



General information

Wellbore name	33/9-1
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	33/9-1
Seismic location	LINE MNG-28 SP.1-680
Production licence	037
Drilling operator	Mobil Exploration Norway INC
Drill permit	109-L
Drilling facility	NORSKALD
Drilling days	64
Entered date	02.04.1974
Completed date	04.06.1974
Release date	04.06.1976
Publication date	13.08.2015
Purpose - planned	WILDCAT
Reentry	NO
Content	OIL
Discovery wellbore	NO
1st level with HC, age	MIDDLE JURASSIC
1st level with HC, formation	BRENT GP
Kelly bushing elevation [m]	25.0
Water depth [m]	146.0
Total depth (MD) [m RKB]	3126.0
Bottom hole temperature [°C]	94
Oldest penetrated age	LATE TRIASSIC
Oldest penetrated formation	STATFJORD GP
Geodetic datum	ED50
NS degrees	61° 15' 7.29" N
EW degrees	1° 50' 25.54" E
NS UTM [m]	6791573.15
EW UTM [m]	437780.23
UTM zone	31
NPDID wellbore	407



Wellbore history

General

Well 33/9-1 was drilled on the Statfjord structure. It was the first appraisal well on the structure after well 33/12-1 had discovered oil there in 1973-1974. The primary objective was to test sandstones in the Middle Jurassic Brent Group.

The well is reference well for the Amundsen, Burton, Cook, Drake, Broom, Rannoch, Etive, Tarbert, Heather, and Draupne formations.

Operations and results

Wildcat well 33/9-1 was spudded with the semi-submersible installation Norskald on 2 April 1974 and drilled to TD at 3126 m in Late Triassic sediments of the Statfjord Group.

The target Middle Jurassic Brent Group, Tarbert Formation came in at 2464 m and was oil-bearing down to the OWC at 2584 m in the Etive Formation. The Brent reservoir has 145 m gross pay and 124 m net oil pay. Porosities range from 13.0 to 35.9 percent with the overall average porosity being 25 percent. Average water saturation is 18 percent. Cores taken near top of the reservoir showed porosities up to 37% and permeabilities as high as 4.1 darcy. The Statfjord Group sandstone was penetrated at 2923 m. Statfjord Group sandstone was water wet as expected from the structural position of this well. The sands, however, had very good reservoir qualities with average porosity of 22 percent as calculated from the CPI log.

Two cores were cut in the Tarbert Formation from 2469.2 to 2499.4 m with 18 m recovery (60%) of the total cored interval. No fluid samples were taken on wire line.

The well was permanently abandoned on 4 June 1974 as an oil appraisal.

Testing

Three drill stem tests were performed in the Brent Group.

DST 1 tested the interval 2614.9 to 2616.4 m in the Rannoch Formation. The test produced up to 2226 m³ water /day through a 5/4" choke.

DST 2 tested the interval 2506.1 to 2507.3 m in the Ness Formation. The test produced 220 Sm³ oil /day through a 1/4" choke. The GOR was 142 Sm³/Sm³, the oil gravity was 37.8 °API, and the gas gravity was 0.661.

DST 3 tested the interval 2464.6 to 2473.8 m in the Tarbert Formation. The test produced 230 Sm³ oil /day through a 1/4" choke. The GOR was 161 Sm³/Sm³, the oil gravity was 38.6 °API, and the gas gravity was 0.691.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
1620.00	3124.00

Cuttings available for sampling?	NO
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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	8101.0	8156.0	[ft]
2	8156.0	8174.5	[ft]

Total core sample length [m]	22.4
Cores available for sampling?	YES

Core photos



8101-8156ft



8101-8156ft



8101-8156ft



8156-8174ft



2469-2486m



2469-2486m



2469-2486m



2469-2486m



2469-2486m



2469-2486m



2469-2486m



2469-2486m



2486-2499m



2486-2499m



2486-2499m



2486-2499m

**Palynological slides at the Norwegian Offshore Directorate**

Sample depth	Depth unit	Sample type	Laboratory
7000.0	[ft]	DC	
7100.0	[ft]	DC	
7200.0	[ft]	DC	
7300.0	[ft]	DC	
7400.0	[ft]	DC	
7500.0	[ft]	DC	
7600.0	[ft]	DC	
7690.0	[ft]	DC	
7800.0	[ft]	DC	
7900.0	[ft]	DC	
7980.0	[ft]	DC	
8010.0	[ft]	DC	
8070.0	[ft]	DC	
8190.0	[ft]	DC	
8300.0	[ft]	DC	
8400.0	[ft]	DC	
8490.0	[ft]	DC	
8580.0	[ft]	DC	
8690.0	[ft]	DC	
8790.0	[ft]	DC	
8900.0	[ft]	DC	
8980.0	[ft]	DC	
9090.0	[ft]	DC	
9200.0	[ft]	DC	
9300.0	[ft]	DC	
9400.0	[ft]	DC	
9500.0	[ft]	DC	
9590.0	[ft]	DC	
9700.0	[ft]	DC	
9800.0	[ft]	DC	
9900.0	[ft]	DC	
10000.0	[ft]	DC	
10100.0	[ft]	DC	
10200.0	[ft]	DC	
10250.0	[ft]	DC	

**Lithostratigraphy**

Top depth [mMD RKB]	Lithostrat. unit
171	NORDLAND GP
750	UTSIRA FM
821	HORDALAND GP
1661	ROGALAND GP
1661	BALDER FM
1706	SELE FM
1871	SHETLAND GP
2429	CROMER KNOLL GP
2448	VIKING GP
2448	DRAUPNE FM
2452	HEATHER FM
2464	BRENT GP
2464	TARBERT FM
2506	NESS FM
2567	ETIVE FM
2596	RANNOCH FM
2664	BROOM FM
2668	DUNLIN GP
2668	DRAKE FM
2715	COOK FM
2801	BURTON FM
2838	AMUNDSEN FM
2923	STATEFJORD GP

Geochemical information

Document name	Document format	Document size [MB]
407_GCH_1	pdf	0.20
407_GCH_2	pdf	1.69

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

Document name	Document format	Document size [MB]
407_01_WDSS_General_Information	pdf	0.27



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

Document name	Document format	Document size [MB]
407 33 9 1 COMPLETION LOG	pdf	1.62
407 33 9 1 COMPLETION REPORT	pdf	5.66

Drill stem tests (DST)

Test number	From depth MD [m]	To depth MD [m]	Choke size [mm]
1.0	2615	2626	12.0
2.0	2506	2507	6.3
3.0	2465	2474	6.3

Test number	Final shut-in pressure [MPa]	Final flow pressure [MPa]	Bottom hole pressure [MPa]	Downhole temperature [°C]
1.0				
2.0				
3.0				

Test number	Oil [Sm3/day]	Gas [Sm3/day]	Oil density [g/cm3]	Gas grav. rel.air	GOR [m3/m3]
1.0					
2.0	220	31000	0.830	0.661	142
3.0	230	37000	0.840	0.691	162

Logs

Log type	Log top depth [m]	Log bottom depth [m]
BHC	465	3121
CDM	458	3122
CNL GR	2377	2669
DLL SP	1498	2680
FDC CNL	1498	3078
IES	473	3122
IES SP	1551	4957





ML MLL	2377	2685
VELOCITY	465	3121

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	223.0	36	223.0	0.00	
SURF.COND.	20	473.0	26	489.0	0.00	
INTERM.	13 3/8	1497.0	17 1/2	1515.0	0.00	
INTERM.	9 5/8	2676.0	12 1/2	2689.0	0.00	
OPEN HOLE		3126.0	8 1/2	3126.0	0.00	