General information

Wellbore name	6507/6-4 A
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Press release	link to press release
Factmaps in new window	link to map
Main area	NORWEGIAN SEA
Well name	6507/6-4
Seismic location	Sinbad:line 3665-xline 3402 & Sesamline :3717-xline 3525
Production licence	350
Drilling operator	E.ON Ruhrgas Norge AS
Drill permit	1387-L
Drilling facility	BORGLAND DOLPHIN
Drilling days	75
Entered date	16.11.2011
Completed date	29.01.2012
Release date	15.03.2013
Publication date	15.03.2013
Purpose - planned	WILDCAT
Reentry	NO
Content	DRY
Discovery wellbore	NO
Kelly bushing elevation [m]	31.2
Water depth [m]	363.5
Total depth (MD) [m RKB]	4957.0
Final vertical depth (TVD) [m RKB]	4391.0
Maximum inclination [°]	40
Oldest penetrated age	PERMIAN
Oldest penetrated formation	ROTLIEGEND GP
Geodetic datum	ED50
NS degrees	65° 38' 6.2'' N
EW degrees	7° 43' 32.8'' E
NS UTM [m]	7280010.99
EW UTM [m]	441342.38
UTM zone	32
NPDID wellbore	6753

Wellbore history

General

Well 6507/6-4 A is a geologic sidetrack to well 6507/6-4 S on the Sør High of the Nordland Ridge in the Norwegian Sea. The distance to the Skarv Field immediately to the west is 10 km and to the Heidrun Field (to the SSW) approximately 30 km. The sidetrack targeted the Sesam prospect, a separate prospect from the Late Triassic Sinbad prospect targeted by the primary well 6507/6-4 S. The Sesam prospect was interpreted as Late Permian platform carbonates reefs/build ups as seen in the Foldvik Creek Group of East Greenland. This target/facies was until drilling 6507/6-4 A unproven in the Norwegian Sea.

Operations and results

The well bore 6507/6-4 A was kicked off at 753 m in well bore 6507/6-4 S on 16 November 2011. It was drilled with the semi-submersible installation Borgland Dolphin to TD at 4957 m in Permian conglomerates. Operations were suspended several times during the storms "Berit", "Cato", and "Dagmar", causing a significant amount of WOW for this well. The well was drilled with Carbo-Sea Oil based mud from kick-off to TD in the 12 1/4" section at 4240 m, and with Aqua-Drill water based mud from 4240 m to TD. The Aqua-Drill mud contained Aqua-col, a glycol additive used for shale inhibition. In addition it was reported in the geochemical report that the water based mud was contaminated with 3% oil from the oil base used in the above section.

The deeper sections of well 6507/6-4 A, the Earliest Triassic and the Permian, can be correlated to East Greenland stratigraphy and to the shallow IKU boreholes on the eastern margin of the Helgeland Basin (IKU 6611/9-U-1 and 6611/9-U-2). Using this "Greenland stratigraphy", top Wordie Creek Formation Eq. is interpreted at 4248 m (3683 m TVD), top Schuchert Dal Formation Eq. at 4652 m (4087 m TVD), and top Ravnefjeld Formation Eq. at 4673 m (4107 m TVD). The Ravnefjeld Formation Eq. is 43 m thick MD (40 m TVD) and show two high Gamma Ray sequences. The TOC levels in cuttings from the Ravnefjeld Formation Eq. were modest, from 0.6 to 1.2 %. Due to mud contamination of the Rock-eval the quality of the kerogen in the Ravnefjeld Formation Eq. (the Hydrogen Index) could not be assessed.

The target section for the Sesam Prospect was penetrated from 4716 to 4790 m (4147 to 4224 m TVD). As hoped for, the formation was found to consist of limestone, but was relative argillaceous and turned out to be very tight with very low porosity. No shows were recorded while drilling the well. Upon organic geochemical analysis of the cored section the extract from a cored grey-black shale at 4734.1 m showed trace amounts of condensate-like hydrocarbons. Vitrinite reflectance at this level was ca 1.1 %Ro, in agreement with the maturity inferred for the hydrocarbons in the extract from 4734.1 m. Otherwise extracts from the cored section showed no obvious petroleum signatures above the mud contaminants.

A core of 27.5 m was cut in the equivalents to Foldvik Creek Group Eq./Wegener Halvø Formation Eq. from 4726 to 4753.5 m with 100% recovery. Two wire line logs were run but no fluid samples were taken.

The well was permanently abandoned on 29 January 2012 as a dry well.

Testing

No drill stem test was performed.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
770.00	4958.00

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	4726.0	4754.0	[m]

Total core sample length [m]	28.0
Cores available for sampling?	YES

Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
1040.0	[m]	DC	FUGRO
1052.0	[m]	DC	FUGRO
1064.0	[m]	DC	FUGRO
1073.0	[m]	DC	FUGRO
1085.0	[m]	DC	FUGRO
1094.0	[m]	DC	FUGRO
1106.0	[m]	DC	FUGRO
1115.0	[m]	DC	FUGRO
1124.0	[m]	DC	FUGRO
1133.0	[m]	DC	FUGRO
1142.0	[m]	DC	FUGRO
1151.0	[m]	DC	FUGRO
1160.0	[m]	DC	FUGRO
1175.0	[m]	DC	FUGRO
1184.0	[m]	DC	FUGRO
1196.0	[m]	DC	FUGRO
1205.0	[m]	DC	FUGRO
1214.0	[m]	DC	FUGRO
1220.0	[m]	DC	FUGRO
1229.0	[m]	DC	FUGRO

1238.0	[m]	DC	FUGRO
1247.0	[m]	DC	FUGRO
1256.0	[m]	DC	FUGRO
1265.0	[m]	DC	FUGRO
1272.0	[m]	DC	FUGRO
1280.0	[m]	DC	FUGRO
1290.0	[m]	DC	FUGRO
1300.0	[m]	DC	FUGRO
1330.0	[m]	DC	FUGRO
1380.0	[m]	DC	FUGRO
1410.0	[m]	DC	FUGRO
1430.0	[m]	DC	FUGRO
1450.0	[m]	DC	FUGRO
1480.0	[m]	DC	FUGRO
1510.0	[m]	DC	FUGRO
1540.0	[m]	DC	FUGRO
1560.0	[m]	DC	FUGRO
1590.0	[m]	DC	FUGRO
1610.0	[m]	DC	FUGRO
1620.0	[m]	DC	FUGRO
1650.0	[m]	DC	FUGRO
1670.0	[m]	DC	FUGRO
1700.0	[m]	DC	FUGRO
1730.0	[m]	DC	FUGRO
1770.0	[m]	DC	FUGRO
1800.0	[m]	DC	FUGRO
1830.0	[m]	DC	FUGRO
1860.0	[m]	DC	FUGRO
1890.0	[m]	DC	FUGRO
1920.0	[m]	DC	FUGRO
1960.0	[m]	DC	FUGRO
1990.0	[m]	DC	FUGRO
2020.0	[m]	DC	FUGRO
2050.0	[m]	DC	FUGRO
2090.0	[m]	DC	FUGRO
2130.0	[m]	DC	FUGRO
2160.0	[m]	DC	FUGRO
2210.0	[m]	DC	FUGRO
2240.0	[m]	DC	FUGRO
2280.0	[m]	DC	FUGRO

2420.0	[m]	DC	FUGRO
2920.0	[m]	DC	FUGRO
2980.0	[m]	DC	FUGRO
3140.0	[m]	DC	FUGRO
3150.0	[m]	DC	FUGRO
3180.0	[m]	DC	FUGRO
3200.0	[m]	DC	FUGRO
3230.0	[m]	DC	FUGRO
3260.0	[m]	DC	FUGRO
3290.0	[m]	DC	FUGRO
3330.0	[m]	DC	FUGRO
3350.0	[m]	DC	FUGRO
3370.0	[m]	DC	FUGRO
3390.0	[m]	DC	FUGRO
3410.0	[m]	DC	FUGRO
3430.0	[m]	DC	FUGRO
3450.0	[m]	DC	FUGRO
3470.0	[m]	DC	FUGRO
3500.0	[m]	DC	FUGRO
3540.0	[m]	DC	FUGRO
3570.0	[m]	DC	FUGRO
3600.0	[m]	DC	FUGRO
4150.0	[m]	DC	FUGRO
4180.0	[m]	DC	FUGRO
4210.0	[m]	DC	FUGRO
4280.0	[m]	DC	FUGRO
4285.0	[m]	DC	FUGRO
4290.0	[m]	DC	FUGRO
4295.0	[m]	DC	FUGRO
4300.0	[m]	DC	FUGRO
4345.0	[m]	DC	FUGRO
4680.0	[m]	DC	FUGRO
4685.0	[m]	DC	FUGRO
4690.0	[m]	DC	FUGRO
4695.0	[m]	DC	FUGRO
4715.0	[m]	DC	FUGRO
4717.0	[m]	DC	FUGRO
4719.0	[m]	DC	FUGRO
4721.0	[m]	DC	FUGRO
4723.0	[m]	DC	FUGRO

4725.0	[m]	DC	FUGRO
4752.4	[m]	C	FUGRO
4753.4	[m]	C	FUGRO
4912.0	[m]	DC	FUGRO
4934.0	[m]	DC	FUGRO
4942.0	[m]	DC	FUGRO
4954.0	[m]	DC	FUGRO
4956.0	[m]	DC	FUGRO
4957.0	[m]	DC	FUGRO
4958.0	[m]	DC	FUGRO

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
395	NORDLAND GP
395	NAUST FM
852	KAI FM
1040	BÅT GP
1040	ÅRE FM
1209	GREY BEDS (INFORMAL)
1289	RED BEDS (INFORMAL)
4652	NO GROUP DEFINED
4895	NO GROUP DEFINED

Geochemical information

Document name	Document format	Document size [MB]
6753_1	pdf	1.24

Logs

Log type	Log top depth [m]	Log bottom depth [m]
MRCH JAR TTRM GR RCEX SP	4717	4718
MWD - APX	753	2410
MWD - CAL ORD CCN APX	4245	4726
MWD - CAL ORD CCN APX	4753	4957
MWD - ORD CCN CAL TTK APX	2410	4245

VSP	86	4707

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
INTERM.	13 3/8	2401.0	17 1/2	2410.0	0.00	LOT
INTERM.	9 5/8	4240.0	12 1/4	4245.0	0.00	LOT
OPEN HOLE		4957.0	8 1/2	4957.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
2020	1.30	20.0		CARBO-SEA	
2351	1.30	25.0		Carbosea OBM	
2410	1.30	25.0		CARBO-SEA	
3277	1.30	20.0		CARBO-SEA	
4190	1.30	20.0		CARBO-SEA	
4302	1.30	20.0		Aqua-drill	
4957	1.34	16.0		Aqua-drill	
4957	1.30	15.0		Aqua-drill	