General information

Wellbore name	16/1-22 S
Type	EXPLORATION
Purpose	APPRAISAL
Status	P&A
Press release	link to press release
Factmaps in new window	link to map
Main area	NORTH SEA
Field	IVAR AASEN
Discovery	16/1-9 Ivar Aasen
Well name	16/1-22
Seismic location	DN14302-0313(N-S)/DN14302-0113(W-E)
Production licence	001 B
Drilling operator	Det norske oljeselskap ASA
Drill permit	1535-L
Drilling facility	MAERSK INTERCEPTOR
Drilling days	33
Entered date	24.04.2015
Completed date	27.05.2015
Release date	27.05.2017
Publication date	27.05.2017
Purpose - planned	APPRAISAL
Reentry	NO
Content	OIL
Discovery wellbore	NO
1st level with HC, age	LATE TRIASSIC
1st level with HC, formation	SKAGERRAK FM
Kelly bushing elevation [m]	55.0
Water depth [m]	111.0
Total depth (MD) [m RKB]	2640.0
Final vertical depth (TVD) [m RKB]	2617.0
Maximum inclination [°]	15.5
Bottom hole temperature [°C]	102
Oldest penetrated age	LATE TRIASSIC
Oldest penetrated formation	SKAGERRAK FM
Geodetic datum	ED50
NS degrees	58° 54' 23.09'' N
EW degrees	2° 9' 43.41'' E

NS UTM [m]	6530083.86
EW UTM [m]	451726.15
UTM zone	31
NPDID wellbore	7531

Wellbore history

General

Well 16/1-22 S was drilled to appraise the Ivar Aasen Field on the Gudrun Terrace in the North Sea. The primary objective was to test the hydrocarbon potential in the Sleipner and Skagerrak Formations in the southwestern part of the Ivar Aasen Field and to establish hydrocarbon fluid contacts.

Operations and results

Appraisal well 16/1-22 S was spudded with the jack-up installation Mærsk Interceptor on 24 April 2015 and drilled to TD at 2640 m in the Late Triassic Skagerrak Formation. No significant problem was encountered in the operations. The well was drilled with seawater and bentonite sweeps down to 600 m, with Versatec oil based mud from 600 m to TD. Good hydrocarbon shows were recorded in the sandy sections in the cores from 2503 to 2550 m.

The Jurassic - Triassic sequence was different from the expected as the Jurassic consisted of the Viking Group only, with no Jurassic reservoir present. This was however partly compensated by a thicker Triassic reservoir sequence with good quality sandstone in the uppermost part. Top Skagerrak Formation was encountered at 2506 m, which was 28 m deeper than the prognosis. The total reservoir thickness was 9 m thinner than expected. The Skagerrak Formation had moveable oil in the top three meters down to an ODT at 2508.3 m (2486 m TVD).

Two cores were cut in this well. Core 1 was cut from 2502.8 to 2517.66 m with 93.14% recovery, and core 2 was cut from 2517.66 to 2550 m with 100% recovery. A small depth shift relative to the logs (-0.1 to -0.4 m) is estimated for core 1. For Core 2 there was no core-log depth shift. MDT fluid samples were taken at 2506.15 (oil) and 2524.03 m (water) fluid.

The well was plugged back for sidetracking on 27 May 2015. It is classified as an oil appraisal well.

Testing

No drill stem test was performed.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
610.00	2639.00

Cuttings available for sampling?	YES

Cores at the Norwegian Offshore Directorate

Core sample number	Core sample - top depth	Core sample - bottom depth	Core sample depth - uom
1	2502.8	2516.6	[m]
2	2517.7	2550.6	[m]

Total core sample length [m]	46.7
Cores available for sampling?	YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
166	NORDLAND GP
774	UTSIRA FM
842	HORDALAND GP
950	SKADE FM
1208	HORDALAND GP
1627	GRID FM
2084	ROGALAND GP
2084	BALDER FM
2124	SELE FM
2194	LISTA FM
2239	HEIMDAL FM
2289	LISTA FM
2322	VÅLE FM
2380	CROMER KNOLL GP
2380	ÅSGARD FM
2412	VIKING GP
2412	DRAUPNE FM
2487	HEATHER FM
2506	HEGRE GP
2506	SKAGERRAK FM

Logs

Log type	Log top depth [m]	Log bottom depth [m]
ADT MRX GR	2410	2530

EC DEN NEU SP GR	1440	2640
LWD - GR RES DEN NEU DI PWD	2502	2640
LWD - GR RES DEN NEU SON DI PWD	1460	2502
LWD - GR RES SON DI	600	1460
MDT HC	2414	2540
RES DEN NEU LITH GR	600	1457
RES SON GR	1440	2640
SON SC PP GR	600	1456
XPT ADT MRX	2195	2640
ZOVSP	402	2578

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	220.5	30	220.5	0.00	
SURF.COND.	20	354.0	26	359.0	0.00	
INTERM.	16	598.0	17 1/2	600.0	1.37	FIT
PILOT HOLE		601.0	9 7/8	601.0	0.00	
INTERM.	9 5/8	1448.5	12 1/4	1460.0	1.81	FIT
OPEN HOLE		2640.0	8 1/2	2640.0	0.00	

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
601	1.09			SPUD MUD	
1450	1.19	27.0		Versatec OBM	
1857	1.23	22.0		Versatec OBM	
2097	1.24	25.0		Versatec OBM	
2411	1.24	24.0		Versatec OBM	
2502	1.24	21.0		Versatec OBM	
2517	1.24	28.0		Versatec OBM	
2551	1.24	22.0		Versatec OBM	
2640	1.24	28.0		Versatec OBM	
2640	1.24	25.0		Versatec OBM	