

**General information**

Wellbore name	6507/11-9
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Press release	link to press release
Factmaps in new window	link to map
Main area	NORWEGIAN SEA
Field	HALTEN ØST
Discovery	6507/11-9 (Natalia)
Well name	6507/11-9
Seismic location	MGW98R01-line2988-trace 3976-Seismic 3D survey
Production licence	263
Drilling operator	StatoilHydro Petroleum AS
Drill permit	1167-L
Drilling facility	WEST ALPHA
Drilling days	38
Entered date	12.03.2008
Completed date	18.04.2008
Release date	18.04.2010
Publication date	18.04.2010
Purpose - planned	WILDCAT
Reentry	NO
Content	GAS
Discovery wellbore	YES
1st level with HC, age	MIDDLE JURASSIC
1st level with HC, formation	GARN FM
Kelly bushing elevation [m]	18.0
Water depth [m]	281.0
Total depth (MD) [m RKB]	3069.0
Final vertical depth (TVD) [m RKB]	3058.0
Maximum inclination [°]	9.3
Bottom hole temperature [°C]	109
Oldest penetrated age	EARLY JURASSIC
Oldest penetrated formation	BÅT GP
Geodetic datum	ED50
NS degrees	65° 9' 7.8" N
EW degrees	7° 25' 10.6" E



NS UTM [m]	7226521.88
EW UTM [m]	425900.64
UTM zone	32
NPDID wellbore	5766

Wellbore history

General

Well 6507/11-9 was drilled on the Natalia prospect in the Grinda Graben, ca 5 km north of the Midgard Field in the Norwegian Sea. The structure is a rotated fault block and comprise of Jurassic reservoir sandstones. It was drilled up-dip from the previously drilled 6507/11-4 on the structure. The primary objective of the well was to prove presence of hydrocarbons in Jurassic sandstones in the Fangst Group. The secondary target was to examine the hydrocarbon migration route in the prospect area.

Operations and results

The rig arrived at the 6507/11-9 location already on 20 February 2008, but had to wait 20 days due to bad weather before setting anchors. The well was spudded with the semi-submersible rig West Alpha on 12 March 2008 and drilled to TD at 3069 m in sandstones and claystones of the Early Jurassic Båt Group. No shallow gas was observed by the ROV at the wellhead or by the MWD while drilling the 26" hole. The well was drilled with spud mud down to 810 m and with Glydril mud from 810 m to TD.

The well penetrated rocks of Quaternary, Tertiary, Cretaceous and Jurassic age. The well penetrated the Garn reservoir section at 2597 m, 24.2 m shallower than prognosed. The well proved a ca 40 m gas column in the Garn Formation; with a gas-down-to top Not Formation at 2637.8 m (2612 m TVD MSL). The Ile Formation was water bearing. The first water bearing sand to be penetrated below the hydrocarbon column was in the Not Formation at 2645 m (2619 m TVD MSL). The hydrocarbon contact for the Natalia structure is therefore expected to be between 2637.8 and 2645 m (2612 m and 2619 m TVD MSL respectively), if same pressure regime and hydrocarbon system up dip. The updated seismic interpretation indicates that the structure spills to the north at 2646 m (2620 m TVD MSL), which is in conformance with the expected contact. The apex of the structure is mapped at 2575m (2550 m TVD MSL), which gives a corresponding column height for the entire structure of 60 m. Shows (fluorescence and cut) were recorded on sandstone cuttings down to 2658 m. The reservoir properties and sedimentary facies observed in the well are similar to the excellent reservoir properties observed on the Midgard Field. Porosity and permeability are estimated to 26% and 4 Darcy respectively.

Apart from shows in the reservoir, a 7.7% gas peak was recorded at 2240 m, with fluorescence and cut recorded on sandy/silty claystone cuttings at the same depth in the Nise Formation.

One core was cut at 2621 - 2642 m in the Garn and Not Formations with 97% recovery. MDT fluid samples were taken in the Garn and Ile Formations at 2609.0 m (condensate), 2625.0 m (gas/oil), and at 2671.5 m (water).

The well was permanently abandoned on 18 April 2008 as a gas Discovery.

Testing

No drill stem test was performed.



Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
820.00	3069.00

Cuttings available for sampling?	YES
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Cores at the Norwegian Offshore Directorate

Core sample number	Core sample - top depth	Core sample - bottom depth	Core sample depth - uom
1	2621.0	2641.3	[m]

Total core sample length [m]	20.3
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	2A	0.00	0.00	WATER		YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
299	NORDLAND GP
299	NAUST FM
1392	KAI FM
1640	HORDALAND GP
1640	BRYGGE FM
2005	ROGALAND GP
2005	TARE FM
2068	TANG FM
2121	SHETLAND GP
2121	SPRINGAR FM
2174	NISE FM



2389	KVITNOS FM
2529	CROMER KNOLL GP
2529	LANGE FM
2531	LYR FM
2535	VIKING GP
2535	SPEKK FM
2543	MELKE FM
2597	FANGST GP
2597	GARN FM
2637	NOT FM
2653	ILE FM
2730	BÅT GP
2730	ROR FM
2812	TILJE FM
2910	ÅRE FM

Logs

Log type	Log top depth [m]	Log bottom depth [m]
ACTS ECRD CMR PEX ECS HNGS HRLA	2600	3071
ACTS ECRD FMI DSI	1800	3071
MDT ACTS	2602	3015
MWD - ONTRACK	360	3069
VSP ACTS ECRD	450	3071

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	188.0	36	363.0	0.00	LOT
SURF.COND.	20	802.0	26	810.0	1.51	LOT
INTERM.	13 3/8	1793.0	17 1/2	1806.0	1.91	LOT
INTERM.	9 5/8	2600.0	12 1/4	2619.0	1.67	LOT
OPEN HOLE		3069.0	8 1/2	3069.0	0.00	LOT

Drilling mud



Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
395	1.37	16.0		Glydril	
525	1.37	19.0		Glydril	
740	1.37	18.0		Glydril	
810	1.60	26.0		Spud Mud	
880	1.35	16.0		Glydril	
990	1.35	16.0		Glydril	
1063	1.37	18.0		Glydril	
1414	1.37	18.0		Glydril	
1536	1.37	17.0		Glydril	
1722	1.37	19.0		Glydril	
1807	1.37	20.0		Glydril	
1807	1.37	20.0		Glydril	
1813	1.55	15.0		Glydril	
1925	1.54	15.0		Glydril	
2095	1.55	18.0		Glydril	
2213	1.55	17.0		Glydril	
2428	1.55	17.0		Glydril	
2493	1.60	19.0		Glydril	
2493	1.55	19.0		Glydril	
2619	1.61	30.0		Glydril	
2619	1.61	25.0		Glydril	
2619	1.60	18.0		Glydril	
2621	1.25	14.0		Glydril	
2632	1.25	14.0		Glydril	
2642	1.25	13.0		Glydril	
2700	1.25	13.0		Glydril	
2780	1.25	16.0		Glydril	
3069	1.25	14.0		Glydril	

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]
5766 Formation pressure (Formasjonstrykk)	pdf	0.29

