

**General information**

Wellbore name	16/2-20 S
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	16/2-20
Seismic location	LN0902R12:inline 3065 & crossline 3710
Production licence	501
Drilling operator	Lundin Norway AS
Drill permit	1450-L
Drilling facility	ISLAND INNOVATOR
Drilling days	53
Entered date	30.09.2013
Completed date	21.11.2013
Release date	21.11.2015
Publication date	21.11.2015
Purpose - planned	WILDCAT
Reentry	NO
Content	SHOWS
Discovery wellbore	NO
Kelly bushing elevation [m]	30.0
Water depth [m]	109.5
Total depth (MD) [m RKB]	2150.0
Final vertical depth (TVD) [m RKB]	2098.0
Maximum inclination [°]	23.6
Bottom hole temperature [°C]	91
Oldest penetrated formation	BASEMENT
Geodetic datum	ED50
NS degrees	58° 56' 30.84" N
EW degrees	2° 25' 18.62" E
NS UTM [m]	6533876.90
EW UTM [m]	466725.98
UTM zone	31
NPDID wellbore	7181



Wellbore history

General

Well 16/2-20 S was drilled on the Torvastad prospect north of the Johan Sverdrup Field on the Utsira High in the North Sea. The primary objective was to investigate the Jurassic - Early Cretaceous sequence with respect to reservoir facies, hydrocarbons, free water level, pressure communication with the Johan Sverdrup Field, and seismic interpretations and depth conversion.

Operations and results

Wildcat well 16/2-20 S was spudded with the semi-submersible installation Island Innovator on 30 September 2013 and drilled to TD at 2150 m (2098 m TVD) m, 36 m into granitic basement. A 9 7/8" pilot hole was drilled from

seabed to 720 m RKB to check for shallow gas. No shallow gas was observed. The well was drilled deviated due to a ridge on the seafloor that could cause instability for the wellhead and BOP. The well path is vertical down to ca 730 m, deviated with a sail angel of ca 23 ° from 730 to 1900 m, and vertical from 1900 m to TD. The well was drilled with seawater and hi-vis sweeps down to 720 m and with Aquadril mud from 720 m to TD.

An unusual, 21 m thick age-equivalent to the Draupne Formation (Volgian to Ryazanian age) was encountered at 2006.3 m (1954.6 m TVD). It consists of a condensed section at base, a thin shale section, and a 16.6 m thick spiculitic sandstone/siltstone on top. The porosity of these sediments is relatively high, but permeability is very low. Underlying this sequence, at 2027 m (1975.5 m TVD) the well penetrated a 10 m sequence of sandstones belonging to the Statfjord Group, a 77 m sequence of sandstones, limestone and mudstones belonging to the Skagerrak Formation and a 20 m thick Smith Bank Formation resting on the granitic basement. Good oil shows were described in the Statfjord Group.

A total of 52.5 m core was recovered in four cores from the interval 2001 to 2055 m. The core to log depth shifts are -2.34 m, -2.12 m, -1.3 m, and -1.3 m for cores 1 to 4, respectively. RCX fluid samples were taken at 2012.5 m (water), 2026.7 m (one sample with water and one with water and a fraction of oil), and at 2031.3 m (water).

The well was permanently abandoned on 21 November 2013 as a dry well with shows.

Testing

No drill stem test was performed.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
730.00	2150.00

Cuttings available for sampling?	YES
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Cores at the Norwegian Offshore Directorate



Core sample number	Core sample - top depth	Core sample - bottom depth	Core sample depth - uom
1	2001.0	2027.8	[m]
2	2028.0	2039.8	[m]
3	2040.0	2044.6	[m]
4	2045.0	2054.3	[m]

Total core sample length [m]	52.5
Cores available for sampling?	YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
140	NORDLAND GP
783	UTSIRA FM
858	UNDIFFERENTIATED
952	HORDALAND GP
952	SKADE FM
1069	NO FORMAL NAME
1130	NO FORMAL NAME
1284	NO FORMAL NAME
1536	NO FORMAL NAME
1718	ROGALAND GP
1718	BALDER FM
1737	SELE FM
1784	LISTA FM
1887	VÅLE FM
1900	SHETLAND GP
1900	TOR FM
1924	HOD FM
1939	CROMER KNOLL GP
1939	RØDBY FM
1978	SOLA FM
1985	ÅSGARD FM
2006	VIKING GP
2006	DRAUPNE FM
2027	STATEFJORD GP
2027	EIRIKSSON FM
2038	HEGRE GP



2038	SKAGERRAK FM
2095	SMITH BANK FM
2114	BASEMENT

Logs

Log type	Log top depth [m]	Log bottom depth [m]
DSL CN ZDL RTEX MLL	1946	2146
DSL IFX RCX	1500	1500
DSL IFX RCX S	1072	1072
DSL IFX S	2012	2031
DSL MAXCORE	1958	2063
DSL MREX FLEX	1946	2141
DSL PCORE	2057	2115
DSL RCX	2009	2115
DSL VSP	630	2130
DSL XMAC ORIT STAR UXPL	1946	2137
MWD - OTK	1895	1999
MWD - OTK APX	120	708
MWD - OTK APX CCN ORD	1914	2147
MWD - SDTK CCN ORD ZTK	683	1954
RCX	690	690

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	219.0	36	223.0	0.00	
SURF.COND.	20	713.0	26	720.0	1.61	FIT
PILOT HOLE		720.0	9 7/8	720.0	0.00	
INTERM.	9 5/8	1948.0	12 1/4	1954.0	1.73	LOT
OPEN HOLE		2150.0	8 1/2	2150.0	0.00	

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
700	1.35	15.0		Water Based	



1284	1.35	20.0		Water Based	
1780	1.40	25.0		Water Based	
2028	1.16	13.0		Water Based	
2050	1.19	16.0		Water Based	
2150	1.16	18.0		Water Based	