



General information





Wellbore name	7220/5-2
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Press release	link to press release
Factmaps in new window	link to map
Main area	BARENTS SEA
Discovery	7220/5-2 (Nunatak)
Well name	7220/5-2
Seismic location	3D survey WG08STR10-inline 1559 & xline 4113
Production licence	532
Drilling operator	Statoil Petroleum AS
Drill permit	1447-L
Drilling facility	WEST HERCULES
Drilling days	51
Entered date	19.05.2013
Completed date	08.07.2013
Release date	08.07.2015
Publication date	13.08.2015
Purpose - planned	WILDCAT
Reentry	NO
Content	GAS
Discovery wellbore	YES
1st level with HC, age	EARLY CRETACEOUS
1st level with HC, formation	KNURR FM
Kelly bushing elevation [m]	31.0
Water depth [m]	398.0
Total depth (MD) [m RKB]	1780.0
Final vertical depth (TVD) [m RKB]	1779.0
Maximum inclination [°]	4.1
Oldest penetrated age	EARLY JURASSIC
Oldest penetrated formation	TUBÅEN FM
Geodetic datum	ED50
NS degrees	72° 33' 40.29" N
EW degrees	20° 23' 54.84" E
NS UTM [m]	8059865.22
EW UTM [m]	680370.77
UTM zone	33
NPDID wellbore	7166



Wellbore history

General

Well 7220/5-2 Nunatak was drilled in the Polheim sub-basin west of the Loppa High in the Barents Sea. The well was placed about five kilometres north of the 7220/8-1 discovery well ("Skrugard"). The primary objective was to prove petroleum in Cretaceous reservoir rocks (the Knurr Formation), as well as acquire information for the planned field development of Johan Castberg. Potential Intra Hekkingen Formation sandstones was a secondary target in the well.

Operations and results

Wildcat well 7220/5-2 was spudded with the semi-submersible installation West Hercules on 19 May 2013 and drilled to TD at 1780 m in the Early Jurassic Tubåen Formation. A 7" liner was set at 1532 m to be able to acquire rock

mechanical data in Jurassic sandstones. The well was drilled with seawater (spud mud) down to 844 m and with Low Sulphate/KCl/Polymer/Glycol mud from 844 m to TD.

In the overburden, the well penetrated Tertiary and Cretaceous Claystones and minor Limestones. In the reservoir section, the well penetrated Cretaceous Claystones and Sandstones as well as Jurassic Claystones, Siltstones and Sandstones. The well encountered top of the target Knurr Formation sandstones at 1255 m. The Knurr Formation was gas bearing with gas down to 1359 m. Petrophysical evaluation gave a gross 104 m gas column in the well with a net/gross = 0.89. Pressure data indicate the Gas-Water Contact (GWC) to be at 1372 m. The reservoir quality was poorer than expected. No oil shows were described in the well and hydrocarbon core scanning confirmed a general lack of oil components in the Knurr reservoir sands. Stable carbon isotopes in the gas components show very good correlation between the Skrugard gas and the Nunatak gas. No sandstones were encountered in the Hekkingen Formation.

One 45 m core was cut in the Knurr reservoir sandstones. A reduced discovery case wireline program was conducted. MDT fluid samples were taken at 1340.9 m (gas) and 1386.7 m (formation water).

The well was permanently abandoned on 8 July 2013 as gas discovery.

Testing

No drill stem test was performed.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
860.00	1780.00

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	1270.0	1315.0	[m]

Total core sample length [m]	45.0
Cores available for sampling?	YES

Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
860.0	[m]	DC	ROBERTSO
870.0	[m]	DC	ROBERT
880.0	[m]	DC	ROBERT
890.0	[m]	DC	ROBERT
900.0	[m]	DC	ROBERT
910.0	[m]	DC	ROBERT
920.0	[m]	DC	ROBERT
930.0	[m]	DC	ROBERT
940.0	[m]	DC	ROBERT
950.0	[m]	DC	ROBERT
960.0	[m]	DC	ROBERT
970.0	[m]	DC	ROBERT
980.0	[m]	DC	ROBERT
990.0	[m]	DC	ROBERT
1000.0	[m]	DC	ROBERT
1010.0	[m]	DC	ROBERT
1020.0	[m]	DC	ROBERT
1030.0	[m]	DC	ROBERT
1040.0	[m]	DC	ROBERT
1050.0	[m]	DC	ROBERT
1060.0	[m]	DC	ROBERT
1070.0	[m]	DC	ROBERT
1080.0	[m]	DC	ROBERT
1090.0	[m]	DC	ROBERT
1100.0	[m]	DC	ROBERT
1110.0	[m]	DC	ROBERT
1120.0	[m]	DC	ROBERT
1130.0	[m]	DC	ROBERT
1140.0	[m]	DC	ROBERT



1150.0 [m]	DC	ROBERT
1160.0 [m]	DC	ROBERT
1170.0 [m]	DC	ROBERT
1180.0 [m]	DC	ROBERT
1190.0 [m]	DC	ROBERT
1200.0 [m]	DC	ROBERT
1210.0 [m]	DC	ROBERT
1220.0 [m]	DC	ROBERT
1230.0 [m]	DC	ROBERT
1240.0 [m]	DC	ROBERT
1246.0 [m]	DC	ROBERT
1252.0 [m]	DC	ROBERT
1258.0 [m]	DC	ROBERT
1264.0 [m]	DC	ROBERT
1270.2 [m]	C	ROBERT
1272.8 [m]	C	ROBERT
1273.8 [m]	C	ROBERT
1276.7 [m]	C	ROBERT
1279.9 [m]	C	ROBERT
1283.9 [m]	C	ROBERT
1286.7 [m]	C	ROBERT
1289.8 [m]	C	ROBERT
1291.5 [m]	C	ROBERT
1293.9 [m]	C	ROBERT
1296.8 [m]	C	ROBERT
1299.3 [m]	C	ROBERT
1301.5 [m]	C	ROBERT
1304.5 [m]	C	ROBERT
1306.5 [m]	C	ROBERT
1309.6 [m]	C	ROBERT
1312.4 [m]	C	ROBERT
1314.9 [m]	C	ROBERT
1321.0 [m]	DC	ROBERT
1327.0 [m]	DC	ROBERT
1333.0 [m]	DC	ROBERT
1339.0 [m]	DC	ROBERT
1345.0 [m]	DC	ROBERT
1351.0 [m]	DC	ROBERT
1357.0 [m]	DC	ROBERT
1363.0 [m]	DC	ROBERT



1369.0	[m]	DC	ROBERT
1375.0	[m]	DC	ROBERT
1381.0	[m]	DC	ROBERT
1387.0	[m]	DC	ROBERT
1393.0	[m]	DC	ROBERT
1399.0	[m]	DC	ROBERT
1405.0	[m]	DC	ROBERT
1411.0	[m]	DC	ROBERT
1417.0	[m]	DC	ROBERT
1423.0	[m]	DC	ROBERT
1429.0	[m]	DC	ROBERT
1435.0	[m]	DC	ROBERT
1441.0	[m]	DC	ROBERT
1447.0	[m]	DC	ROBERT
1453.0	[m]	DC	ROBERT
1459.0	[m]	DC	ROBERT
1465.0	[m]	DC	ROBERT
1471.0	[m]	DC	ROBERT
1477.0	[m]	DC	ROBERT
1483.0	[m]	DC	ROBERT
1489.0	[m]	DC	ROBERT
1495.0	[m]	DC	ROBERT
1501.0	[m]	DC	ROBERT
1507.0	[m]	DC	ROBERT
1513.0	[m]	DC	ROBERT
1519.0	[m]	DC	ROBERT
1525.0	[m]	DC	ROBERT
1531.0	[m]	DC	ROBERT
1537.0	[m]	DC	ROBERT
1543.0	[m]	DC	ROBERT
1549.0	[m]	DC	ROBERT
1555.0	[m]	DC	ROBERT
1561.0	[m]	DC	ROBERT
1567.0	[m]	DC	ROBERT
1573.0	[m]	DC	ROBERT
1579.0	[m]	DC	ROBERT
1585.0	[m]	DC	ROBERT
1591.0	[m]	DC	ROBERT
1597.0	[m]	DC	ROBERT
1603.0	[m]	DC	ROBERT



1609.0	[m]	DC	ROBERT
1615.0	[m]	DC	ROBERT
1621.0	[m]	DC	ROBERT
1627.0	[m]	DC	ROBERT
1633.0	[m]	DC	ROBERT
1639.0	[m]	DC	ROBERT
1645.0	[m]	DC	ROBERT
1651.0	[m]	DC	ROBERT
1657.0	[m]	DC	ROBERT
1663.0	[m]	DC	ROBERT
1669.0	[m]	DC	ROBERT
1675.0	[m]	DC	ROBERT
1681.0	[m]	DC	ROBERT
1687.0	[m]	DC	ROBERT
1693.0	[m]	DC	ROBERT
1699.0	[m]	DC	ROBERT
1705.0	[m]	DC	ROBERT
1711.0	[m]	DC	ROBERT
1717.0	[m]	DC	ROBERT
1723.0	[m]	DC	ROBERT
1729.0	[m]	DC	ROBERT
1735.0	[m]	DC	ROBERT
1741.0	[m]	DC	ROBERT
1747.0	[m]	DC	ROBERT
1753.0	[m]	DC	ROBERT
1759.0	[m]	DC	ROBERT
1765.0	[m]	DC	ROBERT
1771.0	[m]	DC	ROBERT
1780.0	[m]	DC	ROBERT

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
429	NORDLAND GP
429	UNDIFFERENTIATED
475	SOTBAKKEN GP
475	TORSK FM
988	ADVENTDALEN GP
988	KOLMULE FM



1252	KOLJE FM
1254	KNURR FM
1391	HEKKINGEN FM
1464	FUGLEN FM
1532	KAPP TOSCANA GP
1532	STØ FM
1606	NORDMELA FM
1763	TUBÅEN FM

Logs

Log type	Log top depth [m]	Log bottom depth [m]
ADN SON	1535	1780
FMI MSIP ECS HNGS	490	1531
MDT GR	1255	1388
MWD - ARC TELE	429	1239
MWD - GVR ARC TELE	1239	1535
RT GPIT HRLA PEX	1238	1532
USIT CBL	770	1230
VSP GR	451	1525

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	36	490.0	42	495.0	0.00	
SURF.COND.	13 3/8	843.0	17 1/2	852.0	1.19	FIT
INTERM.	9 5/8	1237.0	12 1/4	1239.0	1.78	LOT
LINER	7	1532.0	8 1/2	1535.0	1.84	LOT
OPEN HOLE		1780.0	6	1780.0	0.00	

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
430	1.02	23.0		Seawater	
858	1.12	19.0		KCl/Polymer/Glycol	



1005	1.18	23.0		Low Sulphate/KCl/Polymer/Glycol	
1239	1.12	21.0		KCl/Polymer/Glycol	
1535	1.18	26.0		Low Sulphate/KCl/Polymer/Glycol	
1780	1.18	22.0		Low Sulphate/KCl/Polymer/Glycol	