

**General information**

Wellbore name	7225/3-2
Type	EXPLORATION
Purpose	APPRAISAL
Status	P&A
Press release	link to press release
Factmaps in new window	link to map
Main area	BARENTS SEA
Discovery	7225/3-1 (Norvarg)
Well name	7225/3-2
Seismic location	inline 1627 & crossline 2183
Production licence	535
Drilling operator	Total E&P Norge AS
Drill permit	1444-L
Drilling facility	LEIV EIRIKSSON
Drilling days	100
Entered date	29.04.2013
Completed date	07.08.2013
Release date	07.08.2015
Publication date	07.08.2015
Purpose - planned	APPRAISAL
Reentry	NO
Content	GAS
Discovery wellbore	NO
1st level with HC, age	TRIASSIC
1st level with HC, formation	KOBBE FM
Kelly bushing elevation [m]	25.0
Water depth [m]	381.0
Total depth (MD) [m RKB]	2210.0
Final vertical depth (TVD) [m RKB]	2209.0
Maximum inclination [°]	3.3
Bottom hole temperature [°C]	65
Oldest penetrated age	TRIASSIC
Oldest penetrated formation	KLAPPMYSS FM
Geodetic datum	ED50
NS degrees	72° 57' 5.17" N
EW degrees	25° 58' 23.34" E
NS UTM [m]	8095573.09
EW UTM [m]	466396.98



UTM zone	35
NPDID wellbore	7149

Wellbore history

General

Well 7225/3-2 was drilled on the Norvarg Dome on the Bjarmeland Platform in the Barents Sea. The objective of the well was to appraise the 7225/3-1 Norvarg gas discovery. Primary target was channel sandstones in the Kobbe Formation. Triassic sandstones within the Carnian section and the Upper Snadd Formation as well as Jurassic sandstones in the Stø Formation were secondary targets.

Operations and results

Appraisal well 7225/3-2 was spudded with the semi-submersible installation Leiv Eiriksson on 29 April 2013 and drilled to TD at 2210 m in the Early Triassic Klappmyss Formation. During drilling operations of the 26" hole section at 500 m the drill string parted. The fish was successfully retrieved. After this, the hole packed off at 525 m and 535 m in the 26" section. Most of the NPT in the well were related to these events. Further operation proceeded without significant problems. The well was drilled with seawater and hi-vis pills down to 554 m, with Glydril water based mud from 554 m to 1073 m, and with a water based mud from 1073 m to TD.

Three main gas-filled reservoir layers were encountered in the Kobbe Formation. Channel A with top at 1590 m had a thickness of 18.7 m, a NTG of 76% and an average porosity and water saturation of 17% and 40% respectively. Channel D with top at 1775 m had a thickness of 33.1 m, a NTG of 51% and an average porosity and water saturation of 13% and 44% respectively. A third sandstone, "Anomaly 2", with top at 1909.6 m had a thickness of 18.3 m, a NTG of 89% and an average porosity and water saturation of 13% and 48% respectively. All three had gas-down-to contacts. The secondary targets were water-wet. Shows (fluorescence and cut) were described on sandstones in the Kobbe Formation between 1550 m and 1950 m.

Four 54 m core barrels were cut in the Kobbe Formation, with very low ROP, from 1553 to 1610 m (two cores) and from 1727 to 1757 m (two cores). While the recovery of last two cores was 100%, the first two gave respectively 86.1 and 76.4% recovery. MDT fluid samples were taken at 1600.7 m (dry gas), 1778.31 m (filtrate + gas), 1788.59 m (filtrate), 1913.01 m (filtrate + gas + oil?), and 1923.64 m (filtrate + gas + oil?).

The well was permanently abandoned on 7 August 2013 as a gas appraisal.

Testing

Two Drill Stem Tests were performed in two channel sandstones in the Kobbe Formation

DST 1 tested 207.33 m of perforations from 1725.05 to 1932.38 m. It produced 28500 Sm³ gas/day through a 40/64" choke. The maximum temperature in the test, measured during the clean-up flow was 54.9 °C.

DST 2 tested 23 m of perforation from 1587.5 to 1610.5 m. It produced 167400 Sm³ gas/day through a 36/64" choke. The maximum temperature in the test, measured at end of build-up after the clean-up flow was 48.6 °C.

**Cuttings at the Norwegian Offshore Directorate**

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
554.00	2205.00

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	1553.0	1561.6	[m]
2	1563.0	1598.2	[m]
3	1727.0	1734.5	[m]
4	1734.5	1757.0	[m]

Total core sample length [m]	73.8
Cores available for sampling?	YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
406	NORDLAND GP
406	NO FORMAL NAME
478	ADVENTDALEN GP
478	KOLMULE FM
639	KNURR FM
674	HEKKINGEN FM
702	FUGLEN FM
729	KAPP TOSCANA GP
729	STØ FM
790	FRUHOLMEN FM
807	SNADD FM
1168	UNDIFFERENTIATED
1517	SASSEDALEN GP
1517	KOBBE FM
2141	KLAPPMYSS FM

Drill stem tests (DST)



Test number	From depth MD [m]	To depth MD [m]	Choke size [mm]
1.0	1725	1932	12.5
2.0	1587	1610	20.6

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

Test number	Oil [Sm3/day]	Gas [Sm3/day]	Oil density [g/cm3]	Gas grav. rel.air	GOR [m3/m3]
1.0		23400			
2.0		176200			

Logs

Log type	Log top depth [m]	Log bottom depth [m]
DP GR	1913	1923
GR MDT	732	1020
GR PPC	554	687
GR PPC MSIP CBL FMI ECS CAL	627	2200
HNGR APS TLD HRLA MCFL SP CMR CA	1072	2211
HNGS GR CAL HRLA MCFL SP MSIP AP	681	1073
LWD - RAB RES ECD GR DI FPWD	1073	2210
LWD - RAB RES GR PWD DI	687	1073
LWD - RES GR PWD DI SEIS	474	687
MDT 3D GR	1096	1290
MDT 3D GR	1554	1781
MSCT GR 40XL SWC	1552	1974
VSP GR	386	2140

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	474.0	36	474.0	0.00	
SURF.COND.	20	547.0	26	554.0	0.00	
INTERM.	13 3/8	681.0	17 1/2	687.0	1.18	
INTERM.	9 5/8	1072.0	12 1/4	1073.0	1.75	
LINER	7	2208.0	8 1/2	2210.0	2.30	

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
470	1.37	9.0		KCl/Polymer-Glycol	
475	1.35			Spud mud	
554	1.35			Spud mud	
640	1.37	8.0		KCl/Polymer-Glycol	
687	1.12	7.0		KCl/Polymer-Glycol	
1073	1.36	12.0		KCl/Polymer-Glycol	
1223	1.37	10.0		KCl/Polymer-Glycol	
1554	1.36	12.0		KCl/Polymer-Glycol	
1757	1.36	12.0		KCl/Polymer-Glycol	
2210	1.35			Calcium Chloride	

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]
7149 Formation pressure (Formasjonstrykk)	PDF	0.26

