General information

Wellbore name	6506/11-8
Type	EXPLORATION
Purpose	APPRAISAL
Status	P&A
Press release	link to press release
Factmaps in new window	link to map
Main area	NORWEGIAN SEA
Field	MORVIN
Discovery	6506/11-7 Morvin
Well name	6506/11-8
Seismic location	3d survey ST02M04-inline 2660 & crossline 2648
Production licence	134 B
Drilling operator	Statoil ASA (old)
Drill permit	1110-L
Drilling facility	WEST ALPHA
Drilling days	115
Entered date	24.03.2006
Completed date	16.07.2006
Release date	16.07.2008
Publication date	15.08.2008
Purpose - planned	APPRAISAL
Reentry	NO
Content	OIL
Discovery wellbore	NO
1st level with HC, age	MIDDLE JURASSIC
1st level with HC, formation	GARN FM
2nd level with HC, age	EARLY JURASSIC
2nd level with HC, formation	TOFTE FM
Kelly bushing elevation [m]	18.0
Water depth [m]	380.0
Total depth (MD) [m RKB]	4990.0
Final vertical depth (TVD) [m RKB]	4988.0
Maximum inclination [°]	6.2
Bottom hole temperature [°C]	178
Oldest penetrated age	EARLY JURASSIC
Oldest penetrated formation	TILJE FM
Geodetic datum	ED50

NS degrees	65° 7' 13.6'' N
EW degrees	6° 26' 49.3'' E
NS UTM [m]	7224481.28
EW UTM [m]	380172.20
UTM zone	32
NPDID wellbore	5295

Wellbore history

Block 6506/11 is situated on the north-western part of the Halten Terrace offshore Mid-Norway. The well 6506/11-8 was drilled to appraise the 6506/11-7 Morvin Discovery, approximately 10 km north of the Kristin field. The primary objective of the well was to prove extra recoverable oil in structure, explore potential better reservoir properties and reduce depth uncertainties. The primary target was Bathonian age sandstones in the Garn and Ile Formations. Potential targets in the Tofte and Tilje Formations were also investigated by this drilling.

Operations and results

Appraisal well 6506/11-8 was spudded with the semi-submersible installation West Alpha on 24 March 2006 and drilled to TD at 4990 m in the early Jurassic Tilje Formation (extended from 4893 m, which was the planned TD of the well). No significant technical problems were encountered in the operations. The well was drilled with seawater and bentonite down to 2150 m, with Glydril water based mud (with glycols) from 2150 m to 4500 m, and with Paratherm oil based mud from 4500 m to TD. No shallow gas was observed by the ROV at the wellhead or by the MWD while drilling the 26" hole.

The well penetrated rocks of Quaternary, Tertiary, Cretaceous, and Jurassic age. Small gas peaks of up to 3.67% were observed in the lower Lange Sandstone Unit, similar to those observed in the 6506/11-7 well, indicating slight hydrocarbon charging. In the lower Lange Sandstones from 4449 m to 4479 m, very weak shows where observed. The well penetrated the Garn reservoir section at 4622.9 m and the Ile reservoir section at 4734.8 m, both formations shallower than prognosed. A HC discovery was proven both in the Garn and Ile Formations, but the MDT results suggested the formations to be tight. A MDT mini-DST was run in Tofte Formation and confirmed that it contained HC, but was very tight. The MDT data had insufficient resolution to assess gradients and fluid contacts. However, sufficient good pressure points were achieved to conclude that the pressure regime was the same as in the 6506/11-7 well for both the Garn and Ile Formation.

Eight cores with a total recovered length of 278 m were cut in the well; one was cut in the Spekk/Melke Formation and seven were cut in the Bathonian sandstones. Oil sampling was performed in the Garn (4679 and 4680.7 m), Ile (4773 m) and Tofte (4845.2 m) Formations. Water sampling was performed at 4692.5 m in the Garn Formation. A disappointing high level of contamination in the oil sampling was registered with 10 - 23 % contamination.

The well was permanently abandoned on 1 July 206 as an oil appraisal.

Testing

No drill stem test was performed.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
1350.00	4989.00

Cuttings available for sampling?	YES

Cores at the Norwegian Offshore Directorate

Core sample number	Core sample - top depth	Core sample - bottom depth	Core sample depth - uom
2	4624.0	4658.4	[m]
3	4658.4	4671.4	[m]
4	4671.4	4674.2	[m]
5	4674.4	4699.8	[m]
6	4743.0	4753.0	[m]
7	4753.0	4769.4	[m]
8	4769.4	4775.4	[m]

Total core sample length [m]	108.1
Cores available for sampling?	YES

Oil samples at the Norwegian Offshore Directorate

Test type	Bottle number	Top depth MD [m]	Bottom depth MD [m]	Fluid type	Test time	Samples available
DST	2C	4773.00	0.00	CONDENSATE		YES
DST	2B	0.00	4578.00	CONDENSATE		YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
398	NORDLAND GP
398	NAUST FM
1493	KAI FM
1894	HORDALAND GP
1894	BRYGGE FM
2183	ROGALAND GP

2183	TARE FM
2252	TANG FM
2311	SHETLAND GP
2311	SPRINGAR FM
2503	NISE FM
2704	KVITNOS FM
3393	CROMER KNOLL GP
3393	LYSING FM
3557	LANGE FM
4257	NO FORMAL NAME
4402	LANGE FM
4586	LYR FM
4599	VIKING GP
4599	SPEKK FM
4600	MELKE FM
4623	FANGST GP
4623	GARN FM
4702	NOT FM
4735	ILE FM
4798	BÅT GP
4798	ROR FM
4839	TOFTE FM
4928	TILJE FM

Logs

Log type	Log top depth [m]	Log bottom depth [m]
AIT IPLT DSI GR ECRD	4758	4989
CMR APLT ECS ACTS ECRD	4504	4897
DSI AIT APLT ACTS ECRD	1413	4505
MDT MINI DST SAMPLE	4692	4782
MDT MINI DST SAMPLE	4845	4845
MDT PQ SAMPLE	4500	4830
MDT PRESS	4623	4870
MDT SAMPLE MINI DST	4679	4679
MSCT GR	4599	4981
MSCT GR	4623	4877
MWD - ON TRACK	440	4990
PPC MSIP PPC IS AIT ACTS ECRD	4504	4897

VSI GR	2859	4985
VSP GR	1322	3554

Casing and leak-off tests

Casing type	Casing diam. [inch]	Casing depth [m]	Hole diam. [inch]	Hole depth [m]	LOT/FIT mud eqv. [g/cm3]	Formation test type
CONDUCTOR	30	446.0	36	448.0	0.00	LOT
SURF.COND.	20	1341.0	26	1350.0	1.72	LOT
INTERM.	14	2139.0	17 1/2	2150.0	1.86	LOT
INTERM.	9 7/8	4500.0	12 1/4	4500.0	2.06	LOT
OPEN HOLE		4980.0	8 1/2	4980.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
446	1.06			SW / BENTONITE 1	
1350	1.30			SW / BENTONITE 1	
1823	1.53	23.0		GLYDRIL 18	
2150	1.62	25.0		GLYDRIL 18	
2320	1.70	38.0		PARATHERM	
4500	1.78	29.0		PARATHERM	
4606	1.86	34.0		PARATHERM	
4620	1.86	42.0		PARATHERM	
4624	1.86	34.0		PARATHERM	
4679	1.86	43.0		PARATHERM	
4775	1.86	39.0		PARATHERM	

Pressure plots

The pore pressure data is sourced from well logs if no other source is specified. In some wells where pore pressure logs do not exist, information from Drill stem tests and kicks have been used. The data has been reported to the NPD, and further processed and quality controlled by IHS Markit.

Document name	Document format	Document size [MB]
5295_Formation_pressure_(Formasjonstrykk)	pdf	0.28