General information

Wellbore name	6507/7-14 S
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Press release	link to press release
Factmaps in new window	link to map
Main area	NORWEGIAN SEA
Field	DVALIN
Discovery	6507/7-14 S Dvalin
Well name	6507/7-14
Seismic location	Survey RD0701M01 inline 10519 & crossline 7637
Production licence	435
Drilling operator	RWE Dea Norge AS
Drill permit	1309-L
Drilling facility	BREDFORD DOLPHIN
Drilling days	105
Entered date	14.06.2010
Completed date	26.09.2010
Release date	26.09.2012
Publication date	17.10.2012
Purpose - planned	WILDCAT
Reentry	NO
Content	GAS
Discovery wellbore	YES
1st level with HC, age	MIDDLE JURASSIC
1st level with HC, formation	FANGST GP
Kelly bushing elevation [m]	25.0
Water depth [m]	344.0
Total depth (MD) [m RKB]	4534.0
Final vertical depth (TVD) [m RKB]	4477.0
Maximum inclination [°]	22.4
Bottom hole temperature [°C]	162
Oldest penetrated age	EARLY JURASSIC
Oldest penetrated formation	TILJE FM
Geodetic datum	ED50
NS degrees	65° 25' 35.84'' N
EW degrees	7° 10' 28.05'' E

NS UTM [m]	7257411.95
EW UTM [m]	415293.97
UTM zone	32
NPDID wellbore	6367

Wellbore history

General

The Zidane 6507/7-14 S well was drilled on the Revfall Fault Complex on the Dønna Terrace in the Norwegian Sea,

The primary objective was to test the hydrocarbon potential in the Middle Jurassic Fangst Group; Garn and Ile Formations. Secondary objectives were to test the hydrocarbon potential the Lower Cretaceous Lange Formation sandstone and the Lower Jurassic Tilje Formation.

Operations and results

Wildcat well 6507/7-14 S was spudded with the semi-submersible installation Bredford Dolphin on 26 September 2010 and drilled to TD at 4534 m (4477.5 m TVD) in the Early Jurassic Tilje Formation. No significant problems were encountered in the operations. The well was drilled with seawater and sweeps down to 1301 m, with Performadril water based mud from 1301 m to 2200 m, with HT Performadril mud containing 4.5 - 7% glycol from 2200 m to 3289 m, and with XP-07 oil based mud from 3289 m to TD.

The Fangst Group, Garn Formation was encountered at 4219 m (4163.7 m TVD).The well proved a gas column in the Garn and Ile Formations with a gas down-to contact at 4381 m (4325 m TVD). The Garn Formation is 87 m thick and consists predominantly of sandstone. The Ile Formation is 65 m thick, consisting of interbedded sandstone, claystone and siltstone with poor reservoir properties. Lange Formation sandstone was encountered but proved only some residual gas. The Tilje Formation sandstone was water bearing. Weak oil shows in the form of light-coloured fluorescence were recorded in the gas-bearing reservoir; otherwise there were no oil shows reported from the well.

A core was cut from 4221 to 4275.6 m. Core depths should be shifted 2.7 m down as compared to loggers´ depth. Plug data from the one-metre ends was available at the time of testing and these showed large permeability contrasts with some intervals having permeability of several hundred milliDarcy. Wire line fluid samples were acquired at 4226.45 m (gas), 4483.62 m (water), 4365.2 m (gas, gas+filtrate in one sample).

The well was permanently abandoned on 26 September 2010 as a gas discovery.

Testing

The well was production tested (DST). The test produced 1200 000 Sm3of gas, 47 Sm3 condensate, and 16 m3 water (condensed water) per day through a 36/64 inch choke. The gas was very dry with a separator GOR of 22600 Sm3/Sm3, a gravity of 0.647 (air = 1) and 4.5% CO2. The maximum temperature recorded was 154 deg C, but due to high draw-down the initial reservoir temperature was estimated by different extrapolation techniques to be 151degC.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
1320.00	4534.50

Cuttings available for sampling?	YES

Cores at the Norwegian Offshore Directorate

Core sample number	Core sample - top depth	Core sample - bottom depth	Core sample depth - uom
1	4221.0	4275.6	[m]

Total core sample length [m]	54.6
Cores available for sampling?	YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
369	NORDLAND GP
369	NAUST FM
1479	KAI FM
1910	HORDALAND GP
1910	BRYGGE FM
2035	ROGALAND GP
2035	TARE FM
2087	TANG FM
2148	SHETLAND GP
2148	SPRINGAR FM
2471	NISE FM
2972	CROMER KNOLL GP
2972	LYSING FM
3036	LANGE FM
3767	VIKING GP
3767	SPEKK FM
3790	MELKE FM
4219	FANGST GP
4219	GARN FM
4306	NOT FM
4313	ILE FM
4378	BÅT GP
4378	ROR FM
4478	TILJE FM

Drill stem tests (DST)

Test number	From depth MD [m]	To depth MD [m]	Choke size [mm]
1.0	4219	4289	14.3

Test number	Final shut-in pressure [MPa]	Final flow pressure [MPa]	Bottom hole pressure [MPa]	Downhole temperature [°C]
1.0	44.000			

Test number	Oil [Sm3/day]	Gas [Sm3/day]	Oil density [g/cm3]	Gas grav. rel.air	GOR [m3/m3]
1.0		1200000		0.647	22600

Logs

Log type	Log top depth [m]	Log bottom depth [m]
AIT APS LDS HNGS	3940	4534
ECRD	4282	4282
MDT	4226	4282
MDT	4281	4282
MDT	4296	4510
MSCT	4279	4373
MWD - BAT SONIC DEN NEU DIR	2200	3947
MWD - DDS PWD DIR	448	1301
MWD - DIR	369	448
MWD - GABI PWD GR RES DIR	3223	3289
MWD - GABI PWD GR RES PCAL	2200	3947
MWD - GM PWD RES BAT SON DEN NEU	3947	4534
MWD - GR RES PWD BAT SON DIR	448	2200
MWD - PWD GR RES DIR	3180	3289
OBMI MSIP	3938	4535
VSI-4	1137	4324
XPT CMR AT	3940	4387

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	369.0	36	369.0	0.00	LOT
INTERM.	20	448.0	20	1301.0	0.00	LOT
INTERM.	20	1294.0	20	1301.0	0.00	
INTERM.	13 3/8	2194.0	17 1/2	2200.0	1.95	LOT
INTERM.	9 5/8	3938.0	12 1/4	3947.0	1.96	LOT
LINER	7	4534.0	8 1/2	4534.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
1301	1.36	36.0		PERFORMADRIL	
1444	1.35	30.0		PERFORMADRIL	
2200	1.55	49.0		PERFORMADRIL	
2741	1.55	55.0		PERFORMADRIL	
3134	1.55	59.0		PERFORMADRIL	
3258	1.55	41.0		PERFORMADRIL	
3289	1.64	28.0		XP-07 Yellow	
3412	1.64	57.0		XP-07 Yellow	
3947	1.64	31.0		XP-07 Yellow	
4221	1.70	32.0		XP-07 Yellow	
4534	1.71	38.0		XP-07 Yellow	

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]
6367_Formation_pressure_(Formasjonstrykk)	pdf	0.29