

**General information**

Wellbore name	6507/2-4
Type	EXPLORATION
Purpose	APPRAISAL
Status	P&A
Press release	link to press release
Factmaps in new window	link to map
Main area	NORWEGIAN SEA
Field	MARULK
Discovery	6507/2-2 Marulk
Well name	6507/2-4
Seismic location	Survey ST9717RO4-inline3894 & Trace 3766
Production licence	122
Drilling operator	Eni Norge AS
Drill permit	1163-L
Drilling facility	WEST ALPHA
Drilling days	95
Entered date	17.11.2007
Completed date	19.02.2008
Release date	19.02.2010
Publication date	19.02.2010
Purpose - planned	APPRAISAL
Reentry	NO
Content	GAS/CONDENSATE
Discovery wellbore	NO
1st level with HC, age	LATE CRETACEOUS
1st level with HC, formation	LYSING FM
Kelly bushing elevation [m]	18.0
Water depth [m]	365.0
Total depth (MD) [m RKB]	3600.0
Final vertical depth (TVD) [m RKB]	3600.0
Maximum inclination [°]	2
Bottom hole temperature [°C]	126
Oldest penetrated age	EARLY CRETACEOUS
Oldest penetrated formation	LYR FM
Geodetic datum	ED50
NS degrees	65° 56' 27.42" N
EW degrees	7° 35' 38.18" E



NS UTM [m]	7314229.99
EW UTM [m]	436037.20
UTM zone	32
NPDID wellbore	5685

Wellbore history

General

Well 6507/2-4 was drilled on the Marulk structure on the Dønna Terrace in the Norwegian Sea. The main purpose was to appraise the Lysing Formation discovery in the previous well 6507/2-2, and to confirm the reserves down flank. Lange Formation (Intra Lange sandstones UL2 and UL1) was the secondary target. Planned TD was set 50 m into the Jurassic.

Operations and results

Appraisal well 6507/2-4 was spudded with the semi-submersible installation West Alpha on 17 November 2007 and drilled to TD at 3600 m in the Early Cretaceous Lyr Formation. Operations proceeded without really serious problems, but in the 12 1/4" and 8 1/2" sections a considerable amount of time was NPT due bad weather conditions and hole instability with tendency of stuck BHA. Due to very low rate of penetration it was agreed among the License Partners to set TD in the Cretaceous Lyr Formation. The well was drilled with sea water and hi-vis sweeps down to 1350 m and with Ultradril mud from 1350 m to TD.

All stratigraphic tops were encountered generally 10-27 meters higher than expected; Lysing formation was found 10.4 m higher than prognosed, UL2 sandstone 14.5 m deepest and UL1 sandstone was hit 19 m higher. The primary target Lysing sandstone was found at 2832 m and was found Gas/Condensate bearing all through down to a GDT at 2853 m. Unit UL2 was found water bearing at 3331.5 m, composed by many sand layers interbedded with claystone. Unit UL1 was found at oil bearing at 3378.5 m, consisting in one sand body 3 meters thick. Oil shows and gas peaks were recorded in numerous thin sandstone stringers in the Lange Formation between 3320 m and 3465 m.

One core was cut from 2835 to 2852 m in the Lysing Formation, and two cores were cut in the interval 3334 to 3344.8 m in the Lange Formation. MDT gas/condensate samples were taken at 2838 m and 2850 m in the Lysing Formation, water was sampled in the intra-Lange Formation UL2 level at 3337 m, and oil in the intra-Lange Formation UL1 level at 3380.5 m.

The well was permanently abandoned on 19 February 2008 as a gas/condensate appraisal well.

Testing

No drill stem test was performed.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
1360.00	3600.00



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	2835.0	2852.0	[m]
2	3334.0	3342.3	[m]
3	3342.3	3344.8	[m]

Total core sample length [m]	27.8
Cores available for sampling?	YES

Oil samples at the Norwegian Offshore Directorate

Test type	Bottle number	Top depth MD [m]	Bottom depth MD [m]	Fluid type	Test time	Samples available
DST		0.00	0.00			YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
383	NORDLAND GP
1375	KAI FM
1800	HORDALAND GP
1800	BRYGGE FM
1852	ROGALAND GP
1852	TARE FM
1964	SHETLAND GP
1964	SPRINGAR FM
2456	KVITNOS FM
2832	CROMER KNOLL GP
2832	LYSING FM
2853	LANGE FM
3332	NO FORMAL NAME
3378	NO FORMAL NAME



3552 [LYR FM](#)

Logs

Log type	Log top depth [m]	Log bottom depth [m]
CMR XPT GR	3291	3600
CMR XPT GR ACTS	2755	2971
FMI MSIP GR PPC ACTS	2247	3071
MDT MINI DST	2838	2850
MDT MINI DST	3337	3380
MSCT	3296	3480
MSIP FMI GR	1200	3597
MWD - ARCGR ARCRES DIR	1310	2260
MWD - ARCGR ARCRES DIR SON	447	1310
MWD - GR	383	447
MWD - RAB GR RES BIT RES GDIR EC	3074	3600
MWD - RAB GR RES BIT RES GEODIR	2260	3074
PEX ECS HRLA GR	2247	3074
PEX ECS HRLA GR ACTS	2819	3584
VSP	1440	3550

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	443.0	36	445.0	0.00	LOT
SURF.COND.	20	1343.0	26	1355.0	1.73	LOT
INTERM.	13 3/8	2247.0	17 1/2	2263.0	1.85	LOT
INTERM.	9 5/8	3065.0	12 1/4	3080.0	1.93	LOT
OPEN HOLE		3600.0	8 1/2	3600.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
446	1.30			SPUD MUD	
518	1.05			SPUD MUD	



547	1.05			SPUD MUD	
1089	1.05			SPUD MUD	
1350	1.30	120.0		SPUD MUD	
1400	1.25	15.0		ULTRADRIL DW	
2070	1.55	35.0		ULTRADRIL DW	
2260	1.55	31.0		ULTRADRIL DW	
2591	1.48	29.0		ULTRADRIL DW	
2722	1.48	30.0		ULTRADRIL DW	
2756	1.48	28.0		ULTRADRIL DW	
2772	1.48	27.0		ULTRADRIL DW	
2834	1.48	310.0		ULTRADRIL DW	
2954	1.48	31.0		ULTRADRIL DW	
3051	1.49	33.0		ULTRADRIL DW	
3074	1.49	29.0		ULTRADRIL DW	
3084	1.52	32.0		ULTRADRIL DW	
3170	1.56	32.0		ULTRADRIL DW	
3225	1.62	38.0		ULTRADRIL DW	
3237	1.63	37.0		ULTRADRIL DW	
3257	1.66	37.0		ULTRADRIL DW	
3286	1.67	33.0		ULTRADRIL DW	
3334	1.73	41.0		ULTRADRIL DW	
3400	1.73	37.0		ULTRADRIL DW	
3600	1.52	28.0		ULTRADRIL DW	
3601	1.73	39.0		ULTRADRIL DW	

Thin sections at the Norwegian Offshore Directorate

Depth	Unit
2836.00	[m]
2837.00	[m]
2839.50	[m]
2842.50	[m]
2844.45	[m]
2846.50	[m]
2849.75	[m]
3334.60	[m]
3336.05	[m]
3339.50	[m]
3340.05	[m]
3340.45	[m]



3340.57	[m]
3340.90	[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]
5685 Formation pressure (Formasjonstrykk)	pdf	0.28

