

**General information**

Wellbore name	7/11-7
Type	EXPLORATION
Purpose	WILDCAT
Status	SUSPENDED
Factmaps in new window	link to map
Main area	NORTH SEA
Field	COD
Discovery	7/11-7
Well name	7/11-7
Seismic location	NH CN 82-124 SP 377
Production licence	018
Drilling operator	Phillips Petroleum Company Norway
Drill permit	359-L
Drilling facility	COD
Drilling days	362
Entered date	29.12.1982
Completed date	25.12.1983
Release date	25.12.1985
Publication date	15.02.2006
Purpose - planned	WILDCAT
Reentry	NO
Content	OIL
Discovery wellbore	YES
1st level with HC, age	PALEOCENE
1st level with HC, formation	FORTIES FM
2nd level with HC, age	LATE JURASSIC
2nd level with HC, formation	ULA FM
Kelly bushing elevation [m]	41.8
Water depth [m]	70.0
Total depth (MD) [m RKB]	4927.0
Final vertical depth (TVD) [m RKB]	4703.0
Bottom hole temperature [°C]	168
Oldest penetrated age	LATE PERMIAN
Oldest penetrated formation	ZECHSTEIN GP
Geodetic datum	ED50
NS degrees	57° 4' 10.04" N
EW degrees	2° 26' 4.82" E
NS UTM [m]	6325401.22



EW UTM [m]	465720.08
UTM zone	31
NPDID wellbore	57

Wellbore history

**General**

The primary objective of the wildcat 7/11-7 S was Late Jurassic sandstone surrounding a small salt piercement below the Paleocene Cod Field reservoir. Several discoveries had been made in the vicinity of Cod, in the Upper Jurassic Ula Formation. The Triassic and Permian constituted secondary targets. The well was drilled from the Cod platform with planned bottom hole location ca 0.9 km to the east.

Operations and results

Wildcat well 7/11-7 S was spudded from the fixed installation Cod on 29 December 1982 and drilled deviated to TD at 4927 m (4661 m TVD) m in the Late Permian Zechstein Group. The well was scheduled as a 150-day project but a full drilling crew was still present on day 349 and it took until day 364 to set a plug above the last set of perforations. The length of this project was due to problems in drilling and extended testing to adequately evaluate the three zones of interest. There were delays in setting plugs, running casing, fishing, and installing necessary 10,000 psi surface equipment. The testing delays included problems with setting DHSV's, parted tubing, aborted stimulations, bad weather, and bailing operations. The well was drilled with seawater/lignite and Desco, an organic thinner.

The well reached all three targets. Late Jurassic Ula Formation sandstone was encountered at 4527 m. The Ula Formation rested unconformable on Triassic Skagerrak Formation sandstone at 4566 m. The Permian Zechstein dolomites were encountered at 4856 m. Good shows were recorded in the Ula Formation, with weaker shows extending down to 4609 m in the Triassic Skagerrak Formation. A second Triassic zone with weak shows was observed at 4785 m to 4810 m. Source rock formations were found in the Tertiary interval from 1820 m to 2500 m, and in the Late Jurassic shales of the Mandal and Farsund Formations at 4405 m to 4527. The Tertiary interval had TOC in the range 2 - 4 %, Hydrogen Index from 100 to 120 mg HC/g rock, and was immature. The Late Jurassic had TOC in the range 4 - 8 %, HI in the range 80 - 200 mg/g and peak/late oil window maturity (% Ro around 0.8 and Tmax around 445 deg C). Six cores were cut in the Ula Formation and the upper part of the Skagerrak Formation. RFT results from the Triassic to Jurassic sandstones indicated mainly tight formation, but with some permeability in the upper part of the Ula Formation and possibly also in the top of the Skagerrak Formation. No fluid sample was taken on wire line.

The well was suspended on 25 December 1983 as a minor Jurassic oil discovery. Later the well was re-entered and set in production on the Cod Field.

Testing

Three independent production tests were carried out. DST 1 from 4850 m to 4870 m in the Permian Zechstein Group did not produce. DST 2 test tested from three different zones (4779 m to 4789 m, 4670 m to 4684 m, and 4625 m to 4646 m) in the Triassic Skagerrak Formation. In this test the tubing failed. The fish was not recovered and a cement plug was set. DST 3 from the interval 4550 m to 4577 m in the Jurassic Ula Formation produced small amounts of oil and water. The flow was not stabilized and no reliable pressures were measured. Before acid stimulation the production was not sufficient to completely unload the well bore contents, though some oil (API 37-39) and gas samples were recovered. After acid stimulation the well produced a total of 116 bbls of oil. The gravity of the oil increased throughout this flow period to 41.1 deg API.

It is probable that the mud program damaged the reservoir rock in the near well bore extensively, which in turn adversely affected the test flow rates. This was particularly important for DST 3 in the Ula Formation, the last of the three tests. This reservoir contained on average of 14% illite clay. When exposed to a low-KCl mud for an extended period of time this clay had probably swelled and severely reduced the permeability in the formation.

**Cuttings at the Norwegian Offshore Directorate**

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
1383.79	4922.52

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	14923.0	14959.0	[ft]
2	14961.0	14966.0	[ft]
3	14966.0	14995.0	[ft]
4	15012.0	15051.0	[ft]
5	15052.0	15103.0	[ft]
6	15105.0	15152.0	[ft]

Total core sample length [m]	63.1
Cores available for sampling?	YES

Core photos

14941-14956ft



14923-14938ft



14959-14959ft



14961-14964ft



14966-14981ft



14984-14993ft



15012-15027ft



15030-15045ft



15048-15051ft



15052-15067ft



15070-15085ft



15088-15100ft



15105-15120ft



15123-15138ft



15141-15150ft

Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
14979.0	[ft]	C	OD
15052.3	[ft]	C	OD
15077.0	[ft]	C	OD
15086.0	[ft]	C	OD

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
112	NORDLAND GP
1615	HORDALAND GP
3133	ROGALAND GP
3133	BALDER FM
3146	SELE FM
3185	FORTIES FM
3377	MAUREEN FM
3390	SHETLAND GP
3390	EKOFISK FM
3468	TOR FM
3874	HOD FM
4208	HIDRA FM
4318	CROMER KNOLL GP
4318	RØDBY FM
4360	ÅSGARD FM
4405	TYNE GP
4405	MANDAL FM
4448	FARSUND FM
4527	VESTLAND GP
4527	ULA FM
4566	NO GROUP DEFINED



4566	SKAGERRAK FM
4856	ZECHSTEIN GP

Geochemical information

Document name	Document format	Document size [MB]
57_1	pdf	4.84

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

Document name	Document format	Document size [MB]
57_01_WDSS_General_Information	pdf	0.20
57_02_WDSS_completion_log	pdf	0.42

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

Document name	Document format	Document size [MB]
57_01_7_11_7_Completion_Report_and_Completion_log	pdf	95.22
57_7_11_7_Biostratigraphy_of_the_Interval	pdf	2.81
57_7_11_7_Calcinity_on_6_Samples	pdf	0.06
57_7_11_7_Cored_Interval	pdf	13.13
57_7_11_7_Core_Analysis_Jurassic	pdf	1.11
57_7_11_7_Core_Analysis_Report	pdf	0.43
57_7_11_7_Core_Log_Chart	pdf	0.27
57_7_11_7_Coring_Analysis_Jurassic_Sandst	pdf	1.17
57_7_11_7_Geochemical_Analysis	pdf	1.96
57_7_11_7_Investigation_of_Bailed_Sample_I	pdf	0.65
57_7_11_7_Investigation_of_Bailed_Sample_I_I	pdf	0.27
57_7_11_7_Palynological_Study_of_the_Interval	pdf	0.28
57_7_11_7_Partial_Rock_Analysis_Triassic	pdf	1.98
57_7_11_7_Partial_Rock_Analysis_Zechstein	pdf	1.17
57_7_11_7_Routine_Core_Analysis	pdf	0.27
57_7_11_7_Routine_Core_Analysis_I	pdf	0.34





57 7 11 7 Routine Sidewall Core Analysis	pdf	2.08
57 7 11 7 Sidewall Core Description	pdf	0.26
57 7 11 7 Source Rock Evaluation	pdf	2.64
57 7 11 7 Special Core Analysis	pdf	3.56

Drill stem tests (DST)

Test number	From depth MD [m]	To depth MD [m]	Choke size [mm]
1.0	4850	4870	0.0
2.0	4625	4789	0.0
3.0	4550	4577	1.6

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					
3.0	23		0.820		

Logs

Log type	Log top depth [m]	Log bottom depth [m]
CBL VDL GR CCL	121	1376
CBL VDL GR CCL	2609	3461
CBL VDL GR CCL	2772	3148
CBL VDL GR CCL	3425	4908
CCL	0	61
CNL GR CCL	4343	4867
DI MSFL GR LSS	3370	3491
DI MSFL LSS NGS	3487	4931
DIL GR SLS CALI	3155	3491
DISF BHCS NGL	3426	4620





DISFL SP CALI	3155	3406
GR CALI	3155	3331
ISF GR LSS CALI	1377	3157
ISF LSS GR	479	1383
ISF LSS GR	3155	3405
LDL CNL GR	3426	4676
LDL CNL GR	3487	4621
LDL CNL GR CALI	3155	3406
NGRS	3487	4931
NGS	3426	4615
NGT	3425	4612
NGT SPECT	3155	3404
RFT	3487	4931
RFT	4549	4854
RFT GR	3187	3309
RFT GR	3350	3405
SHDT	3487	4932
SONIC WAVEFORM	4480	4891
VSP	731	4877

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	183.8	36	0.0	0.00	LOT
SURF.COND.	20	498.0	26	0.0	0.00	LOT
INTERM.	16	1379.2	18 3/4	1390.0	1.70	LOT
INTERM.	13 3/8	3156.0	17 1/2	3158.0	1.80	LOT
INTERM.	9 5/8	3492.8	12 1/4	3489.0	1.83	LOT
LINER	7	4912.8	8 1/2	4913.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
1400	1.51	48.0		waterbased	
1540	1.68	66.0		waterbased	
1645	1.65	66.0		waterbased	
3100	1.65	66.0		waterbased	



3290	1.03	52.0		waterbased	
3340	1.44	54.0		waterbased	
3930	1.44	60.0		waterbased	
4250	1.45	53.0		waterbased	
4540	1.64	58.0		waterbased	
4780	1.77	54.0		waterbased	