

**General information**

Wellbore name	6407/8-5 S
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	HYME
Discovery	6407/8-5 S Hyme
Well name	6407/8-5
Seismic location	3D survey BPN9501R05 inline 575 & crossline 1780
Production licence	348
Drilling operator	StatoilHydro Petroleum AS
Drill permit	1248-L
Drilling facility	WEST ALPHA
Drilling days	25
Entered date	02.05.2009
Completed date	26.05.2009
Release date	26.05.2011
Publication date	26.05.2011
Purpose - planned	WILDCAT
Reentry	NO
Content	OIL
Discovery wellbore	YES
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	TILJE FM
Kelly bushing elevation [m]	18.0
Water depth [m]	252.0
Total depth (MD) [m RKB]	3240.0
Final vertical depth (TVD) [m RKB]	2368.7
Maximum inclination [°]	70.9
Bottom hole temperature [°C]	104
Oldest penetrated age	TRIASSIC
Oldest penetrated formation	GREY BEDS (INFORMAL)
Geodetic datum	ED50



NS degrees	64° 20' 56.6" N
EW degrees	7° 33' 44.3" E
NS UTM [m]	7136873.69
EW UTM [m]	430558.81
UTM zone	32
NPDID wellbore	6110

Wellbore history

General

Well 6407/8-5 S and the sidetrack 6407/8-5 A were drilled on the Gygrid prospect situated 7 km west of the Draugen Field in the Norwegian Sea. The main objectives of the wells were to prove hydrocarbons in the Upper and Lower Åre Formation. A secondary objective was to test the prospectivity of the Late Jurassic Rogn Formation. The structure was expected to be gas filled with a thin oil leg. Total Depth of the wells was planned 100 m TVD under prognosed HC/water contact in the Åre Formation or maximum 2308 m TVD RKB in both S and A wells.

Operations and results

Wildcat well 6407/8-5 S was spudded with the semi-submersible installation West Alpha on 2 May 2009 and drilled to TD at 3240 m (2368.7 m TVD) in the Triassic Grey Beds. The well was drilled vertical down to 1375 m, building angle to ca 70 deg at 2170 m, and keeping ca 70 deg from 2170 m to TD. It was drilled with Seawater/WBM down to 926 m and with Versatec oil base mud from 926 m to TD.

The well penetrated rocks of Quaternary, Tertiary, Cretaceous, Jurassic, and Triassic age. Contrary to the pre-drill interpretation a full Jurassic stratigraphy was encountered, with the Viking Group coming in at 2100 m (1979.2 m TVD), the Fangst Group (Garn Formation) at 2252.5 m (2035.5 m TVD), and the Båt Group at 2487.5 m (2114.5 m TVD). The Spekk and Melke Formation contained several thin sandstones, but no massive Rogn Formation. Instead the Ile Formation at 2346.5 m (2067 m TVD) and the Tilje Formation at 2549 m (2135.3 m TVD) proved to be the main reservoirs, with oil proven in the Tilje Formation. No gas cap was seen. A Tilje ODT was encountered at approximately 2148 m TVD with water up to approximately 2151 m TVD. In addition, a thin gas zone was encountered in a condensed Garn Formation. Weak oil shows were recorded on cuttings from 2152 to 2350 m in the Viking and Fangst Groups, and from 2549 to 2565 m in the Tilje Formation.

The well penetrated a seismic flat spot that proved to be in the Tilje Formation and not in the Åre Formation as it was prognosed to be. Due to the unexpected geology in the well the hydrocarbon bearing zone was penetrated too far down flank on the structure, missing the prognosed gas cap. The planned down-dip Åre sidetrack was thus re-designed to enter the structure a bit higher than the S well and then to turn upwards to investigate top Tilje in a structurally higher position. No cores were cut in the well. MDT fluid samples were taken in the Tilje Formation at 2551.5 m (oil), at 2583 m (oil) and at 3169 m (water).

The well was permanently abandoned on 26 May 2009 as an oil discovery.

Testing

No drill stem test was performed.

**Cuttings at the Norwegian Offshore Directorate**

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
930.00	3240.00

Cuttings available for sampling?	YES
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Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
2090.0	[m]	DC	PETROSTR
2100.0	[m]	DC	PETROS
2110.0	[m]	DC	PETROS
2120.0	[m]	DC	PETROS
2130.0	[m]	DC	PETROS
2150.0	[m]	DC	PETROS
2160.0	[m]	DC	PETROS
2170.0	[m]	DC	PETROS
2180.0	[m]	DC	PETROS
2190.0	[m]	DC	PETROS
2200.0	[m]	DC	PETROS
2220.0	[m]	DC	PETROS
2240.0	[m]	DC	PETROS
2260.0	[m]	DC	PETROS
2280.0	[m]	DC	PETROS
2300.0	[m]	DC	PETROS

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
270	NORDLAND GP
270	NAUST FM
900	KAI FM
936	HORDALAND GP
936	BRYGGE FM
1516	ROGALAND GP
1516	TARE FM
1604	TANG FM



1730	SHETLAND GP
1730	SPRINGAR FM
1775	NISE FM
1910	KVITNOS FM
2100	VIKING GP
2100	SPEKK FM
2180	MELKE FM
2253	FANGST GP
2253	GARN FM
2317	NOT FM
2347	ILE FM
2488	BÅT GP
2488	ROR FM
2549	TILJE FM
2731	ÅRE FM
2905	GREY BEDS (INFORMAL)

Composite logs

Document name	Document format	Document size [MB]
6110	pdf	0.42

Logs

Log type	Log top depth [m]	Log bottom depth [m]
MDT GR	2550	2848
MWD LWD - DIR	270	334
MWD LWD - DIR GR RES	334	2469
MWD LWD - DIR GR RES DEN NEU SON	2469	3240
VI VSP	1920	2985

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	330.0	36	334.0	0.00	LOT





SURF.COND.	13 3/8	915.0	17 1/2	926.0	1.80	LOT
INTERM.	9 5/8	2467.0	12 1/4	2469.0	0.00	LOT
OPEN HOLE		3240.0	8 1/2	3240.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
928	1.47	23.0		Versatec	
1070	1.47	24.0		Versatec	
1195	1.47	28.0		Versatec	
1360	1.47	27.0		Versatec	
2420	1.13	19.0		Versatec	
2440	1.14	17.0		Versatec	
2467	1.47	31.0		Versatec	
2541	1.18	19.0		Versatec	
2647	1.47	32.0		Versatec	
2879	1.10	15.0		Versatec	
3100	1.10	17.0		Versatec	
3240	1.11	18.0		Versatec	

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]
6110 Formation pressure (Formasjonstrykk)	pdf	0.29

