



General information

Wellbore name	35/10-4 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	35/10-4
Seismic location	CGG17M01 inline 7119 / xline 27917
Production licence	630
Drilling operator	Equinor Energy AS
Drill permit	1711-L
Drilling facility	DEEPSEA BERGEN
Drilling days	58
Entered date	14.08.2018
Completed date	10.10.2018
Plugged date	10.10.2018
Release date	10.10.2020
Publication date	10.10.2020
Purpose - planned	WILDCAT
Reentry	NO
Content	SHOWS
Discovery wellbore	NO
Kelly bushing elevation [m]	23.0
Water depth [m]	363.0
Total depth (MD) [m RKB]	4010.0
Final vertical depth (TVD) [m RKB]	3810.0
Maximum inclination [°]	34.7
Bottom hole temperature [°C]	150
Oldest penetrated age	EARLY JURASSIC
Oldest penetrated formation	COOK FM
Geodetic datum	ED50
NS degrees	61° 8' 55.44" N
EW degrees	3° 17' 4.98" E
NS UTM [m]	6779548.53
EW UTM [m]	515327.82
UTM zone	31
NPDID wellbore	8499



Wellbore history

General

Well 35/10-4 S was drilled to test the Stålull prospect on the Marflo Spur in the North Sea. The primary objective was to prove petroleum in Middle and Early Jurassic reservoir rocks (the Brent group and the Cook formation). The secondary objectives were to prove hydrocarbons in Late Jurassic reservoir rocks (Intra Viking Group sands), and to test the reservoir potential in the Paleocene (Intra Balder sands/Sele formation).

Operations and results

Wildcat well 35/10-4 S was spudded with the semi-submersible installation Deepsea Bergen on 14 August 2018 and drilled to TD at 4010 m (3810 m TVD) m in the Early Jurassic Cook Formation. Operations proceeded without significant problems. The well was drilled with seawater and hi-vis pills down to 772 m, with KCl/GEM/polymer mud from 772 m to 1406 m, with XP-07 oil based mud from 1406 m to 3456 m, and with HT XP-07 and BaraECD oil-based mud from m and with MUD from 3456 m to TD.

In the Paleocene, the well encountered a 17-metre thick water-bearing sand package with good reservoir properties. The Heather Formation came in at 3353 m and consisted of claystone with numerous interlayered sandstones. A total of 10 metres of the top 50 meters was sandstones with poor reservoir quality, and in this interval, there was an oil show (direct and cut fluorescence) at 3370 m, while live oil was sampled at 3358.3 m. A second sand-rich Intra-Heather interval was penetrated from 3513 to 3556 m, but without any hydrocarbon indications. The Brent group was encountered at 3625 m (3425 m TVD), about 210 metres thick, of which 40 metres are effective reservoir sandstone, mainly with poor to moderate reservoir properties. Top Cook Formation was encountered at 3845 m (3645 m TVD). About 75 metres of the gross 165 m Cook Formation that was drilled in the well was effective reservoir sandstone, mainly with moderate to good reservoir properties. Both Brent and Cook were water-bearing. There were no oil shows in the well other than the show and the oil in the Intra-Heather sands.

No cores were cut. MDT fluid samples were taken in the Balder Formation at 1798.5 m (two water samples) and in Intra-Heather sandstone at 3358.3 m (three oil samples). PVT analyses prove 26 % to 28 % OBM contamination in the oil samples.

The well was permanently abandoned on 10 October 2019 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]
780.00	4010.00

Cuttings available for sampling?	YES
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**Lithostratigraphy**

Top depth [mMD RKB]	Lithostrat. unit
386	NORDLAND GP
386	NO FORMAL NAME
855	UTSIRA FM
925	HORDALAND GP
925	NO FORMAL NAME
1105	SKADE FM
1221	NO FORMAL NAME
1737	ROGALAND GP
1737	BALDER FM
1817	SELE FM
1851	LISTA FM
1980	VÅLE FM
2023	SHETLAND GP
2023	JORSALFARE FM
2090	KYRRE FM
2860	TRYGGVASON FM
3125	BLODØKS FM
3135	SVARTE FM
3163	CROMER KNOLL GP
3163	RØDBY FM
3174	SOLA FM
3180	ÅSGARD FM
3221	VIKING GP
3221	DRAUPNE FM
3353	HEATHER FM
3625	BRENT GP
3625	TARBERT FM
3640	NESS FM
3742	ETIVE FM
3761	RANNOCH FM
3801	OSEBERG FM
3834	DUNLIN GP
3834	DRAKE FM
3845	COOK FM

Logs



Log type	Log top depth [m]	Log bottom depth [m]
AIT PEX MSIP XPT	3449	4013
MDT	1565	1900
MDT	3353	3402
MSIP AIT GR	3375	4013
MWD LWD - ARC6 TELE	3456	4010
MWD LWD - ARC9 TELE	449	2497
MWD LWD - ARC9 TELE	3140	3456
MWD LWD - TELE	363	449
MWD LWD - XC ARC9 TELE SS SADN	2497	3140
PEX AIT MSIP	770	2497
PEX AIT MSIP	2390	3406
PEX ECS	3449	4012
USIT CBL	2720	3410
VSP	359	2430
VSP	2233	3818
XLROCK	3511	3997
XPT PEX GR	3628	3397

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	449.4	36	449.4	0.00	
SURF.COND.	20	766.7	26	772.0	1.37	FIT
LINER	17	1388.0	17 1/2	1406.0	1.87	FIT
INTERM.	13 3/8	2491.3	16	2497.0	1.72	FIT
INTERM.	9 5/8	3448.0	12 1/4	3456.0	1.90	FIT
OPEN HOLE		4010.0	8 1/2	4010.0	0.00	

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
752	1.20	22.0		KCl/Polymer/GEM	
875	1.22	18.0		KCl/Polymer/GEM	
875	1.25	20.0		KCl/Polymer/GEM	
1406	1.35	37.0		XP-07	



1406	1.25	22.0		KCl/Polymer/GEM	
1676	1.36	22.0		XP-07	
1706	1.56	20.0		XP-07	
1706	1.34	16.0		XP-07	
1844	1.35	26.0		XP-07	
2277	1.35	23.0		XP-07	
2581	1.53	23.0		XP-07	
2771	1.60	23.0		XP-07	
2843	1.57	21.0		XP-07	
2900	1.58	21.0		XP-07	
3100	1.82	39.0		BaraECD	
3120	1.55	17.0		XP-07	
3350	1.82	39.0		BaraECD	
3405	1.55	20.0		XP-07	
3456	1.82	34.0		XP-07	
3456	1.55	19.0		XP-07	
3530	1.82	42.0		BaraECD	
4010	1.82	39.0		BaraECD	