General information

Wellbore name	6407/2-4
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Press release	link to press release
Factmaps in new window	link to map
Main area	NORWEGIAN SEA
Well name	6407/2-4
Seismic location	inline 4603 & crossline 2292
Production licence	380
Drilling operator	Det norske oljeselskap ASA (old)
Drill permit	1244-L
Drilling facility	SONGA DELTA
Drilling days	40
Entered date	23.07.2009
Completed date	31.08.2009
Release date	06.01.2010
Publication date	23.12.2010
Purpose - planned	WILDCAT
Reentry	NO
Content	DRY
Discovery wellbore	NO
Kelly bushing elevation [m]	29.0
Water depth [m]	269.0
Total depth (MD) [m RKB]	3001.0
Final vertical depth (TVD) [m RKB]	3000.0
Maximum inclination [°]	2.1
Oldest penetrated age	MIDDLE JURASSIC
Oldest penetrated formation	ILE FM
Geodetic datum	ED50
NS degrees	64° 57' 47.4'' N
EW degrees	7° 26' 51.2'' E
NS UTM [m]	7205429.55
EW UTM [m]	426693.13
UTM zone	32
NPDID wellbore	6106

Wellbore history

General

The Fongen prospect in PL380 is located northernmost in the Gimsan Basin, to the west of the Midgard Discovery on the Halten Terrace in the Norwegian Sea. Well 6407/2-4 was drilled to test the hydrocarbon and reservoir potential of the large Jurassic pre-rift fault block, named the Midgard West Block. The fault block is down faulted to the west with respect to the Midgard Horst. The primary target of the well was the shallow marine sandstones of the Garn Formation of Middle Jurassic age. Planned TD was TD 30 m into the first water bearing sandstone formation below the Garn Formation.

Operations and results

Wildcat well 6407/2-4 was spudded with the semi-submersible installation Songa Delta on 23 July 2009 and drilled to TD at 3001 m, 30 m into the Middle Jurassic Ile Formation. After drilling to 17 1/2" TD at 1777 m operations were suspended in three hours due to a fire in the generator switch board. During drilling the interval 2630 m to 2800 m significant gas peaks from 1.5% - 9% was observed, matching connection depths. Peaks were regarded as formation gas during drilling, but later experiences on the well indicate that mud weight should have been increased.

The Garn Formation primary target was encountered at 2892 m, 19 m deeper than the prognosis. It proved to be 10.5 m thicker than the prognosticated thickness of 41 m. Petrophysical evaluation of the MWD logs showed that Fangst Group section penetrated by the well had porosities up to 30%, with 67 m net reservoir having 24% average porosity. Water saturation was 95-100% in the entire reservoir range, indicating no residual hydrocarbon saturation. A questionable show on cuttings at 2891 m could be due to the oil based mud, otherwise no fluorescence or oil stain was seen from the cuttings. Apart from gas peaks caused by low mud weight gas readings were very low throughout the reservoir section.

No cores were cut. No wire line logging was performed and no fluid samples were taken.

The well was permanently abandoned on 31 August 2009 as a dry well.

Testing

No drill stem test was performed.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
1790.00	3001.00

Cuttings available for sampling?	YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
298	NORDLAND GP
298	NAUST FM
1391	KAI FM
1594	HORDALAND GP
1594	BRYGGE FM
1976	ROGALAND GP
1976	TARE FM
2019	TANG FM
2117	SHETLAND GP
2117	SPRINGAR FM
2227	NISE FM
2386	KVITNOS FM
2547	CROMER KNOLL GP
2547	LANGE FM
2800	LYR FM
2819	VIKING GP
2819	SPEKK FM
2858	MELKE FM
2892	FANGST GP
2892	GARN FM
2943	NOT FM
2973	ILE FM

Logs

Log type	Log top depth [m]	Log bottom depth [m]
LWD - GR RES	356	2876
LWD - GR RES DEN NEU SON	2876	3001

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	351.0	36	354.0	0.00	LOT
SURF.COND.	20	749.0	26	755.0	1.49	LOT
PILOT HOLE		755.0	9 7/8	755.0	0.00	LOT
INTERM.	13 3/8	1773.0	17 1/2	1777.0	2.25	LOT

INTERM.	9 5/8	2869.0	12 1/4	2876.0	1.77	LOT
OPEN HOLE		3001.0	8 1/2	3001.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
500	1.32	21.0		AQUACOL KCL/POLYMER/GLYCOL	
1192	1.25	15.0		AQUACOL KCL/POLYMER/GLYCOL	
1639	1.64	20.0		CARBO TECH	
1777	1.30	19.0		AQUACOL KCL/POLYMER/GLYCOL	
1900	1.60	38.0		CARBO TECH	
2876	1.62	40.0		CARBO TECH	
2876	1.62	43.0		CARBO TECH	
3001	1.63	41.0		CARBO TECH	
3001	1.25	24.0		CARBO TECH	