

**General information**

Wellbore name	35/11-3 S
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Factmaps in new window	link to map
Main area	NORTH SEA
Well name	35/11-3
Seismic location	MN 88 - 815 SP. 585
Production licence	090
Drilling operator	Mobil Exploration Norway INC
Drill permit	611-L
Drilling facility	DYVI STENA
Drilling days	75
Entered date	27.06.1989
Completed date	09.09.1989
Release date	09.09.1991
Publication date	15.06.2005
Purpose - planned	WILDCAT
Reentry	NO
Content	OIL SHOWS
Discovery wellbore	NO
Kelly bushing elevation [m]	25.0
Water depth [m]	358.0
Total depth (MD) [m RKB]	4040.0
Final vertical depth (TVD) [m RKB]	4025.0
Maximum inclination [°]	9.3
Bottom hole temperature [°C]	144
Oldest penetrated age	EARLY JURASSIC
Oldest penetrated formation	STATFJORD GP
Geodetic datum	ED50
NS degrees	61° 5' 12.24" N
EW degrees	3° 20' 18.47" E
NS UTM [m]	6772656.11
EW UTM [m]	518257.03
UTM zone	31
NPDID wellbore	1356



Wellbore history

**General**

Well 35/11-3 S was drilled on a location ca 20 km north-north-east of the Troll Field, and was designed to test multiple deltaic sands in the Middle Jurassic Brent Group. Early Eocene turbidites and Paleocene channel fill deposits were secondary objectives. Reservoir sands were expected in the Tarbert, Ness, Etive and Oseberg Formations. These were hydrocarbon bearing in the 35/11-2 well. The seismic anomaly at Middle Jurassic level was mapped with a 30.4 km³ closure, and the expected gross thickness was 220 m. The site survey showed no strong indications of shallow gas. It was, however, thought possible that sands in the intervals 479 - 497 m, and 573 - 634 m might be gas charged.

Operations and results

Wildcat well 35/11-3 S was spudded with the semi-submersible installation Dyvi Stena on 27 June 1989 and drilled to TD at 4040 m in the Early Jurassic Statfjord Formation. The well was drilled deviated below 2100 m. Drilling proceeded without significant problems. However, the FMT sampling program for the Jurassic was curtailed when hole conditions deteriorated, and both the FMT tool and drill pipe became stuck during the final logging operation. The well was drilled with seawater and hi-vis pills down to 1010 m and with KCl/polymer mud from 1010 m to TD. No shallow gas was encountered.

No reservoir rocks were encountered in the Lower Eocene succession, but good sands were present in the Paleocene (Intra Lista sand). Top Draupne Formation shales came in at 2821 m. Then came the Sognefjord Formation at 3081 m and the Heather Formation at 3096 m. The well penetrated the Brent Group at 3431 m, 236 m deep to prognosis. Good quality sands were found in the Brent Group, but not as good as in the 35/11-2 well.

Gas levels throughout the Tertiary and Late Cretaceous were low. Oil shows with abundant free oil in the mud system were observed in limestones of the Early Cretaceous Rødby and Mime Formations and in sandstones of the Late Jurassic Sognefjord Formation. The sandstone units within the Middle Jurassic Brent Group were water wet with residual hydrocarbon shows. Petrophysical evaluation did not indicate hydrocarbons in the Cromer Knoll Group but did so in the Sognefjord Formation and, possibly, in the Brent Group. The evaluation and shows however, did not indicate significant hydrocarbons and did not warrant a test in any of the zones.

Excellent, highly oil prone, source rock was found in the Draupne Formation and good source rock was found in the Heather Formation. Both are capable of producing large quantities of petroleum, given sufficient maturity. In well position the Draupne Formation is early mature for petroleum generation, but probably has not expelled any hydrocarbons yet. The Heather Formation appears early to middle mature and may have expelled significant oil quantities in the lower section. Maturity indicators show a dramatic increase in thermal maturity at the base of the Draupne Formation. A similar break is indicated in today temperature gradient in the wire line BHT data.

Three conventional cores were cut: in the Intra Lista Sand, in the Sognefjord Formation, and in the Tarbert/Ness Formations of the Brent Group. FMT formation pressures were obtained in the Late Jurassic Sognefjord Formation and in the Brent and Dunlin Groups of the Middle and Early Jurassic. The valid pressure points showed a water gradient. Additionally, formation fluid samples were attempted in the Sognefjord Formation, but recovered only mud filtrate due to seal failures.

The well was permanently abandoned on 9 September 1989 as a dry hole with oil shows.

Testing

No drill stem test was performed.

**Cuttings at the Norwegian Offshore Directorate**

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
1020.00	4040.00

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	1987.0	1996.0	[m]
2	3082.0	3086.0	[m]
3	3446.0	3472.8	[m]

Total core sample length [m]	39.8
Cores available for sampling?	YES

Core photos

1987-1992m



1992-1996m



3082-3086m



3446-3451m



3451-3456m



3456-3461m



3461-3466m



3466-3471m



3471-3472m



3085-3085m



3085-3085m



3085-2085m



3085-3085m



**Palynological slides at the Norwegian Offshore Directorate**

Sample depth	Depth unit	Sample type	Laboratory
1020.0	[m]	DC	RRI
1050.0	[m]	SWC	RRI
1080.0	[m]	DC	RRI
1120.0	[m]	DC	RRI
1150.0	[m]	SWC	RRI
1180.0	[m]	DC	RRI
1220.0	[m]	DC	RRI
1280.0	[m]	DC	RRI
1320.0	[m]	DC	RRI
1350.0	[m]	SWC	RRI
1380.0	[m]	DC	RRI
1400.0	[m]	DC	RRI
1421.0	[m]	DC	RRI
1439.0	[m]	DC	RRI
1450.0	[m]	SWC	RRI
1469.0	[m]	DC	RRI
1481.0	[m]	DC	RRI
1511.0	[m]	SWC	RRI
1529.0	[m]	DC	RRI
1537.0	[m]	SWC	RRI
1550.0	[m]	DC	RRI
1610.0	[m]	DC	RRI
1619.0	[m]	DC	RRI
1620.0	[m]	DC	RRI
1650.0	[m]	SWC	RRI
1661.0	[m]	DC	RRI
1671.0	[m]	DC	RRI
1679.0	[m]	DC	RRI
1709.0	[m]	DC	RRI
1739.0	[m]	DC	RRI
1750.0	[m]	SWC	RRI
1775.0	[m]	SWC	RRI
1790.0	[m]	SWC	RRI
1799.0	[m]	DC	RRI
1811.0	[m]	DC	RRI



1825.0 [m]	SWC	RRI
1850.0 [m]	SWC	RRI
1910.0 [m]	SWC	RRI
2005.0 [m]	SWC	RRI
2009.0 [m]	DC	RRI
2051.0 [m]	DC	RRI
2550.0 [m]	SWC	RRI
2650.0 [m]	SWC	RRI
2690.0 [m]	SWC	RRI
2728.0 [m]	SWC	RRI
2800.0 [m]	DC	RRI
2805.0 [m]	DC	RRI
2815.0 [m]	DC	RRI
2820.0 [m]	DC	RRI
2840.0 [m]	DC	RRI
2880.0 [m]	SWC	RRI
2890.0 [m]	SWC	RRI
2910.0 [m]	SWC	RRI
2960.0 [m]	DC	RRI
3000.0 [m]	SWC	RRI
3025.0 [m]	DC	RRI
3030.0 [m]	DC	RRI
3040.0 [m]	DC	RRI
3070.0 [m]	SWC	RRI
3080.0 [m]	SWC	RRI
3082.0 [m]	C	RRI
3082.4 [m]	C	RRI
3082.7 [m]	C	RRI
3082.8 [m]	C	HYDRO
3083.4 [m]	C	HYDRO
3084.0 [m]	C	RRI
3084.4 [m]	C	RRI
3085.7 [m]	C	RRI
3100.0 [m]	SWC	RRI
3110.0 [m]	SWC	RRI
3120.0 [m]	SWC	RRI
3140.0 [m]	SWC	RRI
3170.0 [m]	DC	RRI
3180.0 [m]	SWC	RRI
3200.0 [m]	SWC	RRI



3220.0	[m]	SWC	RRI
3230.0	[m]	DC	RRI
3240.0	[m]	SWC	RRI
3260.0	[m]	SWC	RRI
3280.0	[m]	SWC	RRI
3290.0	[m]	DC	RRI
3300.0	[m]	SWC	RRI
3310.0	[m]	DC	RRI
3320.0	[m]	SWC	RRI
3360.0	[m]	SWC	RRI
3380.0	[m]	SWC	RRI
3400.0	[m]	SWC	RRI
3410.0	[m]	DC	RRI
3420.0	[m]	SWC	RRI
3430.0	[m]	DC	RRI
3443.5	[m]	SWC	RRI
3446.5	[m]	C	RRI
3454.6	[m]	C	RRI
3458.6	[m]	C	RRI
3462.6	[m]	C	RRI
3467.7	[m]	C	RRI
3472.7	[m]	C	RRI
3477.0	[m]	SWC	RRI
3494.0	[m]	SWC	RRI
3505.5	[m]	SWC	RRI
3522.0	[m]	SWC	RRI
3589.0	[m]	SWC	RRI
3609.0	[m]	SWC	RRI
3640.0	[m]	DC	RRI
3650.0	[m]	DC	RRI
3660.0	[m]	DC	RRI
3670.0	[m]	DC	RRI
3710.0	[m]	DC	RRI
3730.0	[m]	DC	RRI
3760.0	[m]	DC	RRI
3790.0	[m]	DC	RRI
3830.0	[m]	DC	RRI
3850.0	[m]	DC	RRI
3900.0	[m]	DC	RRI
3920.0	[m]	DC	RRI



4000.0 [m]	DC	RRI
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Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
383	NORDLAND GP
789	UTSIRA FM
866	HORDALAND GP
1728	ROGALAND GP
1728	BALDER FM
1786	SELE FM
1871	LISTA FM
1905	NO FORMAL NAME
1997	LISTA FM
2042	VÅLE FM
2063	SHETLAND GP
2716	CROMER KNOLL GP
2716	RØDBY FM
2747	ÅSGARD FM
2803	MIME FM
2821	VIKING GP
2821	DRAUPNE FM
3081	SOGNEFJORD FM
3096	HEATHER FM
3431	BRENT GP
3431	TARBERT FM
3470	NESS FM
3528	ETIVE FM
3538	RANNOCH FM
3573	OSEBERG FM
3640	DUNLIN GP
3640	DRAKE FM
3693	COOK FM
3764	AMUNDSEN FM
3794	JOHANSEN FM
3895	AMUNDSEN FM
3930	STATEFJORD GP



Composite logs

Document name	Document format	Document size [MB]
1356	pdf	0.53

Geochemical information

Document name	Document format	Document size [MB]
1356 1	pdf	2.95

Documents - older Norwegian Offshore Directorate WDSS reports and other related documents

Document name	Document format	Document size [MB]
1356 01 WDSS General Information	pdf	0.25
1356 02 WDSS completion log	pdf	0.23

Documents - reported by the production licence (period for duty of secrecy expired)

Document name	Document format	Document size [MB]
1356 35 11 3 COMPLETION REPORT AND LOG	pdf	41.29

Logs

Log type	Log top depth [m]	Log bottom depth [m]
ACBL VDL GR	875	3038
ACBL VDR GR	1610	2175
COREGUN GR	1050	2028
COREGUN GR	1690	1975
COREGUN GR	2100	3110
COREGUN GR	2100	3110
COREGUN GR	3120	3745
DIFL AC GR	998	4042
DIPLOG GR	998	2034





DIPLOG GR	3116	3700
FMT GR	2717	3095
FMT GR	3453	3497
FMT GR	3469	3695
MWD - GR RES DIR	499	4040
VSP	1780	3870
ZDEN CNL GR CAL	998	4041

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	498.0	36	499.0	0.00	LOT
INTERM.	20	1000.0	26	1013.0	1.42	LOT
INTERM.	13 3/8	2040.0	17 1/2	2057.0	1.70	LOT
INTERM.	9 5/8	3111.0	12 1/4	3115.0	1.91	LOT
OPEN HOLE		4040.0	8 1/2	4040.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
400	1.03			WATER BASED	30.06.1989
499	1.03			WATER BASED	03.07.1989
692	1.03			WATER BASED	04.07.1989
1010	1.03			WATER BASED	04.07.1989
1010	1.03			WATER BASED	04.07.1989
1010	1.03			WATER BASED	10.07.1989
1010	1.03			WATER BASED	04.07.1989
1010	1.03			WATER BASED	10.07.1989
1285	1.20	17.0	21.0	WATER BASED	18.07.1989
1554	1.02	21.0	20.0	WATER BASED	18.07.1989
1761	1.20	21.0	20.0	WATER BASED	18.07.1989
1776	1.20	16.0	20.0	WATER BASED	18.07.1989
1987	1.20	17.0	21.0	WATER BASED	18.07.1989
1996	1.20	16.0	21.0	WATER BASED	18.07.1989
2039	1.27	16.0	19.0	WATER BASED	18.07.1989
2057	1.27	14.0	16.0	WATER BASED	18.07.1989
2057	1.27	14.0	16.0	WATER BASED	18.07.1989



2070	1.03	15.0	24.0	WATER BASED	24.07.1989
2120	1.30	21.0	21.0	WATER BASED	25.07.1989
2224	1.30	24.0	26.0	WATER BASED	26.07.1989
2278	1.30	20.0	24.0	WATER BASED	28.07.1989
2366	1.26	18.0	22.0	WATER BASED	31.07.1989
2467	1.26	18.0	26.0	WATER BASED	31.07.1989
2531	1.26	16.0	23.0	WATER BASED	01.08.1989
2622	1.26	16.0	18.0	WATER BASED	01.08.1989
2701	1.26	17.0	22.0	WATER BASED	02.08.1989
2726	1.26	16.0	18.0	WATER BASED	03.08.1989
2775	1.26	15.0	18.0	WATER BASED	07.08.1989
3039	1.26	17.0	18.0	WATER BASED	07.08.1989
3082	1.38	18.0	20.0	WATER BASED	07.08.1989
3096	1.38	18.0	23.0	WATER BASED	08.08.1989
3115	1.38	17.0	19.0	WATER BASED	08.08.1989
3204	1.62	28.0	18.0	WATER BASED	17.08.1989
3333	1.62	22.0	16.0	WATER BASED	22.08.1989
3352	1.62	21.0	17.0	WATER BASED	22.08.1989
3446	1.62	23.0	16.0	WATER BASED	22.08.1989
3673	1.58	24.0	15.0	WATER BASED	24.08.1989
3673	1.58	25.0	17.0	WATER BASED	28.08.1989
3673	1.58	24.0	15.0	WATER BASED	24.08.1989
3891	1.58	25.0	17.0	WATER BASED	28.08.1989
3910	1.58	32.0	23.0	WATER BASED	28.08.1989
3929	1.58	25.0	18.0	WATER BASED	28.08.1989
4040	1.40	21.0	17.0	WATER BASED	04.09.1989
4040	1.58	32.0	24.0	WATER BASED	31.08.1989
4040	1.49	35.0	15.0	WATER BASED	04.09.1989
4040	1.40	20.0	19.0	WATER BASED	05.09.1989

Pressure plots

The pore pressure data is sourced from well logs if no other source is specified. In some wells where pore pressure logs do not exist, information from Drill stem tests and kicks have been used. The data has been reported to the NPD, and further processed and quality controlled by IHS Markit.

Document name	Document format	Document size [MB]
1356 Formation pressure (Formasjonstrykk)	pdf	0.23

