

**General information**

Wellbore name	2/11-6 S
Type	EXPLORATION
Purpose	APPRAISAL
Status	SUSPENDED
Factmaps in new window	link to map
Main area	NORTH SEA
Field	HOD
Discovery	2/11-2 Hod
Well name	2/11-6
Seismic location	ANO 75 - 13 SP. 333
Production licence	033
Drilling operator	Amoco Norway Oil Company
Drill permit	305-L
Drilling facility	SEDCO 703
Drilling days	177
Entered date	02.09.1981
Completed date	25.02.1982
Release date	25.02.1984
Publication date	22.03.2013
Purpose - planned	APPRAISAL
Reentry	NO
Content	OIL
Discovery wellbore	NO
1st level with HC, age	LATE CRETACEOUS
1st level with HC, formation	TOR FM
2nd level with HC, age	LATE CRETACEOUS
2nd level with HC, formation	HOD FM
Kelly bushing elevation [m]	26.0
Water depth [m]	72.0
Total depth (MD) [m RKB]	4076.0
Final vertical depth (TVD) [m RKB]	2957.0
Maximum inclination [°]	57
Bottom hole temperature [°C]	111
Oldest penetrated age	EARLY CRETACEOUS
Oldest penetrated formation	HOD FM
Geodetic datum	ED50
NS degrees	56° 10' 35.5" N
EW degrees	3° 27' 36.72" E



NS UTM [m]	6225960.07
EW UTM [m]	528571.99
UTM zone	31
NPDID wellbore	289

Wellbore history

General

Well 2/11-6 S was drilled on the Lindesnes Ridge in the southern North Sea. The objective was to appraise the Hod discovery made by well 2/11-2 in 1974 (Hod West) and appraisal well 2/11-3 in 1977 (Hod East). The Hod structure is oil-bearing in Late Cretaceous chalks, the Hod and Tor formations. Well 2/11-6 S targeted the Hod East structure.

Operations and results

Appraisal well 2/11-6 S was the first well to be drilled on a subsea template which was laid by the semi-submersible installation Sedco 703. It was then drilled with Sedco 703 through slot number W7 of the twelve slot templates, to TD at 3970 m (2905 m TVD) where the pipe got stuck. The pipe was shot off with top of the fish at 3669 m and a technical sidetrack 2/11-6 ST1 was kicked off from 3626 m. The sidetrack was drilled to the final TD at 4076 m (2980 m TVD). The initial well bore was drilled with seawater and hi-vis sweeps down to 1460 m, with Vertoil oil based mud from 1460 m to 3601 m, and with Oilfaze oil based mud from 3601 m to 3970 m. The 2/11-6 ST1 sidetrack was drilled with Vertoil oil based mud from kick-off to TD.

Well 2/11-6 drilled a nearly complete Tertiary section and penetrated top chalk at 3690 m (2732 m TVD). The sidetrack penetrated top of the chalk group at 3685 m (2729 m) with a slightly lower angle (50 deg) than in the initial well bore (55 deg). The chalk stratigraphy in the two well bores was very similar apart from the angle/depth shift. The well tested oil in the Tor / upper Hod formations and in the lower Hod Formation.

Seven conventional cores were cut from 3693 to 3741 m in the initial well bore before side tracking. The cores were cut in the Late Cretaceous Chalk. The total recovery was 34 m (71%). Due to the fish left in the hole no logs were run below 3790 m in the initial well bore. Logs were run to TD in the sidetrack, including the RFT tool, but no fluid samples were taken.

The well was suspended on 25 February 1982 as an oil appraisal well.

Testing

Two Drill Stem Tests were performed.

DST 1 tested the interval 3875 - 3900 m (2851.7 - 2867.8 m TVD) in the Hod Formation. It produced 39650 Sm³ gas and 355 Sm³ oil /day through a 24/64" choke. The GOR was 108 Sm³/Sm³.

DST 2 tested the interval 3685 - 3735 m (2729.7 - 2761.8 m TVD) in the Tor Formation and the upper part of the Hod Formation. It produced 93450 Sm³ gas and 922 Sm³ oil /day through a 48/64" choke. The GOR was 101 Sm³/Sm³, the oil density was 0.871 g/cm³, and the gas gravity was 0.71 (air = 1). The down hole temperature, measured at 3609 m, was 104.4 deg C.

**Cuttings at the Norwegian Offshore Directorate**

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
180.00	3970.00

Cuttings available for sampling?	YES
----------------------------------	-----

Cores at the Norwegian Offshore Directorate

Core sample number	Core sample - top depth	Core sample - bottom depth	Core sample depth - uom
1	3693.1	3712.0	[m]

Total core sample length [m]	19.0
Cores available for sampling?	YES

Core photos

3693-3696m



3696-3703m



3703-3709m



3709-3711m



3711-3717m



3717-3720m



3720-3723m



3723-3727m



3727-3734m



3734-3736m



3736-3739m



3739-3740m

**Lithostratigraphy**

Top depth [mMD RKB]	Lithostrat. unit
98	NORDLAND GP
1792	HORDALAND GP
3564	ROGALAND GP
3564	BALDER FM
3690	SHETLAND GP
3690	TOR FM
3716	HOD FM

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

Document name	Document format	Document size [MB]
289_01_WDSS_General_Information	pdf	0.20
289_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]
289_2_11_6_Completion_log	pdf	2.39
289_2_11_6_S_Biostratigraphy_of_the_Intervals_180m-3970m	pdf	9.00
289_2_11_6_S_Completion_report	pdf	2.79
289_2_11_6_S_Completion_report_drilling	pdf	5.36
289_2_11_6_S_Core_analysis	pdf	0.60
289_2_11_6_S_Petrographic_and_scanning_electron	pdf	3.17
289_2_11_6_S_Petrographic_and_Sheets_for_Interval_3693-3739m	pdf	6.77
289_2_11_6_S_PVT_study_DST1_3875-3900m	pdf	2.41
289_2_11_6_S_PVT_study_DST1_Zone_3875-3900m	pdf	5.19
289_2_11_6_S_PVT_study_DST2_Zone_3713-3735m	pdf	4.18
289_2_11_6_S_PVT_stud_Zone_3685-3706m	pdf	4.24





Drill stem tests (DST)

Test number	From depth MD [m]	To depth MD [m]	Choke size [mm]
1.0	3875	3900	3.2
2.0	3585	3706	7.9
3.0	3713	3735	19.0

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	364	39000			105
2.0	223	24000	0.863	0.714	106
3.0	921	87000			95

Logs

Log type	Log top depth [m]	Log bottom depth [m]
CBL VDL CCL GR	3386	4038
DIL LDL NGT	3589	4976
HDT	3589	4079
HRT	3440	4028
LDL CNL GR	3589	4080
RFT GR	3589	3952
VELOCITY	352	4076

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	167.0	36	167.0	0.00	LOT
SURF.COND.	20	353.0	26	358.0	1.38	LOT
INTERM.	13 3/8	1453.0	17 1/2	1461.0	1.90	LOT



INTERM.	9 5/8	3593.0	12 1/4	3601.0	1.97	LOT
LINER	7	4072.0	8 1/2	4076.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
130	1.03			waterbased	
1125	1.07			waterbased	
1325	1.11	34.0		waterbased	
1475	1.53	53.0		waterbased	
1565	1.54	70.0		waterbased	
1850	1.56	68.0		waterbased	
2260	1.74	70.0		waterbased	
3900	1.88	94.0		waterbased	
3920	1.81	90.0		waterbased	

Thin sections at the Norwegian Offshore Directorate

Depth	Unit
3721.36	[m]
3722.50	[m]
3718.20	[m]
3720.00	[m]

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]
289 Formation pressure (Formasjonstrykk)	pdf	0.21

