

**General information**

Wellbore name	6406/6-3
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Press release	link to press release
Factmaps in new window	link to map
Main area	NORWEGIAN SEA
Discovery	6406/6-3 (Mjøsa)
Well name	6406/6-3
Seismic location	WINO09M02 inline 760 & xline 2806
Production licence	511
Drilling operator	Wintershall Norge AS
Drill permit	1446-L
Drilling facility	TRANSOCEAN ARCTIC
Drilling days	86
Entered date	14.04.2013
Completed date	09.07.2013
Release date	09.07.2015
Publication date	13.08.2015
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]	24.0
Water depth [m]	243.0
Total depth (MD) [m RKB]	4420.0
Final vertical depth (TVD) [m RKB]	4419.0
Maximum inclination [°]	5.1
Bottom hole temperature [°C]	159
Oldest penetrated age	EARLY JURASSIC
Oldest penetrated formation	ÅRE FM
Geodetic datum	ED50
NS degrees	64° 34' 24.49" N
EW degrees	6° 58' 27.53" E
NS UTM [m]	7162647.49
EW UTM [m]	402962.76



UTM zone	32
NPDID wellbore	7156

Wellbore history

General

Well 6406/6-3 Mjøsa was drilled on the Halten Terrace in the Norwegian Sea, about 25 kilometres south of the Tyrihans field and about 15 kilometres northeast of the 6406/9-1 Linnorm discovery. The primary target was the Middle Jurassic Ile Formation with secondary targets in the Lower Jurassic of Tofte, Tilje and Åre Formation.

Operations and results

Wildcat well 6406/6-3 was spudded with the semi-submersible installation Transocean Arctic on 14 April 2013 and drilled to TD at 4420 m in the Early Jurassic Åre Formation. A 9 7/8" pilot hole was drilled from 377 m to 1400 m to check for shallow gas. No shallow gas was seen. Operations proceeded without significant problems. The well was drilled with seawater down to 377 m, with KCl/GEM/polymer mud from 377 m to 1400 m, and with XP-07 oil based mud from 1400 m to TD.

The Melke Formation, where the 9-7/8" casing was set, was found thinner than expected due to condensed and partially eroded section on top of the structure. The Garn Formation was encountered at 3802 m. The Garn Formation was evaluated pre-drill as most likely shaled out, but proved to have good overall reservoir quality and was also found to contain dry gas in the topmost part with a gas-water contact at 3816 m. All the pre-drill Jurassic targets deeper down were found water bearing and in general with better than expected reservoir quality. No oil shows were described in the well.

No conventional cores were cut. Sidewall cores were taken in the Garn Formation. RCX fluid samples were taken at 3803 m (gas) and 3841.5 m (water).

The well was permanently abandoned on 9 July 2013 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]
1410.00	4421.00

Cuttings available for sampling?	YES
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Lithostratigraphy



Top depth [mMD RKB]	Lithostrat. unit
267	NORDLAND GP
555	NAUST FM
1337	KAI FM
1669	HORDALAND GP
1669	BRYGGE FM
2173	ROGALAND GP
2173	TARE FM
2258	TANG FM
2324	SHETLAND GP
2324	SPRINGAR FM
2505	NISE FM
2758	KVITNOS FM
2848	CROMER KNOLL GP
2848	LYSING FM
3172	LANGE FM
3721	LYR FM
3732	VIKING GP
3732	SPEKK FM
3753	MELKE FM
3802	FANGST GP
3802	GARN FM
3855	NOT FM
3921	ILE FM
4035	BÅT GP
4035	ROR FM
4064	TOFTE FM
4075	ROR FM
4188	TILJE FM
4373	ÅRE FM

Logs

Log type	Log top depth [m]	Log bottom depth [m]
CCL GR SBT VDL	3000	3780
GR ASR	1450	4378
MRCH JAR GR MAXCOR	3640	3694
MRCH JAR TTRM DSL CN ZDL ORIT HD	267	4416



MRCH JAR TTRM GR 6TC IFX RCX	3803	4358
MRCH JAR TTRM GR RCX	3808	3984
MWD - DIR PWD	265	377
MWD - DIR PWD GR RES	381	1400
MWD - DIR PWD GR RES DIR SON	1400	2290
MWD - DIR PWD GR RES SON DEN POR	2290	3797
MWD - DIR PWD GR RES TESTRAC RES	3797	4420
VSP	500	4408

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	377.0	36	377.0	0.00	
SURF.COND.	20	1395.0	26	1400.0	0.00	
PILOT HOLE		1400.0	9 7/8	1400.0	0.00	
INTERM.	13 3/8	2285.0	17 1/2	2290.0	0.00	
LINER	9 7/8	3788.0	12 1/4	3797.0	0.00	
OPEN HOLE		4420.0	8 1/2	4420.0	0.00	

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
381	1.34	15.0		Performadril	
394	1.02	1.0		Seawater	
501	1.64	28.0		HT-XP-07 Low ECD	
1223	1.34	20.0		KCI GEM Polymer	
1400	1.35	12.0		KCI GEM Polymer	
1400	1.29	12.0		KCI GEM Polymer	
2200	1.84	37.0		HT-XP-07 Low ECD	
2200	1.84	36.0		HT-XP-07 Low ECD	
2200	1.80	35.0		HT-XP-07 Low ECD	
2290	1.67	39.0		XP-07 Yellow	
3543	1.90	56.0		HT-XP-07 Low ECD	
3797	1.80	44.0		HT-XP-07 Low ECD	
3923	1.94	52.0		HT-XP-07 Low ECD	
4091	1.90	50.0		HT-XP-07 Low ECD	



4420	1.89	49.0		HT-XP-07 Low ECD	
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