

**General information**

Wellbore name	1/3-6
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Factmaps in new window	link to map
Main area	NORTH SEA
Field	OSELVAR
Discovery	1/3-6 Oselvar
Well name	1/3-6
Seismic location	LINJE SH 8902 - 161 SP436
Production licence	065
Drilling operator	Elf Petroleum Norge AS
Drill permit	669-L
Drilling facility	DYVI STENA
Drilling days	104
Entered date	11.03.1991
Completed date	22.06.1991
Release date	22.06.1993
Publication date	19.12.2007
Purpose - planned	WILDCAT
Reentry	NO
Content	GAS/CONDENSATE
Discovery wellbore	YES
1st level with HC, age	PALEOCENE
1st level with HC, formation	FORTIES FM
Kelly bushing elevation [m]	25.0
Water depth [m]	72.0
Total depth (MD) [m RKB]	3586.0
Final vertical depth (TVD) [m RKB]	3584.0
Maximum inclination [°]	4.5
Bottom hole temperature [°C]	142
Oldest penetrated age	LATE CRETACEOUS
Oldest penetrated formation	HOD FM
Geodetic datum	ED50
NS degrees	56° 56' 14.92" N
EW degrees	2° 42' 20.81" E
NS UTM [m]	6310606.04
EW UTM [m]	482095.98



UTM zone	31
NPDID wellbore	1521

Wellbore history

General

Well 1/3-6 is located between the Gyda, Ula, and Blane fields in the Central Graben of the Norwegian North Sea.

The primary objective was Late Jurassic Ula sands deposited as a rim syncline linked to salt diapirism. The Ula sands had been found hydrocarbon bearing in several wells in the surrounding blocks. Secondary objective was Late Paleocene "Cod sands" (Forties Formation), which could be present in the 1/3-6 area and could pinch out towards the diapir. The prognosed TD was 5030 m below MSL. The "Cod sands" were considered a low-probability target.

Operations and results

Wildcat well 1/3-6 was spudded with the semi-submersible installation Dyvi Stena on 11 March 1991. Drilling performance went on without significant problems but the primary target of the well was not reached. The discovery of a significant hydrocarbon-bearing reservoir in the Paleocene activated the contingency measures of the programme (to set an extra 11 3/4" liner). For safety and technical reasons, and to allow for a proper test of the Paleocene, the well was stopped at 3586 m in the Late Cretaceous Hod Formation. No shallow gas was encountered while drilling. The well was drilled with a KCl polymer mud.

The well encountered 85 m of hydrocarbon bearing Forties sands at 2913.5 m. The pay zone was 44 m thick with a hydrocarbon saturation of 56 %. No hydrocarbon-water contact was found. Apart from the hydrocarbons in the Forties sands oil shows were also recorded from 3519 to 3530 m in the Tor Formation.

One conventional core was cut at 2921 m to 2928.5 m in the Forties sands. Segregated fluid samples were taken at three depths: 2923 m (filtrate and gas), 2937 m (filtrate and gas), and two samples at 2973.5 m (filtrate and gas in one and filtrate only in the other).

The well was permanently abandoned on 22 June 1991 as a gas-condensate discovery.

Testing

Three DST tests were performed. DST 1A and DST 1B both tested the interval 2960.5 - 2977 m. Due to packer failure

during DST 1A this test was abnormally terminated and the re-test DST 1B was performed. DST 1B produced 78 Sm³ oil and 93300 Sm³ gas /day through a 44/64" choke in the final flow period. The GOR was 1196 Sm³/Sm³. The bottom hole temperature in this flow was 107.2 deg C.

DST 2 tested the intervals 2913 - 2924 m + 2929 - 2953 m. The final flow in DST 2 was 153 Sm³ oil and 172500 Sm³ gas /day through a 48/64" choke. The GOR was 1131 Sm³/Sm³ and the condensate gravity was measured to 50.47 deg API. The pressure drawdown in this flow was 290 bar and the bottom hole temperature was 112.2 deg C. The maximum temperature in DST 2 was 123.1 deg C and was recorded in the flow with the lowest rates and lowest drawdown. It was believed to be closer to the true formation temperature than the one recorded in DST 1B.

**Cuttings at the Norwegian Offshore Directorate**

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
1220.00	3585.00

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	2921.0	2928.5	[m]

Total core sample length [m]	7.5
Cores available for sampling?	YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
97	NORDLAND GP
1600	HORDALAND GP
2823	ROGALAND GP
2823	BALDER FM
2836	SELE FM
2914	FORTIES FM
2999	VÅLE FM
3103	SHETLAND GP
3103	EKOFISK FM
3201	TOR FM
3530	HOD FM

Geochemical information

Document name	Document format	Document size [MB]
1521_1	pdf	0.14
1521_2	pdf	0.82





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

Document name	Document format	Document size [MB]
1521_01_WDSS_General_Information	pdf	24.16
1521_02_WDSS_completion_log	pdf	0.19

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

Document name	Document format	Document size [MB]
1521_1_3_6_COMPLETION_LOG	pdf	2.54
1521_1_3_6_COMPLETION_REPORT	pdf	33.95

Drill stem tests (DST)

Test number	From depth MD [m]	To depth MD [m]	Choke size [mm]
1.0	2961	2977	17.5
2.0	2913	2953	15.8

Test number	Final shut-in pressure [MPa]	Final flow pressure [MPa]	Bottom hole pressure [MPa]	Downhole temperature [°C]
1.0		3.000		107
2.0		6.800		112

Test number	Oil [Sm ³ /day]	Gas [Sm ³ /day]	Oil density [g/cm ³]	Gas grav. rel.air	GOR [m ³ /m ³]
1.0	78	93300	0.780	0.780	1196
2.0	153	172500	0.771	0.735	1131

Logs

Log type	Log top depth [m]	Log bottom depth [m]
DIT-D SLS MSFL GR	2860	3153
DIT-E SLS GR	2860	3590





DLL MSFL GR	2860	3100
FMS GR	2860	3591
LDL CNL GR	2860	3591
LDL CNL GR	2860	3155
LDL CNL GR	2902	3017
MWD - GR RES DIR	186	3586
RFT-B GR	2915	2961
RFT-B HP GR	2916	3360
VSP	905	3575

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	183.0	36	185.0	0.00	LOT
INTERM.	20	2000.0	26	2003.0	1.80	LOT
INTERM.	13 3/8	2861.0	17 1/2	2864.0	2.13	LOT
LINER	9 5/8	3062.0	12 1/4	3065.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
361	1.03			WATER BASED	
550	1.03			WATER BASED	
857	1.55	20.0		WATER BASED	
1255	1.39	38.0		WATER BASED	
1573	1.50	37.0		WATER BASED	
1600	1.55	22.0		WATER BASED	
1820	1.70	41.0		WATER BASED	
1925	1.74	56.0		WATER BASED	
1930	1.75	52.0		WATER BASED	
2070	1.75	63.0		WATER BASED	
2210	1.75	72.0		WATER BASED	
2263	1.75	47.0		WATER BASED	
2356	1.75	40.0		WATER BASED	
2503	1.75	43.0		WATER BASED	
2589	1.75	55.0		WATER BASED	
2651	1.75	58.0		WATER BASED	



2673	1.75	46.0		WATER BASED	
2680	1.75	52.0		WATER BASED	
2683	1.75	35.0		WATER BASED	
2715	1.55	28.0		WATER BASED	
2731	1.75	48.0		WATER BASED	
2800	1.75	48.0		WATER BASED	
2846	1.75	62.0		WATER BASED	
2850	1.75	27.0		WATER BASED	
2851	1.75	45.0		WATER BASED	
2859	1.43	4.0		WATER BASED	
2863	1.75	53.0		WATER BASED	
2870	1.75	45.0		WATER BASED	
2880	1.75	25.0		WATER BASED	
2888	1.43	4.0		WATER BASED	
2921	1.75	33.0		WATER BASED	
2928	1.75	34.0		WATER BASED	
2958	1.43	4.0		WATER BASED	
2958	1.43	4.0		WATER BASED	
2959	1.43			WATER BASED	
2994	1.75	30.0		WATER BASED	
3015	1.40			WATER BASED	
3060	1.55	46.0		WATER BASED	
3061	1.75	43.0		WATER BASED	
3064	1.55	33.0		WATER BASED	
3110	1.75	44.0		WATER BASED	
3150	1.55	23.0		WATER BASED	
3157	1.75	28.0		WATER BASED	
3176	1.64	25.0		WATER BASED	
3200	1.55	30.0		WATER BASED	
3210	1.60	24.0		WATER BASED	
3270	1.55	29.0		WATER BASED	
3300	1.55	33.0		WATER BASED	
3326	1.55	30.0		WATER BASED	
3344	1.55	31.0		WATER BASED	
3388	1.55	30.0		WATER BASED	
3391	1.55	30.0		WATER BASED	
3465	1.55	34.0		WATER BASED	
3529	1.55	32.0		WATER BASED	
3554	1.55	34.0		WATER BASED	
3573	1.55	42.0		WATER BASED	



3586	1.50			WATER BASED	
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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]
1521 Formation pressure (Formasjonstrykk)	pdf	0.21

