



General information





Wellbore name	33/12-4
Type	EXPLORATION
Purpose	APPRAISAL
Status	P&A
Factmaps in new window	link to map
Main area	NORTH SEA
Field	STATFJORD
Discovery	33/12-1 Statfjord
Well name	33/12-4
Seismic location	LINE MNG 28 SP.380
Production licence	037
Drilling operator	Mobil Exploration Norway INC
Drill permit	130-L
Drilling facility	NORSKALD
Drilling days	62
Entered date	17.05.1975
Completed date	17.07.1975
Release date	17.07.1977
Publication date	02.12.2014
Purpose - planned	APPRAISAL
Reentry	NO
Content	OIL
Discovery wellbore	NO
1st level with HC, age	MIDDLE JURASSIC
1st level with HC, formation	BRENT GP
2nd level with HC, age	EARLY JURASSIC
2nd level with HC, formation	STATFJORD GP
Kelly bushing elevation [m]	25.0
Water depth [m]	146.0
Total depth (MD) [m RKB]	2896.0
Bottom hole temperature [°C]	99
Oldest penetrated age	LATE TRIASSIC
Oldest penetrated formation	STATFJORD GP
Geodetic datum	ED50
NS degrees	61° 14' 19.2" N
EW degrees	1° 53' 27.5" E
NS UTM [m]	6790038.19
EW UTM [m]	440466.88
UTM zone	31
NPDID wellbore	126



Wellbore history

General

Well 33/12-3 was drilled on the Statfjord structure in the Tampen Spur area. It was designed to test the erosional escarpment on the east flank of the structure for possible trapping of hydrocarbons in an area downfaulted to the Statfjord Field pay section to the west. Primary objectives of the well were the Early Jurassic Statfjord Group sands and possible Middle Jurassic Brent Formation sands. Well 33/12-3 was junked due to technical problems. The rig was moved 30 m and re-spudded as replacement well 33/12-4.

Operations and results

Appraisal well 33/12-4 was spudded with the semi-submersible installation Nordskald on 17 May and drilled to 2896 m in Late Triassic sediments in the Statfjord Group. The well was drilled with seawater down to 495 m and with water based lignosulphonate mud from 495 m to TD.

The Middle Jurassic Brent Group was encountered at 2675 m, ca 55 m high to prognosis but, as anticipated, well below the Brent oil/water contact of 2609 m (2584 m MSL) in the upthrown block of the field. Scattered poor to fair hydrocarbon indications were noted in the cores but gas readings were low. Average core porosity in the sands is 23 %, ranging from two to 29 %. Measured horizontal permeabilities average 604 mD and range between 0.01 and 2028 mD. The CPI log indicated some 40 feet of prospective net pay with 23 percent average porosity and 53 percent average water saturation.

The top of the Statfjord Group was penetrated at 2757 m, only 2 m low to prognosis. Core 4 at the top of Statfjord recovered sand, siltstones and claystones with no shows. However, poor shows were recorded above and below the cored section. Using a 65% water saturation cut-off Schlumberger's preliminary CPI analysis showed hydrocarbon indications over approximately 7 m of net sand within the Statfjord Group, with porosities ranging between 25 to 30 percent and high water saturations of 59 to 65 percent.

Seven cores were cut. Cores 1 to 4 were cut from 2679.2 m to 2721.3 m, core 5 was cut from 2764.8 m to 2772.5 m, and core 6 and 7 were cut from 2775.5 m to 2790.4 m. No wire line fluid samples were taken.

The well was permanently abandoned on 17 July as an oil appraisal well on the Statfjord Field.

Testing

Two through-casing drill stem test were run to evaluate the best sections of the thin Brent and Statfjord Formation sands. Both tests produced water at a low rate with insignificant amounts of oil and gas:

DST1 tested the interval 2774 to 2778 m at the top of the Statfjord Formation. The test produced 51 m3 water with 3% oil per day. Oil gravity was 32.4 °API. Bottom hole temperature during the test was 95.6 °C.

DST2 tested the interval 2685 to 2688 m in the upper part of the Brent Group. The test produced 65 m3 oil with 5-10% oil per day. Bottom hole temperature during the test was 85 °C.



Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
495.30	2895.60

Cuttings available for sampling?	YES
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Cores at the Norwegian Offshore Directorate

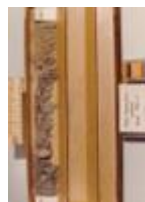
Core sample number	Core sample - top depth	Core sample - bottom depth	Core sample depth - uom
1	8824.0	8837.0	[ft]
2	8837.0	8859.0	[ft]
3	8874.0	8901.0	[ft]
4	8901.0	8928.0	[ft]
5	9071.0	9083.0	[ft]

Total core sample length [m]	30.8
Cores available for sampling?	YES

Core photos



8790-8799ft



8799-8802ft



8837-8846ft



8846-8855ft



8855-8859ft



8874-8883ft



8883-8892ft



8892-8901ft



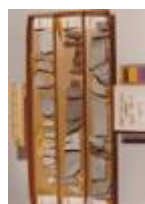
8901-8910ft



8910-8919ft



8919-8928ft



9071-9080ft



9080-9083ft

**Palynological slides at the Norwegian Offshore Directorate**

Sample depth	Depth unit	Sample type	Laboratory
1720.0	[m]	DC	STAT
7000.0	[ft]	DC	
7090.0	[ft]	DC	
7210.0	[ft]	DC	
7290.0	[ft]	DC	
7400.0	[ft]	DC	
7500.0	[ft]	DC	
7600.0	[ft]	DC	
7700.0	[ft]	DC	
7790.0	[ft]	DC	
7900.0	[ft]	DC	
8000.0	[ft]	DC	
8100.0	[ft]	DC	
8190.0	[ft]	DC	
8310.0	[ft]	DC	
8410.0	[ft]	DC	
8510.0	[ft]	DC	
8600.0	[ft]	DC	
8670.0	[ft]	DC	
8680.0	[ft]	DC	
8690.0	[ft]	DC	
8700.0	[ft]	DC	
8710.0	[ft]	DC	
8882.0	[ft]	C	OD
8899.0	[ft]	C	OD
8915.0	[ft]	C	OD
8915.0	[ft]	DC	OD
8923.0	[ft]	C	OD

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
171	NORDLAND GP
1706	ROGALAND GP



1706	BALDER FM
1766	LISTA FM
1916	SHETLAND GP
2671	VIKING GP
2671	DRAUPNE FM
2673	CROMER KNOLL GP
2675	BRENT GP
2701	DRAKE FM
2776	STATEJORD GP

Geochemical information

Document name	Document format	Document size [MB]
126_GCH_1	pdf	0.54
126_GCH_2	pdf	2.04

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

Document name	Document format	Document size [MB]
126_01_WDSS_General_Information	pdf	0.25

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

Document name	Document format	Document size [MB]
126_33_12_4_Completion_log	pdf	1.47
126_33_12_4_Completion_Report	pdf	3.33
126_33_12_4_Data_summary_char_Encl_8	pdf	0.21
126_33_12_4_Drilling_program	pdf	1.90
126_33_12_4_Final_geological_summary	pdf	20.97
126_33_12_4_The_biostratigraphy_of_the_interval_1620-9500ft	pdf	1.41
126_33_12_4_The_maturation_and_source_rock_potential	pdf	2.97
126_33_12_4_Well_history_&_operation_report	pdf	5.26



**Drill stem tests (DST)**

Test number	From depth MD [m]	To depth MD [m]	Choke size [mm]
1.0	2774	2778	0.0
2.0	2685	2688	0.0

Test number	Final shut-in pressure [MPa]	Final flow pressure [MPa]	Bottom hole pressure [MPa]	Downhole temperature [°C]
1.0				
2.0				

Test number	Oil [Sm3/day]	Gas [Sm3/day]	Oil density [g/cm3]	Gas grav. rel.air	GOR [m3/m3]
1.0					
2.0					

Logs

Log type	Log top depth [m]	Log bottom depth [m]
CBL	1189	2861
CDM	1635	2886
CDM AP	1635	2886
DLL MSFL	2560	2865
FDC CNL	2537	2891
ISF SON	1635	2889
VELOCITY	1635	2888

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	232.0	36	232.0	0.00	
SURF.COND.	20	480.0	26	495.0	0.00	
INTERM.	13 3/8	1635.0	17 1/2	1646.0	0.00	
INTERM.	9 5/8	2548.0	12 1/4	2550.0	0.00	
PROD.	7	2894.0	8 1/2	2896.0	0.00	

**Drilling mud**

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
359	1.06	45.0		waterbased	
481	1.07	45.0		waterbased	
1533	1.22	44.0		waterbased	
1725	1.19	40.0		waterbased	
2148	1.56	53.0		waterbased	
2547	1.60	48.0		waterbased	
2895	1.55	44.0		waterbased	