



General information





Wellbore name	35/11-22 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
Discovery	35/11-22 S (Bergand)
Well name	35/11-22
Seismic location	CGG17M01 Inline: 7306 Crossline: 27341
Production licence	248 C
Drilling operator	Equinor Energy AS
Drill permit	1739-L
Drilling facility	DEEPSEA BERGEN
Drilling days	53
Entered date	12.12.2018
Completed date	02.02.2019
Plugged and abandon date	02.02.2019
Release date	02.02.2021
Publication date	30.04.2021
Purpose - planned	WILDCAT
Reentry	NO
Content	OIL
Discovery wellbore	YES
1st level with HC, age	JURASSIC
1st level with HC, formation	HEATHER FM
Kelly bushing elevation [m]	23.0
Water depth [m]	355.6
Total depth (MD) [m RKB]	3882.0
Final vertical depth (TVD) [m RKB]	3866.0
Oldest penetrated age	JURASSIC
Oldest penetrated formation	STATFJORD GP
Geodetic datum	ED50
NS degrees	61° 5' 2.27" N
EW degrees	3° 20' 56.92" E
NS UTM [m]	6772350.65
EW UTM [m]	518834.79
UTM zone	31
NPDID wellbore	8627



Wellbore history

General

Well 35/11-22 S was drilled to test the Bergand prospect in on the Lomre Terrace about 10 kilometres west of the Fram field in the North Sea. The primary exploration objective for well 35/11-22 S was to prove oil in Middle to Early Jurassic reservoir rocks of the Brent Group and the Cook Formation (Dunlin Group). The secondary exploration objective was to prove oil in the Statfjord Group in the Early Jurassic.

Operations and results

Wildcat well 35/11-22 S was spudded with the semi-submersible installation Deepsea Bergen on 12 December 2018 and drilled to TD at 3882 m (3866 m TVD) in the Early Jurassic Statfjord Group. Drilling at 2503 m there was a gas influx, believed to come from a thin sandstone in the Shetland Group. The gain was killed by raising the mud weight from 1.25 to 1.32 sg. Otherwise operations proceeded without significant problems. The well was drilled with seawater and hi-vis pills down to 429 m, with KCl mud from 429 m to 1207 m, and with Innovert oil-based mud from 1207 m to TD.

A 30 m thick Oxfordian to Early Kimmeridgian age Intra Heather sandstone was encountered at 3030 m (3026 m TVD), directly underlying the Draupne Formation. Fluid sampling indicated oil all through this sandstone. No oil/water contact was established. In the primary exploration target, the well encountered the Brent Group with a thickness of about 190 metres, of which 90 metres of effective reservoir rocks with moderate reservoir quality. The thickness of the Cook Formation is about 70 metres, of which 50 metres of effective reservoir rocks with poor to moderate reservoir quality. Both primary targets are water-bearing. The secondary exploration target, in the Statfjord group, has a thickness of about 130 metres, of which 60 metres of water-bearing reservoir rocks with poor reservoir quality. A thin sandstone at 3264 to 3271 m in the Ness Formation had oil shows in the form of direct and cut fluorescence and residue fluorescence.

An open hole side-track 35/11-22 ST2 was drilled to acquire a bypass core over the intra-Heather sandstone interval. The core was cut from 3027.37 to 3077.37 m. No logs were acquired in this side-track. MDT fluid samples were taken in the main bore at 3042 m (oil), 3052 m (?oil), 3058 m (oil), and 3311.5 m (water).

The well was permanently abandoned on 2 February as an oil discovery.

Testing

No drill stem test was performed.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
720.00	3882.00

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	3026.0	3074.1	[m]

Total core sample length [m]	48.1
Cores available for sampling?	YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
379	NORDLAND GP
776	UTSIRA FM
858	HORDALAND GP
1723	ROGALAND GP
1723	BALDER FM
1779	SELE FM
1795	LISTA FM
1884	VÅLE FM
2069	SHETLAND GP
2069	JORSALFARE FM
2223	KYRRE FM
2639	TRYGGVASON FM
2656	BLODØKS FM
2663	SVARTE FM
2704	CROMER KNOLL GP
2704	RØDBY FM
2749	SOLA FM
2756	ÅSGARD FM
2783	VIKING GP
2783	DRAUPNE FM
3030	HEATHER FM
3030	INTRA HEATHER FM SS
3060	HEATHER FM
3250	BRENT GP
3250	TARBERT FM
3259	NESS FM
3335	ETIVE FM
3353	RANNOCH FM



3377	OSEBERG FM
3417	DUNLIN GP
3417	DRAKE FM
3495	COOK FM
3565	AMUNDSEN FM
3657	JOHANSEN FM
3676	AMUNDSEN FM
3738	STATFJORD GP

Logs

Log type	Log top depth [m]	Log bottom depth [m]
AIT PEX XPT	2542	3884
MDT	3042	3311
MSIP	1800	3542
MSIP NGI	1810	3884
MWD LWD - GR RES	429	3882
VSP	1208	3475
XLR	3156	3836

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	429.1	36	429.1	0.00	
INTERM.	13 3/8	1198.8	17 1/2	1207.0	1.52	FIT
INTERM.	9 5/8	2542.0	12 1/4	2553.0	1.70	FIT
OPEN HOLE		3882.0	8 1/2	3882.0	0.00	

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
429	1.35	12.0		KCl/Polymer/GEM	
429	1.39	14.0		KCl/Polymer/GEM	
877	1.35	16.0		KCl/Polymer/GEM	
877	1.36	18.0		KCl/Polymer/GEM	
890	1.35	18.0		KCl/Polymer/GEM	



1070	1.34	21.0		Innovert	
1207	1.23	13.0		Innovert	
1207	1.35	23.0		KCl/Polymer/GEM	
1210	1.24	14.0		Innovert	
1220	1.34	21.0		Innovert	
1220	1.35	20.0		Innovert	
1350	1.34	15.0		Innovert	
1606	1.25	15.0		Innovert	
2190	1.25	15.0		Innovert	
2281	1.34	15.0		Innovert	
2281	1.49	30.0		Innovert	
2503	1.25	16.0		Innovert	
2503	1.30	18.0		Innovert	
2514	1.32	18.0		Innovert	
2546	1.49	27.0		Innovert	
2553	1.52	17.0		Innovert	
2553	1.33	17.0		Innovert	
2556	1.52	17.0		Innovert	
2690	1.49	21.0		Innovert	
2697	1.52	18.0		Innovert	
2729	1.48	26.0		Innovert	
2824	1.52	18.0		Innovert	
2965	1.48	23.0		Innovert	
3026	1.48	27.0		Innovert	
3090	1.52	19.0		Innovert	
3882	1.49	28.0		Innovert	
3882	1.52	23.0		Innovert	