

**General information**

Wellbore name	16/4-12
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	16/4-12
Seismic location	LN12M02R16. inline 3277. crossline 1968
Production licence	981
Drilling operator	Lundin Norway AS
Drill permit	1835-L
Drilling facility	DEEPSEA STAVANGER
Drilling days	20
Entered date	19.09.2021
Completed date	08.10.2021
Plugged and abandon date	08.10.2021
Release date	21.04.2022
Publication date	21.04.2022
Purpose - planned	WILDCAT
Reentry	NO
Content	DRY
Discovery wellbore	NO
Kelly bushing elevation [m]	30.0
Water depth [m]	100.5
Total depth (MD) [m RKB]	2171.0
Final vertical depth (TVD) [m RKB]	2171.0
Maximum inclination [°]	1
Bottom hole temperature [°C]	86
Oldest penetrated age	PERMIAN
Oldest penetrated formation	ZECHSTEIN GP
Geodetic datum	ED50
NS degrees	58° 41' 51.29" N
EW degrees	2° 8' 50.75" E
NS UTM [m]	6506841.72
EW UTM [m]	450587.48
UTM zone	31
NPDID wellbore	9162



Wellbore history

General

Well 16/4-12 was drilled to test the Merckx prospect west of the 16/4-6 S Solveig discovery on the Utsira High in the North Sea. The primary objective was to test the reservoir properties and hydrocarbon potential of the Ty Formation. The secondary objective was to test the reservoir properties and hydrocarbon potential of the Zechstein Group.

Operations and results

A 9 7/8" pilot well 16/4-U-8 was drilled to 778 m to check for shallow gas. No shallow gas was seen.

Wildcat well 16/4-12 was spudded with the semi-submersible installation Deepsea Stavanger on 19 September 2021 and drilled to TD at 2171 m in the Permian Zechstein Group. Severe mud losses were experienced in the Zechstein Group with a total loss of 1353 m WBM, 68 m SW, 65 m brine and 96 m thixotropic cement. A total of 3.3 days was used to cure losses. The well was drilled with seawater and hi-vis pills down to 990 m, with Rheguard Prime oil-based mud from 990 m to 2043 m, and with Glydril Plus mud from 2043 m to TD.

Well 16/4-12 was dry at both target levels. Forty-eight metres of sandstone with good to very good reservoir quality was penetrated in the Ty Formation. In the secondary target, the well encountered 12 metres of dolomitic rocks of the Zechstein Group with poor to moderate reservoir quality. The well also encountered an interval of sandstone of possibly Jurassic/Triassic age between the Ty Formation and Top Zechstein Group. The interval was 15 metres thick with good to very good reservoir quality. The only hydrocarbon indication in the well was weak shows in a thin sandstone at 2020 m in the Lista Formation ("No odour, rare black carbonaceous material, spotty pale yellow direct fluorescence, weak, slow streaming, bluish white cut fluorescence, dull bluish white, fluorescent residue ring and patchy dark orange residue"). C1 C5 gas peaks above background level were observed around the same depth.

No cores were cut, and no fluid sample was taken.

The well was permanently abandoned on 8 October 2021 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]
1000.00	2163.00

Cuttings available for sampling?	YES
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**Lithostratigraphy**

Top depth [mMD RKB]	Lithostrat. unit
131	NORDLAND GP
131	UNDIFFERENTIATED
440	NAUST FM
768	UTSIRA FM
968	UNDIFFERENTIATED
1037	HORDALAND GP
1037	UNDIFFERENTIATED
1046	SKADE FM
1223	NO FORMAL NAME
1610	NO FORMAL NAME
1665	GRID FM
1716	NO FORMAL NAME
1929	ROGALAND GP
1929	BALDER FM
1942	SELE FM
1950	LISTA FM
2052	VÅLE FM
2054	TY FM
2101	SHETLAND GP
2112	CROMER KNOLL GP
2112	SOLA FM
2118	ÅSGARD FM
2129	HEGRE GP
2144	ZECHSTEIN GP

Logs

Log type	Log top depth [m]	Log bottom depth [m]
FMI HD PPC MSIP PPC GR JAR	130	2163
LWD - GR RES PWD DEN CAL NEU DIR	2043	2170
LWD - GR RES PWD DIR SON CAL DEN	990	2043
LWD - PWD DIR	130	187
LWD - PWD RES GR DIR	196	987
VSI4	142	2154
XLR GR	2096	2150



XPT NEXT HNGS GR JAR	2042	2159
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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	196.0	36	196.0	0.00	
INTERM.	13 3/8	984.0	17 1/2	990.0	1.66	LOT
OPEN HOLE		2171.0	8 1/2	2171.0	0.00	
INTERM.	9 5/8	2943.0	12 1/4	2043.0	1.57	FIT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
131	1.03	1.0	1.0	SW	
990	1.35	25.0	9.5	Rheguard Prime	
2043	1.37	33.0	11.5	Rheguard Prime	
2171	1.10	10.0	7.7	KCL Polymer	
2171	1.35	32.0	9.0	Rheguard Prime	