

**General information**

Wellbore name	6506/6-1
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Factmaps in new window	link to map
Main area	NORWEGIAN SEA
Discovery	6506/6-1 (Victoria)
Well name	6506/6-1
Seismic location	Innline 1330 trase 1940 Strikeline 1330
Production licence	211
Drilling operator	Mobil Exploration Norway INC
Drill permit	977-L
Drilling facility	WEST ALPHA
Drilling days	150
Entered date	10.07.2000
Completed date	07.12.2000
Release date	07.12.2002
Publication date	18.12.2002
Purpose - planned	WILDCAT
Reentry	NO
Content	GAS
Discovery wellbore	YES
1st level with HC, age	MIDDLE JURASSIC
1st level with HC, formation	FANGST GP
2nd level with HC, age	EARLY JURASSIC
2nd level with HC, formation	BÅT GP
Kelly bushing elevation [m]	18.0
Water depth [m]	434.0
Total depth (MD) [m RKB]	5491.0
Final vertical depth (TVD) [m RKB]	5474.2
Maximum inclination [°]	11.84
Bottom hole temperature [°C]	200
Oldest penetrated age	EARLY JURASSIC
Oldest penetrated formation	ÅRE FM
Geodetic datum	ED50
NS degrees	65° 31' 54.88" N
EW degrees	6° 57' 47.3" E
NS UTM [m]	7269443.22



EW UTM [m]	405870.78
UTM zone	32
NPDID wellbore	4122

Wellbore history

**General**

PL 211 covers blocks 6506/6 and 6507/4 off-shore Norway, approximately 300 km northwest of Trondheim. Well 6506/6-1, designated as High Temperature High Pressure well, was drilled by Mobil as the first commitment well for the licence. Well 6506/6-1 was drilled in the southeastern part of Block 6506/6. The primary objective of the well was to test the hydrocarbon potential of the Bella-Donna prospect, which straddles the southern parts of blocks 6506/6 and 6507/4. A faulted, 4-way dip closed dome, with prognosed 500m of vertical closure in the Jurassic Fangst and Båt Group Sandstones was the primary objective of the well. The secondary objective was to assess the Cretaceous prospectivity.

Operations and results

Wildcat well 6506/6-1 was drilled with the semi-submersible installation "West Alpha". A 9 7/8" pilot hole was spudded on 7 July 2000 and drilled to 1425 m to check for the presence of shallow gas. No shallow gas was found.

The final well was spudded on 9 July 2000 and reached TD at 5491.0 m in the Early Jurassic Åre Formation. The well was drilled with seawater and bentonite down to 1437 m, with water based KCl/Glycol mud from 1437 m to 2794 m, and with mineral oil based mud (Versapro) from 2794 m to TD. The sandstones of the Middle Jurassic Fangst Group were found to be extremely hard and abrasive and diamond impregnated bits were required to complete the section.

The geology of the well was very much as prognosed, although the tops generally came in higher than expected. No shows were observed in the sandstones of the Cretaceous Lysing, Lange and Lyr Formations.

The well penetrated a significant thickness of porous and permeable sandstone in the Middle Jurassic Ile and Lower Jurassic Tilje Formations. Hydrocarbons recovered from both indicate a dry gas containing 10% CO₂. Petrophysical analysis indicates that lower reservoir quality Middle Jurassic Garn Formation and Lower Jurassic Upper Åre Formation sandstones are also gas charged. No water sand in the Jurassic section could be identified. Very minor oil shows were observed in the sandstones of the Middle and Lower Jurassic Fangst and Båt Groups. However, some of these could be attributed to contamination by the oil-based mud. Petrophysical and FMT sample analyses indicated that the formation fluid was dry gas, which would not have yielded either good fluorescence or cut. Gas levels, because of the overbalance, were generally very low. One core was cut in sandstones of the Garn Formation and two further cores were cut in the Tilje Formation. Three FMT hydrocarbon samples were collected from 5035.5 m in the Ile Formation and 5169 m and 5267.5 m in the Tilje Formation.

The well was plugged and abandoned as a gas discovery on 6 December 2000.

Testing

Preparations were made to perform a DST in the 8 1/2" hole. However, after setting and cementing liner, gas detected during circulations indicated leak from somewhere behind the liner. It proved impossible to find the leak or seal the liner and a decision was made to abandon the test.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
1440.00	5491.00



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	5001.0	5004.4	[m]
2	5212.0	5220.4	[m]
3	5221.5	5275.9	[m]

Total core sample length [m]	66.1
Cores available for sampling?	YES

Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
4125.0	[m]	SWC	
4132.5	[m]	SWC	
4150.5	[m]	SWC	
4207.0	[m]	SWC	
4254.5	[m]	SWC	
5025.0	[m]	DC	
5061.0	[m]	DC	
5070.0	[m]	DC	
5106.0	[m]	DC	
5133.0	[m]	DC	
5142.0	[m]	DC	
5151.0	[m]	DC	

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
452	NORDLAND GP
452	NAUST FM
1872	HORDALAND GP
1872	BRYGGE FM
1935	ROGALAND GP
1935	TARE FM
2015	TANG FM



2071	SHETLAND GP
2071	SPRINGAR FM
2221	NISE FM
2477	KVITNOS FM
3015	CROMER KNOLL GP
3015	LYSING FM
3086	LANGE FM
4328	LYR FM
4353	VIKING GP
4353	SPEKK FM
4458	MELKE FM
4961	FANGST GP
4961	GARN FM
5015	NOT FM
5033	ILE FM
5095	BÅT GP
5095	ROR FM
5165	TILJE FM
5302	ÅRE FM

Composite logs

Document name	Document format	Document size [MB]
4122	pdf	0.69

Geochemical information

Document name	Document format	Document size [MB]
4122_1	pdf	1.91
4122_2	pdf	1.99
4122_3	pdf	1.87
4122_4	pdf	1.50
4122_5	pdf	0.72

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





Document name	Document format	Document size [MB]
4122 6506 6 1 COMPLETION LOG	.pdf	5.14
4122 6506 6 1 COMPLETION REPORT	.pdf	118.44

Logs

Log type	Log top depth [m]	Log bottom depth [m]
FMT CHT 20L-4L GR	4966	5346
FMT CHT 20L-4L GR	5267	5268
FMT GR 20L-4L	5033	5479
HDIL XMAC ZDL CN TTRM GR	2794	4273
HDIL ZDL CN ORIT TTRM GR	4940	5489
HDIL ZDL CN TTRM GR	4920	5369
MWD - CDR	450	2805
MWD - CDR PDM	2805	4276
MWD - V675 RES ADN	5370	5415
MWD - V675 RES ISONIC ADN	4276	5370
PMFC	1508	4179
PMFC	1509	4152
RCI GR	5035	5169
RCOR CHT GR	3042	4254
SBT CCL GR	0	0
TEMP PRESS	2524	2524
VSP	2050	5365

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	551.0	36	551.0	0.00	LOT
SURF.COND.	20	1424.0	26	1437.0	1.67	LOT
INTERM.	13 3/8	2784.0	17 1/2	2805.0	1.88	LOT
INTERM.	9 5/8	4267.0	12 1/4	4276.0	2.16	LOT
LINER	7	5491.0	8 1/2	5491.0	0.00	LOT

Drilling mud





Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
498	1.03	10.0		DUMMY	
501	1.03	10.0		DUMMY	
551	1.03	10.0		DUMMY	
1101	1.07	10.0		DUMMY	
1437	1.07	10.0		DUMMY	
1437	1.07	10.0		DUMMY	
2805	0.00			DUMMY	
2805	0.00			DUMMY	
2805	1.60	29.0		DUMMY	
3237	1.60	26.0		DUMMY	
4253	1.64	32.0		DUMMY	
4276	1.64	33.0		N/A	
4276	1.64	31.0		DUMMY	
4390	1.75	36.0		OBM	
4972	1.89	41.0		OBM	
4972	1.89	40.0		OBM	
4986	1.87	39.0		OBM	
5005	1.87	40.0		OBM	
5015	1.87	40.0		OBM	
5071	1.87	44.0		OBM	
5179	1.87	41.0		OBM	
5222	1.87	40.0		OBM	
5315	1.87	46.0		OBM	
5370	0.00	46.0		OBM	
5415	1.87	47.0		OBM	
5491	1.87	45.0		OBM	
5491	1.87	45.0		OBM	

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]
4122 Formation pressure (Formasjonstrykk)	PDF	0.28

