:	Motor Drilled: 100 RPM, 5–15 tons WOB, 3700 lpm,120–152 bar.
Bit:	Bit. No. 4, Smith, 17-1/2" XR+VC, Sn: MX7470,1-1-WT-A-2-0-NO-TD

Original 17-1/2" Section

The 17 1/2” rotary BHA was run in the hole and a power choke drill was performed. It was learned that the choke pressure gauges were providing inconsistent readings and it was required to change out a transducer to obtain accurate pressure readings. The cement was tagged in the 18-5/8" casing at 482 m MD RKB. The 18-5/8" shoe track was drilled and the rat hole cleaned out in 12 hours. The BHA was worked through the 18-5/8" shoe several times and the mud conditioned for a LOT. A leak-off test was performed and showed formation integrity of 1.58 s.g. equivalent. The 17-1/2" bit was run to bottom and the 17-1/2” hole was drilled to section TD of 1531 m MD RKB using 1.20 s.g. Gyldril WBM. An electric motor failed on Mud Pump Number 2 just after the LOT and the section was drilled with a reduced pump rate of +\- 3800 lpm until the final 30 m's where the flow rate was increased to 4400 lpm. The hole drilled slow from 512 m MD RKB to 629 m MD RKB, 8.7 m/hr. and it was believed that the bit was partially "balled-up". At 629 m MD RKB, the ROP increased and the hole was drilled to a TD of 1531 at an ROP of 17.7 m/hr, including connection times.

A wiper trip was made to the 18-5/8" shoe. Saw over-pull of 20 tons at 1471 m MD, over-pull in the section from 1160 m to 1030 m MD of 15 to 20 tons, and over-pull of up to 25 tons in the section from 825 m to 509 m MD RKB. The bit tripped back in the hole and tagged up at 508 m MD RKB. Washed through this area until and ran in hole. Tagged up at 825 m with 5 to 8 tons, 1030 m to 1160 m with 5 to 8 tons and at 1487 m MD RKB with 18 tons. Tripped to bottom and circulated 2-1/2 bottoms up at 3800 to 4400 lpm and 170 rpm. Tripped out of the hole to the 18-5/8" casing shoe with little drag or over-pull. Saw 10 to 12 tons drag pulling into the shoe. Ran in the hole to +\- 560 m MD RKB and did not see any drag. Circulated the hole at 4700 lpm and rotated at 60 rpm. Pulled out of the hole and saw 10 to 12 tons over-pull at the 18-5/8" casing shoe. Continued to pull out of the hole and prepared for the 13-5/8" casing job.

Average ROP for the section, including connections, was 15.8 m/hr.

Original 13-5/8" Casing Job

The drill string was pulled out of the hole and the casing equipment rigged up. The 13-5/8" casing was run in the hole and stuck at 953 m MD, approximately 70 m's into the Utsira sand. It was possible to circulate at up to 4700 lpm. Fishing tools were mobilized and the casing was cut at 492 m MD RKB. An attempt was made to jar the remaining 461

m's of casing out of the hole but was unsuccessful. A second cut was made at 696.5 m MD RKB and an attempt made to jar the 200 m's of casing out and again was unsuccessful. A third cut was made at 601.8 m MD RKB and this time the casing was retrieved. It was concluded that a boulder had slipped down the hole, lodged besides casing and caused the casing to become stuck.

Kick-Off Plug

Drill pipe was run to 592 m MD RKB and a Cement Support Tool was pumped into place. A 2.0 s.g. kick-off plug was mixed and pumped into place from 792 m MD to 454 m MD using 50% excess volume for the open hole. An attempt was made to break-off the drill pipe from the top drive and it was discovered that the torque wrench on the top drive was set-up for "New" 5-1/2" drill pipe tool joints. The cement slurry was circulated out of the well and a second plug set. The cementing string was pulled to 350 m MD RKB and well was circulated. During this operation, the mud engineer and shaker hand neglected to divert the cement returns and the active pit was contaminated with cement. The active system was dumped and the surface equipment was cleaned.

Second 17-1/2" Section- T2 Sidetrack

The 17-1/2" kick-off assembly, including a 12-3/4" motor with a 1.4 degree AKO, was run in the hole and cement tagged at 410 m MD RKB. The cement was drilled from 410 m to the kick-off depth of 522 m MD RKB. The 17-1/2" hole was drilled from 522 m MD RKB to 1523 m MD RKB at 16.6 m/hr. ROP. An electric motor failed on Mud Pump Number 1 at 703 m MD RKB and the remainder of the section was drilled at a flow rate of +\- 3700 lpm, a reduction from 4500 lpm. At TD, a 20 m^3 high viscosity sweep was pumped and circulated out of the hole. A wiper trip to the 18-5/8" shoe was performed for this section prior to running the 13-5/8” surface casing string. No tight spots were observed pulling out of the hole.

Average ROP during this section: 16.6 m/hr including connections.

Second 13-5/8" Casing Job

The 13-5/8” casing was run on the 5-1/2” HWDP landing string to 1517 m MD RKB. A total of 15 centralizers were run on the casing. A total of 20 m^3 of seawater pre-flush, 57.0 m^3 of 1.40 s.g. lead cement (25% open hole excess) and 12.0 m^3 of 1.92 s.g. tail cement (30% open hole excess) cement was used to cement the 13-5/8” surface casing. The cement was displaced with the rig pumps at 1100 lpm and 1.25 s.g. WBM and the plug bumped with 75 bar. Full returns were seen during the cement job. The floats held following the cementing operation. The seal assembly was set and pressure tested to 616 bar.

BOP Test

The BOP was tested to 14 bar / 483 bar on both annulars and 14 bar / 616 bar on the pipe rams and choke and kill lines. Due to previous problems unlatching the mini-connectors, the mini-connectors were unlatched during the choke and kill line pressure test. The pressure tests were successful and the mini-connectors were left unlatched. Following the BOP pressure test, the casing hanger seal assembly running tool was retrieved to surface and the 13-3/8" wear bushing run and set in the wellhead. The shear rams were closed and the 13-5/8" casing was pressure tested to 14 bar / 224 bar with 1.25 s.g. WBM in the hole.

30" Grouting Job

Following the BOP test, a 2-7/8" x 5-1/2" grouting string was run through the mouse hole and into the mud at 128 m MD RKB. The rig was positioned such that the BOP and guidebase moved from 2 degrees off of vertical to less than 1 degree off of vertical. The string was lowered into the mud against the 30" conductor and penetrated to 134 m MD RKB. It was reported that the string penetrated the mud about 3 m and tagged up on hard cement. A total of 20 m^3 of 1.95 s.g. cement was pumped and the grouting string retrieved. A total of 10 hours was spent grouting the 30". The rig was left in position off of well center for 19 hours during which time the rig was prepared for upcoming operations and the 12-1/4" BHA made-up and run in the hole. Following the grouting job, the guide base and BOP bulls-eyes showed 1-1/2 to 2 degrees from vertical after the rig was moved back over well center and the conductor and BOP continued to Move approximately six inches from side to side.

2.2.4 12 1/4" Hole Section

Interval:	1523 m MD RKB-2948 m MD RKB (1521.89 m TVD RKB-2946.76 m TVD RKB)
Max Inclination:	2.55 deg
Mud system:	1.25 s.g. to 1.28 s.g. Glydril WBM
Formations:	Hordaland, Grid, Balder, Sele, Lista, Heimdal, Ekofisk and Tor.
Parameters:	50 - 165 RPM, 2-20 tons WOB, 3200-4000 lpm, 150 - 225 bar.
Bit:	Bit. No. 5,Interval 1523 m MD to 2562 m MD Security, 12-1/4" FM3663, Sn:10777706, 1-2-RO-S-X-1-WT-PR
Bit:	Bit. No. 6,Interval 2562 m MD to 2948 m MD Reed-Hycalog, 12-1/4" DSX-97, Sn:112664,1-1-WT-A-X-0-RO-TD

The 12 ¼" BHA was run in the hole and cement was tagged in the 13-5/8" casing at 1485 m MD RKB. The cement in the shoe track and three meters of new formation were drilled in 3 hours. A LOT was taken with 1.25 s.g. Glydril WBM in the hole and recorded a 1.89 s.g. equivalent leak off.

The 12 ¼” hole was drilled with a 9-1/2" motor assembly with a 0.8 AKO and was drilled to 2562 m MD RKB with a Security FM3663 bit. At 2562 m MD the ROP's decreased to zero and no further progress could be made. The bit was pulled out of the hole and was graded 1-2-RO-S-X-1-WT-PR. The ROP for this section was 22.84 m/hr. including connections. There were some chipped teeth and it was believed the bit had drilled through a pyrite stringer. A Reed-Hycalog DSX-97 bit was picked up and ran in the hole. On the trip in the hole, the BHA had to be washed and reamed to bottom from 2365 m MD to 2562 m MD. The hole was then drilled from 2562 m MD RKB to 2948 m MD RKB at an ROP of 11.52 m/hr, including connections, and showed a decreased ROP when drilling the Tor chalk formation from 2787 m to 2948 m MD RKB. The BHA was pulled to surface and no over-pull or drag was seen on the trip out of the hole. A maximum ECD of 1.37 s.g. equivalent was seen while drilling the section.

The hole was deviated to a maximum angle of 2.60 degrees from vertical and oriented to an azimuth of 170 degrees and the top of the section. The angle was corrected back to almost vertical and was TD'd with an angle of 0.6 degrees from vertical and an azimuth of 297 degrees, placing the bottom of the hole 41.75 m's south and 3.1 m's west of target.

The 9-5/8" casing, 9-5/8” casing hanger and seal assembly were run and landed in the high pressure housing on the 5-1/2" HWDP landing string with the shoe at 2942 m MD RKB. The casing had to be washed down from 2920 m MD RKB to 2942 m MD RKB with 800 lpm.

The well was circulated prior to cementing at 1600 lpm and 68 bar surface pressure and had 100% returns. The PEAK Cementing Head was rigged up to drop the ball and drill pipe dart and displace the cement into place.

A total of 30.0 m^3 of 1.92 s.g. tail cement (20% open hole excess) cement was used to cement the 9-5/8” casing. The cement was displaced with the rig pumps at 2000 lpm and the plug did not bump even though 1/2 of the shoe track volume was pumped. A pump effeciency of 98% was used to calculate the displacement and this proved to be too high of an efficency factor. Full returns were seen during the cement job. The calculated top of cement was 2200 m MD RKB and the top of cement was found using the W/L sonic log to be at 2090 m MD RKB.

The seal assembly was set and the seal tested to 690 bar. The BOP’s were then tested against the CHSART to 616 bar and the casing subsequently tested to 476 bar against the shear rams.

Conductor "Sand Bagging" Operation

Following the 13-5/8" casing job, the conductor was grouted with cement but still continued to move from side to side. A visible gap, estimated to be about six inches wide, was observed along the side of the 30" conductor. It was decided to place 50 kg sand bags around the conductor with hopes that the bags would work their way down into the gap and stabilize the conductor movement. The ROV was used to place the sand bags and

total of 81 bags of sand were eventually placed around the 30" conductor. A total of 55 bags were observed to slide down into the gap and 26 bag were left stacked around the conductor. This operation stopped the conductor movement and the conductor and BOP remained stabile for the remainder of the well, as follows:

PGB: Slope indicator - 3/4 deg - Port Forward
BOP: Slope indicator - 1 1/4 deg - Port Forward
LMRP: Slope indicator - 1 1/2 deg - Port

2.2.5 8 1/2" Hole Section

Interval:	2948 m RKB-3915m MD RKB (2946.76 m TVD–3910.11m TVD)
Max Inclination:	9.03 deg
Mud system:	1.35 s.g. Glydril WBM
Formations:	Tor, Hod, Blodøks, Cromer Knoll, Rødby, Draupne, Heather, Hugin Sand, Sleipner, Hegre, Skagerrak.
Parameters:	60 - 175 RPM, 2-23 tons WOB, 1800 - 2400 lpm, 180 - 246 bar
Bit:	Bit. No. 7,Interval 2948 m MD to 3353 m MD Reed-Hycalog, 8-1/2" DSX-173, Sn:206399,1-2-WT-S-X-0-CT-PR
Bit:	Bit. No. 8,Interval 3353 m MD to 3465 m MD Reed-Hycalog, 8-1/2" DSX-173, Sn:207746,0-1-WT-S-X-0-NO-PR
Bit:	Bit. No. 9,Interval 3465 m MD to 3653 m MD Smith ,8-1/2" GF-15, Sn:MM-9289,2-2-ER-A-E-0-BT-HR
Bit:	Bit. No. 10,Interval 3653 m MD to 3915 m MD Reed-Hycalog, 8-1/2" RSX-619, Sn:20860,1-1-WT-S-X-0-CT-TD

After testing the BOP's to 616 bar and the casing to 476 bar, the 8-1/2" rotary BHA was made-up and RIH. The top of the cement was tagged at 2848 m MD RKB and 94 m's of cement were drilled before entering open hole and 3 m of new formation was drilled. The mud weight was increased to 1.35 s.g during drilling cement. Total time used to drill the shoe track and new formation was 7-1/2 hours. A PIT was performed to an equivalent mud weight of 2.03 s.g.

The well was drilled with a rotary assembly and a Reed-Hycalog PDC bit. Drilling began in the Tor formation at 2951 m MD RKB and continued with this it until 3353 m MD, about the middle of the Cromer Knoll formation. The ROP with the DSX-173 bit was exceptional from 2951 m MD RKB until 3337 m MD RKB recorded at 12.9 m/hr. including connections. From 3337 m MD RKB to 3353 m MD RKB the ROP slowed to 2.9 m/hr and it was decided to pull the bit. A second DSX-173 bit was run in the hole and drilled from 3353 m MD RKB to 3465 m MD RKB which was in the Draupne formation. ROP's through this section were 2.26 m/hr. including connections. It was believed the Draupne to be a "plastic shale" and that drilling with a PDC bit would be extremely slow so it was decided to trip for an insert bit. A Smith GF-15 insert bit was run in the hole and drilled the 8-1/2" hole from 3465 m MD RKB to 3653 m MD RKB which was in the Hugin formation and into the target reservoir. ROP's through this section were 4.22 m/hr.

including connections. It was learned that the reservoir was "wet" and it was decided to trip for a PDC bit to finish the hole. A Reed-Hycalog RSX-619 bit was run in the hole and drilled from 3653 m MD RKB to 3915 m MD RKB. ROP's through this section were 14.12 m/hr. including connections.

The hole was deviated to a maximum angle of 9.03 degrees from vertical and oriented to an azimuth of 299 degrees to 151 degrees. At approximately 3100 m's the BHA began to build angle and this build continued through the remainder of the section. The well was TD'd with an angle of 9.03 degrees from vertical and an azimuth of 151 degrees, placing the bottom of the hole 97.58 m's south and 32.19 m's west of target. At the Hugin reservoir top the well was approximately 56 m's south and 6 m's west of target and within the 120 m x 200 m target box.

No coring was performed in the section. The hole was circulated clean and a wiper trip was made to the 9-5/8” casing shoe with no tight spots observed. The bit was run back to TD and the hole circulated clean before pulling out of the hole for logging operations. No tight spots were observed when pulling out of the hole for logging.

2.2.6 Logging Operations

No hydrocarbons were found in the well and it was decided to run the “Dry Hole Case” logging program. A total of 25.5 hours were spent logging and two logging runs were accomplished. During this period there were no downtime hours. Baker-Atlas was contracted to log the well and their W/L unit was rigged up on the *Ocean Vanguard.* When logging tools were called-out from Baker-Atlas they informed ExxonMobil that no tools were available. The Baker-Atlas W/L unit was rigged-down and replaced with a Schlumberger W/L unit and Schlumberger conducted the logging operation.

Logging Run # 1 – DS-GR-MDT

Ran Log # 1 without problems and used 14 1/2 hours. A total of 18 pressure points were taken with the MDT log. The maximum pressure recorded was 489.14 bar (7092.56 psi) at 3876.02 m TVD RKB. This equates to a 1.29 s.g. equivalent pressure and matches the "High Side" Pore Pressure Prediction curve. This is also an exact match with the onsite pore pressure prediction done by Geoservices.

The sonic tool was run inside the 9-5/8" casing and logged-up to 1980 m MD RKB. The 9-5/8" x 12-1/4" cement top was observed at 2090 m MD RKB as compared to the calculated top of cement at 2200 m MD RKB. This places the top of cement 257 m's above the top of the Balder formation.

Logging Run # 2 – Checkshot

Ran Log # 2 without problems and used 10 hours. A total of 33 checkshots were recorded. The air guns were suspended over the side of the rig using one of the pedestal cranes.

2.2.7 P&A Operations

A total of three plugs were set in the open hole section and a fourth plug set through the 9-5/8” casing shoe. This plug was tagged and pressure tested. The 9-5/8” casing was cut 73 m’s below the 13-5/8” casing shoe and the cut-off 9-5/8” casing recovered. A plug was set through the 13-5/8" casing shoe and this plug was tagged and pressure tested. The 13-5/8” casing was initially cut 66 m’s below the 18-5/8” casing shoe and the cut-off 13-5/8” casing was attempted to be recovered. After failure to recover the 13-5/8" casing, two additional cuts were made; one 12 m's below the casing hanger and that casing stub recovered and one 108 m's above the 18-5/8" casing shoe and that casing stub recovered. Two additional plugs were set in the 18-5/8” casing both being tagged and the bottom plug being pressure tested. The BOP and riser were recovered and the high pressure wellhead, low pressure housing were cut-off and recovered along with the permanent drilling guide base, using the Weatherford MOST tool.

Reservoir Cement Plug # 1: Set from TD at 3915 m MD to 3660 m MD. A total of 15.1 m^3 of 1.92 s.g. silica flour - gas tight slurry were pumped.

Reservoir Cement Plug # 2: Set from 3632 m MD to 3377 m MD. A total of 15.1 m^3 of 1.92 s.g. silica flour - gas tight slurry were pumped.

Reservoir Cement Plug # 3: Set from 3349 m MD to 3094 m MD. A total of 15.1 m^3 of 1.92 s.g. silica flour - gas tight slurry were pumped.

Reservoir Cement Plug # 4: Set from 3066 m MD to 2835 m MD. A total of 11.2 m^3 of 1.92 s.g. silica flour - gas tight slurry were pumped. The plug was designed to have the top of cement at 2811 m MD RKB and was tagged with 10 tons at 2835 m MD RKB, 107 m's above the 9-5/8" casing shoe, and pressure tested to 270 bar. The pressure test was equivalent to 70 bar above the recorded Pressure Integrity Test pressure.

Cut the 9-5/8” Casing: After spotting a Hi-Viscosity mud pill from 1770 m MD RKB to 1550 m MD RKB, the Weatherford hydraulic casing cutter was run into the hole and the 9-5/8” casing was cut at 1590 m MD RKB. The wear bushing was retrieved separately. A Weatherford spear/packer assembly was run in the hole and landed in the 9-5/8” casing below the 9-5/8” casing hanger and the SS-15 seal assembly, casing hanger and 9-5/8" casing were retrieved together. Prior to pulling out of the hole with the 9-5/8” casing, the casing was lifted +\-30 meters and the hole was circulated with 1.35 s.g. Glydril WBM at 2300 lpm and the 1.25 s.g. Glydril WBM displaced from the well. No gas was observed

during this operation. The 9-5/8” casing hanger and 115 joints of cut-off (+\-1462 m’s) 9-5/8” casing were retrieved to surface.

13-5/8” Casing Shoe Cement Plug # 5: Set from 1570 m MD RKB to 1265 m MD RKB, on top of a Halliburton 12-1/4" Cement Support Tool and a 200 m high viscosity pill. A total of 20.1 m^3 of 1.92 s.g. silica slurry and 3.8 m^3 of 1.92 s.g. "G" Neat slurry was pumped. The plug was designed to have the top of cement at 1320 m MD RKB and was tagged with 10 tons at 1265 m MD RKB, 252 m's above the 9-5/8" casing shoe, and pressure tested to 155 bar with 1.35 s.g. Glydril WBM in the well (70 bar above recorded Leak Off Test pressure).

Cut the 13-5/8” Casing: The Weatherford hydraulic casing cutter was run into the hole and the 13-5/8” casing was initially cut at 570 m MD RKB. The wear bushing was retrieved separately. A Weatherford spear/packer assembly was run in the hole and landed in the 13-5/8” casing below the 13-5/8” casing hanger and an attempt was made to retrieve the SS-15 seal assembly, casing hanger and 13-5/8" casing together but the casing stub would not come free. The seal assembly was retrieved and a jarring assembly was run in the hole. Jarring on the casing proved to be unsuccessful. The 13-5/8" casing was then cut at 140 m MD RKB, 12 m's below the casing hanger. A spear assembly was run in the hole and the casing hanger and stub were retrieved with 20 MT over-pull. A jarring assembly was again run in the hole and the 13-5/8" casing engaged. Jarring on the casing again proved unsuccessful. A hydraulic cutter assembly was then run in the hole and the 13-5/8" casing cut at 396 m MD RKB. A spear and jarring assembly was run in the hole and the well was circulated to 1.35 s.g. Glydril WBM and the 13-5/8" casing stub, +\-256 m's, retrieved to surface with 250 MT over-pull. Upon investigation of the casing cuts, it appears that the 13-5/8" casing was not being completely cut by the casing cutter, see below. A maximum of 5% gas was observed during this operation.

13-5/8" casing cut at 396 m MD RKB

13-5/8" casing cut at 140 m MD RKB

18-5/8" Casing Cement Plug # 6: Set from 392 m MD RKB to 236 m MD RKB, on top of a Halliburton 12-1/4" Cement Support Tool. A total of 18.7 m^3 of 1.95 s.g. "G" Neat slurry was pumped. The plug was designed to have the top of cement at 275 m MD RKB

and was tagged with 15 tons at 236 m MD RKB, 268 m's above the 13-5/8" casing shoe, and pressure tested to 52 bar with 1.35 s.g. Glydril WBM in the well, 18-5/8" casing test pressure and 31 bar above recorded Leak Off Test pressure.

Surface Cement Plug # 7: After displacing the well to seawater, Plug # 7 was set from 236 m MD RKB to 156 m MD RKB, on top of the previous cement plug. A total of 15.0 m3 of 1.95 s.g. "G" Neat slurry was pumped. The plug was designed to have the top of cement at 155 m MD RKB and was tagged with 12 tons at 156 m MD RKB, 28 m's below the mud line.

Cut the 20" x 30" Casing and PGB Retrieval: After the BOP was pulled, the 20” and 30” casings were cut at 134.81 m MD RKB. The Weatherford MOST tool was engaged on the 18-3/4" High Pressure Housing and pulled in tension. A motor assembly was in place and the 20" casing extension cut. Once the 20" casing was cut, the wellhead rotated and disengaged from the 30" Low Pressure Housing. The High Pressure Housing and 20" casing stub were retrieved to surface. No cement was observed on the outside of the 20" even though good cement returns had been observed at the seabed during the 20" cement job. The 30" was cut and after an unsuccessful attempt to retrieve it with the 30" CART, was retrieved with the 18-3/4" High Pressure Housing.

For additional drilling information, see Final Well Report Wishbone Well: 15/9-22T2 (ExxonMobil, June 2006).

3 STRATIGRAPHY

3.1 Lithostratigraphy

Lithostratigraphy and well results are shown in Tables 3.1, 3.2 and 3.3 and Figure 3.1. (some of the depths/TWT's have been updated since completion of the Final Well Report in June, 2006).

Stratigraphic Top	Prognosed Depth (mTVDSS); error range	Prognosed Depth (m MDRKB)	Actual Depth (mTVDSS)	Actual Depth (m MDRKB)	Actual TWT (ms)
Seabed	107 ±0.5	129	107	129	145
Top Utsira Fm	838 ±15	860	854.1	877	917
Top Hordaland Group	1074 ±15	1096	1091.0	1114	1142
Top Skade Fm	1248 ±15	1270	1419.7	1443	1449
Base Skade Fm	1465 ±15	1487	1453.7	1477	1481
Top Grid Fm	1904 ±20	1926	1951.6	1975	1935
Base Grid Fm	2205 ±20	2227	2212.6	2236	2149
Top Rogaland Group / Top Balder Fm	2349 ±25	2371	2331.6	2355	2249
Top Sele Fm	2390 ±25	2412	2374.6	2398	2283
Top Lista Fm	2423 ±25	2445	2429.6	2453	2327
Top Heimdal Fm	2485 ±25	2507	2485.6	2509	2370
Base Heimdal Fm	2664 ±25	2686	2678.6	2702	2493
Top Shetland Group / Top Ekofisk Fm	2804 ±30	2826	2770.5	2794	2555
Top Tor Fm	2839 ±30	2861	2814.5	2838	2578
Top Hod Fm	2968 ±30	2990	3012.5	3036	2664
Top Blodøks Fm	3219 ±35	3241	3187.5	3211	2740
Top Cromer Knoll Gp. / Top Rødby Fm	3309 ±35	3331	3299.4	3323	2795
Top Viking Group / Top Draupne Fm (BCU)	3368 ±40	3390	3375.9	3399.5	2835
Top Heather Fm	-	-	3524.1	3548	2946
Top Vestland Group / Top Hugin Fm	3561 -20/+50	3583	3548.0	3572	2962
Top Lower Hugin Fm	3614 -20/+50	3636	3591.7	3616	2987
Top Sleipner Fm	3715 -20/+50	3737	3688.0	3713	3040
Top Hegre Group / Top Skagerrak	3831 -20/+70	3853	3730.6	3756	3065
Total Depth (TD)	50 m into Triassic (3881 - 20/+70)	50 m into Triassic (3903)	3896	3923	3149

Table 3.1 Well 15/9-22T2 Lithostratigraphy (Actual depths refers to WL depths)

Stratigraphic Top	Prognosed Depth (mTVDSS); error range	Prognosed Depth (m MDRKB)	Actual Depth (mTVDSS)	Actual Depth (m MDRKB)	Actual TWT (ms)
Seabed	107 ±0.5	129	107	129	145
Top Utsira Fm	838 ±15	860	850	872	913
Top Hordaland Group	1074 ±15	1096	1087.8	1110	1139
Top Skade Fm	1248 ±15	1270	1382.5	1404.5	1414
Base Skade Fm	1465 ±15	1487	1468	1490	1494
Total Depth (TD)			1509	1531	1532

Table 3.2 Lithostratigraphy 15/9-22

3.2 Chronostratigraphy

Fugro Robertson did the biostratigraphy work (Table 3.3).

STRATIGRAPHIC SUCCESSION

Age		Depth (MD from KB)
Middle Eocene		1980m-2250m
Lower Eocene		2350m-2400m
Upper Paleocene		2450m-2710m
Lower Paleocene		2770m
Sample gap: 2770m-3411m		
Upper Jurassic	Upper Volgian	3411m
	Middle - Upper Kimmeridgian	3450m-3537m
	Middle Oxfordian	3552m-3576m
----------	Stratigraphic break?	----------
Middle Jurassic	Bathonian	3615m-3747m
----------	Stratigraphic break	----------
Late Triassic	Upper Norian - Rhaetian	3806m-3915m

Table 3.3 Well 15/9-22T2 Chronostratigrahpy

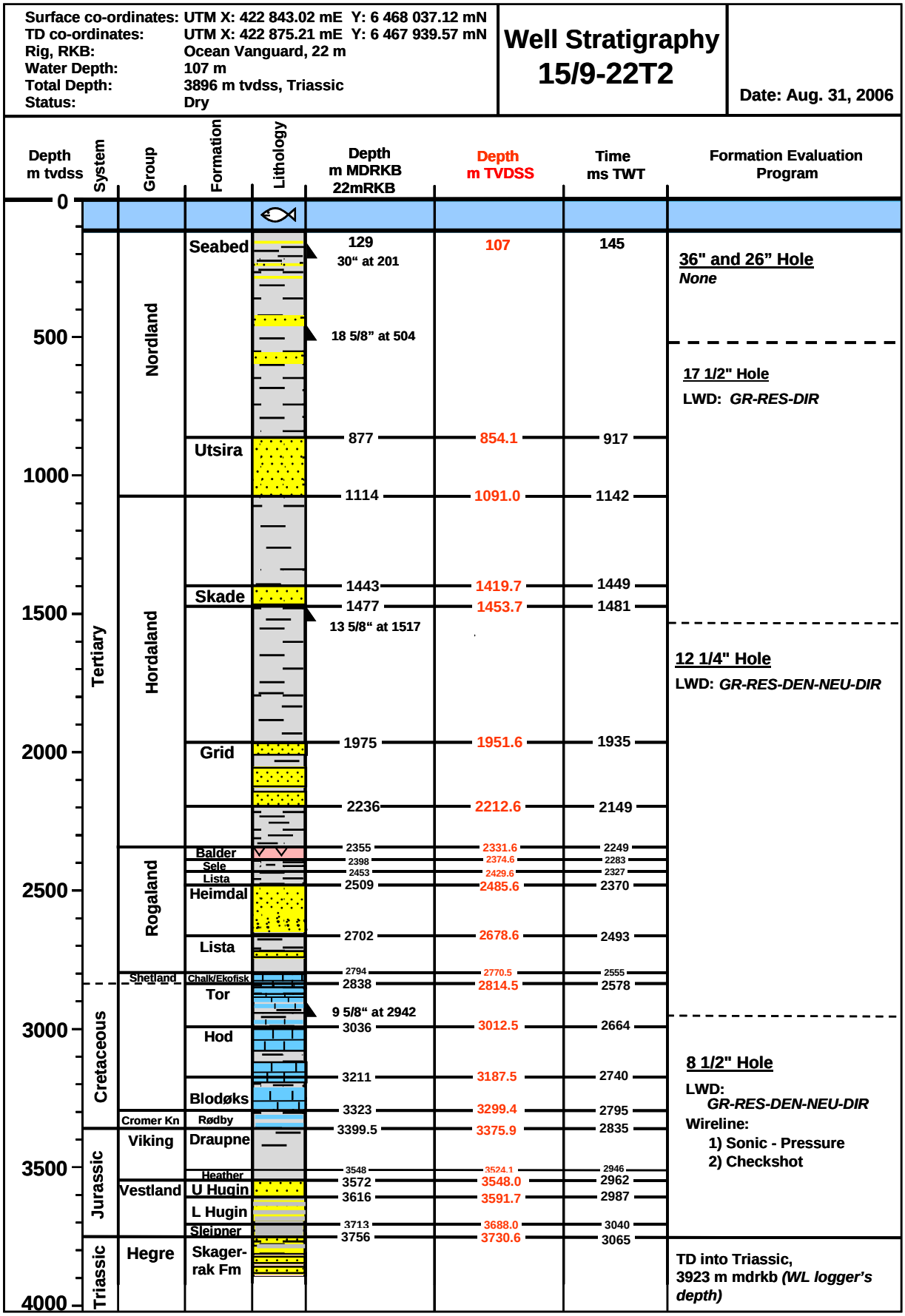


Figure 3.1 Stratigraphic Column

3.3 Lithology Descriptions

Detailed descriptions of cutting samples are included in Appendix I & Appendix II.

Quaternary and Pliocene
Reference is being made to site survey report (OIMS Shallow Drilling Hazards Evaluation NOCS Block 15/9-22).

Nordland Group (Seabed at 129m-1114 m MDRKB)
The group was interpreted as very soft to slightly silty clay with frequent gravels and possible boulders based on information from the site survey report. While drilling there bolders were in the 36" hole section, but there were no cuttings return until the 18 5/8" casing.

Utsira Formation (877-1114 m MDRKB)
This formation consists of marine sandstone and claystone.

SANDSTONE: predominantly loose quartz, clear to translucent, fine to medium occasionally coarse, generally sub rounded, generally moderately sorted, occasionally well sorted, spherical, commonly aggregated with argillaceous/silty matrix, common shell fragments, trace lignite, occasional glauconitic, trace pyrite.
CLAYSTONE: medium dark grey to olive grey, soft, amorphous to sub blocky, very silty, common very fine sand grading to argillaceous sandstone, slightly calcareous in part.

Hordaland Group (1114-2355 m MDRKB)
The group consists of marine claystone interbedded with sandstone. Limestone stringers have been observed.

CLAYSTONE: grey brown to olive black, soft to firm, sub blocky to blocky, sub fissile in places, pervasive, fairly featureless, slightly to moderately silty, trace micro-mica, local good trace glauconite, generally non calcareous.
SANDSTONE: generally loose colorless quartz, very fine to coarse predominately fine, clear to translucent, sub angular to sub rounded, moderately well sorted, weakly cemented with calcite, trace glauconite.
ARGILLACEOUS LIMESTONE : yellowish grey to off white, soft to firm, sub blocky, mudstone texture, micritic, very argillaceous.

Skade Formation (1443-1477 m MDRKB)
This formation consists of marine sandstones with brownish grey claystone interbeds.

SANDSTONE: generally loose quartz, fine to medium, clear to translucent, sub rounded, well sorted, occasionally white, weakly cemented with calcite, common glauconite. No show
CLAYSTONE: brown grey, firm, blocky, very silty, calcareous, earthy texture, common with very fine quartz.

Grid Formation (1975-2236 m MDRKB)
This formation consists of white to light grey sandstones with interbeds of greenish grey claystone.

SAND/SANDSTONE: dominantly as loose quartz: clear, transparent, rare stain, very fine upper to fine upper and locally medium lower becoming moderate to well sorted, becoming fine upper to coarse upper and poorly to dominantly moderately sorted, moderate to highly spherical, sub rounded to sub angular, no visible cement, local trace argillaceous matrix washing out.
CLAYSTONE: variable dark greenish grey, olive grey to olive black, firm, blocky, commonly platy, waxy texture, slightly silty in places, yellowish grey and kaolinitic in parts, commonly with fine glauconitic specks, non calcareous.
ARGILLACEOUS SILTSTONE: olive brown black to grey brown, firm to moderately hard, blocky to sub fissile, earthy, very argillaceous, grades to SILTY CLAYSTONE in part, common very fine disseminated micro pyrite, slightly calcareous.
TR DOLOMITIC LIMESTONE: buff to yellowish brown, pale yellowish grey, off white, generally hard to very hard, occasionally softer, angular, crypto to micro crystalline, fairly clean, possibly kaolinite?, rare mineral inclusions, no visible porosity.

Rogaland Group (2355-2794 m MDRKB)
This group consists of deep marine shale interbedded with deep marine sandstone.

Balder Formation (2355-2398 m MDRKB)
This formation consists of grey shale interbedded with pale grey tuffs.

CLAYSTONE: predominantly pale grey to grey, brown grey, occasionally blue grey, rarely red brown, firm to very firm, blocky to sub fissile, commonly platy, waxy texture, occasionally silty, trace kaolinite in part, non to slightly calcareous.
TUFF: Pale grey to blue grey speckled with black specks, firm, friable, sub blocky to blocky, calcareous in part.

Sele Formation (2398-2453 m MDRKB)
This formation consists of olive grey shale.

CLAYSTONE: grey to olive grey, occasionally brown grey, homogenous, rarely red brown, firm to moderately hard, blocky to sub-fissile, platy, occasionally splintery, silty in part, no calcareous to slightly calcareous.

Upper Lista Formation (2453-2509 m MDRKB)
This formation consists of grey to olive grey shale.

CLAYSTONE: grey to olive grey, occasionally dark brown grey and silty, trace dark greenish grey, firm to moderately hard, blocky to sub-fissile, locally platy, silty in part, rare trace micro pyrite, generally non calcareous, trace of loose SAND washing out, clear, translucent, very fine to fine lower, well sorted, sub angular, no visible cement.

Heimdal Formation (2509-2702 m MDRKB)
This formation consists of predominately sandstone ranging from fine to coarse grain size and often argillaceous with locally developed siltstone and claystone.

SAND/SANDSTONE: dominantly as loose quartz, transparent, rare trace varicolored, fine upper to medium upper, locally coarse and angular, poor to moderately sorted, moderate to highly spherical, sub rounded to dominantly sub angular, no visible cement, trace granular pyrite cement, trace lithic fragments, trace argillaceous matrix in unwashed, rare aggregates are off white, moderately hard, well consolidated, very fine to medium, generally well sorted, sub rounded, heavily cemented with calcite, trace white to creamy white argillaceous or kaolinite matrix, grading to ARGILLACEOUS SANDSTONE in parts, nil to very poor visible porosity. Often with lamina of LIGNITE/COAL: black, soft to firm, splintery, sub vitreous.
ARGILLACEOUS SILTSTONE: olive brownish black, firm to moderately hard, blocky to sub fissile, rare fissile and splintery, generally earthy, very argillaceous, trace micro mica, trace very fine disseminated micro pyrite, slightly calcareous.
CLAYSTONE: dark grey to olive grey, occasionally dark brown grey and dark greenish grey, firm to moderately hard, blocky to sub-fissile, trace silt to locally moderately silty, rare trace micro pyrite, generally non calcareous.

Lower Lista Formation (2702-2794 m MDRKB)
This formation consists of sandstone with minor interbedded marls and limestone.

SAND/ARGILLACEOUS ARKOSIC SANDSTONE: light olive grey, light grey to off white, generally soft to firm, rare hard aggregates are heavily calcite cemented and with creamy white kaolinite? matrix, loose quartz is generally medium to coarse, rarely very coarse, poorly sorted, sub angular, with nil to very poor visible porosity.
MARL: light to olive grey, firm, sub blocky, locally soft sticky and plastic, very calcareous, trace silt.
LIMESTONE: white to cream, very pale grey, firm, crumbly to sub blocky, very fine slylolities/algal with black micro laminations, micro to cryptocrystalline, and no visible porosity.

Shetland Group (2794-3323 m MDRKB)
This group consists mainly of limestone.

Ekofisk Formation (2794-2838 m MDRKB)
This formation consists mainly of white limestone with interbedded gradations to grey marl.

LIMESTONE: white to pale yellowish grey, very light grey, firm to moderately hard, mudstone, sub blocky to crumbly, becoming blockier, predominantly microcrystalline, very rare trace argillaceous, rare traces of very fine black algal matter in micro laminations.

MARL: light to medium light grey, very light grey in part, becoming light brownish grey to pale red, sub blocky to trace crumbly, predominantly featureless, very slightly swelling, variably calcareous.

Tor Formation (2838-3036 m MDRKB)
This formation consists of mainly white to light grey limestone.

LIMESTONE: white to off white, with greyish orange pink (slightly argillaceous), moderately hard to hard, blocky to sub angular when hard, commonly softer and crumbly with chalky texture, mudstone, microcrystalline, generally very clean, featureless, rare stylolites, no visible porosity.

Hod Formation (3036-3211 m MDRKB)
This formation consists of light grey limestone.

LIMESTONE: Very light grey, pale greyish orange pink, trace greenish grey, firm to moderately hard, blocky to sub blocky, hard crystalline and splintery where greyish green, commonly soft and crumbly with chalky texture, mudstone, micritic, microcrystalline, slightly kaolinitic?, featureless, no visible porosity.

Blodøks Formation (3211-3323 m MDRKB)
This formation consists of a clean white limestone interbedded with a grey marly limestone.

LIMESTONE: white to trace pinkish grey, firm, blocky to commonly angular, microcrystalline, rarely micritic, mudstone.
MARLY LIMESTONE becoming MARL: light grey to light brownish grey, occasionally medium grey, firm, becoming harder, microcrystalline, crumbly to friable, slightly dispersive where highly argillaceous, very earthy texture, clastic appearance with abundant fine dark yellowish green glauconite grains, traces of large nodular pyrite, locally silty, occasionally very micromicaceous.

Cromer Knoll Group (3323-3399.5 m MDRKB)
This group consists of grey marl and light grey limestone.

Rødby Formation (3323-3399.5 m MDRKB)
This formation consists of interbedded limestone marl and claystone.

MARL: Light to medium grey, occasionally pale red brown, soft to firm, slightly plastic, amorphous to sub blocky, locally sandy with colorless quartz, grading to calcareous Claystone in part.
LIMESTONE: Off white, very light grey, firm, sub blocky, microcrystalline, predominately clean, chalky, and occasionally slightly argillaceous.
CLAYSTONE: medium to dark grey, dark brown grey, firm, occasionally moderately hard, blocky, occasional earthy texture, slightly calcareous, locally carbonaceous, fine crystalline pyrite.

Viking Group (3399.5-3572 m MDRKB)
This group consists mainly of shale.

Draupne Formation (3399.5-3548 m MDRKB)
This formation consists of mainly olive black shale.

CLAYSTONE: dark grey, olive black, brownish black, firm to moderately hard, sub blocky to platy, earthy texture, slightly dispersive where soft, variably silty with fine clear quartz grains, black carbonaceous fragments, occasional fine disseminated pyrite, non calcareous.

Heather Formation (3548-3572 m MDRKB)
This formation consists of silty grey claystone interbedded with light grey limestone/dolomite.

SILTY CLAYSTONE: light to medium grey, soft, firm where lighter, sub blocky to amorphous, slightly dispersive, rare sticky, very slightly calcareous, possibly from lithic fragments, extremely silty with colorless quartz, trace very fine to fine quartz sand, commonly with black and dark brown carbonaceous material, common micro mica, trace fine sand sized nodular pyrite, very rare fine glauconite grains.
LIMESTONE/DOLOMITE: light grey, firm, sub blocky to crumbly, very argillaceous, micro to cryptocrystalline.

Vestland Group (3572-3756 m MDRKB)

Upper Hugin Formation (3572-3616 m MDRKB)
This formation consists of sandstone with interbedded siltstone and coal.

SAND: predominantly loose quartz, colorless to occasionally very pale brown, transparent to translucent, very fine to very coarse, occasional granule, trace silt, unsorted, angular to sub rounded, moderate to highly spherical, unconsolidated, trace fine to medium sized pyrite nodules, 5-10% white to very pale grey weathered feldspar, trace degraded to kaolinite, sandstone grading to arkose, moderate to good inferred porosity.
SILTSTONE: brownish black to dark brownish grey, firm to hard, blocky to angular, trace sub fissile to platy, earthy texture, non calcareous, very carbonaceous with black detrital material, rare angular quartz sand grains bound up, slight metallic lustre from very finely disseminated pyrite.
COAL: black to brownish black, bituminous to anthracitic, firm to very hard in part, common vitreous to anthracitic lustre, often with very finely laminated appearance, trace micro pyrite coating on laminations.

Lower Hugin Formation (3616-3713 m MDRKB)
This formation consists of claystone with interbedded sandstone and coal.

CLAYSTONE: brownish black, firm, blocky to platy, variably silty, occasional fine black carbonaceous fragments, occasional fine mica, fine disseminated pyrite, no calcareous, grades to argillaceous SILTSTONE in part.
SANDSTONE: dark yellowish brown, crumbly, blocky, clear quartz, very fine to fine, sub angular, highly spherical, moderately sorted, locally abundant calcareous cement/matrix, poor to no visible porosity, occasionally silica cement and fair visible porosity.
COAL: black, hard, conchoidal fracture, anthracitic, waxy lustre.

Sleipner Formation (3713-3756 m MDRKB)
This formation consists mainly of silty claystone, interbedded with sandstone and a few minor coals.

CLAYSTONE: brownish black, firm, blocky to platy, variably silty, occasional fine black carbonaceous fragments, occasional fine mica, fine disseminated pyrite, no calcareous, grades to argillaceous SILTSTONE in part.
SANDSTONE: dark yellowish brown, crumbly, blocky, clear quartz, very fine to fine, sub angular, highly spherical, moderately sorted, locally abundant calcareous cement/matrix, poor to no visible porosity, occasionally silica cement and fair visible porosity.
COAL: black, hard, conchoidal fracture, anthracitic, vitreous lustre, locally finely bedded with silty partings.

Hegre Group (3756-TD: 3923 m MDRKB)

Skagerrak Formation (3756-3923 m MDRKB)
This formation consists of orange red sandstone/siltstone interbedded with red brown claystone.

SANDSTONE: orange and red, locally crumbly, blocky, clear translucent quartz, very fine to medium, sub angular to sub round, sub spherical, poor to moderately sorted, commonly as loose quartz, argillaceous in parts, often with calcareous cement/matrix, poor to no visible porosity, locally highly silty grading to SILTSTONE in part.
CLAYSTONE: greyish red, brown, dusky brown, soft to firm, amorphous to sub-blocky, rarely silty, non-calcareous.

4 FORMATION EVALUATION

4.1 Cuttings Samples

The following samples were collected every 10 m MD from first sample return below 13 3/8" casing shoe to Base Cretaceous, then samples were collected every 3 m MD to TD.

3 sets of wet samples:

a) 1 bulk 5 L sample for splitting
b) Esso (0.5 kg) for biostratigraphy
c) Esso (geochemical tin) for geochemical analysis (every 30m)

1 set of washed and dried samples

a) Esso (50 g)

The bulk 5 L wet sample was split into the following sets onshore by Reslab:

Wet samples - NPD 1 kg, Esso 0.5 kg, Statoil 0.5 kg, 1 trade set* (1 kg)
Dry samples - NPD 50 g, Esso 150 g and 6 trade sets 50 g, Statoil 100 g

* The wet trade set should be split into 6 washed and dry sets (50 grams each).

4.2 Cores

No conventional coring or sidewall coring were performed in this well.

4.3 Logging

4.3.1 Mud System

Water-based mud was used in this well in order to allow the straightforward separation of mud filtrate from potential gas/condensate fluid in the objective Hugin interval. At the time of logging, the mud properties were:

1.35 sg mud weight
0.059 ohmm @ 17 degC Rmf
167 kppm NaCl-equivalent
124 degC BHT on DSI-MDT run
132 degC BHT at 3800mMD on Checkshot run

4.3.2 LWD Logging

Baker Hughes Inteq did the logging while drilling (Tables 4.1 and 4.2).

Date beginning	Run	Hole Size (inches)	LWD Tool Suite	Mud	Interval (mMD)
Jan 19, 2006	1	17 ½	GR/MPR	Glycol KCL	508-1531

Table 4.1 Well 15/9-22 LWD Logging Summary

Date beginning	Run	Hole Size (inches)	LWD Tool Suite	Mud	Interval (mMD)
Jan 31, 2006	2	17 ½	GR/MPR	Glycol KCL	605-1523
Feb 7, 2006	3	12 ¼	GR/MPR/ORD/CCN	Glycol KCL	1523- 2562
Feb 9, 2006	4	12 ¼	GR/MPR/ORD/CCN	Glycol KCL	2562- 2948
Feb 12, 2006	5	8 ½	GR/MPR/ORD/CCN	Glycol KCL	2948-3353
Feb 18, 2006	6	8 ½	GR/MPR/ORD/CCN	Glycol KCL	3353-3465
Feb 21, 2006	7	8 ½	GR/MPR/ORD/CCN	Glycol KCL	3465-3653
Feb 24, 2006	8	8 ½	GR/MPR/ORD/CCN	Glycol KCL	3653-3915

Table 4.2 Well 15-9-22T2 LWD Logging Summary
(MPR – Multipole Resistivity tool, ORD- Rotational Density tool, CCN- Compensated Neutron Porosity tool, APX – Acoustic Properties Explorer)

The neutron porosity is missing between 2940-3345mMD because of a failure. The curves are affected by the presence of many coal beds over the interval 3585-3755mMD.

The wireline TD for the well was found to be 8m deeper than the driller's TD. The wireline depth was deemed to be accurate and the LWD logs were depth-aligned to the wireline logs. Depth-alignment between the LWD curves was also performed.

4.3.3 Wireline Logging

The wireline logging was done in the 8 ½" hole by Schlumberger (Table 4.3).

Date	Run	Wireline Tool Suite	Interval (m MDRKB)
26 Feb, 2006	1A	DSI-MDT-GR-ACTS-ECRD	MDT 3574-3895 DSI 3923-1980
27 Feb, 2006	1B	VSI (checkshots)	500-3915

Table 4.3 Well 15/9-22T2 Wireline Logging Summary

The quality of the sonic data was affected by a sticky hole between 3592m and 3583m.

4.3.4 Composite Logging Curve Set

Composite Log input curves were generated from the Baker Hughes Inteq LWD data and the Schlumberger wireline data. The following curves are included:

Composite Curve	Input Curve	Description
GR	GRCFM	Gamma Ray
RDEP	RACEHM	Deep Resistivity
RMED	RPCEHM	Medium Resistivity
BS	BS	Bit Size

Table 4.4 Composite Input Data, Well 15/9-22

Composite Curve	Input Curve	Description
AC	DTCO	Compressional Slowness
CALI	CALCM	Caliper
DEN	BDCFM	Bulk Density
GR	GRCFM	Gamma Ray
NEU	NPLFM	Neutron Porosity
RDEP	RACEHM	Deep Resistivity
RMED	RPCEHM	Medium Resistivity
PEF	DPEFM	Photoelectric fact.
BS	BS	Bit Size

Table 4.5 Composite Input Data, Well 15/9-22T2

4.4 Petrophysical Interpretation

4.4.1 Standard Petrophysical Interpretation

A standard petrophysical evaluation was conducted on the 15/9-22T2 log data to understand the reservoir quality and fluid content of the reservoir intervals. Shale volume was calculated by both linear GR and density-neutron separation methods, total porosity was estimated with the bulk density measurement, and water saturation was calculated with the Archie equation and formation resistivity. The petrophysical parameters shown in Table 4.6 were used.

4.4.2 Shale Volume

Shale volume was calculated in two ways. One method was from the total gamma response using equation 1 below. GRclean and GRshale were defined from inspection of the log data and are shown in the input parameters table.

$$VSHGR = (GR - GRclean) / (GRshale - GRclean) \qquad \text{eqn. 1}$$

The second method is based on the separation between the neutron and density porosity curves and equation 2.

$$VSHDN = (NEUSS-PHIT)/DNDELTA \qquad \text{eqn. 2}$$

Where NEUSS is neutron porosity on a sand matrix (NEU + 0.044), PHIT is density porosity (as calculated with equation 3) and DNDELTA is the typical amount of neutron-density separation in shale zones (from the input parameters table).

4.4.3 Porosity

Total porosity has been determined from the density log:

$$PHIT = (RHOMA - DEN) / (RHOMA - RHOFL) \qquad \text{eqn. 3}$$

RHOMA, matrix density, and RHOFL, fluid density, are from the input parameters tables.

4.4.4 Water Saturation

The Archie equation, equation 4, was used to calculate total water saturation.

$$Sw = ([Rw*a]/[(PHIT^m)*Rt])^{(1/n)} \qquad \text{eqn. 4}$$

Where Rw is resistivity of the formation water, a = 1, PHIT is porosity from equation 3, 'm' and 'n' are from the parameter table, and Rt is resistivity. Water saturation was limited to fractional values between 0 and 1.

4.4.5 Permeability

The following relationship with PHIT was used to calculate permeability, using the parameter values listed in Table 4.6.

$$LOG(KPRM) = coeff. * PHIT + intercept \qquad \text{eqn. 5}$$

PHIT is entered as a fraction.

Parameter	Value						
Interval (mMD)	1900-2050	2050-2300	2300-2794	2794-3399.8	3399.8-3754.7	3754.7-3840	3840-3906
Description	Upper Grid	Lower Grid	Heimdal	Chalk	Hugin & Sleipner Reservoir*	Skagerrak	Skagerrak
GR Clean (gAPI)	25	25	25	5	13	13	13
GR Shale (gAPI)	75	75	75	75	90	110	90
ND Delta in 100% shale (frac phi)	0.28	0.28	0.28	0.28	0.30	0.30	0.30
Main Vsh source (GR or ND)	ND	ND	ND	GR	GR	GR	ND
Grain density (g/cm3)	2.65	2.65	2.65	2.71	2.65	2.65	2.65
Fluid density (g/cm3)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Vsh/Porosity cutoffs (to set Swt to 1.0 in shale intervals)	50/15	50/15	50/15	0/4	50/8	50/8	50/8
BHT (degC) at TD (mMD)	124degC @ 3919.3						
Surf. Temp (degC) (mMD)	80degC @ 1900						
Porosity Exponent "m"	1.7	1.7	1.7	2.2	1.76	1.76	1.76
Saturation Exponent "n"	2.05	2.05	2.05	2.2	2.29	2.29	2.29
Formation Water Salinity (kppm NaCl equiv.)	50	62	65	70	125	125	125
Permeability coefficient	25.4504	25.4504	25.4504	0	25.4504	25.4504	25.4504
Permeability intercept	-2.3279	-2.3279	-2.3279	0	-2.3279	-2.3279	-2.3279

Table 4.6 Petrophysical Input Parameters, Well 15/9-22T2
(In Hugin/Sleipner coal intervals, porosity and permeability were set to zero and Swt was set to 1)*

4.4.6 Results of Petrophysical Interpretation

The results of this evaluation are shown with log plots (Figures 4.3-4.5) and a net summation table (Table 4.8). Also, there is a plot in the Appendix VII.

The well penetrated 40mTVD of Hugin reservoir with average porosity of 18.1% and a NTG of 28%. It is possible that there is residual hydrocarbon saturation in the uppermost porosity intervals in the Hugin (see Figures 4.3 and 4.4) as identified with resistivity analysis of the reservoir fluid saturations. It seems unlikely that the salinity in these beds is significantly lower than the nearby Sleipner field sands such that resistivity analysis would result in 100% water saturation. Many coal beds are present in the Hugin interval.

The well penetrated 131mTVD of Sleipner reservoir with average porosity of 13.7 and NTG of 81%. Resistivity analysis results in Sw values very close to 100% with the standard analysis parameters.

4.5 Wireline Formation Pressure Logging

Schlumberger's MDT wireline formation tester was run in the well to measure formation pressure. Table 4.7 shows the data acquired. 18 pretests were attempted, 11 gave good pressures and 7 were unsuccessful. Figure 4.1 shows the data acquired and trends through the data. The wireline depths (rather than the LWD depths) were used for the pretest depths. No fluid samples were attempted in the well.

WISHBONE 15/9-22T2 MDT Pretest Pressures									
Test	Depth m	TVD m	TVDSS m	Mobility md/cp	Hyd Before psi	Hyd After psi	FP (psi)	FP (bar)	Result
1	3574.00	3572.19	3550.19	188.91	6892.95	6879.80	6203.72	427.73	Good test
2	3581.50	3579.65	3557.65	423.70	6893.54	6885.43	6214.80	428.49	Good test
3	3592.51	3590.60	3568.60	29.03	6912.99	6904.42	6121.16	422.04	Good test
4	3598.52	3596.58	3574.58	72.79	6918.00	6913.38	6129.50	422.61	Good test
5	3604.50	3602.53	3580.53	12.33	6929.25	6924.17	6139.50	423.30	Good test
6	3613.50	3611.48	3589.48	154.00	6949.47	6941.67	6258.36	431.50	Good test
12	3613.51	3611.49	3589.49	134.13	6968.74	6952.38	6257.88	431.46	Good test
7	3629.00	3626.88	3604.88		6985.76	6974.22			Dry test
8	3629.51	3627.38	3605.38		6970.13	6970.03			Dry test
9	3648.50	3646.24	3624.24		7027.09	7012.64			Dry test
10	3663.00	3660.63	3638.63		7054.48	7041.42			Dry test
11	3692.50	3689.91	3667.91		7122.96	7097.30			Dry test
13	3780.01	3776.62	3754.62	1.06	7278.23	7254.29	6918.65	477.02	Good test
15	3790.50	3787.01	3765.01	0.27	7274.25	7269.38	6921.05	477.19	Good test
19	3809.50	3805.82	3783.82		7310.84	7310.50			Dry test
18	3862.49	3858.22	3836.22	32.76	7408.21	7406.78	7040.33	485.41	Good test
16	3880.50	3876.02	3854.02	0.41	7462.71	7443.43	7092.56	489.01	Good test
17	3895.00	3890.36	3868.36		7480.27	7467.42			Dry test

Table 4.7. Formation pressure data acquired with the MDT tool in the 15/9-22T2 wellbore.

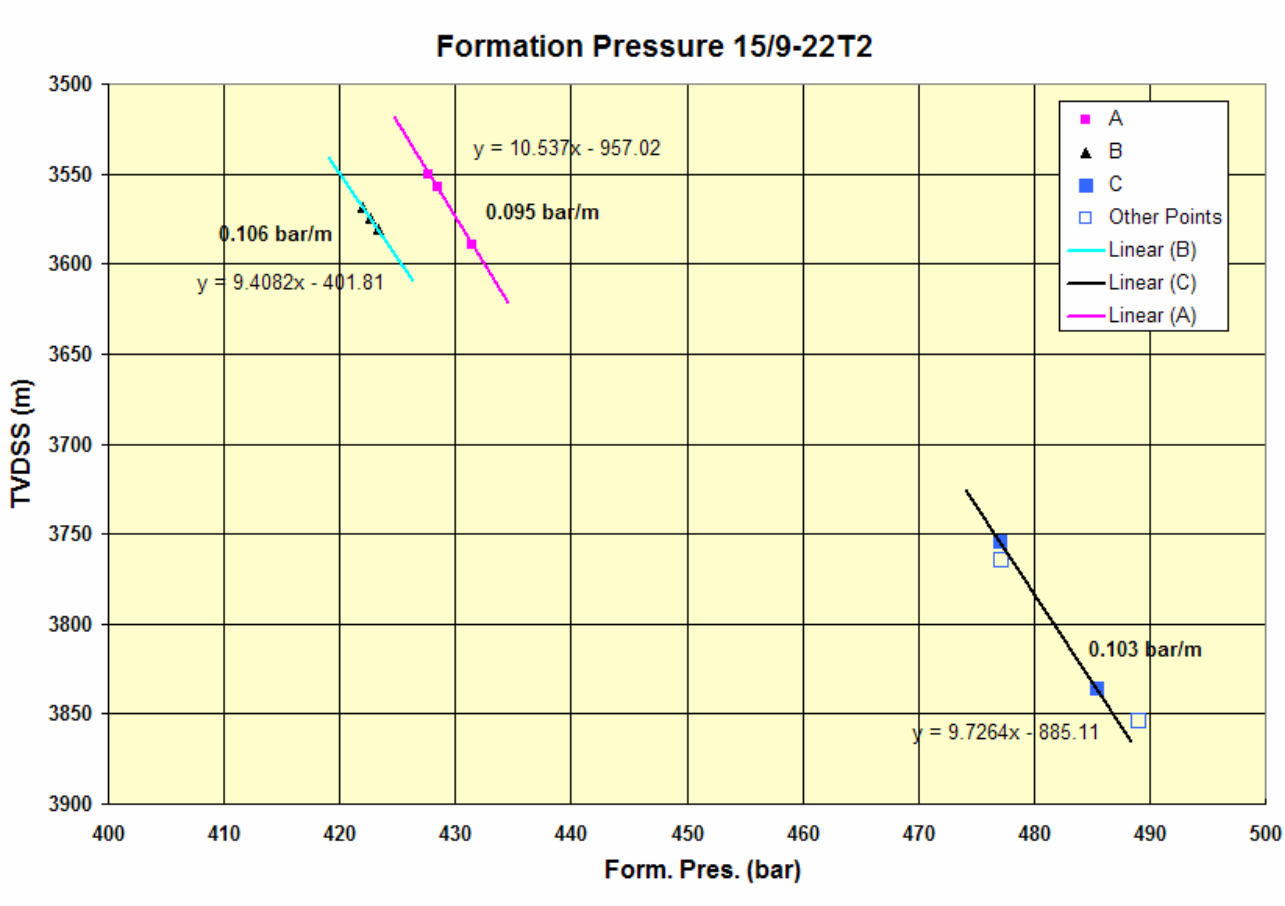


Figure 4.1. Formation pressures acquired with the MDT tool in the 15/9-22T2 wellbore.

4.6 Temperature Data

The measured temperature data from wireline logging is listed in Table 4.8. Before wireline logging at TD, circulation was stopped on 26 February at 07:00 after circulating the hole clean for 1.5 hours. The DSI-MDT-GR-ACTS-ECRD was on bottom on 27 February at 01:15. The maximum recorded temperature was 124ºC. For the subsequent checkshot run, maximum recorded temperature was 132ºC. Extrapolated Horner plot gave 142ºC at TD (Figure 4.2).

Date	Run	Wireline Tool Suite	Measured Temperature (ºC)	Time since Circulation Stopped (hours)	Interval (m MDRKB)
26 Feb, 2006	1A	DSI-MDT-GR-ACTS-ECRD	124, 124, 122	18 hours and 15 min	3923-1980 TD=3923
27 Feb, 2006	1B	VSI (checkshots)	132	34 hours and 30min	3800

Table 4.8. Well 15/9-22T2 Temperature Summary

ExxonMobil **Horner BHT Calculation**

Well: 15/9-22T2 Field: Wishbone Prospect Location:

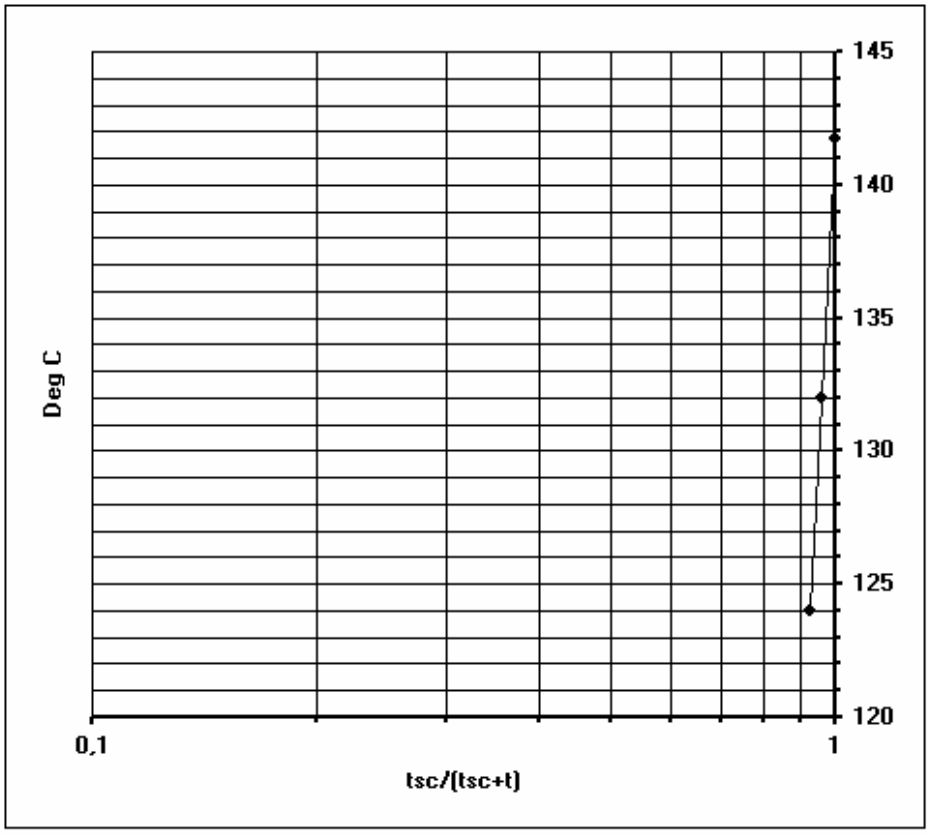
Date: 14. June 2006 Geologists:

Depth, Circulation and Temperature Data

			Date	Time
Depth:	3923	mBRT	Circulation stopped:	26-feb-06	7:00
TVD:	3896	mTVD			
RT-SB:	129	m			

Seabed Temperature:	5	(5 deg C is default)

Log	Run No	Date (ddmmmyy)	Bottom Log Interval	Max Temp	Time Since Circ stopped	Circulation Time	Log to Bottom?
DSI-MDT-GR	1A	26-feb-06	3923	124	18,25	1,5	y
VSI checkhot	1B	27-feb-06	3915	132	34,5	1,5	n
			3915	132	34,5	1,5	



BOTTOM HOLE TEMPERATURE =	141,7	deg C
GEOTHERMAL GRADIENT =	33,7	deg C

Figure 4.2 Extrapolated Horner plot for well 15/9-22T2

Wishbone 15/9-22T2 – Hugin Detail

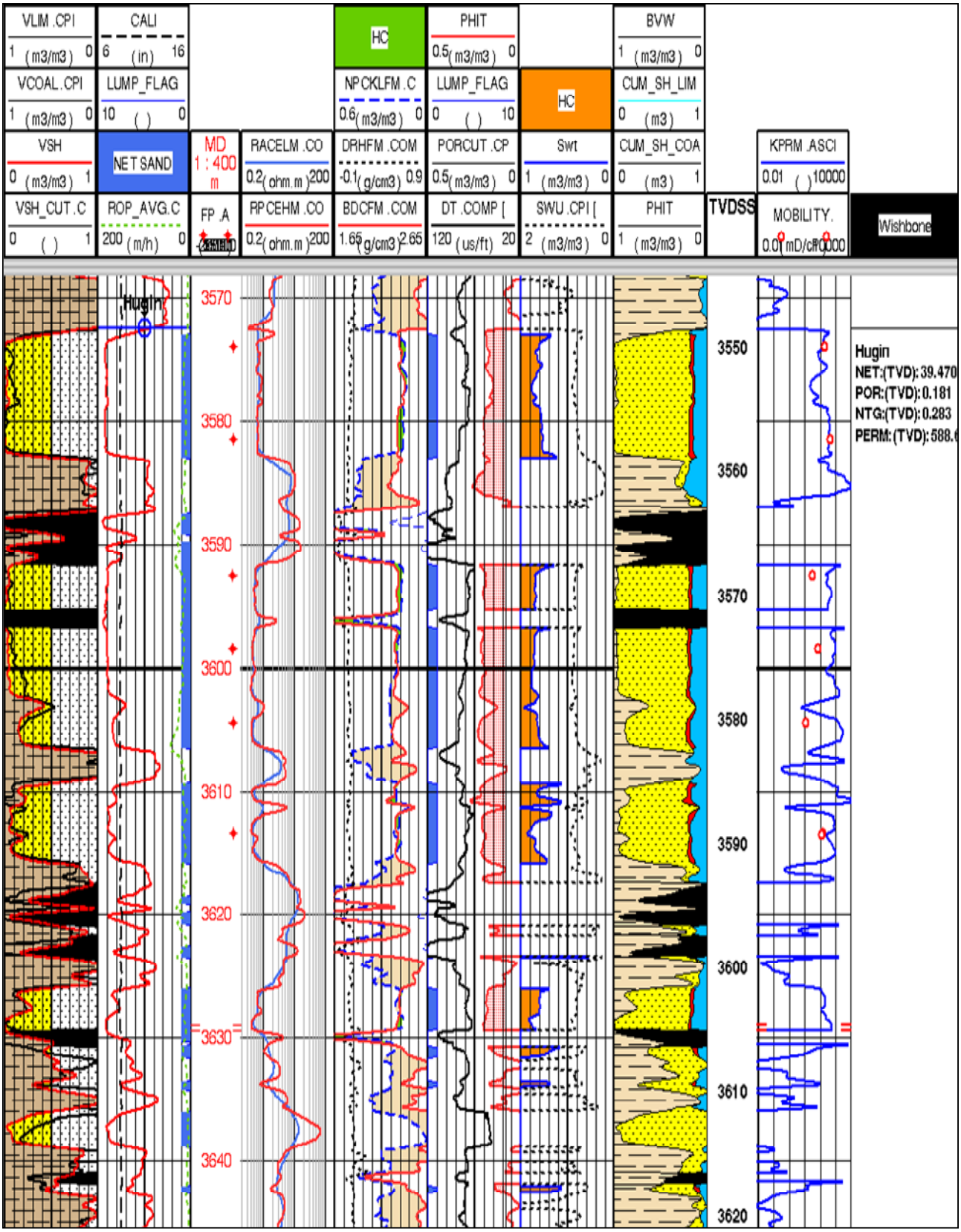


Figure 4.3 Petrophysical interpretation of Hugin in well 15/9-22T2

Wishbone 15/9-22T2 – Hugin/Sleipner Results

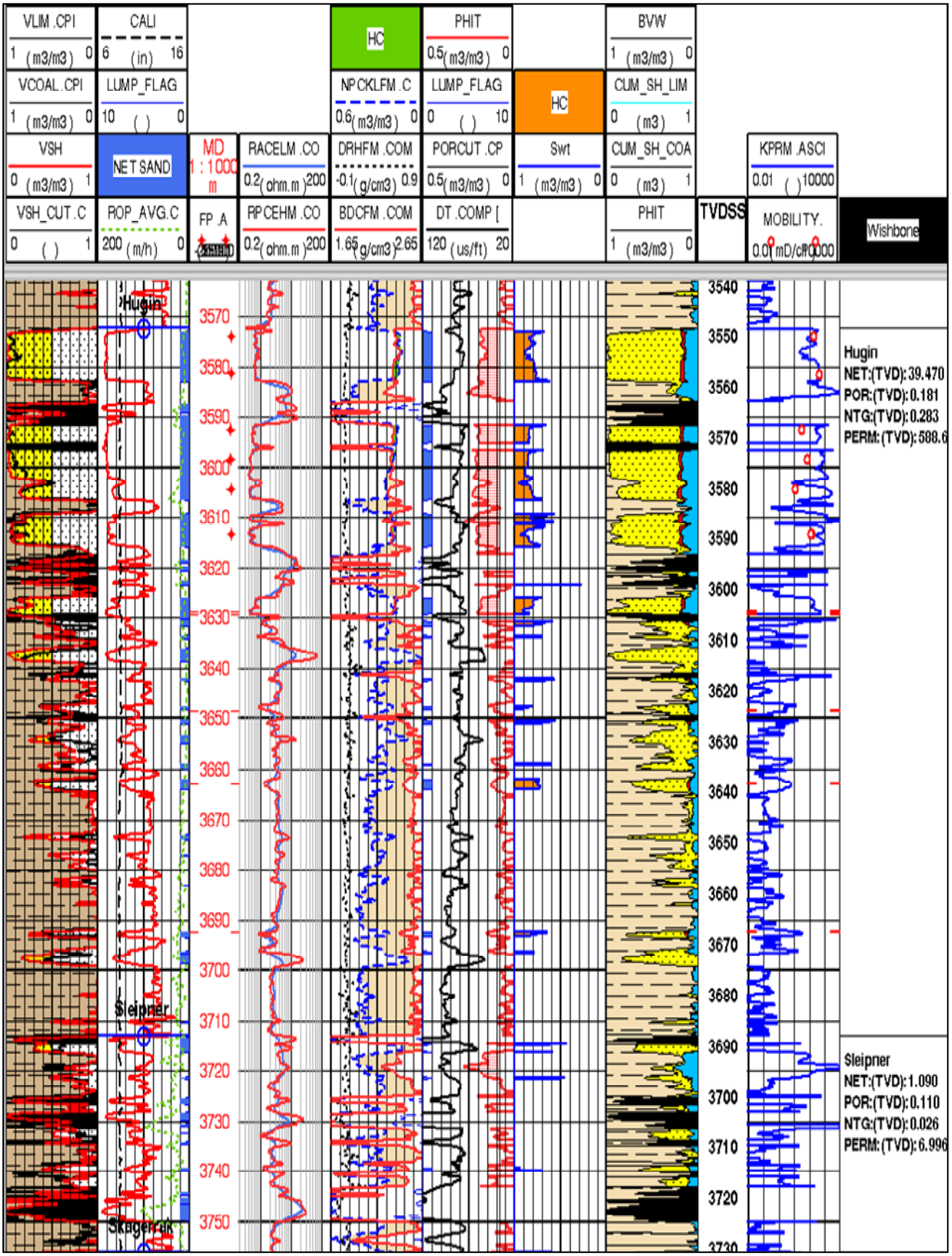


Figure 4.4 Petrophysical interpretation of Hugin & Sleipner in well 15/9-22T2

Wishbone 15/9-22T2 – Skagerrak Results

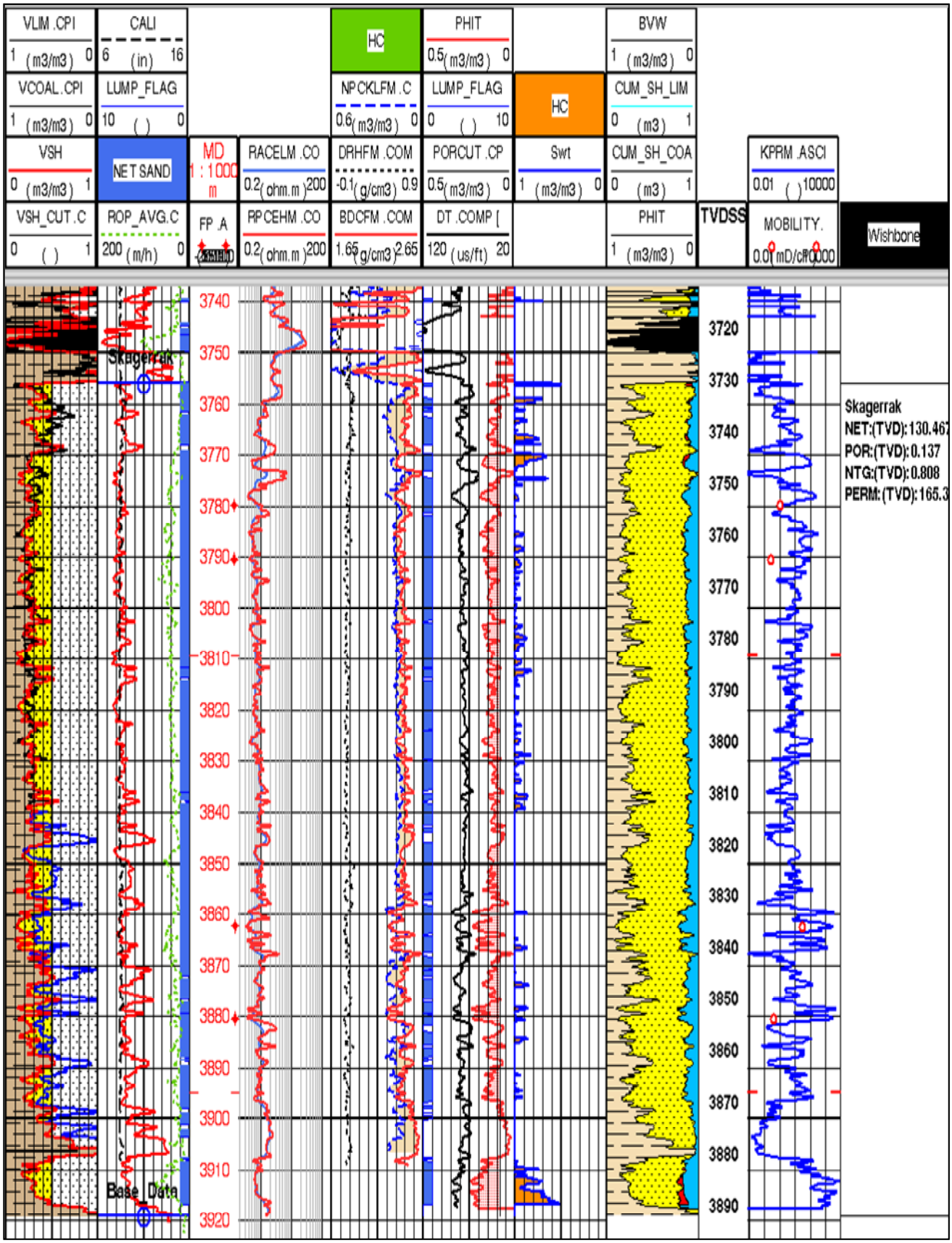


Figure 4.5 Petrophysical interpretation of Skagerrak in well 15/9-22T2

Wishbone 15/9-22T2 Net Summary

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True Vertical Depth						Net Sand (TVD) (Vsh < 50%)		Net Reservoir (TVD) (Vsh < 50%, PHIT > 8%)						
Zone	Top MD m	Base MD m	Top TVDSS m	Base TVDSS m	Gross TVD Interval Thickness m	Net Sand Thickness m	Net to Gross Interval frac	Net Resv Thickness m	Net to Gross Interval frac	Avg. Vsh frac	Avg. Porosity frac	Avg. Perm (Arith) mD	Net Porosity Thickness m	Avg. Sw frac
Grid	1975.0	2237.0	1951.6	2213.6	262.0	120.7	0.461	120.7	0.461	0.063	0.337	9951.6	40.72	
Heimdal	2509.0	2702.0	2485.6	2678.6	193.0	147.3	0.763	147.2	0.763	0.192	0.230	5005.0	33.83	
Lista	2702.0	2794.0	2678.6	2770.5	92.0	54.8	0.596	54.2	0.589	0.231	0.202	4338.4	10.93	
Upper Hugin	3572.5	3616.0	3548.5	3591.7	43.3	34.7	0.802	29.7	0.687	0.089	0.192	743.9	5.7	
Lower Hugin	3616.0	3713.0	3591.7	3688.0	96.3	21.7	0.226	9.7	0.101	0.320	0.146	114.4	1.4	
Sleipner	3713.0	3756.0	3688.0	3730.6	42.6	11.9	0.279	1.1	0.026	0.430	0.110	7.0	0.1	
Skagerrak	3756.0	3919.2	3730.6	3892.0	161.4	147.1	0.911	130.5	0.808	0.275	0.137	165.3	17.9	

- Depth reference is the wireline depth.
- Perm calculation is based on Hugin core data from the Sleipner field, so should be used with caution in the other intervals.

Table 4.9. Net Summation Table of Wishbone 15/9-22T2.

5 GEOPHYSICS

5.1 Shallow Gas Evaluation

No shallow gas hazards were predicted at the well location, and no shallow gas pilot hole was therefore drilled. No shallow gas was seen on the MWD logs from the 17 ½" hole.

5.2 Acoustic Logs

Density logs were obtained in the 12 ¼" and 8 ½" sections of this well, while sonic logs were obtained only in the 8 ½" section. Parts of the logs are displayed in Figure 5.1, along with a synthetic seismogram and seismic traces at the well location.

5.3 Checkshot Survey

A conventional rig sourced vertical checkshot survey was acquired at TD in this well. The survey was acquired by Schlumberger and processed by Baker Atlas (VSFusion). Separate field (acquisition) and processing reports are produced by the contractors for these services. The survey used a single level VSI (Versatile Seismic Imager) receiver and three 150cu inch Sodera G-Guns in cluster as source (4.5m below sea level). The checkshot survey had at least 3 good repeatable shots at each level and the following acquisition density:

- at 1545m MDRKB and 2793.5m MDRKB on the way in/out of the hole
- at 100m intervals from 3915m MDRKB to 1957.5m MDRKB
- approximately every 500m from 1957.5m MDRKB to surface

The data acquisition gave checkshot data of fair quality

5.4 Tie of Well Logs to Seismic Data

Figures 5.1 and 5.2 show parts of the acoustic logs and a synthetic seismogram (based on a 20Hz Ricker wavelet) tying the seismic data in the reservoir section of this well. No timeshift was applied between the checkshot TWT and the seismic TWT. This gave a good correlation between the synthetic data and the seismic data from above BCU and into the Hugin reservoir. Lower part of Hugin Formation and Sleipner Formation are not tying as good. A bulkshift of 5-6 milliseconds would have improved the tie of this section. However, the overall correlation allows a confident tie of the stratigraphic formations to the seismic 3D dataset.

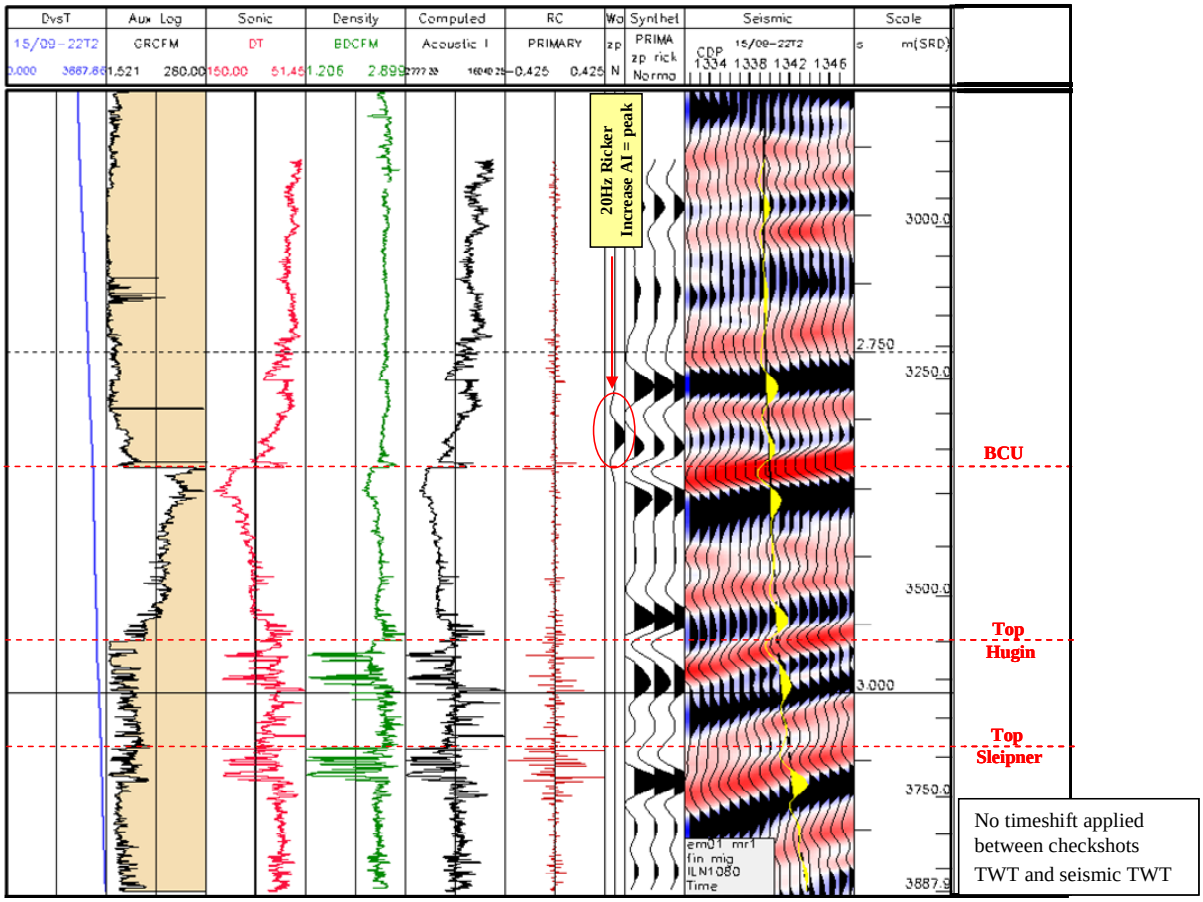

Figure 5.1 Well logs, synthetic seismogram and seismic tie of well 15/9-22T2

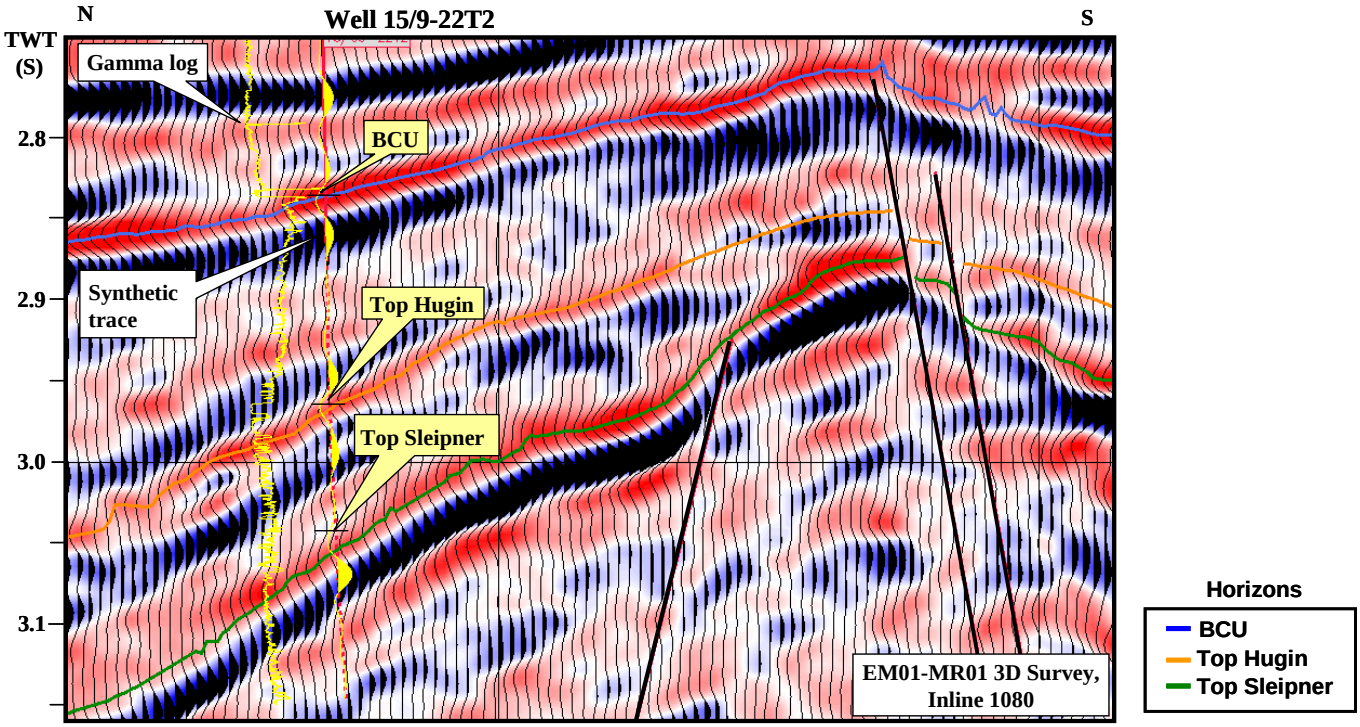

Figure 5.2 Seismic tie of well 15/9-22T2

6 STANDARD AND SPECIAL STUDIES

6.1 Pressure Prediction - Predrill, During Drilling and Post Drill Actual

A pressure prediction study was carried out predrill and during drilling to predict the most likely pressure in the Jurassic and Triassic sands. The major question was if this prospect was drawn down as a result of the Sleipner West production or if it was at the same pressure as the Sleipner Field before production or if it was even higher, like the 15/8-1 field.

Predrill study

Offset well logs, pressure data and production data along with the geological model was used in the study carried out by ExxonMobil. The result of the pre-drill study is shown in Figure 6.1. The solid blue line is showing the best estimate for pore pressure, with thinner lines for the high, very high and low case. The most likely pore pressure estimate at reservoir depth in a dry gas case was 1.24 s.g., and as low as 0.49 s.g. if in communication with the Sleipner Field Hugin Formation, and as high as 1.5 s.g. in the highest case.

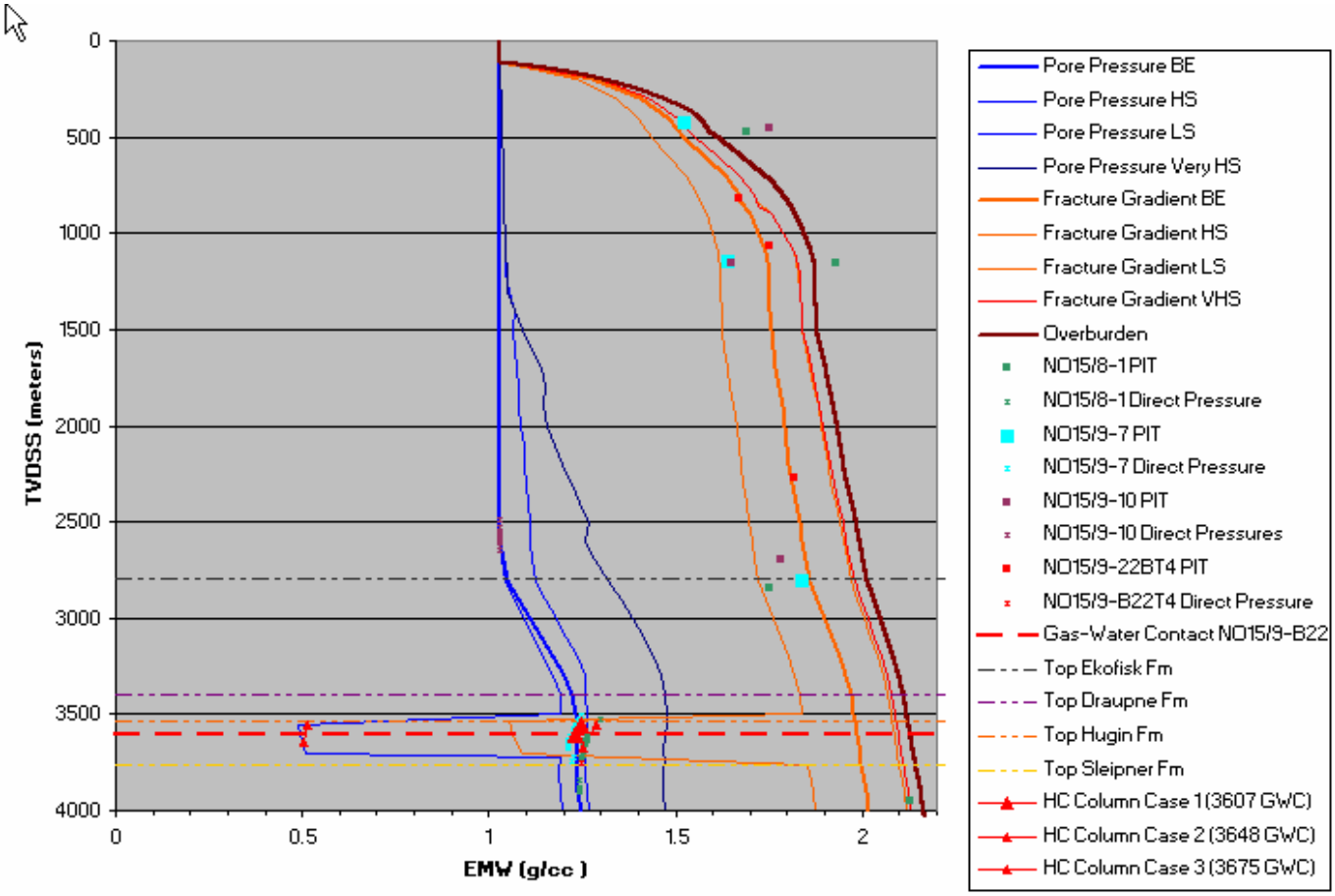

Figure 6.1 Well 15/9-22T2 Pressure Prognosis

Pressure prediction in the drilling phase
During drilling pore pressure estimates were based on mudlogging data such as ROP, gas, torque, flowline temperature and cuttings, combined with D-exponent calculations and LWD. A detailed discussion of this work is in Final Well Report from Geoservices.
The 8 ½" hole section was drilled with 1.35 s.g. mud, pore pressure was estimated to be max 1.25 s.g. at 3450m in the shales before entering the reservoir. The reservoir was drilled without loosing any mud, confirming the pressure was not the drawn down low case. Based on D'exponent etc. the pressure appeared to drop towards 1.2 s.g. at total depth of 3915m.

Post Drill Pressure – Actual Pressure
After the well was drilled to TD, Schlumberger's MDT wireline formation tester was run in the well to measure formation pressure. The results are described in Chapter 4.5 (Wireline Formation Pressure Logging). The MDT results show the Hugin Formation to have formation pressure equivalent to 1.20-1.23 s.g. and the Skagerrak equivalent to 1.24 s.g. This is close to the most likely pore pressure estimate.

6.2 Biostratigraphy

Fugro Robertson did the biostratigraphy on wet samples.

6.3 Geochemical Analysis

Applied Petroleum Technologies did the geochemical analysis on the well.

6.4 List of Reports

- Site Investigation Report (ExxonMobil, 2005)
- Shallow Drilling Hazards Evaluation (ExxonMobil, March 2005)
- Drilling and Evaluation Program (ExxonMobil, July 2005)
- Final Well Report (ExxonMobil, June 2006)
- Final Well Report Mudlogging (Geoservices, June 2006)
- End of Well Report MWD and Directional Drilling (Baker Hughes, June 2006)
- Borehole Survey Report – Zero Offset Checkshot Survey (Schlumberger, Feb. 2006)
- Borhole Seismic report - Rig Source Checkshot, Velocity Survey, Acoustic Log Calibration and Synthetic Seismograms (VSFusion, 2006)
- Logs (CD), MDT / DSI (Sclumberger, 2006)
- Biostratigraphy Report – Interval from 1980-3915m (Fugro Robertson Ltd, June 2006)
- Petroleum Geochemistry Report (Applied Petroleum Technology AS, 2006)

Appendix I

Sample Description 15/9-22

ESSO NORGE A/S				WELLSITE SAMPLE DESCRIPTION												
WELL: 15/9-22		AREA: Wishbone		Spud Date: 1st January 2006									Sheet No.			
DEPTH	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES	Rating
(m)		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL	COL	
		Commenced drilling 17.5" hole section at 22:00 hrs on the 19th January 2006. LOT test was performed at 504 m to an EMW of 1.58 sg. Section was drilled with 1.2 sg Glydril WBM system.												
		Sticky swelling cuttings.												
510														
520		Slow drilling at 5 m/hr.												
530	100	CLAYSTONE: medium grey to dark olive grey, very soft to soft, sub blocky to dominantly amorphous, very pervasive, sticky, plastic, massive, slightly to moderately silty in parts, rare micro-mica, generally very calcareous, washing away.												
540	100	CLAYSTONE: medium grey to dark olive grey, very soft to soft, sub blocky to dominantly amorphous, very pervasive, sticky, plastic, massive, slightly to moderately silty in parts, rare micro-mica, rare trace fine embedded Quartz, calcareous.												
550	100	CLAYSTONE: medium grey to dark olive grey, as above, fairly featureless.												
560	100	CLAYSTONE: dominantly medium dark grey, soft to rarely moderately firm, sub blocky to dominantly amorphous, very pervasive, sticky, plastic, massive, slightly to moderately silty in parts, rare micro-mica, rare trace very fine to fine Quartz washing out, trace disseminated broken shell debris, very calcareous.												
570	100	CLAYSTONE: becoming dominantly medium dark grey, moderately calcareous, else as 560 m.												
580	100	CLAYSTONE: medium dark grey to dark greenish grey, soft to rarely slightly firm, sub blocky to dominantly amorphous, very pervasive, sticky, plastic, massive, moderately silty, rare micro-mica, rare trace very fine carbonaceous specks, good trace to 3% fine to medium and Quartz washing out, trace disseminated broken shell debris, slightly calcareous in parts.												
590	100	CLAYSTONE: medium dark grey to dark greenish grey, soft to rarely slightly firm, sub blocky to dominantly amorphous, very pervasive, sticky, plastic, massive, moderately silty to silty, rare micro-mica, trace glauconitic, good trace to 3% fine to medium Quartz washing out, rare trace Lignitic carbonaceous locally pyritic inclusions, slightly calcareous in parts.												

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION												
WELL: 15/9-22		AREA: Wishbone	Spud Date: 1st January 2006								Sheet No.				
DEPTH	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES	Rating
(m)		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL	COL	
600	100	CLAYSTONE: medium dark grey, soft to rarely slightly firm, sub blocky to dominantly amorphous, very pervasive, sticky, plastic, massive, moderately silty, rare micro-mica, rare trace very fine carbonaceous specks, good trace to 3% fine to medium and Quartz washing out, trace disseminated broken shell debris, moderately calcareous.												
610	100	CLAYSTONE: medium dark grey to dark greenish grey, else as												
620	100	CLAYSTONE: medium dark grey, soft, amorphous, sticky, calcareous, slightly sandy with very fine to fine loose quartz, trace shell fragments.												
630	100	CLAYSTONE: as above with less loose quartz, occasional disseminated carbonaceous debris.												
640	100	CLAYSTONE: as above												
650	100	CLAYSTONE: as above												
660	100	CLAYSTONE: as above												
670	100	CLAYSTONE: as above												
680	100	CLAYSTONE: as above with increasing proportion of loose quartz up to 3%												
690	100	CLAYSTONE: as above												
700	100	CLAYSTONE: as above becoming slightly greenish grey in part.												
710	100	CLAYSTONE: medium dark grey else as above.												
720	100	CLAYSTONE: medium dark grey, soft to rarely slightly firm, sub blocky to dominantly amorphous, very pervasive, sticky, plastic, fairly massive, moderately silty to silty, rare trace fine mica, rare trace very fine carbonaceous specks, 3-5% very fine to fine Quartz washing out (clear, frosted, sub angular, high sphericity, well sorted), trace broken shell debris, moderately calcareous.												
730	100	Missed A/a.												
740	100	CLAYSTONE: medium dark grey, slightly calcareous. Trace to 3% very fine to fine QUARTZ sand washing out, sub angular to locally angular else as above.												
750	100	Missed A/a.												
760	100	CLAYSTONE: medium dark grey, as 720 m.												
770	100	CLAYSTONE: medium dark grey, soft, sub blocky to dominantly amorphous, very pervasive, sticky, plastic, slightly silty, trace very fine to fine Quartz sand, slightly calcareous, fairly featureless.												

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION												
WELL: 15/9-22		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES	Rating
(m)		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL	COL	
780	100	CLAYSTONE: medium dark grey, as 770 m, homogenous.												
790	100	CLAYSTONE: medium dark grey, as 770 m.												
800	100	CLAYSTONE: medium dark grey, as 770 m.												
810	100	CLAYSTONE: medium dark grey, as 770 m.												
820	100	CLAYSTONE: fairly featureless, homogenous medium dark grey, very soft, sub blocky to dominantly amorphous, very pervasive, sticky, plastic, massive, slightly silty, very rare trace very fine to fine Quartz sand, slightly calcareous.												
830	100	CLAYSTONE: homogenous medium dark grey, very soft, sub blocky to dominantly amorphous, very pervasive, sticky, plastic, massive, slightly silty, trace to 2% very fine to fine Quartz sand, trace carbonaceous specks, slightly calcareous.												
840	100	CLAYSTONE: homogenous medium dark grey, silty, 3-5% loose Quartz sand washing out of Claystone: clear, colourless, frosted, very fine to fine, sub angular, well sorted.												
850	100	CLAYSTONE: as 830 m, slightly calcareous to dolomitic in parts.												
860	100	CLAYSTONE: as above, trace dolomitic.												
870	100	CLAYSTONE: as 860 m.												
880	90 10	CLAYSTONE: as above. SAND/SANDSTONE: very generous – bad sample. Loose. Bad hole cleaning. GR drops to 50 api.												
890	90 10	SAND/SANDSTONE: loose Quartz: dominantly clear, colourless, rarely frosted - very pale yellow and light grey, very fine upper to fine lower, occasionally fine and rare medium lower, very well sorted, sub rounded to locally sub angular, generally high sphericity, trace to 2% vari-coloured lithic fragments, rare trace pale yellow broken shell fragments, no visible cement, trace moderate HCL reaction, inferred argillaceous matrix washing out, no shows. 3.4 % Gas peak in drilling break to 60 m/hr. CLAYSTONE: medium dark grey, else as above.												
900	10 90	SAND/SANDSTONE: generally loose quartz, clear to translucent, very fine to fine, sub angular, well sorted, commonly very argillaceous grading to sandy Claystone. CLAYSTONE: medium dark grey, soft, amorphous, very silty, common very fine sand, occasional shell fragments. (Poor sample too generous to Claystone)												

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION												
WELL: 15/9-22		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES	Rating
(m)		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL	COL	
910	60 40	SAND/SANDSTONE: predominantly loose quartz, clear to translucent, rarely frosted, upper fine to lower middle, sub rounded to rounded, well sorted, commonly aggregated with argillaceous matrix, occasionally slightly calcareous, occasional glauconite, trace mica. CLAYTONE: as at 900m												
920	90 10	SAND/SANDSTONE: as at 900m CLAYSTONE: as at 900m												
930	100	SAND/SANDSTONE: loose quartz, clear to translucent, upper fine to lower medium occasionally upper medium, sub rounded, spherical, well sorted, occasional glauconite, common shell fragments.												
940	100	SAND/SANDSTONE: as at 930m												
950		Missed												
960		Missed												
970		Missed												
980	100	SAND/SANDSTONE: loose quartz, clear to translucent, upper fine to lower medium occasionally upper medium, rarely coarse, sub rounded, spherical, well sorted, occasional glauconite, common shell fragments. Occasionally aggregated with argillaceous and possibly kaolinitic matrix grading to sandy claystone.												
990	100	SAND/SANDSTONE: as at 980m. Coarse element absent.												
1000	100	SAND/SANDSTONE: loose quartz, clear to translucent, upper fine to lower medium, sub rounded, spherical, well sorted, occasional glauconite, common shell fragments.												
1010	100	SAND/SANDSTONE: loose quartz, clear to translucent, upper fine to lower medium occasionally upper medium, rarely coarse, sub rounded, spherical, well sorted, occasional glauconite, common shell fragments. Occasionally aggregated with argillaceous and possibly kaolinitic matrix grading to sandy Claystone.												
1020	100	SAND/SANDSTONE: loose quartz, clear to translucent, upper fine to lower medium, occasionally upper medium to coarse, sub rounded, spherical, well sorted, rare glauconite, occasional shell fragments.												
1030	100	SAND/SANDSTONE: loose quartz, clear to translucent, upper fine to lower medium occasionally upper medium, rarely coarse, sub rounded, spherical, well sorted, occasional glauconite, common shell fragments. Occasionally aggregated with argillaceous and possibly kaolinitic matrix grading to sandy Claystone.												

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION												
WELL: 15/9-22		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH (m)	%	LITHOLOGY DESCRIPTION and COMMENTS Colour, hardness, texture, mineralogy, modifiers, cement	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES	Rating
				DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL	COL	
1040	100	SAND/SANDSTONE: loose quartz, clear to translucent, upper fine to lower medium occasionally upper medium, rarely coarse, sub rounded, spherical, well sorted, common glauconite, common shell fragments. Commonly aggregated with argillaceous and possibly kaolinitic matrix grading to sandy Claystone.												
1050	100	SAND/SANDSTONE: loose quartz, clear to translucent, upper fine to lower medium occasionally upper medium, rarely coarse, sub rounded, spherical, well sorted, common glauconite, rare shell fragments. Commonly aggregated with argillaceous and possibly kaolinitic matrix grading to sandy Claystone. Argillaceous component has become brown grey.												
1060	100	SAND/SANDSTONE: predominantly very argillaceous, very light grey to brown grey, quartz, clear to translucent, very fine to upper fine, commonly lower medium, sub rounded, spherical, moderately sorted, abundant argillaceous and possibly kaolin matrix grading to sandy Claystone, common glauconite.												
1070	100	SAND/SANDSTONE: predominantly very argillaceous, as above.												
1080	100	SAND/SANDSTONE: predominantly very argillaceous, as above												
1090	100	SAND/SANDSTONE: predominantly very argillaceous, as above.												
1100	100	SAND/SANDSTONE: medium grey to medium dark grey, soft to firm, locally friable aggregates, dominantly as loose Quartz: clear to translucent, very fine to upper fine, commonly lower medium, sub rounded, spherical, well sorted, abundant argillaceous and possibly kaolin matrix grading to sandy Claystone in parts, trace calcareous, very rare trace glauconite/lithic fragments. No Shows.												
1110		Missed Sample												
1120	60 40	SAND/SANDSTONE: dominantly as loose Quartz: clear to translucent, upper fine to lower medium, sub rounded to sub angular, spherical, well sorted, abundant argillaceous and good trace white kaolininite? matrix in parts, trace calcareous, good trace glauconite, rare lithic fragments. No Shows. Grading to; SANDY CLAYSTONE: medium grey to medium dark grey, soft to firm in parts, sub blocky to amorphous, silty and very sandy in parts, trace calcareous.												
1130	20 80	SAND/SANDSTONE: dominantly as loose Quartz: clear to translucent, very fine upper to fine and locally medium, possibly washing from sample. CLAYSTONE: medium grey to medium dark grey, soft to firm in parts, sub blocky to amorphous, silty and very sandy in parts commonly grading to SANDY CLAYSTONE, trace glauconitic specks, trace calcareous.												
1140	90 10	CLAYSTONE: more olive grey, else as above. SAND: as above washing out.												

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION												
WELL: 15/9-22		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES	Rating
(m)		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL	COL	
1150	85 5 10	CLAYSTONE: olive grey to dark greenish grey, moderately calcareous, as above. DOLOMITIC LIMESTONE: variable light grey to olive grey in parts, rarely off white, firm to very firm, hard in places, sub blocky to sub angular, locally crumbly, mirco to locally fine crystalline, sub sucrosic, mudstone to wackstone, local abundant silt to very fine sand and occasionally as CALCAREOUS SANDSTONE interbeds, generally fairly clean to locally slightly argillaceous when olive grey, moderately calcareous to commonly dolomitic HCL reaction. No Shows. SAND: as above washing out, very fine upper to fine upper, well sorted.												
1160	100	CLAYSTONE: olive grey to dark greenish grey, soft to firm in parts, sub blocky to amorphous, sticky, plastic, pervasive, silty, abundant trace very fine to fine Quartz sand, in parts grading to SANDY CLAYSTONE, rare trace glauconitic specks, trace shell frags, locally paler to white Kaolinite?, moderately calcareous.												
1170	100	CLAYSTONE: dominantly olive grey with minor dark greenish grey, soft to firm, sub blocky to amorphous, occasionally sub platy, sticky, plastic, pervasive, slightly silty, trace very fine Quartz sand, rare trace glauconitic specks, trace shell frags, very calcareous.												
1180		Missed												
1190	100 5	CLAYSTONE: olive to dark olive grey, soft to generally firm, sub blocky, amorphous sticky and plastic in places, still pervasive with washing, slightly silty, rare trace very fine Quartz sand, rare trace glauconitic specks, occasional fine disseminated platy Calcite crystals, generally very calcareous grading to 20% CALCAREOUS CLAYSTONE. ARGILLACEOUS DOLOMITE: olive grey, semi-translucent in places, moderately hard to hard, rarely softer, sub angular, mudstone texture, micro crystalline, sub sucrosic in parts, local abundant silt to very fine sand, moderate to very argillaceous. No Shows.												
1200	100	CLAYSTONE: olive to dark olive grey, soft to generally firm, sub blocky, sub platy in parts, amorphous sticky and plastic with washing, slightly silty, rare trace very fine Quartz sand, rare trace glauconitic specks, micritic, rare Calcite crystals, very calcareous grading to CALCAREOUS CLAYSTONE.												

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION												
WELL: 15/9-22		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH (m)	%	LITHOLOGY DESCRIPTION and COMMENTS Colour, hardness, texture, mineralogy, modifiers, cement	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES	Rating
				DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL	COL	
1210	100	CLAYSTONE: olive grey to olive black, soft to generally firm, sub blocky, sub platy in parts, amorphous sticky and plastic with washing, slightly silty, rare trace very fine Quartz sand, rare trace glauconitic specks, micritic, rare Calcite crystals, moderately calcareous to calcareous.												
1220	100	CLAYSTONE: olive grey to olive black, soft to generally firm, sub blocky, sub platy in parts, amorphous sticky and plastic with washing, slightly silty, trace very fine Quartz sand, rare trace glauconitic specks, micritic, rare Calcite crystals, calcareous to very calcareous.												
1230	100	CLAYSTONE: olive grey to olive black (minor brownish), soft to generally firm, sub blocky, sub platy in parts, amorphous sticky and plastic with washing, slightly silty, good trace very fine Quartz sand and Silt, rare trace glauconitic specks, non to slightly calcareous.												
1240	100	CLAYSTONE: olive grey to olive black (minor brownish), slightly to moderately calcareous, else as above.												
1250	100	CLAYSTONE: olive grey, soft, sub blocky, slightly calcareous, common very fine quartz sand, occasional glauconite												
1260	100	CLAYSTONE: brown grey, firm, blocky, very silty, calcareous, common very fine quartz sand.												
1270	100	CLAYSTONE: brown grey, firm, blocky, very silty, calcareous, common very fine quartz sand.												
1280	100	CLAYSTONE: olive grey, trace brown grey, firm, sub blocky, very silty, calcareous, trace very fine quartz sand.												
1290	100	CLAYSTONE: olive grey, trace brown grey, firm, sub blocky, very silty, calcareous, trace very fine quartz sand, trace glauconite												
1300	100	CLAYSTONE: olive grey grading to brown grey, firm, sub blocky, very silty, calcareous, trace very fine quartz sand, trace glauconite												
1310	100	CLAYSTONE: olive grey grading to brown grey, firm, sub blocky, very silty, calcareous, trace very fine quartz sand, trace glauconite												
1320	100	CLAYSTONE: olive grey grading to brown grey, firm, sub blocky, very silty, calcareous, trace very fine quartz sand, trace glauconite												
1330	100	CLAYSTONE: predominantly brown grey commonly olive grey, firm, sub blocky to blocky, very silty, calcareous, trace very fine quartz sand, common glauconite												
1340	100	CLAYSTONE: brown grey, firm, sub blocky to blocky, very silty, calcareous, trace very fine quartz sand, common glauconite												
1350	100	CLAYSTONE: predominantly brown grey commonly olive grey, firm, sub blocky to blocky, very silty, calcareous, trace very fine quartz sand, trace glauconite.												

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION												
WELL: 15/9-22		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH (m)	%	LITHOLOGY DESCRIPTION and COMMENTS Colour, hardness, texture, mineralogy, modifiers, cement	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES	Rating
				DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL	COL	
1360	100	CLAYSTONE: predominantly brown grey occasionally olive grey, firm, sub blocky to blocky, very silty, calcareous, occasional cemented very fine quartz sand lenses, trace glauconite.												
1370	100	CLAYSTONE: brown grey occasionally olive grey, firm, sub blocky to blocky, very silty, calcareous, common very fine quartz sand, trace glauconite												
1380		Missed												
1390	100	CLAYSTONE: brown grey occasionally olive grey, firm, sub blocky to blocky, very silty, calcareous, common very fine quartz sand, trace glauconite Trace LIMESTONE: pale brown, friable, argillaceous, microcrystalline												
1400	100	CLAYSTONE: brown grey occasionally olive grey, firm, sub blocky to blocky, very silty grading to Siltstone, earthy texture, calcareous, occasional very fine quartz sand, trace glauconite												
1410	100	CLAYSTONE: brown grey to brown black, firm, blocky, slightly to non calc, very silty grading to siltstone, earthy texture, occasional shell fragments.												
1420	100	CLAYSTONE: brown grey to brown black, firm, blocky, slightly to non calc, very silty grading to siltstone, earthy texture, occasional shell fragments.												
1430		Missed												
1440	100	CLAYSTONE: brown grey to brown black, firm, blocky, non calc, very silty, earthy texture, occasional shell fragments. Trace DOLOMITE: pale brown, very hard, angular, cryptocrystalline.												
1450	100	CLAYSTONE: brown grey to brown black, firm, blocky, non calc, very silty, earthy texture, occasional shell fragments. Trace DOLOMITE: pale brown, very hard, angular, cryptocrystalline.												
1460	100	CLAYSTONE: brown grey to brown black, firm, blocky, non calc, very silty, earthy texture, occasional shell fragments. Trace DOLOMITE: pale brown, very hard, angular, cryptocrystalline.												
1470	100 tr-5% tr	CLAYSTONE: brown grey to brown black, firm, sub blocky to blocky, non calc, very silty, earthy texture, micro-micaceous, trace black carbonaceous laminations, occasional shell fragments. SAND: loose, clear, translucent, off white, fine upper to medium upper, sub angular, spherical, moderate to well sorted, no visible cement, trace rock flour. DOLOMITIC LIMESTONE: pale brown, very hard, angular, cryptocrystalline.												

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION												
WELL: 15/9-22		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH (m)	%	LITHOLOGY DESCRIPTION and COMMENTS Colour, hardness, texture, mineralogy, modifiers, cement	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES	Rating
				DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL	COL	
1480	60 40	CLAYSTONE: brown grey to brown black, firm, sub blocky to blocky, slightly calcareous, very silty, earthy texture, very micro-micaceous, trace black carbonaceous laminations, occasional shell fragments. SAND/ARGILLACEOUS SANDSTONE: olive brownish grey, soft, friable, pervasive, loose Quartz: clear, translucent, fine lower to medium lower, sub angular to sub rounded, moderate to well sorted, abundant argillaceous matrix possibly washing in from Claystone, trace calcareous, trace shell fragments, no visible porosity. No Shows. Race DOLOMITE: as above.												
1490	30 70	CLAYSTONE: brown grey to brown black, else as above. SAND/ARGILLACEOUS SANDSTONE: olive brownish grey, soft, friable, pervasive, dominantly loose Quartz: clear, translucent, frosted, fine lower to medium lower, sub angular to sub rounded, moderate to well sorted, abundant argillaceous matrix coating grains, calcareous in parts, trace shell fragments, rare trace glauconitic fragments, no visible cement, no visible porosity. No Shows.												
1500	60 40	Lagged samples seem to be late by 10 – 15 m SAND/ARGILLACEOUS SANDSTONE: olive brownish grey to olive grey, soft, friable and crumbly, pervasive, dominantly as loose Quartz: clear, translucent, frosted, fine lower to medium upper, sub angular to sub rounded, moderately sorted, trace argillaceous matrix , very calcareous in parts as off white soft kaolinitic aggregates, rare trace glauconitic fragments, no visible cement, no visible porosity. No Shows. CLAYSTONE: brown grey to brown black, trace green glauconitic specks, else as above.												
1510	20 80	SAND: as above interpretted as caved – late lagged. CLAYSTONE: olive grey to brown olivish grey, firm to very firm, sub blocky to blocky, sub platy, very silty, earthy texture, micro-micaceous, slightly calcareous.												
1520	90 10	CLAYSTONE: olive grey to brown olivish grey, else as 1510 m. ARGILLACEOUS (Kaolinitic) LIMESTONE: light olive grey, firm, rarely moderately hard, blocky, crumbly, mudstone, mictitic, very argillaceous with Kaolinite Clay? Good trace dusky green glauconitic Specks, no visible porosity. No Shows.												
1531 B/u	100 tr	CLAYSTONE: olive grey to brown olivish grey, firm to very firm, sub blocky to blocky, sub platy to platy when fresh, pervasive with washing, earthy texture, silty, micro-micaceous, trace rounded fine to medium embedded glauconite lithics, slightly calcareous. ARGILLACEOUS LIMESTONE: as above.												

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION												
WELL: 15/9-22		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH (m)	%	LITHOLOGY DESCRIPTION and COMMENTS Colour, hardness, texture, mineralogy, modifiers, cement	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES COL	Rating
				DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL		
		TD at 1531 m MD RKB was reached at 10:50 hrs on the 22nd January 2006.												

Appendix II

Sample Description 15/9-22T2

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION												
WELL: 15/9-22 T2		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES	Rating
(m)		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL	COL	
		Kicked off 17.5" hole section for Sidetrack 15/9-22T2 at 522m on 31 January 2006 at 03:30hrs Section was drilled with 1.20 sg Glydril WBM system.												
530	20 80	CLAYSTONE: medium grey to dark olive grey, very soft to soft, sub blocky to dominantly amorphous, sticky, plastic, massive, slightly to moderately silty in parts, rare micro-mica, generally very calcareous, washing away. CEMENT												
540	70 30	CLAYSTONE: medium grey to dark olive grey, very soft to soft, sub blocky to dominantly amorphous, sticky, plastic, massive, slightly to moderately silty in parts, rare micro-mica, rare trace fine embedded Quartz, calcareous. CEMENT												
550	80 20	CLAYSTONE: medium grey to dark olive grey, as above, fairly featureless. CEMENT												
560	90 10	CLAYSTONE: dominantly medium dark grey, soft to rarely moderately firm, sub blocky to dominantly amorphous, sticky, plastic, massive, slightly to moderately silty in parts, very calcareous. CEMENT												
570	100	CLAYSTONE: becoming dominantly medium dark grey, moderately calcareous, else as 560 m.												
580	100	Missed												
590	100	CLAYSTONE: medium dark grey to dark greenish grey, soft to rarely slightly firm, sub blocky to dominantly amorphous, very pervasive, sticky, plastic, massive, moderately silty to silty, rare micro-mica, trace glauconitic, slightly calcareous in parts.												
600	100	CAYSTONE: as at 590m												
610	100	CLAYSTONE: medium dark grey to dark greenish grey, else as at 610m												
620	100	CLAYSTONE: medium dark grey to dark greenish grey, soft, amorphous, sticky, calcareous, slightly sandy with very fine to fine loose quartz, trace shell fragments.												
630	100	CLAYSTONE: as above with less loose quartz, occasional disseminated carbonaceous debris.												
640	100	CLAYSTONE: as at 630m												
650	100	CLAYSTONE: as at 630m												

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION												
WELL: 15/9-22 T2		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES	Rating
(m)		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL	COL	
660	100	Missed												
670	100	Missed												
680	100	Missed												
690	100	CLAYSTONE: medium grey, soft, sticky. Sub blocky to amorphous, sillty, calcareous, trace very find sand, occasional micromica												
700	100	CLAYSTONE: as at 690m												
710	100	CLAYSTONE: as at 630m												
720	100	CLAYSTONE: as at 630m												
730	100	CLAYSTONE: as at 630m with occasional oose fine to medium rounded quartz												
740	100	CLAYSTONE: medium dark grey, slightly calcareous. Trace to 3% very fine to fine QUARTZ sand washing out, sub angular to locally angular else as above.												
750	100	Missed A/a.												
760	100	CLAYSTONE: medium dark grey, as 720 m.												
770	100	CLAYSTONE: grey to dark grey, soft, sub blocky to dominantly amorphous, very pervasive, sticky, plastic, slightly silty, trace very fine to fine Quartz sand, slightly calcareous, homogenous, rr fine lams.												
780	100	CLAYSTONE: grey to dark grey, as 770 m, homogenous.												
790	100	CLAYSTONE: grey to dark grey, as 770 m.												
800	100	CLAYSTONE: grey to dark grey, as 770 m.												
810	100	CLAYSTONE: medium dark grey, as 770 m.												
820	100	CLAYSTONE: homogenous grey to slight green grey, very soft, sub blocky to dominantly amorphous, very pervasive, sticky, plastic, massive, slightly silty, trace very fine to fine Quartz sand, slightly calcareous.												
830	100	CLAYSTONE: grey to slight green grey as 820 m.												
840	100	CLAYSTONE: grey to slight green grey as 820 m.												
850	100	CLAYSTONE: grey to slight green grey as 820 m.												
860	100	CLAYSTONE: as above as 820m.												

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION												
WELL: 15/9-22 T2		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES	Rating
(m)		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL	COL	
870	100	Missed												
880	90 10	CLAYSTONE: as above, trace dolomitic. SANDSTONE/SAND: loose quartz, cllear to transluscent, very fine to fine, sub angullar, well sorted												
890	100	SANDSTONE/SAND: loose quartz, clear to transluscent, very fine to fine, sub angullar, well sorted, abundant silty argillaceous matrix, trace lignite.												
900	100	SANDSTONE/SAND: loose quartz, clear to transluscent, very fine to medium, sub rounded, well sorted, common silty argillaceous matrix, trace lignite, trace shelll fragments.												
910	100	SAND/SANDSTONE: loose Quartz: dominantly clear, colourless, rarely frosted - very pale yellow and light grey, very fine upper to fine lower, occasionally fine and rare medium lower, very well sorted, sub rounded to locally sub angular, generally high sphericity, trace to 2% vari-coloured lithic fragments, rare trace pale yellow broken shell fragments, no visible cement, trace moderate HCL reaction, inferred argillaceous matrix washing out, no shows.												
920	100	SAND/SANDSTONE: predominantly loose quartz, clear to transluscent, very fine to medium, generally sub rounded, moderately sorted, occasionally aggregated with argillaceous/silty matrix, trace calcite cement, occasional shell fragments, trace pyrite nodules, trace glauconite.												
930	80 20	SAND/SANDSTONE: predominantly loose quartz, clear to transluscent, very fine to medium, generally sub rounded, moderately sorted, occasionally aggregated with argillaceous/silty matrix, trace calcite cement, occasional shell fragments, trace pyrite nodules, trace glauconite. CLAYSTONE: medium dark grey to olive grey, soft, amorphous to sub blocky, very silty, common very fine sand grading to argillaceous sandstone, slightly calcareous in part.												
940	70 30	SAND/SANDSTONE: as 930m CLAYSTONE: as 930m												
950	80 20	SAND/SANDSTONE: as 930m CLAYSTONE: as 930m												
960		Missed owing to high ROP and need to fix broken geolograph wire												
970		Missed												
980		Missed												
990	90 10	SAND/SANDSTONE: as 930m generally fine to medium CLAYSTONE: as 930m												

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION												
WELL: 15/9-22 T2		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES	Rating
(m)		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL	COL	
1000		Missed												
1010		Missed												
1020	30	SAND/SANDSTONE: as 990m generally fine to medium CLAYSTONE: medium dark grey, soft, sub blocky to amorphous, abundant fine to medium quartz, grading to argillaceous sandstone, trace glauconite												
1030	100	SAND/SANDSTONE: loose quartz, clear to translucent, upper fine to lower medium occasionally upper medium, rarely coarse, sub rounded, spherical, well sorted, occasional glauconite, common shell fragments. Occasionally aggregated with argillaceous and possibly kaolinitic matrix grading to sandy Claystone.												
1040	100	SAND/SANDSTONE: loose quartz, clear to translucent, upper fine to lower medium occasionally upper medium, rarely coarse, sub rounded, spherical, well sorted, common glauconite, common shell fragments. Commonly aggregated with argillaceous and possibly kaolinitic matrix grading to sandy Claystone.												
1050	100	SAND/SANDSTONE: loose quartz, clear to translucent, upper fine to lower medium occasionally medium, rarely coarse, sub angualar to rounded, sub spherical, well sorted, common glauconite, rare shell fragments. Commonly aggregated with argillaceous and possibly kaolinitic matrix grading to sandy Claystone. Argillaceous component has become brown grey.												
1060	100	SAND/SANDSTONE: predominantly very argillaceous, very light grey to brown grey, quartz, clear to translucent, very fine to fine, commonly lower medium, sub rounded, spherical, moderately sorted, abundant argillaceous and possibly kaolin matrix grading to sandy Claystone, common glauconite.												
1070	100	SAND/SANDSTONE: predominantly very argillaceous, as above.												
1080	100	SAND/SANDSTONE: predominantly very argillaceous, as above												
1090	100	SAND/SANDSTONE: predominantly very argillaceous, as above.												
1100	100	SAND/SANDSTONE: medium grey to grey, locally friable aggregates, dominantly as loose Quartz: clear to translucent, very fine to fine, commonly medium, sub angular to rounded, spherical, well sorted, some argillaceous and possibly kaolin matrix grading to sandy Claystone in parts, trace calcareous, very rare trace glauconite/lithic fragments. No Shows.												
1110		Missed Sample												

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION												
WELL: 15/9-22 T2		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES	Rating
(m)		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL	COL	
1120	60 40	SAND/SANDSTONE: dominantly as loose Quartz: clear to translucent, upper fine to lower medium, sub rounded to sub angular, spherical, well sorted, abundant argillaceous and good trace white kaolininite? matrix in parts, trace calcareous, good trace glauconite, rare lithic fragments. No Shows. Grading to; SANDY CLAYSTONE: medium grey to medium green grey, soft to firm in parts, sub blocky to amorphous, silty and very sandy in parts, trace calcareous.												
1130	20 80	SAND/SANDSTONE: dominantly as loose Quartz: clear to translucent, very fine upper to fine and locally medium, possibly washing from sample. CLAYSTONE: medium grey to medium dark grey, soft to firm in parts, sub blocky to amorphous, silty and very sandy in parts commonly grading to SANDY CLAYSTONE, trace glauconitic specks, trace calcareous.												
1140	90 10	CLAYSTONE: more olive grey, else as above. SAND: as above washing out.												
1150	85 5 10	CLAYSTONE: olive grey to dark greenish grey, moderately calcareous, as above. DOLOMITIC LIMESTONE: variable light grey to olive grey in parts, rarely off white, firm to very firm, hard in places, sub blocky to angular, locally crumbly, micro to locally fine crystalline, sub sucrosic, mudstone to wackstone, grading to LIMESTONE in places. SAND: as above washing out, very fine upper to fine upper, well sorted.												
1160	100 tr gd tr	CLAYSTONE: grey to predominantly olive grey occ greenish grey, soft to firm in parts, sub blocky to amorphous, sticky, plastic, pervasive, silty, abundant trace very fine to fine Quartz sand, in parts grading to SANDY CLAYSTONE, rare trace glauconitic specks, locally paler to white Kaolinite?, moderately calcareous. DOLOMITIC LIMESTONE: variable light grey to olive grey in parts, rarely off white, firm to very firm, hard in places, sub blocky to angular, locally crumbly, micro to locally fine crystalline, sub sucrosic, mudstone to wackstone, grading to LIMESTONE in places SAND/SANDSTONE: dominantly as loose Quartz: clear to translucent, very fine and lmedium, possibly washing from sample.												
1170	100 tr tr	CLAYSTONE: as for 1160. DOLOMITIC LIMESTONE: as for 1160. SAND/SANDSTONE: as for 1160.												
1180		Missed												

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION												
WELL: 15/9-22 T2		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES	Rating
(m)		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL	COL	
1190	100 5	CLAYSTONE: olive to dark olive grey, soft to generally firm, sub blocky, amorphous sticky and plastic in places, still pervasive with washing, slightly silty, rare trace very fine Quartz sand, rare trace glauconitic specks, occasional fine disseminated platy Calcite crystals, generally very calcareous grading to 20% CALCAREOUS CLAYSTONE. ARGILLACEOUS DOLOMITE: olive grey, semi-translucent in places, moderately hard to hard, rarely softer, sub angular, mudstone texture, micro crystalline, sub sucrosic in parts, local abundant silt to very fine sand, moderate to very argillaceous. No Shows.												
1200	100	CLAYSTONE: olive to dark olive grey, soft to generally firm, sub blocky, sub platy in parts, amorphous sticky and plastic with washing, slightly silty, rare trace very fine Quartz sand, rare trace glauconitic specks, micritic, rare Calcite crystals, very calcareous grading to CALCAREOUS CLAYSTONE.												
1210	100	CLAYSTONE: olive grey to brown grey, soft to generally firm, sub blocky, sub platy in parts, amorphous sticky and plastic with washing, slightly silty, rare trace very fine Quartz sand, rare trace glauconitic specks, micritic, rare Calcite crystals, moderately calcareous to calcareous.												
1220	100	CLAYSTONE: olive grey to brown grey, soft to generally firm, sub blocky, sub platy in parts, amorphous sticky and plastic with washing, slightly silty, trace very fine Quartz sand, rare trace glauconitic specks, micritic, rare Calcite crystals, calcareous												
1230	100	CLAYSTONE: olive grey to brown grey, soft to generally firm, sub blocky, sub platy in parts, amorphous sticky and plastic with washing, slightly silty, good trace very fine Quartz sand and Silt, rare trace glauconitic specks, calcareous												
1240	100	CLAYSTONE: as 1230												
1250	100	CLAYSTONE: as 1230												
1260	100	CLAYSTONE: mottled brown to dark brown occ pale green grey, soft to sometimes firm, amorphous to sub blocky, mostly dispersive, slightly silty, trace very fine Quartz sand and Silt, rare trace glauconitic specks, calcareous												
1270	100	CLAYSTONE: as 1260												
1280	100	CLAYSTONE: brown grey, firm, blocky, very silty, calcareous, earthy texture, common very fine quartz sand.												
1290	100	CLAYSTONE: as 1280												
1300	100	CLAYSTONE: olive grey, minor brown grey, firm, sub blocky, very silty, calcareous, trace very fine quartz sand.												

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION												
WELL: 15/9-22 T2		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES	Rating
(m)		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL	COL	
1310	100	CLAYSTONE: olive grey, trace brown grey, firm, sub blocky, very silty, calcareous, trace very fine quartz sand.												
1320	100	Missed												
1330	100	CLAYSTONE: olive grey, commonly brown grey, firm, sub blocky, very silty, calcareous, trace very fine quartz sand.												
1340	100	CLAYSTONE: predominantly brown grey rarely olive grey, firm, sub blocky to blocky, very silty, calcareous, trace very fine quartz sand, trace glauconite.												
1350	100	CLAYSTONE: brown grey, firm, sub blocky to blocky, very silty, calcareous, trace very fine quartz sand.												
1360	100	CLAYSTONE: brown grey, firm, sub blocky to blocky, very silty, earthy texture, calcareous, trace very fine quartz sand.												
1370	100	CLAYSTONE: brown grey, firm, sub blocky to blocky, very silty, earthy texture, calcareous, trace very fine quartz sand.												
1380	100	CLAYSTONE: brown grey, firm, sub blocky to blocky, very silty, earthy texture, calcareous, trace very fine quartz sand.												
1390	100	CLAYSTONE: as 1380m trace shell fragments												
1400	100	CLAYSTONE: as 1380m												
1410	100	CLAYSTONE: brown, firm, blocky, slightly to non calc, very silty grading to siltstone, earthy texture, occasional shell fragments.												
1420	100	CLAYSTONE: brown grey, firm, blocky, slightly to non calc, very silty grading to siltstone, trace very fine sand, earthy texture, occasional shell fragments.												
1430	100	CLAYSTONE: brown, firm, blocky, slightly to non calc, very silty grading to siltstone, earthy texture, occasional shell fragments.												
1440	100 Tr	CLAYSTONE: brown, firm, blocky, slightly to non calc, very silty grading to siltstone, earthy texture, occasional shell fragments. SANDSTONE: white, quartz, very fine, clear to transluscent, sub angular, well sorted, weakly cemented with calcite, common glauconite. No show												
1450	100 Tr	CLAYSTONE: brown, firm, blocky, slightly to non calc, very silty grading to siltstone, earthy texture, occasional shell fragments. SANDSTONE: white, quartz, very fine, clear to transluscent, sub angular, well sorted, weakly cemented with calcite, common glauconite. No show												
1460	90 10	CLAYSTONE: brown, firm, blocky, slightly to non calc, very silty grading to siltstone, earthy texture, occasional shell fragments. SANDSTONE: generally loose quartzwhite, quartz, very fine, clear to transluscent, sub angular, well sorted, weakly cemented with calcite, common glauconite. No show												

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION												
WELL: 15/9-22 T2		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH (m)	%	LITHOLOGY DESCRIPTION and COMMENTS Colour, hardness, texture, mineralogy, modifiers, cement	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES	Rating
				DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL	COL	
1470	90 10	CLAYSTONE: brown occ grey green, firm, amorphous to blocky, slightly to non calc, very silty grading to siltstone, earthy texture, occasional shell fragments, calcareous SANDSTONE: generally loose colourless quartz,very fine to coarse pred fine, clear to transluscent, sub angular to sub rounded, moderately well sorted, weakly cemented with calcite, trace glauconite. No show												
1480		missed												
1490	100 tr	CLAYSTONE: brown to dark brown, rarely grey green, firm, amorphous to blocky, slightly to non calc, very silty grading to siltstone, earthy texture, occasional shell fragments, calcareous SANDSTONE: generally loose colourless quartz,very fine to coarse pred fine, clear to transluscent, sub angular to sub rounded, moderately well sorted, weakly cemented with calcite, trace glauconite. No show												
1500	100	CLAYSTONE: brown to dark brown, rarely grey green, firm, amorphous to blocky, slightly to non calc, very silty grading to siltstone, earthy texture, occ calcareous sand w glauconite, calcareous												
1510	100	CLAYSTONE: as 1500												
1520	100	CLAYSTONE: brown to dark brown, grey green, firm, amorphous to blocky, very silty grading to siltstone, earthy texture often waxy, occ calcareous sand w glauconite, calcareous												
1522 bu	100	CLAYSTONE: as 1520												
		TD 17.5" HOLE @ 1522m												

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION												
WELL: 15/9-22 T2		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH (m)	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES COL	Rating
		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL		
		Drilled 12.25" hole section from 1522 m on 7th February 2006 at 00:00hrs **Section was drilled with 1.25 sg Glydril WBM system.** **LOT at 1517 m 19.5 sg EMW (105 Bar)**												
1530	100	CLAYSTONE: olive greyish brown to olive black, soft to firm, sub blocky to blocky, sub fissile in places, pervasive, fairly featureless slightly silty, non calcareous.												
1540	100	CLAYSTONE: olive greyish brown to olive black, soft to firm, sub blocky to blocky, sub fissile in places, pervasive, fairly featureless, slightly to moderately silty, trace micro-mica, local good trace Glauconitic specks, generally non calcareous.												
1550	100	CLAYSTONE: olive greyish brown to olive black, as above increasing silt and glauconite rounded lithics? Locally calcareous with cacitic fragments. Trace DOLOMITE: buff, dark yellowish brown to off white, hard, angular, micro crystalline.												
1560	100	CLAYSTONE: olive greyish brown to olive black, as above becoming slightly calcareous.												
1570	100 tr	CLAYSTONE: 80% olive grey to brownish grey 20% grading to dark greenish grey (Glauconitic), soft to firm, sub blocky to blocky, sub fissile in places, pervasive, fairly featureless, slightly silty, local good trace Glauconitic, non calcareous. ARGILLACEOUS LIMESTONE / (KAOLINITIC MARL): yellowish grey to off white, soft to firm, sub blocky, slightly dispersive, kaolinitic, mudstone texture, micritic, very argillaceous.												
1580	100 tr	CLAYSTONE: olive grey to brownish grey soft to firm, sub blocky to blocky, sub fissile in places, slightly silty, local trace glauconite, calcareous. LIMESTONE yellowish grey to off white, soft to firm becoming hard crystalline in places, sub blocky to blocky , argillaceous.												
1590	100 tr	CLAYSTONE: olive grey to brownish grey soft to firm, sub blocky to blocky, sub fissile in places, slightly silty, local trace glauconite, calcareous. LIMESTONE yellowish grey to off white, brown grey, soft to firm becoming hard crystalline in places, sub blocky to blocky , argillaceous.												
1600		As for 1590												

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION												
WELL: 15/9-22 T2		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH (m)	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES COL	Rating
		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL		
1610		As for 1590												
1620		As for 1590												
1630	100 tr	CLAYSTONE: pale to medium olive grey , pale to medium green grey, brown grey, soft to firm, sub blocky to blocky, sub fissile in places, slightly silty, good trace glauconite, calcareous. LIMESTONE yellowish grey to off white, brown grey, soft to firm becoming hard crystalline in places, sub blocky to blocky , argillaceous.												
1640		As 1630												
1650	100 tr	CLAYSTONE: pale to medium brown grey , pale to medium green grey, brown grey, soft to firm, sub blocky to blocky, sub fissile in places, slightly silty, good trace glauconite, calcareous. LIMESTONE yellowish grey to off white, brown grey, soft to firm becoming hard crystalline in places, sub blocky to blocky , argillaceous.												
1660		As 1650 w rare shell fragments												
1670	100	CLAYSTONE: becoming pale to medium grey.												
1680	100	CLAYSTONE: pale to medium olive grey , pale brown grey, firm, sub blocky to blocky, sub fissile in places, slightly silty, slightly calcareous.												
1690	100 tr	CLAYSTONE: pale to medium olive grey , pale brown grey, firm, sub blocky to blocky, sub fissile in places, slightly silty, slightly calcareous. LIMESTONE: off white to very pale orange, occ mottled pale brown, soft to firm com friable, amorphous to blocky.												
1700	100 Gd tr	CLAYSTONE: pale to medium olive grey , pale brown grey, firm, sub blocky to blocky, sub fissile in places, slightly silty, slightly calcareous. LIMESTONE: off white to very pale orange,occ mottled pale brown, soft to firm com friable, also moderately hard to hard crystalline sub blocky to blocky												
1710		missed												
1720		As 1700												
1730		As 1700												
1740		missed												
1750	100 tr	CLAYSTONE: pale to medium olive grey , pale brown grey to grey brown occ pale brown, firm, sub blocky to blocky often sub fissile, commonly platy, slightly silty, slightly calcareous. LIMESTONE: off white to very pale orange,occ mottled pale brown, soft to firm com friable, amorphous to blocky												

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION												
WELL: 15/9-22 T2		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH (m)	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES COL	Rating
		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL		
1760		As 1750m with up to 5% LIMESTONE												
1770		As 1750m												
1780		As 1750m												
1790		Missed												
1800		missed												
1810	100 tr	CLAYSTONE: pale to medium grey brown to brown grey occ pale brown, firm, commonly dispersive, sub blocky to blocky often sub fissile, commonly platy, slightly silty, non calcareous. LIMESTONE: mainly off white, often mottled pale brown to grey brown, occ orange brown, friable occ moderately hard, rarely hard cystalline, argillaceous in parts.												
1820/40		missed												
1850	100 tr	CLAYSTONE: pale to medium brown grey, firm, commonly dispersive, sub blocky to blocky often sub fissile, commonly platy, slightly silty, non calcareous. LIMESTONE: mainly off white, often mottled pale brown to grey brown, occ orange brown, friable occ moderately hard, rarely hard cystalline, argillaceous in parts.												
1860		As 1850m												
1870		As 1850m												
1880	100 tr	CLAYSTONE: mainly pale to medium grey occ brown grey, firm, sub blocky to blocky often sub fissile, commonly platy, slightly silty, trace pyrite, non calcareous. LIMESTONE: mainly off white, often mottled pale brown to grey brown, occ orange brown, friable occ moderately hard, rarely hard cystalline, argillaceous in parts.												
1890		As 1880 with good trace LIMESTONE												
1900		As 1880 with good trace LIMESTONE												
1910	100	CLAYTSTONE: as 1880 occ mottled grye green												
1920	100	CLAYSTONE: pale to medium grey green, commonly mottled green to dark green, light bluish grey, off white to white, rarely grey brown, firm, blocky to												

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION												
WELL: 15/9-22 T2		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH (m)	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES COL	Rating
		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL		
	rr tr	subfiss commonly platy, waxy texture, slightly calcareous in parts, kaolinitic in parts, trace pyrite. LIMESTONE												
1930		As 1920												
1940		As 1920. CLAYSTONE: increasingly dark grey green to grey brown with occ finely diseeminated pyrite.												
1950		As 1920												
1960		As 1920. CLAYSTONE: becoming increasingly soft.												
1970		Missed												
1980	90-100 tr-10	CLAYSTONE: pale to medium grey green, commonly mottled green to dark green, pale brown to grey brown, occ light bluish grey, firm, blocky to subfiss commonly platy, waxy texture, slightly calcareous in parts, kaolinitic in parts, trace pyrite, grading to grey brown SILTSTONE in part. SANDSTONE: off white, translucent, fine to medium grading to brown SILTSTONE, friable to moderately hard, angular to subrounded, well sorted, rarely calcareous, trace mica, good visual porosity, no show												
1990		As 1980												
2000	40 10 50	CLAYSTONE: variable dark greenish greys, firm to very firm, blocky to sub fissile, commonly platy, very waxy texture, slightly silty, yellowish grey and kaolinitic in parts, generally glauconitic, non to slightly calcareous in parts. ARGILLACEOUS SILTSTONE: olive brownish black, firm to moderately hard, blocy to sub fissile, earthy, very argillaceous and grading to SILTY CLAYSTONE, slightly calcareous. SAND/SANDSTONE: dominatly as loose Quartz: clear, transparent, rare stained, very fine upper to fine upper and locally medium lower, moderate to well sorted, spherical, sub rounded to rounded, no visible cement, trace argillaceous matrix washing out. No Shows.												
2010	40 50 10	CLAYSTONE: variable dark greenish greys, as above, trace granular pyrite. ARGILLACEOUS SILTSTONE: olive brownish black, grading to SILTY CLAYSTONE SANDSTONE: loose as above but increasing grain size, fine loer to medium lower, moderate to ell sorted.												
2020	100	CLAYSTONE: variable dark greenish greys, olive black to olive grey, rare dusky green specs, firm to very firm, blocky to sub fissile, commonly platy, waxy texture, slightly to moderately silty, trace kaolinitic in parts, generally												

ESSO NORGE A/S — WELLSITE SAMPLE DESCRIPTION

WELL: 15/9-22 T2 | **AREA: Wishbone** | **Spud Date: 1st January 2006** | **Sheet No.**

DEPTH (m)	%	LITHOLOGY DESCRIPTION and COMMENTS Colour, hardness, texture, mineralogy, modifiers, cement	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES COL	Rating
				DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL		
	tr	glauconitic locally as specks, non calcareous. SANDSTONE: loose as above												
2030	100	CLAYSTONE: as 2020 m.												
2040	100 tr5%	CLAYSTONE: as 2020 m slightly silty. ARGILLACEOUS SILTSTONE: olive brownish black, slightly calcareous, as above.												
2050	100	CLAYSTONE: variable dark greenish greys, olive black to olive grey, rare dusky green specs, firm to very firm, blocky to sub fissile, commonly platy, waxy texture, slightly to moderately silty, trace kaolinitic in parts, generally glauconitic locally as specks, non calcareous.												
2060	100	CLAYSTONE: A/a. Rare Trace kaolinitic Sandstone Aggregate, fine grained, clear, well sorted, calcite cement.												
2070	100	CLAYSTONE: as above dominantly dark greenish grey. Trace DOLOMITE: buff, moderate yellowish brown, hard to very hard, angular, crypto to micro crystalline, fairly clean, mineral inclusions.												
2080	100	CLAYSTONE: as above dominantly dark greenish grey.												
2090	5 95 tr	SAND/SANDSTONE: dominatly as loose Quartz: clear, transparent, varicoloured, very fine upper to fine upper and locally medium lower, moderately sorted, spherical, sub rounded to sub angular, no visible cement. No Shows. CLAYSTONE: as above. DOLOMITE/DOLOMITIC LIMESTONE: as above.												
2100	5 95 tr	A/a.												
2110	95 5 tr rtr	CLAYSTONE: as above, trace dusky green glauconitic liths. ARGILLACEOUS SILTSTONE: as above, rarely fissile, slightly calcareous. DOLOMITE/DOLOMITIC LIMESTONE: as above. SAND.												
2120	95 5	CLAYSTONE: dominantly moderate to dark greenish grey, firm to very firm, blocky to sub fissile, commonly platy, very waxy texture, slightly silty, trace kaolinitic in parts, trace glauconite locally as specks, non calcareous. SAND: loose Quartz a/a.												
2130	100 tr	CLAYSTONE: variable dark greenish greys, locally sandy lenses, else as above.												

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION												
WELL: 15/9-22 T2		AREA: Wishbone	Spud Date: 1st January 2006										Sheet No.		
DEPTH (m)	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES COL	Rating
		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL		
2140	40 60 tr	SAND/SANDSTONE: as loose Quartz: clear, transparent, trace varicoloured, fine lower to medium lower, trace coarse, well sorted, spherical, sub rounded to sub angular, no visible cement, rare kaolinitic matrix, trace lithic fragments, rare creamy aggregates. No Shows. CLAYSTONE: variable dark greenish greys, locally sandy lenses, else as above, grading to 5% brownish grey SILTY CLST which is slightly calcareous and micro pyritic. DOLOMITE/DOLOMITIC LIMESTONE.												
2150	30 70	CLAYSTONE: variable dark greenish greys, trace dusky green, else as above and grading to 50% brownish grey SILTY CLST. SAND/SANDSTONE: clear, colourless, fine upper to coarse upper, rare very7 coarse, poorly sorted, generally sub angular, rarely rounded, moderate to poor sphericity, trace Kaolinitic matrix as above. No Shows.												
2160	90 10	SAND/SANDSTONE: clear, colourless, fine upper to coarse upper, poorly sorted, sub angular to locally sub rounded, moderate to poor sphericity, trace Kaolinitic matrix as above. No Shows. CLAYSTONE: as above.												
2170	80 20	SAND/SANDSTONE: as above CLAYSTONE: as above.												
2180	90 10	As above.												
2190	40 60	CLAYSTONE: becoming moderate to dark bluish grey and greenish grey in places, firm to very firm, blocky to sub fissile, commonly platy, very waxy texture, rare silty, trace kaolinitic in parts, trace glauconite locally as specks, non calcareous. SAND/SANDSTONE: as above.												
2200	80 20	CLAYSTONE: variable dark greenish greys, dark olive grey, trace greyish brown SILTY CLAYSTONE, firm to very firm, blocky to sub fissile, commonly platy, waxy texture, slightly to moderately silty, trace kaolinitic in parts, generally glauconitic locally as specks, non calcareous. SAND/SANDSTONE: as above.												
2210	95 5	CLAYSTONE: as above, 10% SILTY CLAYSTONE: brownish grey with local very fine disseminated micro pyrite. SAND/SANDSTONE: as above.												

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION												
WELL: 15/9-22 T2		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH (m)	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES COL	Rating
		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL		
2220	90 10	SAND/SANDSTONE: as loose Quartz: clear, transparent, trace varicoloured, fine lower to medium upper, trace coarse, MODE medium, well sorted, moderate to high sphericity, sub rounded to sub angular, no visible cement, rare kaolinitic matrix, trace lithic fragments. No Shows. CLAYSTONE: medium to dark greenish grey, else as above.												
2230	90 10	SAND/SANDSTONE: as loose Quartz:, clean, well sorted, MODE medium. CLAYSTONE: medium to dark greenish grey, else as above.												
2240	40 60	SAND/SANDSTONE: as above. CLAYSTONE: moderate to dark greenish grey and olive grey variable, firm to very firm, blocky to sub fissile, commonly platy, very waxy texture, rare silty, trace kaolinitic in parts, trace glauconite locally as specks, non calcareous.												
2250	100	BAD sample 100% Claystone on LWD logs: as above.												
2250		As 2240: 80% CLAYSTONE												
2260	c	CLAYSTONE: moderate to dark greenish grey and olive grey variable, firm to very firm, blocky to sub fissile, commonly platy, very waxy texture, rare silty, trace kaolinitic in parts, trace glauconite locally as specks, non calcareous. SAND/SANDSTONE: loose quartz, fine to very coarse, pred med to crs, ang-sub-rnd, poorly sorted, occ arg mtx, no shows												
2270	100 tr tr	CLAYSTONE: as 2260, trace pyrite SAND/SANDSTONE: loose quartz, fine to very coarse, pred med to crs, ang-sub-rnd, poorly sorted, no shopws LIMESTONE: off wh to grey white, dark brown grey, soft ,friable to occ very hard crystalline												
2280	100 tr	CLAYSTONE: variable moderate to dark greenish grey and olive grey to grey brown, firm to very firm, blocky to sub fissile, commonly platy, waxy texture, rare silty, trace kaolinitic in parts, non calcareous. SAND/SANDSTONE: loose quartz, fine to very coarse, pred med to crs, ang-sub-rnd, poorly sorted, occ arg mtx, no shows LIMESTONE: off wh to grey white, dark brown grey, soft ,friable to occ very hard crystalline												
2290	100	CLAYSTONE: as 2280												
2300	100	CLAYSTONE: as 2280 becoming mainly olive grey to grey brown												
2310	100 tr	CLAYSTONE: as above LIMESTONE: off wh to grey white, dark brown grey, soft ,friable to occ very												

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION												
WELL: 15/9-22 T2		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH (m)	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES COL	Rating
		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL		
		hard crystalline												
2320	100 tr	CLAYSTONE: as 2310 mainly blue grey to green grey LIMESTONE: off wh to grey white, dark brown grey, soft ,friable to occ very hard crystalline												
2330	100 tr	CLAYSTONE: green grey and olive grey to grey brown, firm to very firm, blocky to sub fissile, commonly platy, waxy texture, rare silty, trace kaolinitic in parts, non to slightly calcareous. LIMESTONE: off wh to grey white, dark brown grey, soft ,friable to occ very hard crystalline												
2340		As 2330m . CLAYSTONE: no olive grey												
2350	80 20	CLAYSTONE: pale grey to grey, green grey blue grey, brown grey, rarely red brown, firm to very firm, blocky to sub fissile, commonly platy, waxy texture, occ silty, trace kaolinitic in parts, non to slightly calcareous. LIMESTONE: off wh mottled grey to brown, dark brown grey, soft ,friable to occ very hard crystalline												
2360		Missed												
2370	100 gd tr tr	CLAYSTONE: predominantly pale grey to grey, brown grye,occ blue grey, rarely red brown, firm to very firm, blocky to sub fissile, commonly platy, waxy texture, occ silty, trace kaolinitic in parts, non to slightly calcareous. LIMESTONE: off wh mottled grey to brown, dark brown grey, also pale grey to blue grey w black specks (MARL) soft ,friable to occ very hard crystalline TUFF: Pale grey to blue grey speckled w black specks, firm, friable, sub-.blocky to blocky, calcareous in part.												
2380		As 2370m												
2390	90 tr| 10	CLAYSTONE: LIMESTONE: As above TUFF:												
2400	100 tr	CLAYSTONE: grey to dark grey occ olive grey, rarely blu grey, firm to moderately hard, blocky to sub-fissile becoming fissile, platy, non calcareous TUFF: As 2380m												

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION												
WELL: 15/9-22 T2		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH (m)	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES COL	Rating
		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL		
2410		As 2400.s												
2420	100	CLAYSTONE: grey to olive grey occ brown grey, homogenous, rarely red brown, firm to moderately hard, blocky to sub-fissile becoming fissile, platy occ splintery, silty in part, non occ slightly calcareous												
2430	100	As above												
2440	100	CLAYSTONE: as above with pale grey white translucent kaolinitic or possible tuffaceous material												
2450	100	CLAYSTONE: as above, occ pale brown grey												
2460	100	CLAYSTONE: grey to olive grey occ brown grey, brown to dark brown, firm to moderately hard, blocky to sub-fissile becoming fissile, platy occ splintery, silty in part, trace pyrite non occ slightly calcareous												
2470	100	CLAYSTONE: as above, occ pale brown grey												
2480	100	CLAYSTONE: medium dark grey to olive grey and 20% dark brown grey, trace dark greenish grey, firm to moderately hard, blocky to sub-fissile locally platy, trace silty in part, rare trace micro pyrite, non calcareous												
2490	100	CLAYSTONE: as 2480 m.												
2500	100 gd tr	CLAYSTONE: medium dark grey to olive grey and 30% dark brown grey and silty in parts, trace dark greenish grey, and trace to loose SAND washing out, clear, translucent, very fine to fine lower, well sorted, sub angular, no visible cement.												
2510	40 10 50	CLAYSTONE: variable and as above. ARGILLACEOUS SILTSTONE: olive brownish black, firm to moderately hard, blocky to sub fissile, rarely fissile, locally splintery, earthy, very argillaceous, micro mica, good trace very fine disseminated micro pyrite, slightly calcareous locally grading to SILTSTONE. SAND/SANDSTONE: dominantly as loose Quartz: clear, transparent, trace varicoloured, fine upper to medium upper, trace coarse, MODE medium, moderately sorted, moderate to high sphericity, sub rounded to dominantly sub angular, no visible cement, trace granular pyrite cement, trace lithic fragments, trace argillaceous matrix in unwashed, rare aggregates are off white to white, moderately hard to hard, well consolidated, very fine to fine, local medium, generally well sorted, sub rounded, heavily cemented with calcite, trace white to creamy matrix, grading to ARG SST in parts, nil to very poor visible porosity,												

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION													
WELL: 15/9-22 T2		AREA: Wishbone	Spud Date: 1st January 2006											Sheet No.		
DEPTH (m)	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR				CUT		CUT FLUOR		RES COL	Rating
		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL		INTEN	COL	INTEN	COL		
	r Tr	locally as white amorphous calcareous gritty rock flour. No Shows. LIGNITE/COAL: black, soft to firm, splintery, sub vitreous.													
2520	80 10 10 Tr	SAND/SANDSTONE: as above, moderately sorted. ARGILLACEOUS SILTSTONE: as above. CLAYSTONE: variable and as above possibly hole cleaning. DOLOMITE: buff, moderate yellowish brown, hard to very hard, angular, crypto to micro crystalline, fairly clean, trace black very fine speckled mineral inclusions, no visible porosity. N/S.													
2530	70 20 10 Tr	SAND/SANDSTONE: as above, moderately sorted, fine to medium upper, very fine material in unwashed, grading to ARG SST in parts. ARGILLACEOUS SILTSTONE: grading to SILTY CLAYSTONE: CLAYSTONE: variable and as above possibly hole cleaning. DOLOMITE: as above, hard.													
2540	70 30 Tr	SAND/SANDSTONE: as above, poorly sorted, fine to medium upper, common coarse are generally angular, very fine material in unwashed. N/S. Trace off white SANDY LIMESTONE: gradational from Sandstone as cemented horizons. CLAYSTONE: as above silty, fissile, splintery interbedded with; ARGILLACEOUS SILTSTONE: grading to SILTY CLAYSTONE in parts. DOLOMITIC LIMESTONE: more calcareous creamy off whites as well as buff, generally hard.													
2550	60 10 20 10	SAND/SANDSTONE: dominantly as loose quartz, good trace bit crushed rock flour and heavily cemented in parts. LIMESTONE: white to off white, firm, crumbly, gritty, vigorous HCL reaction, sandy, bit crushed, N/S. CLAYSTONE: medium dark grey to olive grey, locally dark greenish grey and brown grey interbedded with; ARGILLACEOUS SILTSTONE: as below.													
2560	GTr 50 25 25	Very slow drilling DOLOMITE: as above, hard, brittle, angular, crypto crystalline. N/S. CLAYSTONE: medium dark grey to olive grey, locally dark greenish grey and brown grey interbedded with; ARGILLACEOUS SILTSTONE: olive brownish black, firm to moderately hard, blocky to sub fissile, rarely fissile, locally splintery, earthy, very argillaceous, micro mica, local trace very fine disseminated micro pyrite, non to slightly calcareous and commonly grading to SILTY CLAYSTONE and rarely SILTSTONE. SAND/SANDSTONE: dominantly as loose quartz, very fine to coarse, poorly sorted, argillaceous matrix washing out and very fine Quartz from unwashed													

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION												
WELL: 15/9-22 T2		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH (m)	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES COL	Rating
		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL		
		sample. N/S.												
2562 B/u		Trip for Bit. 5% Dolomite – else as 2560 m.												
2570	60 20 10 10	SAND/SANDSTONE: Quartz, predominantly loose, colourless to trace very pale grey, very rare pinkish brown, transparent to translucent, medium to coarse, trace very coarse, no mode, moderately poorly sorted, perfectly rounded to sub angular, moderate to high sphericity, 10% moderately consolidated with pale grey argillaceous and silty matrix, very poor visible and inferred porosity. ARGILLACEOUS SILTSTONE: Olive black to brownish black, slightly firm to firm, sub blocky to trace crumbly, rare sub fissile to platy, very earthy in part, very argillaceous and commonly grading to EARTHY CLAYSTONE, reflective lustre indicating micro mica or disseminated micro pyrite(?), non calcareous. CLAYSTONE: Olive grey to medium bluish grey, dark greenish grey, firm to slightly hard, sub blocky to trace splintery, waxy lustre, non swelling, non dispersive, non calcareous. LIMESTONE: White to very pale grey, slightly firm, crumbly, microcrystalline, very rarely silty.												
2580	30 40 10 20	SANDSTONE: As above, 50% loose quartz, 50% loosely consolidated with amorphous calcareous argillaceous matrix, commonly silty, gradational with arentic limestone? SILTY CLAYSTONE: As argillaceous siltstone above, less silty, very earthy texture. CLAYSTONE: Greenish grey, firm, as above. LIMESTONE: White to very pale grey, crumbly to slightly amorphous, microcrystalline, as above.												
2590	40 30 20 10	SANDSTONE: As above, predominantly loose, fine to coarse, no mode, poorly sorted. SILTY CLAYSTONE: As above, increasingly firm to hard, splintery, slightly angular where less earthy. CLAYSTONE: As above, slightly translucent appearance in minor part, increasingly hard, trace bright bluish grey.' LIMESTONE: Off white, microcrystalline as above.												
2600	60 30	CLAYSTONE: Light bluish grey to medium bluish grey, greyish blue green, firm to hard, sub blocky to splintery, angular, trace sub fissile in part, waxy texture, very rarely earthy, non calcareous. EARTHY CLAYSTONE: Brownish grey to dark yellowish brown, very firm to hard, sub blocky to crumbly, very earthy texture, commonly silty throughout and 20% grading to argillaceous siltstone, commonly micro												

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION												
WELL: 15/9-22 T2		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH (m)	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES COL	Rating
		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL		
	10	pyritic, good trace large nodules of pyrite and micro pyrite. SAND/ARKOSE?: Loose colourless quartz as above, common soft and amorphous white weathered feldspar/Kaolinitic, common colourless silt in matrix, possible rock flour associated with low ROP?												
2610	65 15 20	CLAYSTONE: as above, some splintery cuttings and look like cavings. EARTHY CLAYSTONE: as above. SAND/ARKOSE?: Loose colourless quartz, fine to coarse and locally very fine, sub angular, common soft and amorphous white weathered feldspar/Kaolinitic, common colourless silt in matrix as possible rock flour, trace coarse granular pyrite.												
2620	10 15 60 15	CLAYSTONE: as above, some splintery cuttings and look like cavings. EARTHY CLAYSTONE: Brownish grey to dark yellowish brown, very firm to hard, sub blocky to crumbly, very earthy texture, commonly silty throughout and 20% grading to argillaceous siltstone, commonly micro pyritic, good trace large nodules of pyrite and micro pyrite, slightly calcareous. SAND/ARKOSE ARGILLACEOUS SANDSTONE?: medium grey, pervasive, common soft and amorphous light grey white weathered possibly feldspar/Kaolinitic? and locally very argillaceous occasionally as rock flour with silty ground matrix, and as loose colourless quartz, fine to coarse and locally very fine in unwashed, MODE medium, sub angular, moderate to dominantly poorly sorted, trace granular pyrite, abundant calcite cementation, no visible porosity. N/S. LIMESTONE: white to off white, translucent white, rarely clear, generally bit crushed soft and crumbly, occasionally hard and brittle, good trace hard fibrous calcite, micro crystalline, clean, mudstone, no visible porosity, as thin stringers – slow ROP.												
2630	10 20 10 60	CLAYSTONE: Light bluish grey to medium bluish grey, dark greyish green, as above. EARTHY CLAYSTONE: becoming olive black to dark greyish brown, locally very carbonaceous grading to black brown CARB CLST, abundant very fine disseminated micro pyrite, else a/a. LIMESTONE: as above, locally trace very fine Quartz silt. SAND/ARGILLACEOUS SANDSTONE: becoming olive grey, as above, dominantly loose Quartz, fine to coarse, rare very coarse, poorly sorted, sub angular, commonly as bit crushed pasty rock flour. N/S.												
2640	5 40	CLAYSTONE: as above. EARTHY CLAYSTONE: becoming olive black to dark greyish brown, locally very carbonaceous grading to black brown CARB CLST, abundant very fine disseminated micro pyrite, else a/a.												

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION												
WELL: 15/9-22 T2		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH (m)	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES COL	Rating
		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL		
	5 50	LIMESTONE: as above. SAND/ARGILLACEOUS SANDSTONE: olive grey as above, dominantly loose Quartz, fine to coarse, rare very coarse, poorly sorted, sub angular. N/S.												
2650		As 2630 m.												
2660	10 30 45 15	CLAYSTONE: moderately calcareous, as above. SAND/ARGILLACEOUS SANDSTONE: olive grey, as above, dominantly loose Quartz, fine to coarse, rare very coarse, poorly sorted, sub angular, commonly as bit crushed pasty rock flour. Lots less on LWD logs and in unwashed. N/S. ARGILLACEOUS SILTSTONE: Olive black to brownish black, slightly firm to firm, sub blocky to trace crumbly, rare sub fissile, very earthy in part, very argillaceous, local good trace micro mica and disseminated micro pyrite, non calcareous carbonaceous in parts grading to 5% CARBONACEOUS CLAYSTONE/LIGNITE: black to brownish black, firm to rarely hard, sub fissile to fissile, locally brittle. LIMESTONE: as above, rare calcite.												
2670	25 35 10 30	CLAYSTONE: Light greenish grey to medium bluish grey, dark greenish grey, firm to hard, sub blocky to splintery, angular, trace sub fissile in part, waxy texture, non to moderately calcareous, glauconitic, possibly some caved? EARTHY CLAYSTONE: as above grading to 10% ARG SLST. LIMESTONE: as above, rare calcite. SAND/ARGILLACEOUS SANDSTONE: Kaolinitic in places, possibly weathered, argillaceous, as loose Quartz and fine to coarse, poorly sorted. N/S.												
2680	30 45 5 20	CLAYSTONE: as above slightly paler. EARTHY CLAYSTONE: as above grading to 10% ARG SLST. LIMESTONE: as above, SAND/SANDSTONE: as above, dominantly as loose Quartz, poorly sorted, very little in unwashed sample.												
2690	40 30 15	CLAYSTONE: Light greenish grey to medium bluish grey, dark greenish grey, rare dusky green, firm to hard, sub blocky to splintery, angular, trace sub fissile, waxy texture, non to moderately calcareous, locally very glauconitic, rare trace silt, rare light grey soft pervasive KAOLINITIC CLAYSTONE. SILTY CLAYSTONE: Olive brownish black to olive grey, slightly calcareous in parts and grading ARGILLACEOUS SILTSTONE. As above and trace CARB CLST. LIMESTONE: white to off white, translucent white, rarely clear, occasionally buff and dolomitic, firm to occasionally hard and brittle, trace hard fibrous calcite, micro crystalline, clean, mudstone, no visible porosity, N/S.												

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION												
WELL: 15/9-22 T2		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH (m)	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES COL	Rating
		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL		
	10	SAND/SANDSTONE: as above,												
2700	50 20 20 10	Posssible Top Lower LISTA / MAUREEN FORMATION 2693 m MDRKB CLAYSTONE: Light greenish grey to medium bluish grey, dark greenish grey, rare dusky green, abundant glauconite, rarely sandy, non calcareous. SILTY CLAYSTONE: as above, trace ARG SLST. SAND: as above fine to coarse, MODE medium, moderate to poorly sorted. N/S. LIMESTONE: white to off white, commonly sandy becoming argillaceous in parts.												
2710	25 30 35 10	SAND/ARGILLACEOUS SANDSTONE: olive grey, off white, rare firm to hard aggregates, calcite cemented with creamy white Kaolinitic matrix, and as loose Quartz, fine to coarse, rare very coarse, poorly sorted, sub angular, commonly as bit crushed pasty rock flour. Lots less on LWD logs and in unwashed. N/S. CLAYSTONE 2: olive grey to medium dark grey, becoming calcareous to very calcareous in parts, trace very fine sand, softer and pervasive, grading to MARL. CLAYSTONE: as above. LIMESTONE: as above argillaceous.												
2720	100	MARL: light to olive grey, firm to very firm, soft and pervasive in parts, sub blocky, sticky and plastic, very calcareous, trace silt.												
2730	60 5 20 15	SAND/ARGILLACEOUS ARKOSIC SANDSTONE: light olive grey, light grey to off white, generally soft to firm and rare hard aggregates which are calcite cemented and with creamy white Kaolinitic? matrix, loose Quartz, medium to coarse, rare very coarse, poorly sorted, sub angular, trace bit crushed pasty rock flour, nil to very poor visible porosity. N/S. LIMESTONE: as above argillaceous. MARL: light to olive grey, grading to CALC CLST. CLAYSTONE: as above variable bluish greenish greys.												
2740	70 20 10	SANDSTONE: Loose colourless quartz predominantly, rare very pale yellowish brown, transparent to translucent, fine to medium, rare coarse to very coarse, no mode, moderately poorly sorted, well rounded to sub angular, moderate to high sphericity, trace consolidated in soft and amorphopus kaolinitic(?) argillaceous matrix, soluble, possibly rock flour in minor part, very silty where bound up, poor to no inferred porosity, NO SHOW. CLAYSTONE: Dark grey to medium dark grey, rare pale greenish grey, slightly firm to hard, sub blocky to trace angular, sub fissile in minor part, non dispersive, very slightly swelling, rare trace calcareous in minor part. LIMESTONE: Off white to very pale grey, slightyl firm, crumbly, micro to												

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION												
WELL: 15/9-22 T2		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH (m)	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES COL	Rating
		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL		
		cryptocrystalline, very argillaceous in minor part, very finely stylolitic in minor part, commonly finely arentic.												
2750	70 25 5	SANDSTONE: Loose quartz as above, colourless to trace very light grey, fine to medium, rare coarse, very rare very coarse and angular, mode medium, commonly in argillaceous matrix, rare trace well consolidated with argillaceous cement. CLAYSTONE/MARL: As above, 20% light greenish grey, very calcareous, grading to marl or calcareous claystone. LIMESTONE: Off white to white, trace very fine black stylolites, microcrystalline as above.												
2760	80 20 Tr	SANDSTONE: As above, medium to very coarse, 100% loose, consolidated with argillaceous cement in unwashed sample, rare trace very pale orange brown. MARL/CLAYSTONE: As above, slightly mottled, very calcareous in part, commonly sand sized cuttings. LIMESTONE: As above, very fine cuttings.												
2770	70 20 10	SANDSTONE: As above, fine to coarse, poorly sorted, unconsolidated, washed clean of matrix. LIMESTONE: White to cream, very pale grey, slightly firm, crumbly to rare sub blocky, very finely slylolitic/algal with black microlaminations, micro to cryptocrystalline and probably argillaceous. CLAYSTONE/MARL: As above, trace brownish grey, firm to hard, blocky, non calcareous.												
2780		Missed												
2790	60 40	MARL: Light grey to medium light grey, very light grey in part, slightly firm to firm, sub blocky to trace crumbly, predominanyl featureless, very slightly swelling, slightly to extremely calcareous, grading to calcareous Claystone. LIMESTONE: White to pale yellowish grey, very light grey, slightly firm to slightly hard, sub blocky to crumbly, trace blockier, predominanly cryptocrystalline, trace argillaceous and microcrystalline, rare trace mottled light grey, rare trace soluble where more argillaceous, commonly gradational with marl.												
2800	100	LIMESTONE: White to extremely pale grey, bluish white tinge, firm to slightly hard, sub blocky to blocky, rare soapy tetxure, cryptocrystalline, mudstone grade, very rare traces of very fine black algal matter in microlaminations, featureless, rare trace Claystone/Marl cavings.												
2810	60	MARL: Light brownish grey to pale red, slightyl firm to firm, sub blocky to crumbly slightly dispersive highly reactive with HCl, grading to argillaceous												

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION												
WELL: 15/9-22 T2		AREA: Wishbone	Spud Date: 1st January 2006										Sheet No.		
DEPTH (m)	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES COL	Rating
		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL		
	40	crumbly, slightly dispersive, highly reactive with HCl, grading to argillaceous limestone. LIMESTONE: White to very light grey, as above, commonly microcrystalline, gradational in part with marl as above.												
2820	70 30	MARL: As above, commonly light grey, light bluish grey, gradational with limestone and grading to argillaceous limestone. LIMESTONE: As above, white to light grey, gradational with marl.												
2830	90 10	LIMESTONE: As above, increasingly hard and blocky, very rare argillaceous and slightly dispersive, rare bluish white. MARL: As above, pale red and very slightly dispersive, blocky to crumbly.												
2840	100	LIMESTONE: White to cream, firm to slightly hard, sub blocky to blocky, cryptocrystalline to rare microcrystalline, featureless, very rare (caved?) Marl grains.												

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION												
WELL: 15/9-22 T2		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES	Rating
(m)		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL	COL	
		Drilled 8.5" hole section from 2948 m on 16th February 2006 at 04:00hrs Section was drilled with 1.35 sg Glydril WBM system. **LOT at 2942 m 2.03 sg EMW with 1.35 sg MW**													
2960	100 Tr	Cretaceous CHALK GROUP continued LIMESTONE: white to off white with 30% greyish orange pink (slightly argillaceous), moderately hard to hard, blocky to sub angular when hard, commonly softer and crumbly with chalky texture, mudstone, micro crystalline, generally very clean, fairly featureless, nil visible porosity. N/S. MARL/ARG LST: Traces, buff to dark yellowish brown, rarely very hard angular, micro – cryptocrystalline, moderately to very argillaceous.													
2970	100 Tr	LIMESTONE: white to off white with 70% greyish orange pink, else as above.													
2980	100	LIMESTONE: even greyish orange pink, firm to moderately, blocky to sub blocky, commonly soft and crumbly with chalky texture, mudstone, iritic, generally micro crystalline, slightly argillaceous, rare trace very fine Quartz Silt, fairly featureless, nil visible porosity. N/S.													
2990	100	LIMESTONE: greyish orange pinks and 10% white, becoming dominantly moderately hard, crunchy in parts, less argillaceous, again fairly featureless. N/S.													
3000	100 Tr	LIMESTONE: as above 10% white. MARL: gradational and rare as thin interbeds, moderate brown, soft to firm, pervasive, very argillaceous, earthy in parts.													
3010	100	LIMESTONE: as 2980 m slightly paler shade, Trace white.													
3020	100	LIMESTONE: white to off white with 40% pale greyish orange pink, moderately hard to hard, becoming crunchy and micro to rarely crypto crystalline, clean, nil visible porosity. N/S.													
3030	100	LIMESTONE: white to off white with 60% pale greyish orange pink and generally softer and more argillaceous when pink.													
3040	100	LIMESTONE: becoming off white to very light grey white to off white with 20% pale greyish orange pink, slightly argillaceous, else as above.													
3050	100	LIMESTONE: white to very light grey with 30% pale greyish orange, trace very fine Sand washing out, slightly gritty texture in parts, micro crystalline.													

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WELL: 15/9-22 T2		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES	Rating
(m)		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL	COL	
3060	100	LIMESTONE: white to very light grey with 10% pale greyish orange, else as 3050 m.												
3070	100	LIMESTONE: very light grey, minor pale greyish orange pink and TRACE greenish grey, firm to moderately, blocky to sub blocky, rarely hard and sub angular, commonly soft and crumbly with chalky texture, mudstone, iritic, generally micro crystalline, slightly Kaolinitic?,fairly featureless, nil visible porosity. N/S.												
3080	100	LIMESTONE: very light grey, trace pale greyish orange pink, slightly to moderately argillaceous, Kaolinitic? Else as 3070 m.												
3090	100	LIMESTONE: Off white to very pale grey, rare greyish orange pink, rare light grey, firm rare harder, sub blocky to blocky, trace friable, occasionally soft and slightly plastic where chalkier, micro to predominantly cryptocrystalline mudstone, featureless, no visible porosity, very pure.												
3100	100	LIMESTONE: As above, commonly softer with argillaceous texture and appearance, very rarely dispersive.												
3110	100	LIMESTONE: As 3090m, trace pale pink, good trace light grey, 20% less blocky and angular, slightly firm, crumbly, argillaceous texture and appearance, probably friable chalk.												
3120	100	LIMESTONE: As above, trace greenish grey and possibly marly, 20% less blocky and iritic as above, rare very firm to hard where blockiest.												
3130	100	LIMESTONE: Off white to very light grey, slightly to very firm, sub blocky to very blocky, trace angular, commonly crumbly where iritic, cryptocrystalline throughout.												
3140		Missed												
3150	100	Possible chert trace? LIMESTONE: Off white to light grey, firm to very firm, trace softer and crumbly, as above, very rare trace possibly chert (?), light greyish brown, very firm to hard, splintery, crystalline and slightly translucent.												
3160	100	LIMESTONE: Bimodal, 60% greyish pink to greyish red, pale brown, 40% white to very light grey, greenish grey, abundantly dark yellowish green very finely mottled, rare greyish green, all slightly firm to very hard, crumbly to sub blocky, rare angular where hardest, very hard crystalline and splintery where greyish green, iritic in part, cryptocrystalline to microcrystalline where more translucent, green probably glauconitic?, same intense HCl reaction throughout, no indication of marl.												
3170	100	LIMESTONE: 90% off white to white, very finely green speckled, firm to hard, blocky to angular in part, commonly crumbly where more iritic, 20% as above, predominantly pinkish red, trace greyish green, hard, translucent and												

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WELL: 15/9-22 T2		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES	Rating
(m)		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL	COL	
		crystalline in part.												
3180	100	LIMESTONE: As above, 95% off white to very light grey, firm and blocky to trace crumbly as above, traces pinkish grey to pinkish red, good trace greenish grey to medium light grey with dark greenish yellow mottling, hard to very hard, blocky to crumbly, micro to coarsely crystalline, very glauconitic.												
3190	100	Colour change - glauconitic LIMESTONE: Bimodal, 60% very light grey heavily mottled dark yellowish green, firm, crumbly, microcrystalline, friable texture, 40% off white to white, firm, blocky to crumbly, occasionally iritic, as 3150m.												
3200	100	LIMESTONE: 70% very light grey to off white, commonly mottled green as above, predominantly crumbly, friable, iritic, 30% pinkish grey to rare pale red, crumbly, as other component, very clastic appearance where pale red, very glauconitic in part.												
3210	70 30	MARLY LIMESTONE: Medium light grey to light brownish grey, slightly firm, crumbly, slightly dispersive, very argillaceous in part, very abundantly mottled throughout with fine dark yellowish green glauconite grains, micro to coarsely crystalline, very clastic appearance. LIMESTONE: White to trace pinkish grey, firm, blocky to commonly angular, cryptocrystalline, rarely iritic, mudstone, as above.												
3220	80 20	MARL: Light grey to medium light grey, occasionally medium grey, firm to hard, crumbly to blocky, very earthy texture, very glauconitic, trace large nodules of pyrite, silty, sparry. LIMESTONE: As above, white to very light grey, iritic, blocky.												
3230	90 10	MARL: As above, extremely glauconitic in part, silty, extremely earthy, occasionally very micromicaceous, predominantly micro to coarsely crystalline. LIMESTONE: Off white to medium light grey, as above, occasionally very finely speckled throughout with glauconite.												
3240	90 10	MARLY LIMESTONE: light grey, firm, crumbly to blocky, micro to fine crystalline, micromicaceous, common glauconitic, grades to marl in part. LIMESTONE: off white to light grey, firm to mod hard, blocky, microcrystalline.												
3250	80 20	MARLY LIMESTONE: as above, highly micromicaceous, predominatelly finely crystalline. LIMESTONE: clean mudstone, off white, firm to moderately hard, microcrystalline, chalky texture.												
3260	100	MARL: light to dark grey, firm to moderately hard, blocky, very finely crystalline, micro micaceous.												
3270	20 80	MARL: as above. LIMESTONE: clean mudstone, off white, firm, blocky, finely crystalline, chalky.												

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WELL: 15/9-22 T2		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES	Rating
(m)		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL	COL	
3280	30 70	MARLY LIMESTONE: light to medium grey, firm, blocky, finely crystalline. LIMESTONE: clean off white mudstone as above.												
3290	10 90	MARLY LIMESTONE: light to medium grey, firm to moderately hard, blocky, finely crystalline, occasional fine mica. LIMESTONE: clean off white mudstone as above.												
3300	100	LIMESTONE: clean off white mudstone, firm, blocky, predominately microcrystalline, chalky.												
3310	30 70	MARLY LIMESTONE: light to medium grey, firm, blocky, finely crystalline, occasional fine mica. LIMESTONE: off white, clean and chalky, as above												
3320	70 30	MARLY LIMESTONE: light grey, firm, blocky, finely crystalline, locally abundant fine mica, locally abundant glauconite. LIMESTONE: off white, clean and chalky, as above												
3330	100	MARLY LIMESTONE: light to medium grey, firm, blocky, finely crystalline, locally abundant fine mica, locally abundant glauconite, becoming more argillaceous.												
3348.5	70 20 10	MARL: predominately pale redbrown, also light grey, soft to firm, crumbly to blocky, rare fine mica. MARLY LIMESTONE: light to medium grey, firm, blocky, finely crystalline, locally with fine mica. CLAYSTONE: green grey, firm to moderately hard, blocky, occasionally platy, slightly calcareous, common fine disseminated pyrite.												
3350	10 80 10	MARL: pale redbrown, soft to firm, crumbly to blocky, rare fine mica. MARLY LIMESTONE: light to medium grey, firm, blocky, finely crystalline, locally with abundant fine mica. LIMESTONE: clean off white mudstone, firm, blocky, predominately microcrystalline, chalky.												
3352	60 30 10	MARL: Light brown to pale reddish brown, firm to very rare very hard, crumbly to slightly amorphous, sub blocky, very earthy, very argillaceous and slightly dispersive, very silty in part with colourless quartz and rare carbonaceous material, grading to calcareous Claystone, commonly sparry to microcrystalline appearance. MARLY LIMESTONE: Light to medium grey, very light grey, light greenish grey, firm to hard, crumbly to sub blocky, very earthy to microcrystalline texture, very sparry, extremely glauconitic in parts, commonly silty, micaceous. LIMESTONE: Off white, very light grey, firm, sub blocky, cryptocrystalline mudstone, iritic and rarely slightly dispersive.												
3359	80	MARL: light to medium grey, occasionally pale red brown, soft to firm, crumbly to blocky, locally sandy w clear quartz, grades to calcareous Claystone in part.												

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DEPTH	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES	Rating
(m)		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL	COL	
	10 10	LIMESTONE: clean off white mudstone, firm, blocky, predominately microcrystalline, chalky. CLAYSTONE: green grey, firm to moderately hard, blocky, slightly platy locally slightly calcareous.												
3360	100 Tr	MARL: Light grey to light bluish grey, medium grey, light brownish grey to brownish grey, pale red to light brown, firm, sub blocky to slightly plastic in part, trace crumbly, waxy where plastic, predominantly featureless, slightly to very glauconitic with dark yellowish green staining on bluish grey lithology in part, commonly grading to calcareous Claystone. LIMESTONE: Off white to pinkish grey, firm to hard, sub blocky to angular, splintery in places, iritic and crumbly in minor part, cryptocrystalline, very rare, very hard clastic limestone, very light grey mottled dark yellowish green, translucent, crumbly to sub blocky, microcrystalline, very glauconitic, very rare colourless quartz silt and very fine sand.												
3370	100	MARL: Varicoloured as above, predominantly very light grey to very light brownish grey, firm to 10% hard to very hard where slightly translucent and pale greenish grey especially, sub blocky, increasingly with slightly plastic and waxy texture, crumbly in part, otherwise as above, possibly very slightly dolomitic throughout causing decrease in ROP, overall increase in sparryness and crystallinity over 3360m sample.												
3380	100	MARL/CLAYSTONE: Predominantly light grey to very light grey, trace moderate reddish brown, trace light brownish grey, firm, sub blocky to crumbly in part, trace slightly plastic, predominantly very earthy with trace granular or finely sucrosic texture, very argillaceous and slightly dispersive, very calcareous, commonly silty to very silty, rare trace dark yellowish green glauconite grains, very abundant extremely fine black carbonaceous specks and very fine sub silty black grains throughout, rare very hard pale greenish grey clastic/microcrystalline glauconitic limestone with quartz silt, very rare pure white cryptocrystalline limestone.												
3390	60 40	MARL/CLAYSTONE: as above. Dark grey carbonaceous claystone. CLAYSTONE: medium to dark grey, dark browngrey, firm, occasionally moderately hard, blocky, occasional earthy texture, slightly calcareous, locally carbonaceous, fine crystalline pyrite.												
3393	30 10 60	MARL/CLAYSTONE: as above, more calcareous. CLAYSTONE: as above, more medium grey and calcareous, little of the dark grey earthy texture. LIMESTONE: off white, firm, blocky, microcrystalline, chalky, locally slightly argillaceous, occasional viens of fine crystalline pyrite.												

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WELL: 15/9-22 T2		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH (m)	%	LITHOLOGY DESCRIPTION and COMMENTS Colour, hardness, texture, mineralogy, modifiers, cement	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES	Rating
				DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL	COL	
3396	100	CLAYSTONE: dark greyish black, firm, earthy, slightly silty, micaceous, carbonaceous.												
3399	100	CLAYSTONE: as above.												
3402	100	CLAYSTONE: as above, becoming dark brown, less carbonaceous.												
3405	100	CLAYSTONE: as above												
3408	100	CLAYSTONE: Brownish black to olive black, strong hydrocarbon odour, slightly firm, very rare firm, sub blocky to trace plastic and amorphous, earthy texture, non swelling, non dispersive, non calcareous, commonly micaceous, extremely carbonaceous and organic, slight metallic lustre under high magnification, rare trace probably caved white limestone fragments.												
3411	100	CLAYSTONE: Olive grey to olive black, very abundantly carbonaceous with brownish black lignitic material, slightly silty, as above.												
3414	100	CLAYSTONE: As above, slightly dispersive, very earthy, silty, trace sub fissile.												
3417	100	CLAYSTONE: Brownish black to olive black, very earthy, increasingly silty and carbonaceous, dispersive, trace very finely micromicaceous, very finely micropyritic with disseminated grains.												
3420	100	CLAYSTONE: Dark brownish grey to brownish black, as above, trace disseminated micropyrite where dispersed, common fine fibrous dark brown organic/lignitic material.												
3423	100	CLAYSTONE: Olive black homogenous, slightly firm, dispersive, extremely earthy, micromicaceous, common silt and fine sand sized black carbonaceous grains.												
3426	100	CLAYSTONE: Dark brownish grey to olive black, as above, very earthy, dispersive, very silty with carbonaceous matter, very rare colourless quartz silt, extremely micromicaceous.												
3429	100	CLAYSTONE: Brownish black to olive black, firm, commonly slightly calcareous/dolomitic, very silty in part.												
3432	100	CLAYSTONE: As above, rare calcareous, slightly softer and trace amorphous where plastic.												
3435	100	CLAYSTONE: Brownish black to dark brownish grey, slightly firm to firm, very earthy, dispersive in part, as above, rare white waxy non calcareous grains, vitreous lustre, tuffaceous?												
3438	100	CLAYSTONE: As above, olive grey to olive black, slightly firm to firm, very earthy, very finely micromicaceous, possible disseminated micropyrite.												
3441	100	CLAYSTONE: Brownish black to olive black, firm to slightly hard in part, sub blocky, to trace sub angular, earthy, as above, very silty with black												

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WELL: 15/9-22 T2		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES	Rating
(m)		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL	COL	
		carbonaceous rains, abundantly micromicaceous.												
3444	100	CLAYSTONE: Olive black, soft to firm, plastic and amorphous to sub blocky, very earthy throughout, as above, very rare lignitic material, very rare white limestone fragments.												
3447	100	CLAYSTONE: Olive grey to olive black, slightly firm, commonly slightly dispersive, very earthy, silty, as above, common micropyrite associated with laminar lignitic carbonaceous material, trace disseminated micropyrite throughout.												
3450	100	CLAYSTONE: Olive black homogenous, firm, sub blocky, rare slightly plastic, very earthy, moderately calcareous throughout, as above, slightly silty with carbonaceous material, rarely micromicaceous.												
3453	100	CLAYSTONE: Browish black to olive black, trace brownish grey, as above, moderately calcareous, increasingly silty and micromicaceous, trace white cryptocrystalline limestone fragments, caved?												
3456	100	CLAYSTONE: Olive black to dark brownish grey, as above, very earthy, very silty, very carbonaceous with occasional fibrous very fine organic matter, very micromicaceous, common very fine disseminated pyrite, rare colourless quartz silt.												
3459	100	CLAYSTONE: dark olive grey to black, firm to moderately hard, platy, earthy texture, silty grains, fine mica, occasional fine crystalline pyrite, slightly calcareous, highly carbonaceous.												
3462	100	CLAYSTONE: as above												
3465	100	CLAYSTONE: dark olive grey to olive brown, as above, more silty grains.												
3468	100	CLAYSTONE: dark grey, brownish grey, moderately hard, blocky to platy, silty, occasional very fine sand grains, occasional fine pyrite, carbonaceous, non calcareous.												
3471	100	CLAYSTONE: dark brownish grey, firm, sub blocky, less silty, more earthy texture, carbonaceous, non calcareous.												
3474	100	CLAYSTONE: as above with some fine crystalline pyrite.												
3477	100	CLAYSTONE: as above with more silty grains and occasionally with fine clear quartz grains.												
3480	100	CLAYSTONE: brownish black, olive black, firm, sub blocky, silty, occasional fine clear quartz grains, fine disseminated pyrite, non calcareous.												
3483	100	CLAYSTONE: Very homogenous olive black, soft to slightly firm, rarely firmer, amorphous and slightly plastic to trace sub blocky, sticky, very earthy texture, occasionally soapy, traces very finely disseminated micropyrite, rarely												

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION												
WELL: 15/9-22 T2		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES	Rating
(m)		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL	COL	
		micromicaceous, commonly silty, trace very fine to fine colourless quartz, translucent, sub rounded to rounded, very well sorted.												
3486	100	CLAYSTONE: Homogenous as above, less sticky, increasingly dispersive, more granular, very highly micromicaceous, commonly silty with black and brownish black grains, traces very fine to silt sized colourless quartz, non calcareous.												
3489	100	CLAYSTONE: Olive grey to medium dark grey, as above, soft and dispersive, non swelling, silty, extremely organic with good traces fibrous and laminar moderate to dark brown carbonaceous material, very micromicaceous, commonly silty, 5% fine sized cuttings of white iritic limestone and greenish grey claystone, probably cavings.												
3492	100	CLAYSTONE: Olive black homogenous, soft, amorphous and plastic, sticky, earthy texture, slightly dispersive, very slightly calcareous, silty with colourless quartz grains, trace very finely micromicaceous.												
3495	100	CLAYSTONE: Olive black as above, soft to slightly firm, very rare firm to hard, trace sub blocky, very earthy, less dispersive and sticky than 3495m, increasingly silty, trace sandy with fine colourless quartz, commonly carbonaceous with fine black specks and grains, micromicaceous throughout, rare trace micropyritic, rare trace micropyrite, trace caved(?) white limestone and greenish grey claystone.												
3498	100	CLAYSTONE/SANDY CLAYSTONE: Olive grey, soft and amorphous as above, 5% sand with very fine colourless quartz, well sorted, rounded, highly spherical, abundant fine to medium sand sized clastic and carbonate lithic fragments, very carbonaceous with black specks.												
3501	100	CLAYSTONE: Dark olive grey to olive black, soft to very slightly firm, trace very firm to hard and blocky, bulk amorphous to plastic, slightly dispersive, trace sticky, silty with colourless quartz grains, trace large nodular pyrite, up to 10% lithic fragments of white to light grey limestone, light brown to moderate reddish brown marl and bluish green clasitc and glauconitc limestone, possibly caved, probably from washing out shaker box prior to catching sample?												
3504	100	CLAYSTONE: Olive black to dark olive grey, slightly firm, sub blocky to amorphous and dispersive, earthy texture, very slightly calcareous, very silty in part, trace very fine colourless quartz, very carbonaceous with silt and sub silty material, extremely finely micromicaceous, common fine to very fine sized lithic fragments as above.												
3507	100	CLAYSTONE: brownish black, firm, subblocky, slightly dispersive, very silty with fine sand grains of clear quartz, fine carbonaceous material, occasional fine disseminated pyrite.												

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION												
WELL: 15/9-22 T2		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES	Rating
(m)		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL	COL	
3510	100	CLAYSTONE: as above.												
3513	100	CLAYSTONE: as above, still very silty but with less sand grains.												
3516	100	CLAYSTONE: as above with crystalline pyrite nodules, occasionally trace light to medium brownish grey argillaceous limestone, silty, sandy.												
3519	100	CLAYSTONE: brownish black, firm, subblocky, slightly dispersive, becoming very silty with fine sand grains, carbonaceous, occasional fine crystalline pyrite, non calcareous.												
3522	100	CLAYSTONE: as above with some olive grey calcareous claystone cuttings.												
3525	100	CLAYSTONE: as above.												
3528	100	CLAYSTONE: brownish black, soft to firm, subblocky, becoming more dispersive, very silty with fine clear quartz grains, carbonaceous, non calcareous.												
3531	100	CLAYSTONE: as above, with occasional fine mica.												
3534	100	CLAYSTONE: brownish black, soft to firm, subblocky, partly soft and dispersive, silty with fine clear quartz grains, carbonaceous fragments, generally non calcareous but with a few olive grey calcareous cuttings.												
3537	100	CLAYSTONE: 60% brownish black as above with 40 % brownish grey, firm, subblocky, silty, and slightly calcareous.												
3540	100	Missed												
3543		CLAYSTONE: brownish black, brownish grey, soft to firm, sub blocky, partially dispersive, silty with fine clear quartz grains, fine carbonaceous material, occasional fine crystalline pyrite, no calcareous.												
3546	100	CLAYSTONE: becoming medium to dark grey, soft to firm, sub blocky, silty with fine clear quartz grains, rare fine black carbonaceous fragments, occasional fine crystalline pyrite, no calcareous.												
3549	100	CLAYSTONE: light to medium grey, soft to firm, subblocky, slightly dispersive, silty with some fine clear quartz grains, fine disseminated and crystalline pyrite, non calcareous. TRACE LIMESTONE: light grey, firm, blocky, microcrystalline, argillaceous, silty, grades to calcareous CLAYSTONE in part.												
3552	100	CLAYSTONE: as above, more pyrite, slightly calcareous.												
3555	100	CLAYSTONE: light grey, soft to firm, slightly dispersive, silty, fine crystalline pyrite, slightly calcareous.												
3558	100	SILTY CLAYSTONE: Medium light grey to medium grey, slightly firm, trace firm												

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION												
WELL: 15/9-22 T2		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES	Rating
(m)		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL	COL	
		where lighter, sub blocky to slightly amorphous, slightly dispersive, rare sticky, very slightly calcareous, possibly from lithic fragments, extremely silty with colourless quartz, trace colourless very fine to fine quartz, commonly carbonaceous with black and dark brown material and silt, common micro mica, trace fine sand sized nodular pyrite, very rare fine glauconite grains.												
3561	90 10	CLAYSTONE: As above, increasingly soft and dispersive, soluble, less silty than above but still abundant, good trace nodular pyrite, rare gravel sized angular pale brown tinged quartz grains. LIMESTONE: Very light grey to light grey, firm, sub blocky to crumbly, very argillaceous, micro to cryptocrystalline, possibly dolomitised in part due to slow HCl reaction?												
3564	100	CLAYSTONE: Medium grey, soft to slightly firm, predominantly amorphous and slightly plastic, increasingly sticky, soluble, rarely dispersive, very silty, very micromicaceous, trace nodular pyrites, very finely carbonaceous, good trace gravel sized pale brown quartz as above, trace fine sand.												
3567	60 10 10 20	CLAYSTONE: As above, medium dark grey to medium light grey, slightly firm to firm, sub blocky to blocky, trace angular in minor part, trace medium bluish grey, marly, possibly caved? SILTSTONE: Dark brownish grey, firm to hard, blocky, very carbonaceous, earthy. LIMESTONE: As 3561m, very argillaceous, grading to marl throughout. SAND: Loose quartz, colourless to occasionally very pale brown tinged, transparent to translucent, very fine to very coarse, trace quartz silt, trace gravel, unsorted, no mode, very angular to sub rounded, moderate to high sphericity, no trace consolidation, NO SHOW, trace fine to medium sized pyrite nodules.												
3571	80	SAND: Loose quartz as above, predominantly colourless, fine to coarse, no mode, predominantly angular, very fractured in part, no trace consolidation, NO SHOW. CLAYSTONE: As above, residual from shakers.												
3573	100 Tr	SAND: Loose quartz as above, colourless, rare very pale grey or brown tinged, transparent to opaque, opacity generally increasing with grain size, very fine to medium, no mode, moderately sorted, sub rounded to predominantly sub angular to angular, moderate sphericity, no trace consolidation, moderate to good inferred porosity, rare trace very fine cubic pyrite, 5% white to very pale grey weathered feldspar, trace degraded to kaolinite, sandstone grading to arkose, NO SHOW. CLAYSTONE: As above, seen as binding sand grains together, probably done in transit, not inferred as matrix.												

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WELL: 15/9-22 T2		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES	Rating
(m)		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL	COL	
3576	50	SILTSTONE: Brownish black to dark brownish grey, firm to hard, blocky to angular, trace sub fissile to platy, very earthy, non calcareous, very carbonaceous with black and brown silt as well as black detrital material, common colourless quartz silt, rare angular quartz sand grains bound up, slight metallic lustre may indicate extremely finely disseminated pyrite?												
	40	SAND: As above, loose colourless quartz, very fine to very coarse, trace gravel, unsorted, no consolidation, trace weathered feldspars, NO SHOW.												
	10	CLAYSTONE: Light grey to medium light grey, slightly firm to firm, as above.												
3579	100	SILTSTONE: As above, rare light brownish grey and more argillaceous, extremely carbonaceous, traces bound up angular quartz, traces very fine sized cubic pyrite, 10% grading to silty claystone, trace loose colourless quartz as above.												
3582	50	SILTSTONE: As above, finer ground up cuttings, very carbonaceous, 10% very argillaceous where pale greyish brown and grading to silty claystone.												
	40	COAL: Black to brownish black, gradational in minor part with siltstone above, firm to hard, blocky to flaggy, earthy in part and crumbly where gradational, common vitreous to anthracitic lustre, very finely laminated structure, NO SHOW, 5.4% gas, C1 10X C2 levels.												
	10	SAND: Loose colourless quartz, very fine to very coarse, no sorting, no consolidation, trace feldspars as above, NO SHOW.												
3585	40	SAND: Colourless quartz as above, rare pale orange brown tinged, very fine to coarse, no consolidation, trace large nodular pyrite grains, NO SHOW.												
	40	COAL: Brownish black to greyish black, as above, very hard in part where anthracitic lustre, earthy and crumbly elsewhere, slightly argillaceous where earthy and trace gradational with carbonaceous siltstone, trace micropyrite coating on laminations.												
	20	SILTSTONE: Dark brownish grey to brownish black, firm, rarely hard, very earthy, as above, up to 50% carbonaceous material by composition, gradational with coal.												
3588	90	ARKOSIC SAND: 70% loose colourless quartz as above, transparent to translucent, fine to coarse, no mode, moderately poorly sorted, rounded to sub angular, angular where fractured or chipped, moderate to predominantly high sphericity, no trace consolidation, 30% loose feldspar, white to very light grey, occasionally mottled or sub laminated black, granular, blocky crystals/cuttings, predominantly soft and crumbly, rare firm and microcrystalline, very weathered in most part, commonly becoming kaolinitic, soluble, no reaction with 50% HCl, NO SHOW.												
	10	COAL/SILTSTONE: Black to brownish black, as above, intergradational.												
3591	90	ARKOSIC SANDSTONE: 70% loose colourless quartz as above, fine to												

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION												
WELL: 15/9-22 T2		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES	Rating
(m)		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL	COL	
		medium, occasional coarse, trace silt, moderately sorted, rounded to sub rounded, rare sub angular, high sphericity, rare amorphous light grey argillaceous material acting as matrix, probably secondary in transit, NO SHOW.												
	10	COAL/SILTSTONE: As above, very fine cuttings, gradational in part, purer coal with anthracitic lustre.												
3594	100	ARKOSIC SANDSTONE: 80% colourless quartz as above, loose, transparent, silt to fine, mode very fine, very rare medium, well sorted, rounded to sub rounded, very high sphericity, no trace consolidation, abundant soluble kaolinitic matrix in sample, possibly from decayed feldspar or possibly as original matrix, 20% white soft decayed feldspar as above, NO SHOW.												
	Tr	COAL/SILTSTONE: As above, gradational, siltstone extremely carbonaceous, probably residual from shakers.												
3597	100	ARKOSIC SANDSTONE: As above, 70% colourless loose quartz, very fine to medium, mode fine, well sorted, trace soluble matrix as above, are trace white mica, 30% white to cream feldspar, microcrystalline, decayed to kaolinite in most part, NO SHOW.												
		COAL/SILTSTONE: As above, hard, blocky, coal flaggy.												
3600	80	SILTSTONE: Brownish black to brownish grey, rare light brownish grey, firm to trace hard, blocky to slightly angular, rare crumbly, extremely earthy, extremely carbonaceous with up to 40% of sample composition, very finely disseminated with pyrite or micro mica thoughout, commonly coaly, 20% grading to silty claystone where more argillaceous, softer, very dispersive.												
	20	ARKOSIC SANDSTONE: 90% loose colourless quartz, very fine to very coarse, poorly sorted, unconsolidated, 10% off white feldspars commonly decaying to kaolinite, rare microcrystalline, NO SHOW.												
3603	90	SAND/SANDSTONE: Predominantly loose colourless quartz, transparent to translucent where coarser, fine to coarse, mode medium, well rounded to sub rounded, very high sphericity, very rare consolidated grains with colourless calcareous cement, very hard, brittle, no visible porosity, good inferred porosity otherwise, up to 5% white weathered feldspars, sub arkosic, NO SHOW.												
	10	SILTSTONE/COAL: As above, very carbonaceous and micropyritic, purer coal jet black, slight anthracitic lustre, flaggy and hard.												
3606	90	ARKOSIC SAND: 80% loose colourless quartz as above, very fine to coarse, no mode, poorly sorted, no consolidation. 20% off white to cream weathered feldspars, trace microcrystalline texture, predominantly weathering to kaolinite, NO SHOW.												
	10	SILTSTONE: Brownish grey to brownish black, slightly firm where argillaceous to hard elsewhere, blocky to crumbly, very earthy, extremely carbonaceous,												

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DEPTH	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES	Rating
(m)		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL	COL	
		trace very finely disseminated micropyrite possibly causing slight metallic lustre.												
3609	90	SAND: As above, sub arkosic with around 5% white microcrystalline feldspar, predominantly loose colourless quartz, fine to coarse, very rare very coarse, mode fine, no trace of consolidation, NO SHOW.												
	10	SILTSTONE: As above, predominantly soft to slightly firm, very earthy, commonly very argillaceous and grading to silty claystone, very carbonaceous, metallic lustre from disseminated micropyrite?												
3612	100	COAL: Black, greyish black, brownish black, firm to trace hard, very blocky to occasionally angular, flaggy throughout, predominantly cryptocrystalline, occasionally earthy where argillaceous and silty, very vitreous to anthracitic lustre in part, fibrous/striated appearance on some surfaces, NO SHOW, trace residual claystone cuttings, caved.												
3615	90	COAL: Greyish black, very hard to hard, blocky to angular, common visible concoidal fracture, very anthracitic lustre, as above.												
	10	CLAYSTONE: Light brownish grey, very soft, amorphous, non calcareous, abundant extremely fine disseminated micropyrite, commonly silty, probably from siltstone.												
3618	80	COAL: Black to greyish black, firm to very hard, blocky and flaggy as above, very anthracitic, graphitic lustre, occasionally slightly crumbly where argillaceous.												
	20	SILTY CLAYSTONE: Pale yellowish brown to dark yellowish brown, brownish grey, soft and amorphous to firm and blocky, silty where firmer, abundantly micromicaceous and micropyritic throughout, commonly very carbonaceous, trace dolomitic in minor part, 50% grading to siltstone as 3606m.												
	Tr	SAND: Loose colourless quartz as above, very fine to coarse, unconsolidated.												
3621	60	SAND: Predominantly loose colourless quartz, colourless to very slight pale brown tinge in part, transparent to translucent, very fine to granular, unsorted, no mode, sub rounded to angular, moderate to low sphericity, 5% off white to very pale grey feldspars, commonly mottled black, very soft and amorphous to firm and crumbly, microcrystalline where firm, decaying to kaolinite where soft, sub arkosic, moderate to poor inferred porosity, NO SHOW:												
	30	CLAYSTONE: As silty claystone above, trace pale brown, commonly amorphous and dispersive otherwise firmer where silty.												
	10	COAL: Black to greyish black, very hard in part, bituminous to anthracitic, graphitic lustre.												
3624	50	COAL: Black to greyish black, very hard, brittle, bituminous to anthracitic, occasionally argillaceous and crumbly, brownish grey, grading to extremely carbonaceous claystone.												

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DEPTH	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES	Rating
(m)		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL	COL	
	50	CLAYSTONE: Pale yellowish brown, pale brown, greyish orange, predominantly soft, soluble and amorphous, trace slightly to very firm, non calcareous, very silty, very carbonaceous, possibly slightly kaolinitic, trace loose quartz bound up in matrix.												
3627	70	CLAYSTONE: As above, predominantly soft and amorphous, silty and sandy, non calcareous, slightly kaolinitic, 20% grading to siltstone, very carbonaceous and earthy.												
	30	COAL: Black, hard, blocky to angular, flaggy, very anthracitic appearance and lustre.												
3630	40	COAL: As above, very hard, anthracitic.												
	30	SAND: Loose colourless quartz, transparent, very fine to medium, common silt, mode fine, moderately well sorted, rounded to sub angular, high sphericity, no consolidation though frequently seen bound up in amorphous claystone matrix, trace white feldspar weathering to kaolinite, NO SHOW.												
	30	CLAYSTONE: Pale yellowish brown as above, very soft, amorphous, dispersive, extremely silty, very sandy, 20% grading to siltstone, dark yellowish brown to brownish grey, firm, sub blocky, very carbonaceous, abundantly micromicaceous.												
3633	20	COAL: black, hard, angular, concoidal fractures, waxy lustre, anthrasitic.												
	20	SANDSTONE: cream to pale brown, moderately hard, blocky, quartz, very fine to coarse, predominately subangular, poorly sorted, calcareous cement, occasional fine white mica, poor visible porosity, common as loose grains, NO SHOW:												
	60	CLAYSTONE: pale yellowish brown, brown, soft to firm, subblocky, locally platy, silty, non calcareous. Trace kaolinite												
3636	50	COAL: black, hard, platy, bedded with claystone and siltstone.												
	20	SANDSTONE: as above.												
	20	CLAYSTONE: pale yellowish brown, brown, soft to firm, sticky, variably silty, non calcareous. Trace kaolinite												
3639	10	COAL: as above.												
	70	SAND: predominately loose unconsolidated quartz grains, colourless transparent to translucent white, very fine to coarse, subangular to subrounded, high sphericity, poorly sorted, common silty, occasionally with calcareous cement, poor visible porosity, NO SHOW.												
	20	CLAYSTONE: yellowish brown, brown, soft to firm, sticky, variably silty, non calcareous, occasional fine disseminated pyrite.												

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DEPTH	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES	Rating
(m)		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL	COL	
3642	10 10 80	COAL: as above. SAND: as above. CLAYSTONE: yellowish brown, brown, soft to firm, subblocky, generally silty and locally grading to argillaceous SILTSTONE: common fine white mica, occasional sand grain, no calcareous.												
3645	30 20 50	COAL: black, hard, concoidal fracture, vitreous lustre, anthracitic, locally platy and lamenated with silty partings. SANDSTONE: cream to pale brown, moderately hard, blocky, quartz, very fine to medium, predominately subangular, poorly sorted, calcareous cement, occasional fine white mica, poor visible porosity, common as loose grains, NO SHOW. CLAYSTONE: as above.												
3648	10 50 30 10	COAL: as above. SANDSTONE: cream to pale brown, firm, friable, quartz, very fine to medium, predominately subangular, poorly sorted, occasional fine white mica, weak calcareous cement, common as loose grains, kaolinite in sample could be forming matrix, NO SHOW. CLAYSTONE: as above. LIMESTONE?: soft white paste with crushed sand grains.												
3651	10 20 70	COAL: black, hard, concoidal fracture, vitreous lustre, anthracitic, locally platy and lamenated with silty partings. SANDSTONE: pale brown, greyish brown, firm to moderately hard, crumbly to friable, quartz, very fine to medium, predominately fine, angular to sub angular, moderately sorted, common calcareous cement, common silty argillaceous matrix, fine mica, grades to argillaceous SILTSTONE in part, poor visible porosity, NO SHOW. CLAYSTONE: yellowish brown, pale brown, soft to firm, sticky, variably silty, non calcareous, fine white mica, occasional fine disseminated pyrite.												
3657	10 90	SANDSTONE: as above CLAYSTONE: brownish black, firm, blocky to platy, variably silty, occasional fine black carbonaceous fragments, no calcareous, grades to argillaceous SILTSTONE in part.												
3660	100	CLAYSTONE: as above, with occasional fine disseminated pyrite.												
3663	100	CLAYSTONE: as above.												
3666	90 10	CLAYSTONE: as above. SANDSTONE: dark yellowish brown, firm, friable, blocky, clear quartz, very fine to fine, subangular, high sphericity, moderately sorted, calcareous cement, poor to no visible porosity, NO SHOW.												

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DEPTH	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES	Rating
(m)		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL	COL	
3672	100	CLAYSTONE: brownish black, firm, blocky to platy, variably silty, occasional fine black carbonaceous fragments, occasional fine white mica, no calcareous, grades to argillaceous SILTSTONE in part.												
3675	90 10	CLAYSTONE: as above. SANDSTONE: dark yellowish brown, firm, friable blocky, clear quartz, white feldspars, some altered to kaolinite, fine to very fine, subangular, moderately sorted, fine mica, silty matrix, calcareous cement, NO SHOW:												
3678	100	CLAYSTONE: as above, more pyrite.												
3681	100	CLAYSTONE: brownish black, firm, blocky to platy, variably silty, occasional fine black carbonaceous fragments, occasional fine disseminated pyrite, no calcareous grades to argillaceous SILTSTONE in part.												
3684	90 10	CLAYSTONE: as above. SANDSTONE: dark yellowish brown, firm, friable, blocky, clear quartz, very fine to fine, subangular, high sphericity, moderately sorted, calcareous cement, poor to no visible porosity, NO SHOW.												
3687	100	CLAYSTONE: as above, less silty.												
3690	100 TR	CLAYSTONE: as above. SANDSTONE: light yellowish brown, crumbly, blocky, clear quartz, very fine to fine, subangular, moderately sorted, trace silty matrix, weak silicic cement, poor visible porosity, NO SHOW. Weak silicic cement												
3693	100 TR	CLAYSTONE: brownish black, firm, blocky to platy, variably silty, occasional fine black carbonaceous fragments, occasional fine disseminated pyrite, no calcareous. SANDSTONE: as above.												
3696	100	CLAYSTONE: brownish black, firm, blocky to platy, variably silty, occasional fine black carbonaceous fragments, occasional fine disseminated pyrite, no calcareous.												
3699	100	CLAYSTONE: as above.												
3702	90 10	CLAYSTONE: as above. SANDSTONE: light yellowish brown, crumbly, blocky, clear quartz, very fine to fine, subangular, moderately sorted, trace silty argillaceous matrix, weak silicic cement, fine white mica, poor visible porosity, NO SHOW.												
3705	100	CLAYSTONE: brownish black, firm, blocky to platy, variably silty, occasional fine black carbonaceous fragments, occasional fine mica, fine disseminated pyrite, no calcareous.												

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DEPTH	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES	Rating
(m)		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL	COL	
3708	60 30 10	CLAYSTONE: as above. SANDSTONE: dark yellowish brown, crumbly, blocky, clear quartz, very fine to fine, subangular, high sphericity, moderately sorted, locally abundant calcareous cement/matrix, poor to no visible porosity, occasionally silicic cement and fair visible porosity, NO SHOW. Often represented by rock flour. COAL: black, hard, concoidal fracture, anthracitic, waxy lustre.												
3711	80 10 10	CLAYSTONE: as above. SANDSTONE: as above COAL: as above												
3714	100 Tr Tr	CLAYSTONE: as above. SANDSTONE: as above. COAL: as above.												
3720	60 40 10	CLAYSTONE: as above. COAL: as above. SANDSTONE: as above.												
3726	60 40 10	CLAYSTONE: brownish black, firm, blocky to platy, variably silty, occasional fine black carbonaceous fragments, occasional fine mica, fine disseminated pyrite, no calcareous. COAL: COAL: black, hard, concoidal fracture, anthracitic, waxy lustre.. SANDSTONE: dark yellowish brown, crumbly, blocky, clear quartz, very fine to fine, subangular, high sphericity, moderately sorted, locally abundant calcareous cement/matrix, poor to no visible porosity, occasionally silicic cement and fair visible porosity, NO SHOW.												
3729	60 40 Tr	SANDSTONE: as above. CLAYSTONE: as above. COAL: as above.												
3732	70 30 Tr	CLAYSTONE: as above. SANDSTONE: as above. COAL: as above.												
3735	40 30 30	COAL: as above. CLAYSTONE: as above. SANDSTONE: as above.												
3741	50 40 10	COAL: as above. CLAYSTONE: as above. SANDSTONE: as above.												
3747	50 40	CLAYSTONE: as above. SANDSTONE: clear, translucent, moderate yellowish brown, crumbly, blocky, clear quartz, fine to medium grained, subangular to subrounded, moderately sorted, commonly as loose quartz, with locally abundant calcareous												

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION												
WELL: 15/9-22 T2		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES	Rating
(m)		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL	COL	
		cement/matrix, poor to no visible porosity, NO SHOW. Often represented by rock flour.												
	10	COAL: black, hard, concoidal fracture, anthracitic, waxy lustre.												
3753	90	SANDSTONE: clear, translucent, fine to medium grained, subangular to subrounded, moderately sorted, commonly as loose quartz, locally crumbly, blocky, with calcareous cement/matrix, poor to no visible porosity. NO SHOW. Often represented by rock flour.												
	10	CLAYSTONE: as above.												
	Tr	COAL: black, hard, concoidal fracture, anthracitic, waxy lustre.												
3756	100	SANDSTONE: as above.												
	Tr	CLAYSTONE: as above.												
	Tr	COAL: as above.												
3762	90	SANDSTONE: as above.												
	10	CLAYSTONE: as above.												
	Tr	COAL: as above.												
3768	80	SANDSTONE: as above.												
	10	CLAYSTONE: as above.												
	10	COAL: as above.												
3771	95	SANDSTONE: clear, translucent, fine to medium grained, subangular to subrounded, moderately sorted, commonly as loose quartz, locally crumbly, blocky, calcareous cement/matrix, poor to no visible porosity, occasionally silicic cement and fair visible porosity, NO SHOW. Often represented by rock flour.												
	5	COAL: black, hard, concoidal fracture, anthracitic, waxy lustre.												
3774	100	SANDSTONE: as above.												
	Tr	COAL: as above.												
3780	100	SANDSTONE: as above.												
	Tr	COAL: as above.												
	Tr	CLAYSTONE: as above.												
3786	100	SANDSTONE: as above.												
	Tr	COAL: as above.												
	Tr	CLAYSTONE: as above.												
3796	90	SANDSTONE: as above.												
	5	COAL: as above.												
	5	CLAYSTONE: as above.												
3806	95	SANDSTONE: as above.												
	5	COAL: as above.												
	5	CLAYSTONE: as above.												

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION											
WELL: 15/9-22 T2		AREA: Wishbone	Spud Date: 1st January 2006								Sheet No.			
DEPTH (m)	%	LITHOLOGY DESCRIPTION and COMMENTS Colour, hardness, texture, mineralogy, modifiers, cement	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES	Rating
				DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL	COL	
3816	100 Tr Tr	SANDSTONE: as above, pyritised in parts. COAL: as above. CLAYSTONE: as above.												
3826	100 Tr	SANDSTONE: clear, translucent, fine to medium grained, subangular to subrounded, moderately sorted, commonly as loose quartz, locally crumbly, blocky, calcareous cement/matrix, poor to no visible porosity. NO SHOW. Often represented by rock flour. CLAYSTONE: as above												
3836	100 Tr	SANDSTONE: as above. CLAYSTONE: as above.												
3846	100 Tr	SANDSTONE: clear, translucent, very rarely orange / red, fine to medium grained, subangular to subrounded, moderately sorted, commonly as loose quartz, locally crumbly, blocky, calcareous cement/matrix, poor to no visible porosity. NO SHOW. Often represented by rock flour. CLAYSTONE: brownish black, dusky yellowish brown, dusky brown, soft, firm in parts, amorphous in parts, sub-blocky in parts, variably silty, rare black carbonaceous fragments, occasional fine mica, non-calcareous.												
3850	100 Tr	SANDSTONE: clear, translucent, rarely orange / red, fine to medium grained, subangular to subrounded, moderately sorted, commonly as loose quartz, locally crumbly, blocky, calcareous cement/matrix, poor to no visible porosity. NO SHOW. Often represented by rock flour. CLAYSTONE: brownish black, dusky yellowish brown, dusky brown, soft, firm in parts, amorphous in parts, sub-blocky in parts, variably silty, rare black carbonaceous fragments, occasional fine mica, non-calcareous.												
3853	100 Tr	SANDSTONE: clear, translucent, orange / red, predominantly fine, medium in parts, subangular to subrounded, well sorted, commonly as loose quartz, locally crumbly, blocky, calcareous cement/matrix, poor to no visible porosity. NO SHOW. Often represented by rock flour. CLAYSTONE: brownish black, dusky yellowish brown, dusky brown, soft, firm in parts, amorphous in parts, sub-blocky in parts, variably silty, rare black carbonaceous fragments, occasional fine mica, non-calcareous.												
3857	100 Tr	SANDSTONE: as above, 10% orange red coloured. CLAYSTONE: as above, trace dusky brown..												
3863	100 Tr	SANDSTONE: as above, 10% orange red coloured. CLAYSTONE: as above, trace dusky brown..												

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION												
WELL: 15/9-22 T2		AREA: Wishbone	Spud Date: 1st January 2006									Sheet No.			
DEPTH	%	LITHOLOGY DESCRIPTION and COMMENTS	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES	Rating
(m)		Colour, hardness, texture, mineralogy, modifiers, cement		DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL	COL	
3865	60 40	SANDSTONE: clear, translucent, orange / red, predominantly fine, medium in parts, subangular to subrounded, well sorted, commonly as loose quartz, locally crumbly, blocky, calcareous cement/matrix, poor to no visible porosity. NO SHOW. Grading to SILTSTONE. Often represented by rock flour. CLAYSTONE: greyish red, moderate brown, dusky yellowish brown, dusky brown, soft, firm in parts, amorphous in parts, sub-blocky in parts, variably silty, occasional fine mica, non-calcareous. NOTE: Claystone possibly washing out & under represented in sample.												
3868	100 Tr	SANDSTONE: as above, (20% orange red coloured). Grading to ARGILLACEOUS SANDSTONE. CLAYSTONE: as above. NOTE: Claystone possibly washing out & under represented in sample.												
3871	70 30	SANDSTONE: as above, (20% orange red coloured). Grading to ARGILLACEOUS SANDSTONE. CLAYSTONE: as above. NOTE: Claystone possibly washing out & under represented in sample.												
3874	70 30	SANDSTONE: as above, (20% orange red coloured). Grading to ARGILLACEOUS SILTSTONE. CLAYSTONE: as above. NOTE: Claystone possibly washing out & under represented in sample.												
3877	100 Tr	SANDSTONE: as above. Grading to ARGILLACEOUS SANDSTONE. CLAYSTONE: as above.												
3880	100 Tr	SANDSTONE: as above. CLAYSTONE: as above.												
3885	100 Tr	SANDSTONE: as above. CLAYSTONE: as above.												
3890	100 Tr	SANDSTONE: clear, translucent, rarely orange / red, predominantly fine, medium in parts, subangular to subrounded, subspherical in parts, well sorted, commonly as loose quartz, locally crumbly, blocky, calcareous cement/matrix, poor to no visible porosity. NO SHOW. Grading to ARGILLACEOUS SANDSTONE. Often represented by rock flour. CLAYSTONE: as above.												
3895	80 20	SANDSTONE: clear, translucent, orange / red, very fine to medium, argillaceous in parts, subangular to subrounded, subspherical in parts, poorly to moderately sorted, commonly as loose quartz, locally crumbly, blocky, calcareous cement/matrix, poor to no visible porosity. NO SHOW. Grading to ARGILLACEOUS SANDSTONE. Often represented by rock flour. CLAYSTONE: brownish black, greyish brown, rarely greyish red, moderate brown, firm, sub-blocky to blocky, silty in parts, non-calcareous.												

ESSO NORGE A/S			WELLSITE SAMPLE DESCRIPTION											
WELL: 15/9-22 T2		AREA: Wishbone	Spud Date: 1st January 2006								Sheet No.			
DEPTH (m)	%	LITHOLOGY DESCRIPTION and COMMENTS Colour, hardness, texture, mineralogy, modifiers, cement	POR	STAIN		FLUOR			CUT		CUT FLUOR		RES	Rating
				DIST	COL	DIST	INTEN	COL	INTEN	COL	INTEN	COL	COL	
	Tr	COAL: black, hard, concoidal fracture, anthracitic, waxy lustre.												
3900	60 40	SANDSTONE: clear, translucent, orange / red, predominantly fine, medium in parts, subangular to subrounded, subspherical in parts, well sorted, commonly as loose quartz, locally crumbly, blocky, calcareous cement/matrix, poor to no visible porosity. NO SHOW. Grading to ARGILLACEOUS SANDSTONE. Often represented by rock flour. CLAYSTONE: greyish red, moderate brown, dusky brown, soft, firm in parts, amorphous in parts, sub-blocky to blocky in parts, rarely silty, non-calcareous.												
3905	60 40	SANDSTONE: as above. CLAYSTONE: as above.												
3910	70 30 Tr	SANDSTONE: clear, translucent, orange / red, very fine to medium, argillaceous in parts, subangular to subrounded, subspherical in parts, poorly to moderately sorted, commonly as loose quartz, locally crumbly, blocky, calcareous cement/matrix, poor to no visible porosity. NO SHOW. Grading to SILTSTONE. Often represented by rock flour. CLAYSTONE: brownish black, greyish brown, greyish red, moderate brown, firm, sub-blocky to blocky, silty in parts, non-calcareous. COAL: black, hard, concoidal fracture, anthracitic, waxy lustre.												
3915	50 50 Tr	SANDSTONE: clear, translucent, orange / red, very fine to medium, argillaceous in parts, subangular to subrounded, subspherical in parts, poorly to moderately sorted, commonly as loose quartz, locally crumbly, blocky, calcareous cement/matrix, poor to no visible porosity. NO SHOW. Grading to SILTSTONE. Often represented by rock flour. CLAYSTONE: brownish black, greyish brown, greyish red, moderate brown, firm, sub-blocky to blocky, silty in parts, non-calcareous, Grading to SILTY CLAYSTONE. COAL: black, hard, concoidal fracture, anthracitic, waxy lustre.												
		TD 15/9-22T2 3915m on 25/02/06												

Appendix III

Deviation Survey 15/9-22

Survey Approval Report

Wellpath: **Definitive 15/9-22 (TD@1531m Md)**

BAKER HUGHES INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	**Esso Norge AS**	Slot	**Exploration NE**
Area	**North sea, Norwegian sector.**	Well	**15/9-22**
Field	**EXPLORATION 15/9 (Wishbone)**	Wellbore	**15/9-22**
Facility	**Ocean Vanguard**		

APPROVAL			
INTEQ Representatives			
Prepared by	PHILIP DE VERE	Reviewed by	FRITZ MULEHAMN
Signature	Philip De Vere	Signature	F. Mulehamn
Position	DATABASE ADMINISTRATOR.	Position	Coordinator
Date	8-MARCH-2006	Date	08 MARCH 2006
Esso Norge AS Representative			
Approved by	CARL W. SAUER	Position	DRILLING ENGINEER
Signature	Carl W. Sauer	Date	08 MARCH 2006

Actual Wellpath Report

Positional Uncertainty

Wellpath: **Definitive 15/9-22 (TD@1531m Md)**

REFERENCE WELLPATH IDENTIFICATION			
Operator	**Esso Norge AS**	Slot	**Exploration NE**
Area	**North sea, Norwegian sector.**	Well	**15/9-22**
Field	**EXPLORATION 15/9 (Wishbone)**	Wellbore	**15/9-22**
Facility	**Ocean Vanguard**		

REPORT SETUP INFORMATION			
Projection System	**ED50 / UTM Zone 31 North**	Software System	**WellArchitect™ 1.1**
North Reference	**Grid**	User	**Devephi**
Scale	**0.999673**	Report Generated	**03/09/06** at **10:08:33**
Wellbore last revised	**03/03/06**	Database/Source file	**WA_ESSO_Server/15_9-22.xml**

WELLPATH LOCATION						
	Local coordinates		**Grid coordinates**		**Geographic coordinates**	
	North [meters]	**East [meters]**	**Easting [meters]**	**Northing [meters]**	**Latitude [°]**	**Longitude [°]**
Slot Location	**0.00**	**0.00**	422843.03	6468037.12	58 20 42.414N	1 40 55.124E
Facility Reference Pt			422843.03	6468037.12	**58 20 42.414N**	**1 40 55.124E**
Field Reference Pt			**422843.00**	**6468037.00**	58 20 42.410N	1 40 55.122E

WELLPATH DATUM			
Calculation method	**Minimum curvature**	Ocean Vanguard (RT) to Facility Vertical Datum	**22.00 meters**
Horizontal Reference Pt	**Facility Center**	Ocean Vanguard (RT) to Mean Sea Level	**22.00 meters**
Vertical Reference Pt	**Ocean Vanguard (RT)**	Facility Vertical Datum to Mud Line	**106.00 meters**
MD Reference Pt	**Ocean Vanguard (RT)**	Section Origin	**N 0.00, E 0.00 m**
Field Vertical Reference	**Mean Sea Level**	Section Azimuth	**73.34°**

POSITIONAL UNCERTAINTY CALCULATION SETTINGS					
Ellipse Confidence Limit	**2.00 Std Dev**	Ellipse Start Depth	**128.00 meters**	Surface Position Uncertainty	**not included**
Declination	**2.62° West of TN**	Dip Angle	**71.56°**	Magnetic Field Strength	**50275 nT**

Actual Wellpath Report

Positional Uncertainty

Wellpath: **Definitive 15/9-22 (TD@1531m Md)**

REFERENCE WELLPATH IDENTIFICATION			
Operator	**Esso Norge AS**	Slot	**Exploration NE**
Area	**North sea, Norwegian sector.**	Well	**15/9-22**
Field	**EXPLORATION 15/9 (Wishbone)**	Wellbore	**15/9-22**
Facility	**Ocean Vanguard**		

WELLPATH DATA (37 stations) - with Positional Uncertainty values † = interpolated/extrapolated station

MD [meters]	Inclination [°]	Azimuth [°]	TVD [meters]	Vert Sect [meters]	North [meters]	East [meters]	DLS [°/30m]	Major Semi-Axis [meters]	Minor Semi-Axis [meters]	Vertical Semi-Axis [meters]	Minor Semi-Axis Azim [°]
0.00†	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000
128.00	0.000	0.000	128.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000
508.00	0.000	259.150	508.00	0.00	0.00	0.00	0.00	6.67	0.66	0.84	270.000
510.80	0.570	259.150	510.80	-0.01	0.00	-0.01	6.11	6.71	0.67	0.84	270.000
541.80	0.480	308.880	541.80	-0.24	0.05	-0.27	0.43	6.71	0.67	0.86	270.000
569.00	0.510	240.210	569.00	-0.42	0.06	-0.46	0.62	6.72	0.68	0.88	270.000
598.00	0.070	247.220	598.00	-0.57	-0.01	-0.59	0.46	6.72	0.69	0.90	270.000
626.50	0.190	120.470	626.50	-0.55	-0.04	-0.56	0.25	6.72	0.70	0.93	90.000
655.10	0.130	188.840	655.10	-0.53	-0.10	-0.53	0.20	6.72	0.72	0.95	270.000
684.40	0.190	208.160	684.40	-0.58	-0.17	-0.56	0.08	6.72	0.74	0.98	270.000
712.60	0.120	221.830	712.60	-0.64	-0.24	-0.60	0.08	6.73	0.77	1.00	269.999
742.80	0.020	251.940	742.80	-0.67	-0.26	-0.62	0.10	6.73	0.80	1.03	269.999
771.60	0.160	216.110	771.60	-0.71	-0.29	-0.65	0.15	6.73	0.84	1.06	269.999
831.70	0.700	93.710	831.70	-0.43	-0.39	-0.34	0.40	6.74	0.90	1.12	89.999
859.20	0.160	58.500	859.19	-0.24	-0.38	-0.13	0.63	6.75	0.93	1.15	89.999
916.50	0.570	324.990	916.49	-0.25	-0.10	-0.23	0.31	6.75	0.99	1.21	269.999
945.40	0.390	354.490	945.39	-0.28	0.11	-0.32	0.31	6.76	1.02	1.24	269.999
974.50	0.300	182.680	974.49	-0.28	0.14	-0.34	0.71	6.76	1.06	1.27	269.999
1003.30	0.210	326.890	1003.29	-0.32	0.11	-0.37	0.51	6.77	1.10	1.31	269.998
1031.50	0.170	97.660	1031.49	-0.30	0.14	-0.35	0.37	6.78	1.14	1.34	89.999
1091.10	0.230	48.380	1091.09	-0.11	0.21	-0.18	0.09	6.79	1.22	1.41	89.999
1118.60	0.130	83.660	1118.59	-0.03	0.25	-0.10	0.16	6.80	1.26	1.45	90.000
1147.80	0.090	79.730	1147.79	0.03	0.26	-0.05	0.04	6.81	1.30	1.48	90.000
1177.50	0.140	106.410	1177.49	0.08	0.25	0.01	0.07	6.82	1.35	1.52	90.000
1206.90	0.330	112.240	1206.89	0.18	0.21	0.12	0.20	6.82	1.39	1.56	90.001

Actual Wellpath Report

Positional Uncertainty

Wellpath: **Definitive 15/9-22 (TD@1531m Md)**

REFERENCE WELLPATH IDENTIFICATION			
Operator	**Esso Norge AS**	Slot	**Exploration NE**
Area	**North sea, Norwegian sector.**	Well	**15/9-22**
Field	**EXPLORATION 15/9 (Wishbone)**	Wellbore	**15/9-22**
Facility	**Ocean Vanguard**		

WELLPATH DATA (37 stations) - with Positional Uncertainty values

MD [meters]	Inclination [°]	Azimuth [°]	TVD [meters]	Vert Sect [meters]	North [meters]	East [meters]	DLS [°/30m]	Major Semi-Axis [meters]	Minor Semi-Axis [meters]	Vertical Semi-Axis [meters]	Minor Semi-Axis Azim [°]
1235.80	0.300	146.100	1235.79	0.26	0.12	0.24	0.19	6.83	1.44	1.60	90.001
1265.70	0.120	183.380	1265.69	0.28	0.02	0.28	0.22	6.84	1.49	1.64	270.002
1293.40	0.200	252.840	1293.39	0.22	-0.02	0.23	0.21	6.85	1.53	1.67	270.001
1322.10	0.330	276.820	1322.09	0.09	-0.03	0.10	0.18	6.86	1.57	1.71	270.001
1351.30	0.240	241.060	1351.29	-0.05	-0.05	-0.03	0.20	6.87	1.62	1.75	270.000
1380.30	0.150	317.700	1380.29	-0.12	-0.05	-0.11	0.26	6.89	1.67	1.80	270.000
1409.30	0.120	66.360	1409.29	-0.11	-0.01	-0.11	0.23	6.90	1.71	1.84	90.000
1438.20	0.800	78.110	1438.19	0.12	0.04	0.12	0.71	6.91	1.76	1.88	90.001
1467.80	0.760	81.210	1467.79	0.52	0.12	0.51	0.06	6.92	1.81	1.92	90.001
1495.30	0.470	64.920	1495.28	0.82	0.19	0.79	0.37	6.93	1.85	1.96	90.002
1517.30	0.300	59.960	1517.28	0.96	0.26	0.93	0.24	6.94	1.89	2.00	90.002
1531.00	0.300	59.960	1530.98	1.03	0.30	0.99	0.00	6.95	1.90	2.02	90.003

HOLE & CASING SECTIONS **Ref Wellbore: 15/9-22** **Ref Wellpath: Definitive 15/9-22 (TD@1531m Md)**

String/Diameter	Start MD [meters]	End MD [meters]	Interval [meters]	Start TVD [meters]	End TVD [meters]	Start N/S [meters]	Start E/W [meters]	End N/S [meters]	End E/W [meters]
36in Open Hole	128.00	205.00	77.00	128.00	205.00	0.00	0.00	0.00	0.00
30in Conductor	128.00	201.00	73.00	128.00	201.00	0.00	0.00	0.00	0.00
26in Open Hole	205.00	508.00	303.00	205.00	508.00	0.00	0.00	0.00	0.00
18.625in Casing	128.00	504.00	376.00	128.00	504.00	0.00	0.00	0.00	0.00
17.5in Open Hole	508.00	1531.00	1023.00	508.00	1530.98	0.00	0.00	0.30	0.99

WELLPATH COMPOSITION **Ref Wellbore: 15/9-22** **Ref Wellpath: Definitive 15/9-22 (TD@1531m Md)**

Start MD [meters]	End MD [meters]	Tool Type	Positional Uncertainty Model	Log Name/Comment	Wellbore
128.00	508.00	Unknown Tool	Unknown Tool (Standard)	15/9-22 No tool in hole: Blind drilling (128-508m)	15/9-22
508.00	1517.30	NaviTrak	NaviTrak (Magcorr1, DLS)	15/9-22 BHI MWD 17 1/2" (508-1517.30m)	15/9-22
1517.30	1531.00	NaviTrak	NaviTrak (DLS)	15/9-22 Extrapolation (TD@1531m)	15/9-22

Appendix IV

Deviation Survey 15/9-22T2

Survey Approval Report

Wellpath: **Definitive 15/9-22 T2 (TD@3915m Md)**

BAKER HUGHES INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	**Esso Norge AS**	Slot	**Exploration NE**
Area	**North sea, Norwegian sector.**	Well	**15/9-22 T2**
Field	**EXPLORATION 15/9 (Wishbone)**	Wellbore	**15/9-22 T2**
Facility	**Ocean Vanguard**	Sidetrack from	**15/9-22 at 510.80 MD**

WELLPATH COMPOSITION Ref Wellbore: 15/9-22 T2 Ref Wellpath: Definitive 15/9-22 T2 (TD@3915m Md)

Start MD [meters]	End MD [meters]	Tool Type	Positional Uncertainty Model	Log Name/Comment	Wellbore
128.00	508.00	Unknown Tool	Unknown Tool (Standard)	15/9-22 No tool in hole: Blind drilling (128-508m)	15/9-22
508.00	510.80	NaviTrak	NaviTrak (Magcorr1, DLS)	15/9-22 BHI MWD 17 1/2" (508-1517.30m)	15/9-22
510.80	1497.00	NaviTrak	NaviTrak (Magcorr1, DLS)	15/9-22 T2 BHI MWD 17 1/2" (510.80-1497m)	15/9-22 T2
1497.00	2923.80	NaviTrak	NaviTrak (Magcorr1, DLS)	15/9-22 T2 BHI MWD 12 1/4" (1497-2923.80m)	15/9-22 T2
2923.80	3909.10	NaviTrak	NaviTrak (Magcorr1, DLS)	15/9-22 T2 BHI MWD 8 1/2" (2923.80-3909.10m)	15/9-22 T2
3909.10	3915.00	NaviTrak	NaviTrak (DLS)	15/9-22 T2 Extrapolation (TD@3915m)	15/9-22 T2

APPROVAL

INTEQ Representatives

Prepared by	PHILIP DE VERE	Reviewed by	FRITZ MULEHAMN
Signature	Philip De Vere	Signature	F. Mulehamn
Position	DATABASE ADMINISTRATOR.	Position	Coordinator
Date	8-MARCH-2006	Date	8 MARCH 2006

Esso Norge AS Representative

Approved by	CARL W. SAUER	Position	DRILLING ENGINEER
Signature	Carl W. Sauer	Date	8 MARCH 2006

Actual Wellpath Report

Positional Uncertainty

Wellpath: **Definitive 15/9-22 T2 (TD@3915m Md)**

REFERENCE WELLPATH IDENTIFICATION			
Operator	**Esso Norge AS**	Slot	**Exploration NE**
Area	**North sea, Norwegian sector.**	Well	**15/9-22 T2**
Field	**EXPLORATION 15/9 (Wishbone)**	Wellbore	**15/9-22 T2**
Facility	**Ocean Vanguard**	Sidetrack from	**15/9-22** at **510.80 MD**

REPORT SETUP INFORMATION			
Projection System	**ED50 / UTM Zone 31 North**	Software System	**WellArchitect™ 1.1**
North Reference	**Grid**	User	**Devephi**
Scale	**0.999673**	Report Generated	**03/09/06** at **10:10:02**
Wellbore last revised	**03/03/06**	Database/Source file	**WA_ESSO_Server/15_9-22_T2.xml**

WELLPATH LOCATION						
	Local coordinates		**Grid coordinates**		**Geographic coordinates**	
	North [meters]	**East [meters]**	**Easting [meters]**	**Northing [meters]**	**Latitude [°]**	**Longitude [°]**
Slot Location	**0.00**	**0.00**	422843.03	6468037.12	58 20 42.414N	1 40 55.124E
Facility Reference Pt			422843.03	6468037.12	**58 20 42.414N**	**1 40 55.124E**
Field Reference Pt			**422843.00**	**6468037.00**	58 20 42.410N	1 40 55.122E

WELLPATH DATUM			
Calculation method	**Minimum curvature**	Ocean Vanguard (RT) to Facility Vertical Datum	**22.00 meters**
Horizontal Reference Pt	**Facility Center**	Ocean Vanguard (RT) to Mean Sea Level	**22.00 meters**
Vertical Reference Pt	**Ocean Vanguard (RT)**	Facility Vertical Datum to Mud Line	**106.00 meters**
MD Reference Pt	**Ocean Vanguard (RT)**	Section Origin	**N 0.00, E 0.00 m**
Field Vertical Reference	**Mean Sea Level**	Section Azimuth	**161.76°**

POSITIONAL UNCERTAINTY CALCULATION SETTINGS					
Ellipse Confidence Limit	**2.00 Std Dev**	Ellipse Start Depth	**128.00 meters**	Surface Position Uncertainty	**not included**
Declination	**2.62° West of TN**	Dip Angle	**71.56°**	Magnetic Field Strength	**50275 nT**

Actual Wellpath Report

Positional Uncertainty

Wellpath: **Definitive 15/9-22 T2 (TD@3915m Md)**

REFERENCE WELLPATH IDENTIFICATION			
Operator	**Esso Norge AS**	Slot	**Exploration NE**
Area	**North sea, Norwegian sector.**	Well	**15/9-22 T2**
Field	**EXPLORATION 15/9 (Wishbone)**	Wellbore	**15/9-22 T2**
Facility	**Ocean Vanguard**	Sidetrack from	**15/9-22** at **510.80 MD**

WELLPATH DATA (111 stations) - with Positional Uncertainty values † = interpolated/extrapolated station

MD [meters]	Inclination [°]	Azimuth [°]	TVD [meters]	Vert Sect [meters]	North [meters]	East [meters]	DLS [°/30m]	Major Semi-Axis [meters]	Minor Semi-Axis [meters]	Vertical Semi-Axis [meters]	Minor Semi-Axis Azim [°]
0.00†	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000
128.00	0.000	0.000	128.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000
508.00	0.000	259.150	508.00	0.00	0.00	0.00	0.00	6.67	0.66	0.84	270.000
510.80	0.570	259.150	510.80	0.00	0.00	-0.01	6.11	6.71	0.67	0.84	270.000
537.70	3.130	153.840	537.69	0.71	-0.69	0.18	3.71	6.71	0.67	0.86	90.000
568.10	3.660	157.150	568.03	2.50	-2.33	0.92	0.56	6.72	0.68	0.88	90.000
626.20	3.790	159.080	626.01	6.26	-5.83	2.33	0.09	6.72	0.72	0.93	90.008
654.90	3.890	158.730	654.65	8.18	-7.62	3.02	0.11	6.72	0.75	0.95	90.015
710.90	3.780	157.290	710.52	11.92	-11.09	4.42	0.08	6.73	0.83	1.00	90.033
741.00	3.700	153.490	740.56	13.87	-12.88	5.24	0.26	6.73	0.87	1.03	90.046
769.70	3.110	157.270	769.21	15.56	-14.43	5.95	0.66	6.74	0.92	1.06	90.060
798.90	2.920	160.690	798.37	17.10	-15.86	6.50	0.27	6.74	0.97	1.08	90.072
827.80	2.840	160.140	827.23	18.55	-17.23	6.99	0.09	6.75	1.02	1.11	90.085
857.40	2.300	161.570	856.80	19.88	-18.48	7.43	0.55	6.75	1.08	1.14	90.097
886.70	2.280	159.950	886.08	21.05	-19.59	7.81	0.07	6.76	1.13	1.18	90.109
914.60	2.290	168.330	913.95	22.15	-20.65	8.12	0.36	6.77	1.19	1.21	90.120
944.10	2.110	171.690	943.43	23.28	-21.77	8.31	0.23	6.78	1.24	1.24	90.130
972.80	2.300	171.030	972.11	24.36	-22.86	8.48	0.20	6.78	1.30	1.27	90.139
1001.30	2.190	174.840	1000.59	25.46	-23.97	8.62	0.20	6.79	1.35	1.30	90.149
1030.60	2.060	176.900	1029.87	26.51	-25.05	8.70	0.15	6.80	1.41	1.34	90.157
1059.20	2.260	176.000	1058.45	27.56	-26.12	8.76	0.21	6.81	1.47	1.37	90.166
1088.70	2.290	175.380	1087.93	28.69	-27.29	8.85	0.04	6.82	1.53	1.41	90.175
1116.60	2.180	176.990	1115.80	29.75	-28.38	8.92	0.14	6.83	1.59	1.44	90.184
1146.60	2.240	176.890	1145.78	30.86	-29.53	8.99	0.06	6.85	1.65	1.48	90.193
1175.70	2.080	173.640	1174.86	31.93	-30.63	9.08	0.21	6.86	1.72	1.52	90.203

Actual Wellpath Report

Positional Uncertainty

Wellpath: **Definitive 15/9-22 T2 (TD@3915m Md)**

REFERENCE WELLPATH IDENTIFICATION			
Operator	**Esso Norge AS**	Slot	**Exploration NE**
Area	**North sea, Norwegian sector.**	Well	**15/9-22 T2**
Field	**EXPLORATION 15/9 (Wishbone)**	Wellbore	**15/9-22 T2**
Facility	**Ocean Vanguard**	Sidetrack from	**15/9-22** at **510.80 MD**

WELLPATH DATA (111 stations) - with Positional Uncertainty values

MD [meters]	Inclination [°]	Azimuth [°]	TVD [meters]	Vert Sect [meters]	North [meters]	East [meters]	DLS [°/30m]	Major Semi-Axis [meters]	Minor Semi-Axis [meters]	Vertical Semi-Axis [meters]	Minor Semi-Axis Azim [°]
1204.70	2.070	172.090	1203.84	32.96	-31.67	9.21	0.06	6.87	1.78	1.56	90.213
1233.80	2.130	178.180	1232.92	33.99	-32.73	9.30	0.24	6.88	1.84	1.59	90.223
1262.70	2.200	176.930	1261.80	35.04	-33.82	9.34	0.09	6.90	1.90	1.63	90.232
1291.70	2.130	178.840	1290.78	36.10	-34.91	9.38	0.10	6.91	1.96	1.67	90.241
1320.30	2.290	182.400	1319.36	37.14	-36.02	9.37	0.22	6.92	2.03	1.71	270.249
1349.40	2.340	180.940	1348.44	38.24	-37.19	9.34	0.08	6.94	2.09	1.75	270.256
1378.40	2.230	184.930	1377.41	39.32	-38.35	9.28	0.20	6.96	2.15	1.79	270.263
1407.60	2.260	178.660	1406.59	40.40	-39.49	9.24	0.25	6.97	2.22	1.84	90.270
1436.60	2.380	182.120	1435.57	41.51	-40.66	9.23	0.19	6.99	2.28	1.88	270.279
1465.30	2.330	179.450	1464.24	42.62	-41.84	9.22	0.13	7.00	2.35	1.92	90.287
1494.10	2.420	183.640	1493.02	43.74	-43.03	9.18	0.20	7.02	2.41	1.96	270.295
1497.00	2.360	182.280	1495.92	43.86	-43.15	9.18	0.85	7.02	2.42	1.97	270.295
1525.90	2.550	173.910	1524.79	45.04	-44.39	9.22	0.42	7.03	2.46	2.01	90.304
1553.90	2.600	170.650	1552.76	46.28	-45.63	9.39	0.17	7.03	2.47	2.05	90.315
1582.60	0.810	247.670	1581.45	46.94	-46.35	9.31	2.66	7.03	2.48	2.10	270.317
1612.70	1.020	258.980	1611.55	46.92	-46.48	8.85	0.28	7.04	2.48	2.15	270.305
1640.50	0.940	264.010	1639.34	46.84	-46.55	8.38	0.13	7.04	2.49	2.19	270.293
1669.50	0.880	245.110	1668.34	46.81	-46.67	7.94	0.32	7.04	2.50	2.24	270.281
1698.10	0.940	250.660	1696.93	46.84	-46.84	7.52	0.11	7.04	2.50	2.28	270.270
1727.20	0.680	260.640	1726.03	46.82	-46.95	7.13	0.30	7.04	2.51	2.33	270.259
1756.20	0.790	252.720	1755.03	46.79	-47.04	6.76	0.15	7.05	2.53	2.38	270.249
1784.70	0.720	253.230	1783.53	46.78	-47.15	6.41	0.07	7.05	2.54	2.43	270.239
1814.30	0.580	278.080	1813.12	46.71	-47.18	6.08	0.32	7.06	2.55	2.48	270.229
1843.20	0.640	284.230	1842.02	46.56	-47.12	5.78	0.09	7.06	2.57	2.53	270.220
1872.00	0.650	294.610	1870.82	46.36	-47.01	5.47	0.12	7.07	2.58	2.58	270.210

Actual Wellpath Report

Positional Uncertainty

Wellpath: **Definitive 15/9-22 T2 (TD@3915m Md)**

REFERENCE WELLPATH IDENTIFICATION			
Operator	**Esso Norge AS**	Slot	**Exploration NE**
Area	**North sea, Norwegian sector.**	Well	**15/9-22 T2**
Field	**EXPLORATION 15/9 (Wishbone)**	Wellbore	**15/9-22 T2**
Facility	**Ocean Vanguard**	Sidetrack from	**15/9-22** at **510.80 MD**

WELLPATH DATA (111 stations) - with Positional Uncertainty values

MD [meters]	Inclination [°]	Azimuth [°]	TVD [meters]	Vert Sect [meters]	North [meters]	East [meters]	DLS [°/30m]	Major Semi-Axis [meters]	Minor Semi-Axis [meters]	Vertical Semi-Axis [meters]	Minor Semi-Axis Azim [°]
1901.20	0.680	299.750	1900.02	46.12	-46.86	5.17	0.07	7.07	2.60	2.63	270.200
1930.20	0.550	302.600	1929.02	45.89	-46.70	4.91	0.14	7.08	2.61	2.68	270.191
1958.90	0.490	300.700	1957.72	45.69	-46.56	4.68	0.07	7.09	2.63	2.74	270.184
1988.20	0.580	318.840	1987.01	45.46	-46.38	4.48	0.20	7.09	2.65	2.79	270.177
2017.20	0.610	316.880	2016.01	45.18	-46.16	4.28	0.04	7.10	2.67	2.84	270.169
2047.10	0.560	313.100	2045.91	44.91	-45.95	4.06	0.06	7.11	2.69	2.90	270.162
2076.40	0.580	314.520	2075.21	44.65	-45.74	3.85	0.03	7.12	2.71	2.96	270.154
2102.10	0.520	307.320	2100.91	44.44	-45.58	3.67	0.11	7.13	2.73	3.01	270.148
2162.60	0.550	324.190	2161.41	43.94	-45.18	3.28	0.08	7.15	2.78	3.12	270.134
2191.80	0.510	314.150	2190.61	43.69	-44.98	3.10	0.10	7.16	2.80	3.18	270.127
2220.20	0.500	309.570	2219.00	43.47	-44.81	2.92	0.04	7.17	2.83	3.24	270.121
2277.80	0.500	289.130	2276.60	43.11	-44.57	2.48	0.09	7.19	2.89	3.36	270.105
2336.30	0.520	301.600	2335.10	42.75	-44.34	2.02	0.06	7.22	2.95	3.48	270.089
2365.70	0.720	293.900	2364.50	42.52	-44.20	1.73	0.22	7.23	2.98	3.54	270.079
2393.00	0.660	297.620	2391.80	42.29	-44.06	1.44	0.08	7.25	3.02	3.60	270.069
2422.70	0.660	283.770	2421.49	42.08	-43.94	1.12	0.16	7.26	3.05	3.66	270.058
2451.40	0.510	297.330	2450.19	41.90	-43.84	0.85	0.21	7.28	3.09	3.73	270.049
2481.20	0.370	302.420	2479.99	41.73	-43.73	0.65	0.15	7.29	3.12	3.79	270.041
2508.50	0.230	249.090	2507.29	41.67	-43.70	0.52	0.33	7.31	3.16	3.85	270.036
2548.00	0.350	278.010	2546.79	41.62	-43.71	0.33	0.14	7.33	3.21	3.94	270.028
2604.60	0.600	266.400	2603.39	41.47	-43.70	-0.14	0.14	7.36	3.29	4.07	270.010
2692.80	0.600	284.310	2691.58	41.10	-43.62	-1.05	0.06	7.42	3.41	4.28	269.978
2779.70	0.880	311.920	2778.48	40.28	-43.06	-1.98	0.15	7.48	3.53	4.49	269.944
2866.80	0.820	305.010	2865.57	39.20	-42.26	-2.99	0.04	7.54	3.66	4.71	269.908
2923.80	0.700	295.770	2922.56	38.63	-41.87	-3.64	0.09	7.59	3.75	4.85	269.885

Actual Wellpath Report

Positional Uncertainty

Wellpath: **Definitive 15/9-22 T2 (TD@3915m Md)**

REFERENCE WELLPATH IDENTIFICATION			
Operator	**Esso Norge AS**	Slot	**Exploration NE**
Area	**North sea, Norwegian sector.**	Well	**15/9-22 T2**
Field	**EXPLORATION 15/9 (Wishbone)**	Wellbore	**15/9-22 T2**
Facility	**Ocean Vanguard**	Sidetrack from	**15/9-22** at **510.80 MD**

WELLPATH DATA (111 stations) - with Positional Uncertainty values

MD [meters]	Inclination [°]	Azimuth [°]	TVD [meters]	Vert Sect [meters]	North [meters]	East [meters]	DLS [°/30m]	Major Semi-Axis [meters]	Minor Semi-Axis [meters]	Vertical Semi-Axis [meters]	Minor Semi-Axis Azim [°]
2968.50	0.510	298.990	2967.26	38.29	-41.66	-4.06	0.13	7.60	3.78	4.97	269.873
2997.20	0.320	327.010	2995.96	38.12	-41.53	-4.22	0.29	7.60	3.78	5.04	269.869
3026.60	0.230	39.450	3025.36	38.01	-41.41	-4.22	0.34	7.61	3.78	5.12	89.869
3055.40	0.290	121.640	3054.16	38.04	-41.41	-4.12	0.36	7.61	3.78	5.20	89.872
3084.50	0.600	137.370	3083.26	38.23	-41.56	-3.96	0.34	7.61	3.79	5.28	89.875
3113.70	1.030	144.710	3112.45	38.62	-41.88	-3.70	0.45	7.61	3.79	5.36	89.881
3142.40	1.350	144.160	3141.15	39.19	-42.37	-3.36	0.33	7.61	3.80	5.43	89.888
3167.00	1.420	142.340	3165.74	39.75	-42.84	-3.00	0.10	7.61	3.81	5.50	89.896
3200.10	1.450	142.010	3198.83	40.53	-43.50	-2.49	0.03	7.62	3.82	5.59	89.908
3229.30	1.580	140.720	3228.02	41.26	-44.10	-2.01	0.14	7.62	3.83	5.68	89.920
3258.40	1.840	140.890	3257.11	42.07	-44.77	-1.46	0.27	7.63	3.84	5.76	89.934
3286.60	2.180	141.300	3285.29	42.99	-45.54	-0.84	0.36	7.63	3.85	5.84	89.951
3315.80	2.400	141.660	3314.47	44.09	-46.46	-0.11	0.23	7.63	3.87	5.92	89.971
3344.40	2.520	142.590	3343.04	45.24	-47.43	0.64	0.13	7.64	3.88	6.01	89.993
3374.70	2.490	143.090	3373.31	46.50	-48.48	1.44	0.04	7.65	3.90	6.09	90.018
3403.70	2.590	145.980	3402.28	47.72	-49.53	2.19	0.17	7.65	3.92	6.18	90.043
3433.10	3.020	150.790	3431.65	49.12	-50.76	2.94	0.50	7.66	3.94	6.27	90.070
3461.90	3.330	151.680	3460.40	50.69	-52.15	3.70	0.33	7.67	3.97	6.35	90.099
3492.10	3.560	148.930	3490.55	52.47	-53.73	4.60	0.28	7.68	3.99	6.44	90.134
3523.80	4.100	151.210	3522.18	54.54	-55.57	5.66	0.53	7.69	4.02	6.54	90.179
3550.80	5.080	146.790	3549.09	56.65	-57.41	6.78	1.16	7.70	4.05	6.62	90.228
3579.70	5.700	145.490	3577.86	59.26	-59.66	8.29	0.66	7.71	4.08	6.71	90.297
3608.90	6.200	146.910	3606.91	62.18	-62.18	9.97	0.54	7.72	4.12	6.80	90.381
3637.80	6.830	145.910	3635.62	65.34	-64.91	11.79	0.66	7.73	4.16	6.89	90.478
3646.90	6.900	145.180	3644.65	66.38	-65.81	12.40	0.37	7.74	4.18	6.92	90.512

Actual Wellpath Report

Positional Uncertainty

Wellpath: **Definitive 15/9-22 T2 (TD@3915m Md)**

REFERENCE WELLPATH IDENTIFICATION			
Operator	**Esso Norge AS**	Slot	**Exploration NE**
Area	**North sea, Norwegian sector.**	Well	**15/9-22 T2**
Field	**EXPLORATION 15/9 (Wishbone)**	Wellbore	**15/9-22 T2**
Facility	**Ocean Vanguard**	Sidetrack from	**15/9-22** at **510.80 MD**

WELLPATH DATA (111 stations) - with Positional Uncertainty values

MD [meters]	Inclination [°]	Azimuth [°]	TVD [meters]	Vert Sect [meters]	North [meters]	East [meters]	DLS [°/30m]	Major Semi-Axis [meters]	Minor Semi-Axis [meters]	Vertical Semi-Axis [meters]	Minor Semi-Axis Azim [°]
3666.50	7.040	146.110	3664.11	68.67	-67.77	13.74	0.28	7.74	4.21	6.98	90.590
3696.20	7.270	146.080	3693.58	72.23	-70.84	15.81	0.23	7.76	4.25	7.08	90.718
3725.30	7.700	147.880	3722.43	75.90	-74.02	17.87	0.50	7.77	4.30	7.17	90.858
3754.40	7.950	147.690	3751.26	79.74	-77.37	19.98	0.26	7.79	4.35	7.26	91.014
3783.40	7.960	145.660	3779.98	83.62	-80.73	22.19	0.29	7.81	4.41	7.36	91.186
3812.10	8.300	147.710	3808.39	87.53	-84.12	24.42	0.47	7.83	4.46	7.45	91.372
3841.10	8.670	150.130	3837.07	91.71	-87.78	26.62	0.53	7.84	4.52	7.54	91.575
3870.50	8.620	150.970	3866.14	96.04	-91.63	28.80	0.14	7.86	4.59	7.64	91.796
3899.60	8.940	149.280	3894.90	100.39	-95.48	31.01	0.42	7.89	4.65	7.74	92.033
3909.10	9.030	151.070	3904.28	101.84	-96.77	31.75	0.93	7.89	4.67	7.77	92.116
3915.00	9.030	151.070	3910.11	102.75	-97.58	32.19	0.00	7.90	4.68	7.79	92.164

HOLE & CASING SECTIONS **Ref Wellbore: 15/9-22 T2** **Ref Wellpath: Definitive 15/9-22 T2 (TD@3915m Md)**

String/Diameter	Start MD [meters]	End MD [meters]	Interval [meters]	Start TVD [meters]	End TVD [meters]	Start N/S [meters]	Start E/W [meters]	End N/S [meters]	End E/W [meters]
36in Open Hole	128.00	205.00	77.00	128.00	205.00	0.00	0.00	0.00	0.00
30in Conductor	128.00	201.00	73.00	128.00	201.00	0.00	0.00	0.00	0.00
26in Open Hole	205.00	508.00	303.00	205.00	508.00	0.00	0.00	0.00	0.00
18.625in Casing	128.00	504.00	376.00	128.00	504.00	0.00	0.00	0.00	0.00
17.5in Open Hole	508.00	510.80	2.80	508.00	510.80	0.00	0.00	0.00	-0.01
17.5in Open Hole	510.80	1523.00	1012.20	510.80	1521.89	0.00	-0.01	-44.26	9.21
13.625in Casing	128.00	1517.00	1389.00	128.00	1515.90	0.00	0.00	-44.00	9.19
12.25in Open Hole	1523.00	2948.00	1425.00	1521.89	2946.76	-44.26	9.21	-41.75	-3.88
9.625in Casing	128.00	2942.00	2814.00	128.00	2940.76	0.00	0.00	-41.78	-3.83
8.5in Open Hole	2948.00	3915.00	967.00	2946.76	3910.11	-41.75	-3.88	-97.58	32.19

Actual Wellpath Report

Positional Uncertainty

Wellpath: **Definitive 15/9-22 T2 (TD@3915m Md)**

REFERENCE WELLPATH IDENTIFICATION			
Operator	**Esso Norge AS**	Slot	**Exploration NE**
Area	**North sea, Norwegian sector.**	Well	**15/9-22 T2**
Field	**EXPLORATION 15/9 (Wishbone)**	Wellbore	**15/9-22 T2**
Facility	**Ocean Vanguard**	Sidetrack from	**15/9-22** at **510.80 MD**

WELLPATH COMPOSITION Ref Wellbore: 15/9-22 T2 Ref Wellpath: Definitive 15/9-22 T2 (TD@3915m Md)

Start MD [meters]	End MD [meters]	Tool Type	Positional Uncertainty Model	Log Name/Comment	Wellbore
128.00	508.00	Unknown Tool	Unknown Tool (Standard)	15/9-22 No tool in hole: Blind drilling (128-508m)	15/9-22
508.00	510.80	NaviTrak	NaviTrak (Magcorr1, DLS)	15/9-22 BHI MWD 17 1/2" (508-1517.30m)	15/9-22
510.80	1497.00	NaviTrak	NaviTrak (Magcorr1, DLS)	15/9-22 T2 BHI MWD 17 1/2" (510.80-1497m)	15/9-22 T2
1497.00	2923.80	NaviTrak	NaviTrak (Magcorr1, DLS)	15/9-22 T2 BHI MWD 12 1/4" (1497-2923.80m)	15/9-22 T2
2923.80	3909.10	NaviTrak	NaviTrak (Magcorr1, DLS)	15/9-22 T2 BHI MWD 8 1/2" (2923.80-3909.10m)	15/9-22 T2
3909.10	3915.00	NaviTrak	NaviTrak (DLS)	15/9-22 T2 Extrapolation (TD@3915m)	15/9-22 T2

Appendix V

Composite Log 15/9-22

ExxonMobil

15/9-22 Wishbone

COMPOSITE WELL LOG

SCALE: 1:500

LOCATION:	
COUNTRY:	Norway
AREA:	Wishbone
LICENCE:	PL106
DRILLING PERMIT:	L-1101
SURVEY CO-ORDINATES	
LATITUDE:	58° 28' 42.418"
LONGITUDE:	01° 48' 51.224"
U.T.M EASTING:	4 468 557.21m N
U.T.M NORTHING:	432 561.01m E
BOTTOM HOLE CO-ORDINATES	
LATITUDE:	58° 28' 42.418" N
LONGITUDE:	01° 48' 51.224" E
U.T.M EASTING:	4 468 557.21m N
U.T.M NORTHING:	432 561.01m E
WELL CLASSIFICATION:	Wildcat
COMPLETION STATUS:	Suspended

RIG PICK UP:	27th December 2005
SPUD DATE:	1st January 2006
DRILLING COMPLETED:	23rd January 2006
LOGGING COMPLETED:	Not Logged
WELL COMPLETED:	Suspended on 21st January 2006
RIG RELEASED:	
TOTAL DATA:	
R.T. ELEVATION:	25m
WATER DEPTH:	207m
TOTAL DEPTH:	
DRILLER:	VIDGA WHIPT (1-500m TVSSS)
LOGGER:	
BOTTOM HOLE FORMATION:	Undifferentiated Hordaland Group

RIG:	Ocean Vanguard
CONTRACTORS	
DRILLING:	Diamond Drilling
LOGGING:	Schlumberger
MUDLOGGING:	Geoservices
LWD:	Baker Hughes Inteq
DIRECTIONAL:	Baker Hughes Inteq
BIOSTRATIGRAPHY:	Fugro Robertson Ltd
WELLSITE GEOLOGISTS	COMPANY
Graham Hoyes	RPS Cambridge
Paul Robinson	RPS Cambridge
Alan Schuyl	RPS Cambridge
LOG COMPILED BY	
Alan Schuyl	RPS Cambridge
LOG UPDATED BY	
Richard Fowler	RPS Cambridge

LOCATION MAP

INTERVIEW

Exxon/Mobil 50% Statoil 50%

SUMMARY RECORD OF CORES, SIDEWALL CORES

CORE NUMBER	TOP DEPTH	BOT DEPTH	RECOVERY	COMMENTS
				No Cores Cut

SWC NUMBER	TOP DEPTH	BOT DEPTH	COMMENTS
			No SWCs Taken

SUMMARY RECORD OF D.S.Ts., R.F.Ts.

OPERATION	TOP DEPTH	BOT DEPTH	COMMENTS
No DSTs or RFTs Taken			

HOLE, CASING & MUD-TYPE DETAILS

BIT SIZE	INTERVAL	CASING SIZE	INTERVAL	MUD TYPE	INTERVAL
36"	207m	20in	207	Seawater	1,135 - 207m
26"	1,135	13 3/8"	1,135	Seawater	1,135 - 207m
17 1/2"	1,135 - 1500	13 3/8"	207 - 1,135	Spud Mud/Seawater	1500 - 1135

* Casing Stuck at 207m

ATTACHED REPORTS

LOGGING SUMMARY

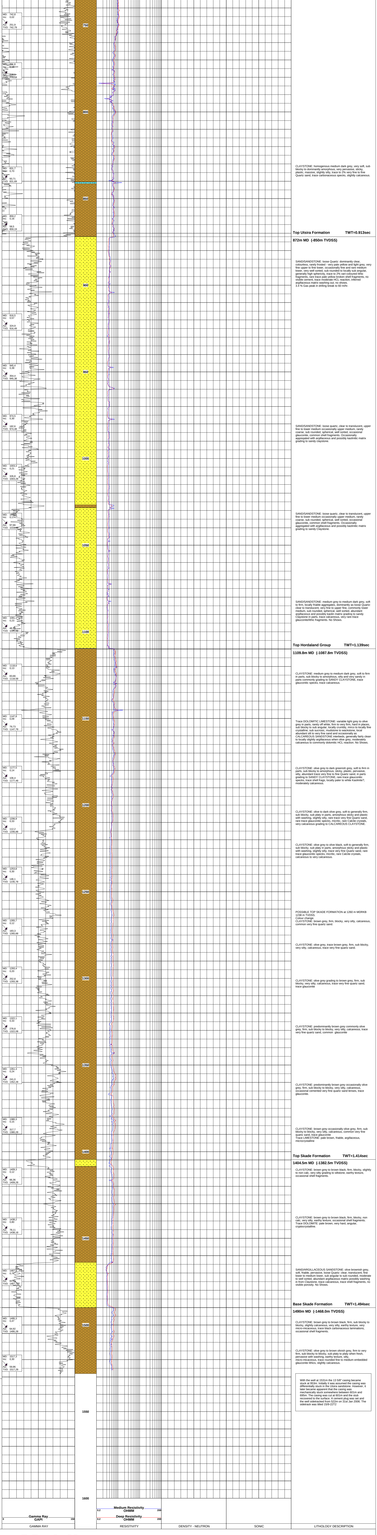
RUN	DATE	BIT SIZE	COMBINATION RUN	DEPTH INTERVAL	DRILLING INTERVAL	REMARKS	Meas T	Meas Date	Resistivities @ BHT Res	Temp	Res
HRDL	01/01/06	17 1/2"	GR-RES-CNL-DIR-ZDL	500-1500	500-1500	Section TD					

LITHOLOGY SYMBOLS

SHOWS

ACCESSORY SYMBOLS

OPERATIONAL SYMBOLS



ExxonMobil

15/9-22 Wishbone

SCALE 1:500

Appendix VI

Composite Log 15/9-22T2

ExxonMobil

15/9-D7T2 Wellbore

COMPOSITE WELL LOG

COUNTRY	NORWAY
PROVINCE	NORTH SEA
BLOCK	15/9
WELL	15/9-D7T2
FIELD	GRANE
LATITUDE	58° 42' 29.07" N
LONGITUDE	02° 25' 22.07" E
DATUM	MSL
WATER DEPTH	136.0 m
KB	25.0 m
SPUD DATE	20-Jun-2011
COMPLETION DATE	01-Jul-2011
RIG	Transocean Leiv Eiriksson
TD	4,000 m MD
TD DATE	01-Jul-2011
PRESSURE	1
PRESSURE DATE	01-Jul-2011
PRESSURE TVD	3,000.0 m TVD
PRESSURE MW	1.03 kg/cm3
PRESSURE EQUIPMENT	Schlumberger MDT
PRESSURE COMMENTS	Pressure points: 3000 m, 3500 m, 4000 m

SCALE 1:200

DRILLING CONTRACTOR	Transocean
RIG	Leiv Eiriksson
DRILLING FLUID TYPE	WBM
HOLE SIZES	36", 26", 17½", 12¼", 8½"
CASING SIZES	30", 20", 13⅜", 9⅝", 7"
DATE DRILLED	20-Jun-2011 to 01-Jul-2011
DATE RIGGED UP	20-Jun-2011
DATE RIGGED DOWN	01-Jul-2011
DAYS DRILLING	11
DAYS WAITING	0
DRILLING RATE	364 m/day
DRILLING TIME	24 hrs/m
DRILLING COSTS	
DRILLING COMMENTS	
DRILLING PROBLEMS	
DRILLING PROBLEMS COMMENTS	
DEVIATION	Vertical
DEVIATION COMMENTS	

CASING SHOES (TVD, m)

30"	136.0
20"	1,000.0
13⅜"	1,500.0
9⅝"	2,000.0
7"	3,000.0

CASING SHOES (MD, m)

30"	136.0
20"	1,000.0
13⅜"	1,500.0
9⅝"	2,000.0
7"	3,000.0

CASING SHOES (TVD, m, S.S.)

30"	111.0
20"	975.0
13⅜"	1,475.0
9⅝"	1,975.0
7"	2,975.0

CASING SHOES (MD, m, S.S.)

30"	111.0
20"	975.0
13⅜"	1,475.0
9⅝"	1,975.0
7"	2,975.0

LEGEND

Sandstone	Coal
Siltstone	Cement
Claystone	Chert
Marl	Dolomite
Limestone	Anhydrite
Salt	Tuff
Volcanic	Basement
Gypsum	Pyrite
Fossil	Glauconite
Oil Shows	Gas Shows
Casing Shoe	Core
Lost Circulation	Stuck Pipe
Fish	Sidetrack
Cement Plug	Bit Change
Formation Test	Pressure Point
Drilling Break	Mud Change
Mud Loss	Kick
Flow Check	Pump Change
Pump Pressure	Pump Rate
Torque	Rotary Speed
Weight on Bit	Rate of Penetration
Gamma Ray	Caliper
Resistivity	Density
Neutron Porosity	Sonic
Mud Weight	Temperature

LITHOSTRATIGRAPHY

Hordaland Group	
Rogaland Group	
Shetland Group	
Cromer Knoll Group	
Viking Group	
Vestland Group	
Dunlin Group	
Statfjord Group	
Hegre Group	
Cook Formation	
Drake Formation	
Heimdal Formation	
Lista Formation	
Vidar Formation	
Hordaland Group	
Rogaland Group	
Shetland Group	
Cromer Knoll Group	
Viking Group	
Vestland Group	
Dunlin Group	
Statfjord Group	
Hegre Group	
Cook Formation	
Drake Formation	
Heimdal Formation	
Lista Formation	
Vidar Formation	

CASING SHOES

30"	136.0 m MD
20"	1,000.0 m MD
13⅜"	1,500.0 m MD
9⅝"	2,000.0 m MD
7"	3,000.0 m MD

CORE SUMMARY

Core 1	1,000.0 - 1,009.0 m MD	9.0 m
Core 2	1,009.0 - 1,018.0 m MD	9.0 m
Core 3	1,018.0 - 1,027.0 m MD	9.0 m
Core 4	1,027.0 - 1,036.0 m MD	9.0 m
Core 5	1,036.0 - 1,045.0 m MD	9.0 m
Core 6	1,045.0 - 1,054.0 m MD	9.0 m
Core 7	1,054.0 - 1,063.0 m MD	9.0 m
Core 8	1,063.0 - 1,072.0 m MD	9.0 m
Core 9	1,072.0 - 1,081.0 m MD	9.0 m
Core 10	1,081.0 - 1,090.0 m MD	9.0 m
Core 11	1,090.0 - 1,099.0 m MD	9.0 m
Core 12	1,099.0 - 1,108.0 m MD	9.0 m
Core 13	1,108.0 - 1,117.0 m MD	9.0 m
Core 14	1,117.0 - 1,126.0 m MD	9.0 m
Core 15	1,126.0 - 1,135.0 m MD	9.0 m
Core 16	1,135.0 - 1,144.0 m MD	9.0 m
Core 17	1,144.0 - 1,153.0 m MD	9.0 m
Core 18	1,153.0 - 1,162.0 m MD	9.0 m
Core 19	1,162.0 - 1,171.0 m MD	9.0 m
Core 20	1,171.0 - 1,180.0 m MD	9.0 m
Core 21	1,180.0 - 1,189.0 m MD	9.0 m
Core 22	1,189.0 - 1,198.0 m MD	9.0 m
Core 23	1,198.0 - 1,207.0 m MD	9.0 m
Core 24	1,207.0 - 1,216.0 m MD	9.0 m
Core 25	1,216.0 - 1,225.0 m MD	9.0 m
Core 26	1,225.0 - 1,234.0 m MD	9.0 m
Core 27	1,234.0 - 1,243.0 m MD	9.0 m
Core 28	1,243.0 - 1,252.0 m MD	9.0 m
Core 29	1,252.0 - 1,261.0 m MD	9.0 m
Core 30	1,261.0 - 1,270.0 m MD	9.0 m
Core 31	1,270.0 - 1,279.0 m MD	9.0 m
Core 32	1,279.0 - 1,288.0 m MD	9.0 m
Core 33	1,288.0 - 1,297.0 m MD	9.0 m
Core 34	1,297.0 - 1,306.0 m MD	9.0 m
Core 35	1,306.0 - 1,315.0 m MD	9.0 m
Core 36	1,315.0 - 1,324.0 m MD	9.0 m
Core 37	1,324.0 - 1,333.0 m MD	9.0 m
Core 38	1,333.0 - 1,342.0 m MD	9.0 m
Core 39	1,342.0 - 1,351.0 m MD	9.0 m
Core 40	1,351.0 - 1,360.0 m MD	9.0 m
Core 41	1,360.0 - 1,369.0 m MD	9.0 m
Core 42	1,369.0 - 1,378.0 m MD	9.0 m
Core 43	1,378.0 - 1,387.0 m MD	9.0 m
Core 44	1,387.0 - 1,396.0 m MD	9.0 m
Core 45	1,396.0 - 1,405.0 m MD	9.0 m
Core 46	1,405.0 - 1,414.0 m MD	9.0 m
Core 47	1,414.0 - 1,423.0 m MD	9.0 m
Core 48	1,423.0 - 1,432.0 m MD	9.0 m
Core 49	1,432.0 - 1,441.0 m MD	9.0 m
Core 50	1,441.0 - 1,450.0 m MD	9.0 m
Core 51	1,450.0 - 1,459.0 m MD	9.0 m
Core 52	1,459.0 - 1,468.0 m MD	9.0 m
Core 53	1,468.0 - 1,477.0 m MD	9.0 m
Core 54	1,477.0 - 1,486.0 m MD	9.0 m
Core 55	1,486.0 - 1,495.0 m MD	9.0 m
Core 56	1,495.0 - 1,504.0 m MD	9.0 m
Core 57	1,504.0 - 1,513.0 m MD	9.0 m
Core 58	1,513.0 - 1,522.0 m MD	9.0 m
Core 59	1,522.0 - 1,531.0 m MD	9.0 m
Core 60	1,531.0 - 1,540.0 m MD	9.0 m
Core 61	1,540.0 - 1,549.0 m MD	9.0 m
Core 62	1,549.0 - 1,558.0 m MD	9.0 m
Core 63	1,558.0 - 1,567.0 m MD	9.0 m
Core 64	1,567.0 - 1,576.0 m MD	9.0 m
Core 65	1,576.0 - 1,585.0 m MD	9.0 m
Core 66	1,585.0 - 1,594.0 m MD	9.0 m
Core 67	1,594.0 - 1,603.0 m MD	9.0 m
Core 68	1,603.0 - 1,612.0 m MD	9.0 m
Core 69	1,612.0 - 1,621.0 m MD	9.0 m
Core 70	1,621.0 - 1,630.0 m MD	9.0 m
Core 71	1,630.0 - 1,639.0 m MD	9.0 m
Core 72	1,639.0 - 1,648.0 m MD	9.0 m
Core 73	1,648.0 - 1,657.0 m MD	9.0 m
Core 74	1,657.0 - 1,666.0 m MD	9.0 m
Core 75	1,666.0 - 1,675.0 m MD	9.0 m
Core 76	1,675.0 - 1,684.0 m MD	9.0 m
Core 77	1,684.0 - 1,693.0 m MD	9.0 m
Core 78	1,693.0 - 1,702.0 m MD	9.0 m
Core 79	1,702.0 - 1,711.0 m MD	9.0 m
Core 80	1,711.0 - 1,720.0 m MD	9.0 m
Core 81	1,720.0 - 1,729.0 m MD	9.0 m
Core 82	1,729.0 - 1,738.0 m MD	9.0 m
Core 83	1,738.0 - 1,747.0 m MD	9.0 m
Core 84	1,747.0 - 1,756.0 m MD	9.0 m
Core 85	1,756.0 - 1,765.0 m MD	9.0 m
Core 86	1,765.0 - 1,774.0 m MD	9.0 m
Core 87	1,774.0 - 1,783.0 m MD	9.0 m
Core 88	1,783.0 - 1,792.0 m MD	9.0 m
Core 89	1,792.0 - 1,801.0 m MD	9.0 m
Core 90	1,801.0 - 1,810.0 m MD	9.0 m
Core 91	1,810.0 - 1,819.0 m MD	9.0 m
Core 92	1,819.0 - 1,828.0 m MD	9.0 m
Core 93	1,828.0 - 1,837.0 m MD	9.0 m
Core 94	1,837.0 - 1,846.0 m MD	9.0 m
Core 95	1,846.0 - 1,855.0 m MD	9.0 m
Core 96	1,855.0 - 1,864.0 m MD	9.0 m
Core 97	1,864.0 - 1,873.0 m MD	9.0 m
Core 98	1,873.0 - 1,882.0 m MD	9.0 m
Core 99	1,882.0 - 1,891.0 m MD	9.0 m
Core 100	1,891.0 - 1,900.0 m MD	9.0 m
Core 101	1,900.0 - 1,909.0 m MD	9.0 m
Core 102	1,909.0 - 1,918.0 m MD	9.0 m
Core 103	1,918.0 - 1,927.0 m MD	9.0 m
Core 104	1,927.0 - 1,936.0 m MD	9.0 m
Core 105	1,936.0 - 1,945.0 m MD	9.0 m
Core 106	1,945.0 - 1,954.0 m MD	9.0 m
Core 107	1,954.0 - 1,963.0 m MD	9.0 m
Core 108	1,963.0 - 1,972.0 m MD	9.0 m
Core 109	1,972.0 - 1,981.0 m MD	9.0 m
Core 110	1,981.0 - 1,990.0 m MD	9.0 m
Core 111	1,990.0 - 1,999.0 m MD	9.0 m
Core 112	1,999.0 - 2,008.0 m MD	9.0 m
Core 113	2,008.0 - 2,017.0 m MD	9.0 m
Core 114	2,017.0 - 2,026.0 m MD	9.0 m
Core 115	2,026.0 - 2,035.0 m MD	9.0 m
Core 116	2,035.0 - 2,044.0 m MD	9.0 m
Core 117	2,044.0 - 2,053.0 m MD	9.0 m
Core 118	2,053.0 - 2,062.0 m MD	9.0 m
Core 119	2,062.0 - 2,071.0 m MD	9.0 m
Core 120	2,071.0 - 2,080.0 m MD	9.0 m
Core 121	2,080.0 - 2,089.0 m MD	9.0 m
Core 122	2,089.0 - 2,098.0 m MD	9.0 m
Core 123	2,098.0 - 2,107.0 m MD	9.0 m
Core 124	2,107.0 - 2,116.0 m MD	9.0 m
Core 125	2,116.0 - 2,125.0 m MD	9.0 m
Core 126	2,125.0 - 2,134.0 m MD	9.0 m
Core 127	2,134.0 - 2,143.0 m MD	9.0 m
Core 128	2,143.0 - 2,152.0 m MD	9.0 m
Core 129	2,152.0 - 2,161.0 m MD	9.0 m
Core 130	2,161.0 - 2,170.0 m MD	9.0 m
Core 131	2,170.0 - 2,179.0 m MD	9.0 m
Core 132	2,179.0 - 2,188.0 m MD	9.0 m
Core 133	2,188.0 - 2,197.0 m MD	9.0 m
Core 134	2,197.0 - 2,206.0 m MD	9.0 m
Core 135	2,206.0 - 2,215.0 m MD	9.0 m
Core 136	2,215.0 - 2,224.0 m MD	9.0 m
Core 137	2,224.0 - 2,233.0 m MD	9.0 m
Core 138	2,233.0 - 2,242.0 m MD	9.0 m
Core 139	2,242.0 - 2,251.0 m MD	9.0 m
Core 140	2,251.0 - 2,260.0 m MD	9.0 m
Core 141	2,260.0 - 2,269.0 m MD	9.0 m
Core 142	2,269.0 - 2,278.0 m MD	9.0 m
Core 143	2,278.0 - 2,287.0 m MD	9.0 m
Core 144	2,287.0 - 2,296.0 m MD	9.0 m
Core 145	2,296.0 - 2,305.0 m MD	9.0 m
Core 146	2,305.0 - 2,314.0 m MD	9.0 m
Core 147	2,314.0 - 2,323.0 m MD	9.0 m
Core 148	2,323.0 - 2,332.0 m MD	9.0 m
Core 149	2,332.0 - 2,341.0 m MD	9.0 m
Core 150	2,341.0 - 2,350.0 m MD	9.0 m
Core 151	2,350.0 - 2,359.0 m MD	9.0 m
Core 152	2,359.0 - 2,368.0 m MD	9.0 m
Core 153	2,368.0 - 2,377.0 m MD	9.0 m
Core 154	2,377.0 - 2,386.0 m MD	9.0 m
Core 155	2,386.0 - 2,395.0 m MD	9.0 m
Core 156	2,395.0 - 2,404.0 m MD	9.0 m
Core 157	2,404.0 - 2,413.0 m MD	9.0 m
Core 158	2,413.0 - 2,422.0 m MD	9.0 m
Core 159	2,422.0 - 2,431.0 m MD	9.0 m
Core 160	2,431.0 - 2,440.0 m MD	9.0 m
Core 161	2,440.0 - 2,449.0 m MD	9.0 m
Core 162	2,449.0 - 2,458.0 m MD	9.0 m
Core 163	2,458.0 - 2,467.0 m MD	9.0 m
Core 164	2,467.0 - 2,476.0 m MD	9.0 m
Core 165	2,476.0 - 2,485.0 m MD	9.0 m
Core 166	2,485.0 - 2,494.0 m MD	9.0 m
Core 167	2,494.0 - 2,503.0 m MD	9.0 m
Core 168	2,503.0 - 2,512.0 m MD	9.0 m
Core 169	2,512.0 - 2,521.0 m MD	9.0 m
Core 170	2,521.0 - 2,530.0 m MD	9.0 m
Core 171	2,530.0 - 2,539.0 m MD	9.0 m
Core 172	2,539.0 - 2,548.0 m MD	9.0 m
Core 173	2,548.0 - 2,557.0 m MD	9.0 m
Core 174	2,557.0 - 2,566.0 m MD	9.0 m
Core 175	2,566.0 - 2,575.0 m MD	9.0 m
Core 176	2,575.0 - 2,584.0 m MD	9.0 m
Core 177	2,584.0 - 2,593.0 m MD	9.0 m
Core 178	2,593.0 - 2,602.0 m MD	9.0 m
Core 179	2,602.0 - 2,611.0 m MD	9.0 m
Core 180	2,611.0 - 2,620.0 m MD	9.0 m
Core 181	2,620.0 - 2,629.0 m MD	9.0 m
Core 182	2,629.0 - 2,638.0 m MD	9.0 m
Core 183	2,638.0 - 2,647.0 m MD	9.0 m
Core 184	2,647.0 - 2,656.0 m MD	9.0 m
Core 185	2,656.0 - 2,665.0 m MD	9.0 m
Core 186	2,665.0 - 2,674.0 m MD	9.0 m
Core 187	2,674.0 - 2,683.0 m MD	9.0 m
Core 188	2,683.0 - 2,692.0 m MD	9.0 m
Core 189	2,692.0 - 2,701.0 m MD	9.0 m
Core 190	2,701.0 - 2,710.0 m MD	9.0 m
Core 191	2,710.0 - 2,719.0 m MD	9.0 m
Core 192	2,719.0 - 2,728.0 m MD	9.0 m
Core 193	2,728.0 - 2,737.0 m MD	9.0 m
Core 194	2,737.0 - 2,746.0 m MD	9.0 m
Core 195	2,746.0 - 2,755.0 m MD	9.0 m
Core 196	2,755.0 - 2,764.0 m MD	9.0 m
Core 197	2,764.0 - 2,773.0 m MD	9.0 m
Core 198	2,773.0 - 2,782.0 m MD	9.0 m
Core 199	2,782.0 - 2,791.0 m MD	9.0 m
Core 200	2,791.0 - 2,800.0 m MD	9.0 m
Core 201	2,800.0 - 2,809.0 m MD	9.0 m
Core 202	2,809.0 - 2,818.0 m MD	9.0 m
Core 203	2,818.0 - 2,827.0 m MD	9.0 m
Core 204	2,827.0 - 2,836.0 m MD	9.0 m
Core 205	2,836.0 - 2,845.0 m MD	9.0 m
Core 206	2,845.0 - 2,854.0 m MD	9.0 m
Core 207	2,854.0 - 2,863.0 m MD	9.0 m
Core 208	2,863.0 - 2,872.0 m MD	9.0 m
Core 209	2,872.0 - 2,881.0 m MD	9.0 m
Core 210	2,881.0 - 2,890.0 m MD	9.0 m
Core 211	2,890.0 - 2,899.0 m MD	9.0 m
Core 212	2,899.0 - 2,908.0 m MD	9.0 m
Core 213	2,908.0 - 2,917.0 m MD	9.0 m
Core 214	2,917.0 - 2,926.0 m MD	9.0 m
Core 215	2,926.0 - 2,935.0 m MD	9.0 m
Core 216	2,935.0 - 2,944.0 m MD	9.0 m
Core 217	2,944.0 - 2,953.0 m MD	9.0 m
Core 218	2,953.0 - 2,962.0 m MD	9.0 m
Core 219	2,962.0 - 2,971.0 m MD	9.0 m
Core 220	2,971.0 - 2,980.0 m MD	9.0 m
Core 221	2,980.0 - 2,989.0 m MD	9.0 m
Core 222	2,989.0 - 2,998.0 m MD	9.0 m
Core 223	2,998.0 - 3,007.0 m MD	9.0 m
Core 224	3,007.0 - 3,016.0 m MD	9.0 m
Core 225	3,016.0 - 3,025.0 m MD	9.0 m
Core 226	3,025.0 - 3,034.0 m MD	9.0 m
Core 227	3,034.0 - 3,043.0 m MD	9.0 m
Core 228	3,043.0 - 3,052.0 m MD	9.0 m
Core 229	3,052.0 - 3,061.0 m MD	9.0 m
Core 230	3,061.0 - 3,070.0 m MD	9.0 m
Core 231	3,070.0 - 3,079.0 m MD	9.0 m
Core 232	3,079.0 - 3,088.0 m MD	9.0 m
Core 233	3,088.0 - 3,097.0 m MD	9.0 m
Core 234	3,097.0 - 3,106.0 m MD	9.0 m
Core 235	3,106.0 - 3,115.0 m MD	9.0 m
Core 236	3,115.0 - 3,124.0 m MD	9.0 m
Core 237	3,124.0 - 3,133.0 m MD	9.0 m
Core 238	3,133.0 - 3,142.0 m MD	9.0 m
Core 239	3,142.0 - 3,151.0 m MD	9.0 m
Core 240	3,151.0 - 3,160.0 m MD	9.0 m
Core 241	3,160.0 - 3,169.0 m MD	9.0 m
Core 242	3,169.0 - 3,178.0 m MD	9.0 m
Core 243	3,178.0 - 3,187.0 m MD	9.0 m
Core 244	3,187.0 - 3,196.0 m MD	9.0 m
Core 245	3,196.0 - 3,205.0 m MD	9.0 m
Core 246	3,205.0 - 3,214.0 m MD	9.0 m
Core 247	3,214.0 - 3,223.0 m MD	9.0 m
Core 248	3,223.0 - 3,232.0 m MD	9.0 m
Core 249	3,232.0 - 3,241.0 m MD	9.0 m
Core 250	3,241.0 - 3,250.0 m MD	9.0 m
Core 251	3,250.0 - 3,259.0 m MD	9.0 m
Core 252	3,259.0 - 3,268.0 m MD	9.0 m
Core 253	3,268.0 - 3,277.0 m MD	9.0 m
Core 254	3,277.0 - 3,286.0 m MD	9.0 m
Core 255	3,286.0 - 3,295.0 m MD	9.0 m
Core 256	3,295.0 - 3,304.0 m MD	9.0 m
Core 257	3,304.0 - 3,313.0 m MD	9.0 m
Core 258	3,313.0 - 3,322.0 m MD	9.0 m
Core 259	3,322.0 - 3,331.0 m MD	9.0 m
Core 260	3,331.0 - 3,340.0 m MD	9.0 m
Core 261	3,340.0 - 3,349.0 m MD	9.0 m
Core 262	3,349.0 - 3,358.0 m MD	9.0 m
Core 263	3,358.0 - 3,367.0 m MD	9.0 m
Core 264	3,367.0 - 3,376.0 m MD	9.0 m
Core 265	3,376.0 - 3,385.0 m MD	9.0 m
Core 266	3,385.0 - 3,394.0 m MD	9.0 m
Core 267	3,394.0 - 3,403.0 m MD	9.0 m
Core 268	3,403.0 - 3,412.0 m MD	9.0 m
Core 269	3,412.0 - 3,421.0 m MD	9.0 m
Core 270	3,421.0 - 3,430.0 m MD	9.0 m
Core 271	3,430.0 - 3,439.0 m MD	9.0 m
Core 272	3,439.0 - 3,448.0 m MD	9.0 m
Core 273	3,448.0 - 3,457.0 m MD	9.0 m
Core 274	3,457.0 - 3,466.0 m MD	9.0 m
Core 275	3,466.0 - 3,475.0 m MD	9.0 m
Core 276	3,475.0 - 3,484.0 m MD	9.0 m
Core 277	3,484.0 - 3,493.0 m MD	9.0 m
Core 278	3,493.0 - 3,502.0 m MD	9.0 m
Core 279	3,502.0 - 3,511.0 m MD	9.0 m
Core 280	3,511.0 - 3,520.0 m MD	9.0 m
Core 281	3,520.0 - 3,529.0 m MD	9.0 m
Core 282	3,529.0 - 3,538.0 m MD	9.0 m
Core 283	3,538.0 - 3,547.0 m MD	9.0 m
Core 284	3,547.0 - 3,556.0 m MD	9.0 m
Core 285	3,556.0 - 3,565.0 m MD	9.0 m
Core 286	3,565.0 - 3,574.0 m MD	9.0 m
Core 287	3,574.0 - 3,583.0 m MD	9.0 m
Core 288	3,583.0 - 3,592.0 m MD	9.0 m
Core 289	3,592.0 - 3,601.0 m MD	9.0 m
Core 290	3,601.0 - 3,610.0 m MD	9.0 m
Core 291	3,610.0 - 3,619.0 m MD	9.0 m
Core 292	3,619.0 - 3,628.0 m MD	9.0 m
Core 293	3,628.0 - 3,637.0 m MD	9.0 m
Core 294	3,637.0 - 3,646.0 m MD	9.0 m
Core 295	3,646.0 - 3,655.0 m MD	9.0 m
Core 296	3,655.0 - 3,664.0 m MD	9.0 m
Core 297	3,664.0 - 3,673.0 m MD	9.0 m
Core 298	3,673.0 - 3,682.0 m MD	9.0 m
Core 299	3,682.0 - 3,691.0 m MD	9.0 m
Core 300	3,691.0 - 3,700.0 m MD	9.0 m
Core 301	3,700.0 - 3,709.0 m MD	9.0 m
Core 302	3,709.0 - 3,718.0 m MD	9.0 m
Core 303	3,718.0 - 3,727.0 m MD	9.0 m
Core 304	3,727.0 - 3,736.0 m MD	9.0 m
Core 305	3,736.0 - 3,745.0 m MD	9.0 m
Core 306	3,745.0 - 3,754.0 m MD	9.0 m
Core 307	3,754.0 - 3,763.0 m MD	9.0 m
Core 308	3,763.0 - 3,772.0 m MD	9.0 m
Core 309	3,772.0 - 3,781.0 m MD	9.0 m
Core 310	3,781.0 - 3,790.0 m MD	9.0 m
Core 311	3,790.0 - 3,799.0 m MD	9.0 m
Core 312	3,799.0 - 3,808.0 m MD	9.0 m
Core 313	3,808.0 - 3,817.0 m MD	9.0 m
Core 314	3,817.0 - 3,826.0 m MD	9.0 m
Core 315	3,826.0 - 3,835.0 m MD	9.0 m
Core 316	3,835.0 - 3,844.0 m MD	9.0 m
Core 317	3,844.0 - 3,853.0 m MD	9.0 m
Core 318	3,853.0 - 3,862.0 m MD	9.0 m
Core 319	3,862.0 - 3,871.0 m MD	9.0 m
Core 320	3,871.0 - 3,880.0 m MD	9.0 m
Core 321	3,880.0 - 3,889.0 m MD	9.0 m
Core 322	3,889.0 - 3,898.0 m MD	9.0 m
Core 323	3,898.0 - 3,907.0 m MD	9.0 m
Core 324	3,907.0 - 3,916.0 m MD	9.0 m
Core 325	3,916.0 - 3,925.0 m MD	9.0 m
Core 326	3,925.0 - 3,934.0 m MD	9.0 m
Core 327	3,934.0 - 3,943.0 m MD	9.0 m
Core 328	3,943.0 - 3,952.0 m MD	9.0 m
Core 329	3,952.0 - 3,961.0 m MD	9.0 m
Core 330	3,961.0 - 3,970.0 m MD	9.0 m
Core 331	3,970.0 - 3,979.0 m MD	9.0 m
Core 332	3,979.0 - 3,988.0 m MD	9.0 m
Core 333	3,988.0 - 3,997.0 m MD	9.0 m
Core 334	3,997.0 - 4,006.0 m MD	9.0 m
Core 335	4,006.0 - 4,015.0 m MD	9.0 m
Core 336	4,015.0 - 4,024.0 m MD	9.0 m
Core 337	4,024.0 - 4,033.0 m MD	9.0 m
Core 338	4,033.0 - 4,042.0 m MD	9.0 m
Core 339	4,042.0 - 4,051.0 m MD	9.0 m
Core 340	4,051.0 - 4,060.0 m MD	9.0 m
Core 341	4,060.0 - 4,069.0 m MD	9.0 m
Core 342	4,069.0 - 4,078.0 m MD	9.0 m
Core 343	4,078.0 - 4,087.0 m MD	9.0 m
Core 344	4,087.0 - 4,096.0 m MD	9.0 m
Core 345	4,096.0 - 4,105.0 m MD	9.0 m
Core 346	4,105.0 - 4,114.0 m MD	9.0 m
Core 347	4,114.0 - 4,123.0 m MD	9.0 m
Core 348	4,123.0 - 4,132.0 m MD	9.0 m
Core 349	4,132.0 - 4,141.0 m MD	9.0 m
Core 350	4,141.0 - 4,150.0 m MD	9.0 m
Core 351	4,150.0 - 4,159.0 m MD	9.0 m
Core 352	4,159.0 - 4,168.0 m MD	9.0 m
Core 353	4,168.0 - 4,177.0 m MD	9.0 m
Core 354	4,177.0 - 4,186.0 m MD	9.0 m
Core 355	4,186.0 - 4,195.0 m MD	9.0 m
Core 356	4,195.0 - 4,204.0 m MD	9.0 m
Core 357	4,204.0 - 4,213.0 m MD	9.0 m
Core 358	4,213.0 - 4,222.0 m MD	9.0 m
Core 359	4,222.0 - 4,231.0 m MD	9.0 m
Core 360	4,231.0 - 4,240.0 m MD	9.0 m
Core 361	4,240.0 - 4,249.0 m MD	9.0 m
Core 362	4,249.0 - 4,258.0 m MD	9.0 m
Core 363	4,258.0 - 4,267.0 m MD	9.0 m
Core 364	4,267.0 - 4,276.0 m MD	9.0 m
Core 365	4,276.0 - 4,285.0 m MD	9.0 m
Core 366	4,285.0 - 4,294.0 m MD	9.0 m
Core 367	4,294.0 - 4,303.0 m MD	9.0 m
Core 368	4,303.0 - 4,312.0 m MD	9.0 m
Core 369	4,312.0 - 4,321.0 m MD	9.0 m
Core 370	4,321.0 - 4,330.0 m MD	9.0 m
Core 371	4,330.0 - 4,339.0 m MD	9.0 m
Core 372	4,339.0 - 4,348.0 m MD	9.0 m
Core 373	4,348.0 - 4,357.0 m MD	9.0 m
Core 374	4,357.0 - 4,366.0 m MD	9.0 m
Core 375	4,366.0 - 4,375.0 m MD	9.0 m
Core 376	4,375.0 - 4,384.0 m MD	9.0 m
Core 377	4,384.0 - 4,393.0 m MD	9.0 m
Core 378	4,393.0 - 4,402.0 m MD	9.0 m
Core 379	4,402.0 - 4,411.0 m MD	9.0 m
Core 380	4,411.0 - 4,420.0 m MD	9.0 m
Core 381	4,420.0 - 4,429.0 m MD	9.0 m
Core 382	4,429.0 - 4,438.0 m MD	9.0 m
Core 383	4,438.0 - 4,447.0 m MD	9.0 m
Core 384	4,447.0 - 4,456.0 m MD	9.0 m
Core 385	4,456.0 - 4,465.0 m MD	9.0 m
Core 386	4,465.0 - 4,474.0 m MD	9.0 m
Core 387	4,474.0 - 4,483.0 m MD	9.0 m
Core 388	4,483.0 - 4,492.0 m MD	9.0 m
Core 389	4,492.0 - 4,501.0 m MD	9.0 m
Core 390	4,501.0 - 4,510.0 m MD	9.0 m
Core 391	4,510.0 - 4,519.0 m MD	9.0 m
Core 392	4,519.0 - 4,528.0 m MD	9.0 m
Core 393	4,528.0 - 4,537.0 m MD	9.0 m
Core 394	4,537.0 - 4,546.0 m MD	9.0 m
Core 395	4,546.0 - 4,555.0 m MD	9.0 m
Core 396	4,555.0 - 4,564.0 m MD	9.0 m
Core 397	4,564.0 - 4,573.0 m MD	9.0 m
Core 398	4,573.0 - 4,582.0 m MD	9.0 m
Core 399	4,582.0 - 4,591.0 m MD	9.0 m
Core 400	4,591.0 - 4,600.0 m MD	9.0 m
Core 401	4,600.0 - 4,609.0 m MD	9.0 m
Core 402	4,609.0 - 4,618.0 m MD	9.0 m
Core 403	4,618.0 - 4,627.0 m MD	9.0 m
Core 404	4,627.0 - 4,636.0 m MD	9.0 m
Core 405	4,636.0 - 4,645.0 m MD	9.0 m
Core 406	4,645.0 - 4,654.0 m MD	9.0 m
Core 407	4,654.0 - 4,663.0 m MD	9.0 m
Core 408	4,663.0 - 4,672.0 m M

Appendix VII

Log Analysis

Visibions 1589-2272 Petrophysical Interp.

Petrophysical Interpretation

Visibions 1589-2272 Petrophysical Interp.

Well Name: Visibions 1589-2272 Petrophysical Interp.
Company: Husky Oil Operations Limited
Field: Visibions
Location: 100/16-08-047-02W5/00
Licence: Alberta
Date: Wednesday, October 14, 2009 10:00:00 AM
Path: C:\Users\Public\Documents\Hampson-Russell\CE7\Projects\Visibions 1589-2272 Petrophysical Interp.hpj
Log: Visibions 1589-2272 Petrophysical Interp.log

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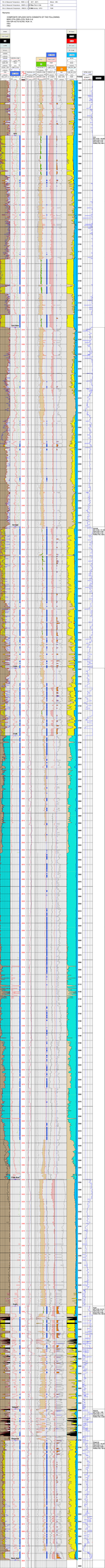
Log Interpretation

Log Name:	Visibions 1589-2272 Petrophysical Interp.log	Date:	Wed, Oct 14, 2009 10:00:00 AM
Log Type:	Petrophysical Interpretation	Time:	10:00:00
Log Source:	Visibions 1589-2272 Petrophysical Interp.log	Depth Step:	0.125
Log Units:	Metric	Depth Type:	Measured Depth

Remarks

COMPOSITE SPLICED DATA CONSISTS OF THE FOLLOWING:
DEPTH GRR-CCL RUN 2-5
DEPTH RT-TD ECRD RUN 1A
DEPTH


Visibions 1589-2272 Petrophysical Interp.log
Log Interpretation
Log Name: Visibions 1589-2272 Petrophysical Interp.log
Log Type: Petrophysical Interpretation
Log Source: Visibions 1589-2272 Petrophysical Interp.log
Log Units: Metric
Date: Wed, Oct 14, 2009 10:00:00 AM
Time: 10:00:00
Depth Step: 0.125
Depth Type: Measured Depth
Remarks
COMPOSITE SPLICED DATA CONSISTS OF THE FOLLOWING:
DEPTH GRR-CCL RUN 2-5
DEPTH RT-TD ECRD RUN 1A
DEPTH
Depth
Scale
Measured Depth
Vertical Depth
Gamma Ray
Caliper
Bit Size
Density Correction
Neutron Porosity
Density Porosity
Density
Neutron Porosity
Sonic Porosity
Shale Volume
Sonic Porosity
Density Porosity
Neutron Porosity
Water Saturation
Hydrocarbon Saturation
Permeability
Formation Factor
Resistivity
Sonic
Density
Neutron