

**General information**

Wellbore name	7220/11-2
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	7220/11-1 (Alta)
Well name	7220/11-2
Seismic location	LN12M01 inline 29260 & crossline 24266
Production licence	609
Drilling operator	Lundin Norway AS
Drill permit	1559-L
Drilling facility	ISLAND INNOVATOR
Drilling days	41
Entered date	24.03.2015
Completed date	03.05.2015
Release date	03.05.2017
Publication date	03.05.2017
Purpose - planned	APPRAISAL
Reentry	NO
Content	GAS
Discovery wellbore	NO
1st level with HC, age	TRIASSIC
1st level with HC, formation	UNDIFFERENTIATED
Kelly bushing elevation [m]	30.0
Water depth [m]	379.0
Total depth (MD) [m RKB]	2050.0
Final vertical depth (TVD) [m RKB]	2050.0
Maximum inclination [°]	6.2
Oldest penetrated formation	BASEMENT
Geodetic datum	ED50
NS degrees	72° 0' 37.55" N
EW degrees	20° 26' 9.01" E
NS UTM [m]	7998765.38
EW UTM [m]	687161.60
UTM zone	33
NPDID wellbore	7638



Wellbore history

General

Well 7220/11-2 was drilled to appraise the 7220/11-1 Alta discovery on the southern part of the Loppa High. The well targeted formations of Permian-Triassic age comparable with the conglomerates encountered in the discovery well. The objectives were to confirm the reservoir model and prove presence of hydrocarbon columns and contacts similar to those established in the discovery well, 7220/11-1. The fluid was expected to be oil with a large gas cap. The gas-oil contact was expected at 1908 m TVD RKB and the free-water level at 1954 m TVD RKB.

Operations and results

Appraisal well 7220/11-1 was spudded with the semi-submersible installation Island Innovator on 24 March 2015 and drilled to TD at 2050 m in Basement rocks. A 9 7/8" pilot hole was drilled after installing the 30" conductor casing to 601 m to check for shallow gas. No shallow gas was observed. No significant problem was encountered in the operations. The well was drilled with Seawater and hi-vis pills down to 599 m, and with Aquadril mud from 599 m to TD.

Top of the target reservoir was encountered at 1864 m. It consists of fine-grained sandstone, conglomeratic in the lower half, with dolomitic cement. It is of Middle Anisian to Olenekian age. It contains a 50-metre gas column in rocks with good to poor reservoir quality. The oil zone was in tight formation. Due to poor reservoir quality, the contacts in the discovery well could not be confirmed, but pressure measurements indicate a common fluid system. Top basement was penetrated at 1954 m. Oil shows were recorded in siltstone and sandstones throughout the Triassic section from Top Kapp Toscana Group and down to top reservoir section. Shows were further recorded throughout the reservoir section and down to 2032 m in the basement rocks.

Four cores were cut from the interval 1857 to 1962.5 m. Core recovery was 100% for core 1 to 3 and 98.7% for core 4. Depth shift to logs were between -1.5 to -1.6 for all cores. MDT fluid samples were taken at 1866.3 m (gas), 1915.1 m (gas), 1935.5 m (water), and at 1943.4 m (water).

Due to poor reservoir quality in the oil zone, a geological sidetrack was decided to confirm the presence of an oil leg on the western side of the Alta structure. The well was plugged back for sidetracking on 3 May 2015. It is classified as an oil and gas 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]
610.00	2049.00

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	1857.0	1884.7	[m]
2	1884.7	1912.5	[m]
3	1912.5	1940.1	[m]
4	1940.1	1962.2	[m]

Total core sample length [m]	105.3
Cores available for sampling?	YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
409	NORDLAND GP
409	UNDIFFERENTIATED
465	SOTBAKKEN GP
465	TORSK FM
587	ADVENTDALEN GP
587	KOLMULE FM
623	KAPP TOSCANA GP
623	SNADD FM
1854	SASSENDALEN GP
1854	KOBBE FM
1865	NO GROUP DEFINED
1865	UNDIFFERENTIATED
1955	BASEMENT
1955	UNDIFFERENTIATED

Logs

Log type	Log top depth [m]	Log bottom depth [m]
CMR XPT ADT	1846	2030
FMI MSIP	1760	2046
MDT	1866	1012
MDT	1912	1943



MDT	1915	2000
MWD-BR REMP BHPR MEC DEN NEU AAC	1175	2050
MWD-GR BHPR MECH	409	465
MWD-GR REMP BHPR MECH AAC	465	598
MWD-NBG BR GR REMP BHPR AAC MECH	559	1210
UBI PEX HRLA NEXT	1777	2005
USIT DCBL	1074	1765
VSP	445	2040
XL ROCK	1976	2035

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	476.0	36	479.0	0.00	
SURF.COND.	20	591.3	26	599.0	1.57	FIT
PILOT HOLE		601.0	9 7/8	601.0	0.00	
INTERM.	13 3/8	1205.1	17 1/2	1212.0	2.13	LOT
INTERM.	9 5/8	1770.8	12 1/4	1778.0	1.62	LOT
OPEN HOLE		2050.0	8 1/2	2050.0	0.00	

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
461	1.03	2.0		Water Based	
490	1.20	14.0		Water Based	
521	1.03	2.0		Water Based	
566	1.40	20.0		Water Based	
599	1.03	2.0		Water Based	
1050	1.16	11.0		Water Based	
1355	1.20	14.0		Water Based	
1450	1.15	10.0		Water Based	
1778	1.20	14.0		Water Based	
2050	1.16	11.0		Water Based	