

**General information**

Wellbore name	35/11-18
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	35/11-18 (Syrah)
Well name	35/11-18
Seismic location	3D survey ST9303 inline 10000 xline 1452
Production licence	248
Drilling operator	Wintershall Norge AS
Drill permit	1593-L
Drilling facility	BORGLAND DOLPHIN
Drilling days	40
Entered date	19.08.2015
Completed date	27.09.2015
Release date	27.09.2017
Publication date	27.09.2017
Purpose - planned	WILDCAT
Reentry	NO
Content	OIL
Discovery wellbore	YES
1st level with HC, age	LATE JURASSIC
1st level with HC, formation	INTRA HEATHER FM SS
2nd level with HC, age	MIDDLE JURASSIC
2nd level with HC, formation	TARBERT FM
3rd level with HC, age	MIDDLE JURASSIC
3rd level with HC, formation	OSEBERG FM
Kelly bushing elevation [m]	31.0
Water depth [m]	366.0
Total depth (MD) [m RKB]	3759.0
Final vertical depth (TVD) [m RKB]	3740.0
Maximum inclination [°]	15.7
Bottom hole temperature [°C]	145
Oldest penetrated age	EARLY JURASSIC
Oldest penetrated formation	COOK FM
Geodetic datum	ED50



NS degrees	61° 9' 24.41" N
EW degrees	3° 20' 38.09" E
NS UTM [m]	6780460.23
EW UTM [m]	518509.99
UTM zone	31
NPDID wellbore	7771

Wellbore history

General

Well 35/11-18 was drilled to test the Syrah prospect on the Marflo Spur/Lomre Terrace, west of the Vega Field in the North Sea. The primary objective was to test the hydrocarbon potential in the Middle Jurassic Brent Group. The secondary target was to test the hydrocarbon potential in Intra Heather Formation sandstone.

Operations and results

Wildcat well 35/11-18 was spudded with the semi-submersible installation Borgland Dolphin on 19 August 2015 and drilled to TD at 3759 m (3740 m TVD) in the Early Jurassic Cook Formation. The Syrah 35/11-18 well was planned and executed as a vertical well with short deviated section below ca 3000 m through the main reservoir targets. The deviation was ca 15° from ca 3300 m to TD. No significant problem was encountered in the operations. The well was drilled with seawater down to 494 m, with KCl/Polymer/GEM mud from 494 m to 1111 m, with Performadril mud from 1111 m to 1742 m and with Innover NS oil based mud from 1742 m to TD.

Top Draupne Formation was encountered at 3037 m and top Heather Formation came in at 3098 m. An Intra Heather Formation sandstone unit was penetrated from 3205 to 3247 m. The unit has ca 5 m gross hydrocarbon-filled sandstone in two sandstone beds on top, otherwise it consists of siltstone, claystone and limestone. Top Tarbert Formation came in at 3491 m with hydrocarbons in the topmost few meters. The Ness and Etive formations were water wet. Top Oseberg Formation came in at 3657 m with oil in the top 2 meters. Weak oil shows were described on the core from the Tarbert Formation down to 3550 m, and on cuttings over the interval 3657 to 3664 m.

One 54 m core was cut from 3498 m to 3552 m in the Middle Jurassic Tarbert - Ness formations. MDT fluid samples were taken at 3498.0 (hydrocarbons), 3540.2 m (water), 3603.5 m (water), 3657.0 m (hydrocarbons) and 3661.7 m (water)

The 35/11-18 well bore was plugged back for sidetracking and permanently abandoned on 27 September. It is classified 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]
1120.00	3759.00



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	3498.0	3552.1	[m]

Total core sample length [m]	54.1
Cores available for sampling?	YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
397	NORDLAND GP
397	UNDIFFERENTIATED
806	UTSIRA FM
948	HORDALAND GP
948	UNDIFFERENTIATED
1711	ROGALAND GP
1711	BALDER FM
1797	SELE FM
1827	LISTA FM
1994	VÅLE FM
2019	SHETLAND GP
2019	JORSALFARE FM
2168	KYRRE FM
2885	TRYGGVASON FM
2918	CROMER KNOLL GP
2918	RØDBY FM
2951	SOLA FM
2962	ÅSGARD FM
3037	VIKING GP
3037	DRAUPNE FM
3098	HEATHER FM
3206	INTRA HEATHER FM SS
3248	HEATHER FM
3492	BRENT GP



3492	TARBERT FM
3600	ETIVE FM
3617	RANNOCH FM
3657	OSEBERG FM
3695	DUNLIN GP
3695	DRAKE FM
3711	COOK FM

Logs

Log type	Log top depth [m]	Log bottom depth [m]
GR RES NEU DEN	3364	3750
IMAGE SONIC	366	3759
MWD - DIR	397	494
MWD - GR RES PWD DIR	1111	1742
MWD - GR RES PWD DIR NEU DEN SON	1742	3759
NMR	3364	3759
PRESSURE	3498	3676
SWC	3481	3745
VSP	1693	3750

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	486.5	36	494.0	0.00	
SURF.COND.	20	1104.0	26	1111.0	0.00	
		1114.0		1114.0	1.54	LOT
INTERM.	13 3/8	1736.0	17 1/2	1742.0	0.00	
		1745.0		1745.0	1.53	LOT
INTERM.	9 5/8	3363.8	12 1/2	3370.0	0.00	
		3373.0		3373.0	1.98	LOT
OPEN HOLE		3759.0	8 1/2	3759.0	0.00	

Drilling mud



Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
397	1.39	8.0		KCl/Polymer GEM	
397	1.64	18.0		KCl/Polymer	
935	1.39	18.0		KCl/Polymer GEM	
1100	1.29	18.0		Performadril	
1100	1.39	24.0		KCl/Polymer GEM	
1300	1.29	28.0		Performadril	
1742	1.29	17.0		INNOVERT NS OBM	
1742	1.29	33.0		Performadril	
1831	1.29	15.0		INNOVERT NS OBM	
1831	1.44	20.0		INNOVERT NS OBM	
2100	1.29	15.0		INNOVERT NS OBM	
3019	1.33	17.0		INNOVERT NS OBM	
3370	1.44	20.0		INNOVERT NS OBM	
3373	1.59	25.0		INNOVERT NS OBM	
3552	1.59	26.0		INNOVERT NS OBM	
3759	1.59	30.0		INNOVERT NS OBM	