

**General information**

Wellbore name	16/4-7
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Press release	link to press release
Factmaps in new window	link to map
Main area	NORTH SEA
Well name	16/4-7
Seismic location	LN10M06 :inline 4058 & crossline 2539
Production licence	544
Drilling operator	Lundin Norway AS
Drill permit	1456-L
Drilling facility	BREDFORD DOLPHIN
Drilling days	30
Entered date	23.07.2013
Completed date	21.08.2013
Release date	21.08.2015
Publication date	21.08.2015
Purpose - planned	WILDCAT
Reentry	NO
Content	DRY
Discovery wellbore	NO
Kelly bushing elevation [m]	25.0
Water depth [m]	91.0
Total depth (MD) [m RKB]	2600.0
Final vertical depth (TVD) [m RKB]	2600.0
Maximum inclination [°]	1.4
Bottom hole temperature [°C]	99
Oldest penetrated age	TRIASSIC
Oldest penetrated formation	SKAGERRAK FM
Geodetic datum	ED50
NS degrees	58° 31' 37.87" N
EW degrees	2° 8' 34.4" E
NS UTM [m]	6487872.88
EW UTM [m]	450081.97
UTM zone	31
NPDID wellbore	7208



Wellbore history

General

Well 16/4-7 was drilled on the Biotitt prospect, a structural trap located some 30 km south of the Edvard Grieg field on the Utsira High in the North Sea. The well was drilled about 0.5 kilometres west of well 16/4-4, which penetrated down to the Late Cretaceous Tor Formation and found gas and condensate in the Early Paleocene Ty Formation. The primary objectives of well 16/4-7 was to prove petroleum deeper down on the structure, in Jurassic Intra-Heather or Hugin Formation sandstones. The well was planned to drill into Triassic strata.

Operations and results

Wildcat well 16/4-7 was spudded with the semi-submersible installation Bredford Dolphin on 23 July 2013 and drilled to TD at 2600 m in the Triassic Skagerrak Formation. No shallow gas was seen while drilling the top hole sections including the 9 7/8" pilot hole. The 12 1/4" section suffered from overall low efficiency due to power generation issues on the rig and a main engine cam shaft breakdown. The well was drilled with seawater and hi-vis sweeps down to 758 m and with Performadril water based mud with glycols from 758 to TD.

Ty Formation sandstones were encountered as prognosed at 2266 m with a gross thickness of 47.5 m. It was dry without shows. The target Jurassic sandstone reservoir was encountered at 2489 m. These sandstones are of Kimmeridgian age and belong to the Ula Formation rather than the Hugin Formation. The reservoir was of excellent quality, but was water-filled with only very weak visible oil shows seen in two sidewall cores. The thickness of the Ula Formation was 40 m. Skagerrak Formation sandstones with good reservoir quality were found unconformably underlying the Ula Formation with very weak oil shows seen in a sidewall core taken at the top of the formation. Post well geochemical analyses of the three weak shows proved only trace amounts of hydrocarbons that might be related to contamination.

No cores were cut. No fluid samples were taken

The well was permanently abandoned on 21 August 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]
770.00	2600.00

Cuttings available for sampling?	YES
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Lithostratigraphy



Top depth [mMD RKB]	Lithostrat. unit
116	NORDLAND GP
116	UNDIFFERENTIATED
226	NO FORMAL NAME
258	NO FORMAL NAME
574	UNDIFFERENTIATED
805	UTSIRA FM
993	UNDIFFERENTIATED
1086	HORDALAND GP
1086	SKADE FM
1273	NO FORMAL NAME
1763	NO FORMAL NAME
1859	GRID FM
1893	NO FORMAL NAME
2059	ROGALAND GP
2059	BALDER FM
2082	SELE FM
2115	LISTA FM
2234	VÅLE FM
2267	TY FM
2314	VÅLE FM
2319	SHETLAND GP
2319	EKOFISK FM
2336	TOR FM
2377	HOD FM
2413	CROMER KNOLL GP
2413	SOLA FM
2422	ÅSGARD FM
2453	VIKING GP
2453	DRAUPNE FM
2489	VESTLAND GP
2489	ULA FM
2529	HEGRE GP
2529	SKAGERRAK FM

Logs



Log type	Log top depth [m]	Log bottom depth [m]
MSCT GR	2306	2565
MWD - NBGR PWD RES DIR SON	116	754
MWD - RES GR PWD DIR CAL DEN NEU	762	2586
XL ROCK	2226	2426
XPT GR	2254	2300
XPT GR	2489	2572

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	192.5	36	196.0	0.00	
SURF.COND.	20	749.5	26	757.5	2.06	LOT
PILOT HOLE		758.0	9 7/8	758.0	0.00	
OPEN HOLE		762.0	17 1/2	762.0	0.00	
INTERM.	9 5/8	2212.0	12 1/4	2221.0	1.57	LOT
OPEN HOLE		2600.0	8 1/2	2600.0	0.00	

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
115	1.50	15.0		Water Based	
758	1.35	30.0		Water Based	
1728	1.40	43.0		Water Based	
2221	1.12	47.0		Water Based	