



General information

Wellbore name	35/1-1
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Press release	link to press release
Factmaps in new window	link to map
Main area	NORTH SEA
Well name	35/1-1
Seismic location	Supergrid line 30280&Supergrid trace 782
Production licence	269
Drilling operator	Phillips Petroleum Company Norway
Drill permit	1038-L
Drilling facility	DEEPSEA BERGEN
Drilling days	52
Entered date	28.05.2002
Completed date	18.07.2002
Release date	18.07.2004
Publication date	18.07.2004
Purpose - planned	WILDCAT
Reentry	NO
Content	DRY
Discovery wellbore	NO
Kelly bushing elevation [m]	23.0
Water depth [m]	408.0
Total depth (MD) [m RKB]	4540.0
Final vertical depth (TVD) [m RKB]	4540.0
Bottom hole temperature [°C]	152
Oldest penetrated age	LATE TRIASSIC
Oldest penetrated formation	LUNDE FM
Geodetic datum	ED50
NS degrees	61° 50' 9.11" N
EW degrees	3° 4' 24.21" E
NS UTM [m]	6856062.02
EW UTM [m]	503864.91
UTM zone	31
NPDID wellbore	4541



Wellbore history

General

The objectives of drilling the Sturlason 35/1-1 well were to test the hydrocarbon potential of the Jurassic Cook and Statfjord Formations and the Triassic Lunde Formation in the Marflo Ridge structural complex located northeast of the Tampen Spur. The well location was designed to test a significant hydrocarbon column height that would potentially spill into additional fault blocks without leaving commercial reserves up dip. The location should further, if possible, evaluate Paleocene potential without compromising the Mesozoic target.

Operations and results

Exploration well 35/1-1 was spudded with the semi-submersible installation Deepsea Bergen on 28 May 2002 and drilled to TD at 4540 m.

Site survey and gravity coring showed that the shallow geology at the well site consists of soft, silty clay down to 16-18 meters below the seabed. A flat topography is interspersed by frequent pockmarks (seabed depressions). These pockmarks are up to 100 meters in diameter and up to 5 meters deep and are scattered throughout the survey area. The closest pockmark is 50 m south of the 35/1-1 location. Pockmarks are believed to have formed as a result of fluid or gas escape originating in or beneath the soft surface sediments.

The well was drilled with seawater and bentonite sweeps down to 878 m, with KCl brine/Glydril from 878 m to 2245 m, and with Versaport oil based mud from 2245 m to TD. No shallow high-pressured water pocket was encountered in the 35/1-1 drilling operation.

No producible hydrocarbons were encountered in the well. The well did not encounter any potential reservoir in the Paleocene interval. All three potential reservoir intervals were evaluated by MWD/LWD log and open hole wire line data. In the 8 1/2" hole section sidewall cores were collected and one run was performed using Schlumbergers Modular Formation Dynamics Tester (MDT) for pressure measurements and fluid sampling. The MDT tool was configured with 2 x 1 gallon chambers and 6 x 450 cc bottles for pressurized samples. Fluid samples were collected at 4043.12 in the Cook Formation, and at 4471 m and 4322.27 in the Statfjord Formation. The CPI made from the wire line log data indicated the presence of small amounts of residual hydrocarbons. Additionally, the sidewall cores and MDT samples contained traces of hydrocarbons. However, geochemical analyses showed that only the MDT sample from the Cook Formation contained trace hydrocarbons that could represent migrated petroleum. The hydrocarbons in the other samples were from the oil-based mud. It should also be noted that the potassium in the KCL/Glycol mud system masked the natural gamma ray readings of the formation in the 17 1/2" section and affected the CDR resistivity resulting in a useless LWD log. Conventional cores were not cut in this well.

The well was permanently abandoned on 18 July 2002 as a dry hole.

Testing

No drill stem test was performed

Cuttings at the Norwegian Offshore Directorate



Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
890.00	4540.00

Cuttings available for sampling?	YES
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Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
1200.0	[m]	DC	PETROSTR
1210.0	[m]	DC	PETROS
1220.0	[m]	DC	PETROS
1230.0	[m]	DC	PETROS
1250.0	[m]	DC	PETROS
1260.0	[m]	DC	PETROS
1270.0	[m]	DC	PETROS
1280.0	[m]	DC	PETROS
1310.0	[m]	DC	PETROS
1320.0	[m]	DC	PETROS
1330.0	[m]	DC	PETROS
1340.0	[m]	DC	PETROS
1350.0	[m]	DC	PETROS
1360.0	[m]	DC	PETROS
1370.0	[m]	DC	PETROS
1380.0	[m]	DC	PETROS
1390.0	[m]	DC	PETROS
1400.0	[m]	DC	PETROS
1420.0	[m]	DC	PETROS
1430.0	[m]	DC	PETROS
1440.0	[m]	DC	PETROS
1450.0	[m]	DC	PETROS
1460.0	[m]	DC	PETROS
1470.0	[m]	DC	PETROS
1480.0	[m]	DC	PETROS
1490.0	[m]	DC	PETROS
1500.0	[m]	DC	PETROS
1510.0	[m]	DC	PETROS
1520.0	[m]	DC	PETROS
1530.0	[m]	DC	PETROS
1550.0	[m]	DC	PETROS
1560.0	[m]	DC	PETROS



1570.0	[m]	DC	PETROS
1580.0	[m]	DC	PETROS
1610.0	[m]	DC	PETROS

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
431	NORDLAND GP
1581	HORDALAND GP
2020	ROGALAND GP
2020	BALDER FM
2042	SELE FM
2050	LISTA FM
2147	VÅLE FM
2153	SHETLAND GP
2153	JORSALFARE FM
2280	KYRRE FM
3301	TRYGGVASON FM
3726	BLODØKS FM
3736	CROMER KNOLL GP
3736	MIME FM
3742	VIKING GP
3742	HEATHER FM
3813	DUNLIN GP
3813	DRAKE FM
3970	COOK FM
4087	BURTON FM
4124	JOHANSEN FM
4180	AMUNDSEN FM
4264	STATFJORD GP
4476	HEGRE GP
4476	LUNDE FM

Composite logs

Document name	Document format	Document size [MB]
4541	pdf	0.79





Geochemical information

Document name	Document format	Document size [MB]
4541_1	pdf	0.69

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

Document name	Document format	Document size [MB]
4541_35_1_1_COMPLETION_LOG	.pdf	3.83
4541_35_1_1_COMPLETION_REPORT	.PDF	3.22

Logs

Log type	Log top depth [m]	Log bottom depth [m]
GR HDIL XMAC ZDL CN TTRM	405	2238
GR HDIL XMAC ZDL CN TTRM	2150	3830
GR HDIL XMAC ZDL CN TTRM	3645	4531
MDT GR SAMPLES	4489	0
MSCT	4510	0
MWD - CDR DIR	503	878
MWD - CDR DIR	878	2245
MWD - CDR DIR	3834	4540
MWD CDR DIR	2245	3834

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	503.0	36	503.0	0.00	LOT
INTERM.	20	872.0	26	878.0	0.00	LOT
INTERM.	13 3/8	2239.0	17 1/2	2245.0	1.65	LOT
INTERM.	9 5/8	3826.0	12 1/4	3834.0	1.75	LOT
OPEN HOLE		4540.0	8 1/2	4540.0	2.15	LOT



**Drilling mud**

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
431	0.00			SPUD MUD	
672	0.00	34.0		VERSAPORT	
678	0.00			SEAWATER	
863	0.00	33.0		VERSAPORT	
878	0.12			SPUD MUD	
1675	1.34	18.0		KCL/POLYMER	
2245	0.00	32.0		VERSAPORT	
2678	1.50	39.0		VERSAPORT	
3452	1.52	36.0		VERSAPORT	
3834	1.61	32.0		VERSAPORT	
3950	0.00	36.0		VERSAPORT	
4129	0.00	35.0		VERSAPORT	
4516	0.00	49.0		VERSAPORT	
4540	0.00	48.0		VERSAPORT	

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]
4541_Formalion_pressure_(Formasjonstrykk)	pdf	0.22

