General information

Wellbore name	7120/2-2
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Factmaps in new window	link to map
Main area	BARENTS SEA
Well name	7120/2-2
Seismic location	NH8904 - 005 SP 470
Production licence	109
Drilling operator	Norsk Hydro Produksjon AS
Drill permit	665-L
Drilling facility	POLAR PIONEER
Drilling days	56
Entered date	27.01.1991
Completed date	23.03.1991
Release date	23.03.1993
Publication date	18.05.2004
Purpose - planned	WILDCAT
Reentry	NO
Content	OIL SHOWS
Discovery wellbore	NO
Kelly bushing elevation [m]	23.0
Water depth [m]	336.5
Total depth (MD) [m RKB]	2794.0
Final vertical depth (TVD) [m RKB]	2794.0
Maximum inclination [°]	12
Bottom hole temperature [°C]	87
Oldest penetrated age	MIDDLE JURASSIC
Oldest penetrated formation	STØ FM
Geodetic datum	ED50
NS degrees	71° 50' 23.99'' N
EW degrees	20° 36' 3.59'' E
NS UTM [m]	7971348.28
EW UTM [m]	486119.44
UTM zone	34
NPDID wellbore	1690

Wellbore history

General

Well 7120/2-2 was designed to test the Mesozoic rocks on a down-faulted position, south of the Loppa High. Well 7120/1-2 about 12.5 km to the southwest had tested minor amounts of oil in the Early Cretaceous. This was a new play concept on the Barents Shelf related to structural/stratigraphic combination traps as a result of wedge sedimentation in conjunction with the Kimmeridgian tectonic phase. The main objectives of the well were to test the prospectivity of the Early Cretaceous fan systems (wedge I and II) in an optimal position, and to test the prospectivity of the Middle Jurassic Stø Formation. The pore pressure was expected to be normal throughout the well. Shallow gas warnings were given for two levels down to 1437 m. A fault with displacement less than 10 m was seen at the planned well location at depth ca 565 m.

Operations and results

Wildcat well 7120/2-2 was spudded with the semi-submersible rig Polar Pioneer on 27 January 1991 and drilled to TD at 2800 m in Early Jurassic sandstones of the Stø Formation. The well was drilled with spud mud down to 800 m and with KCl polymer mud from 800 m to TD. No shallow gas intervals were penetrated. No major problems were experienced while drilling the hole.

The first wedge, in the Kolmule Formation, was penetrated at 1712 m. The second wedge, expected to be sandstones of the Knurr Formation, was penetrated at 2125 m. Oil shows, mostly weak, were recorded from the top of this wedge and down to ca 2700 m. The strongest shows were recorded on a core from 2393 m to 2403 m. Geochemical analyses proved a ten metre claystone sequence with excellent source rock potential at 2120 m on top of the wedge; around 6% TOC and Hydrogen Index around 480 mg HC/g TOC. Vitrinite reflectance in the sequence is in the range 0.55 to 0.60 % Ro and Tmax around 434 deg C, corresponding to early oil window maturity. A second excellent source interval was penetrated in the Late Jurassic Hekkingen Formation at 2503 m. This sequence is 154 m thick and contain from 3 to 12% TOC with Hydrogen Index from 180 to 250 mg HC / g TOC. Vitrinite reflection was measured in the range 0.51 to 0.71 and Tmax in the range 442 deg C to 446 deg C, the latter indicating distinctly higher maturity in Hekkingen compared to Knurr. An RFT segregated sample was taken at 2501 m. It recovered water, oil and some gas. Geochemical analyses of the gas verified a light isotopic composition in all hydrocarbon components, indicating an early mature gas. The oil biomarkers indicated a maturity of the RFT oil corresponding to %Ro in the range 0.6 to 0.9. A total of six conventional cores were cut in the well: core 1 from 1895 m to 1923 m in the upper wedge/Kolmule Formation, core 2, 3, and 4 in the interval 2163 m to 2403 m in the lower wedge/Knurr Formation, core 5 from 2636 m to 2646 m in the Lower Hekkingen Formation, and core 6 from 2720 to 2724 m in the Stø Formation. A total of 120 sidewall cores were attempted and 97 were recovered.

The well was permanently plugged and abandoned on 21 March 1991 as a dry hole with minor shows in Cretaceous and Jurassic siltstones and sandstones.

Testing

No drill stem test was performed

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
810.00	2799.30

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	1895.0	1922.7	[m]
2	2163.0	2163.5	[m]
3	2180.0	2201.5	[m]
4	2393.0	2400.9	[m]
5	2636.0	2645.8	[m]
6	2720.0	2723.5	[m]

Total core sample length [m]	70.9
Cores available for sampling?	YES

Core photos


1895-1900m


1900-1905m


1905-1910m


1910-1915m


1915-1920m


1920-1922m

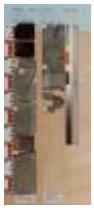

2163-2164m


2180-2185m


2185-2190m


2190-2195m


2195-2200m


2200-2201m


2393-2398m


2398-2400m


2636-2641m


2641-2645m


2710-2723m

Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
810.0	[m]	DC	HALIB
830.0	[m]	DC	HALIB
850.0	[m]	DC	HALIB
870.0	[m]	DC	HALIB
890.0	[m]	DC	HALIB
910.0	[m]	DC	HALIB
930.0	[m]	DC	HALIB
960.0	[m]	DC	HALIB
970.0	[m]	DC	HALIB
990.0	[m]	DC	HALIB
1010.0	[m]	DC	HALIB
1030.0	[m]	DC	HALIB
1050.0	[m]	DC	HALIB
1070.0	[m]	DC	HALIB
1090.0	[m]	DC	HALIB
1110.0	[m]	DC	HALIB
1130.0	[m]	DC	HALIB
1150.0	[m]	DC	HALIB
1170.0	[m]	DC	HALIB
1190.0	[m]	DC	HALIB
1210.0	[m]	DC	HALIB
1230.0	[m]	DC	HALIB
1250.0	[m]	DC	HALIB
1270.0	[m]	DC	HALIB
1290.0	[m]	DC	HALIB
1310.0	[m]	DC	HALIB
1330.0	[m]	DC	HALIB
1350.0	[m]	DC	HALIB

1370.0	[m]	DC	HALIB
1390.0	[m]	DC	HALIB
1410.0	[m]	DC	HALIB
1430.0	[m]	DC	HALIB
1450.0	[m]	DC	HALIB
1470.0	[m]	DC	HALIB
1490.0	[m]	DC	HALIB
1510.0	[m]	DC	HALIB
1535.0	[m]	DC	HALIB
1560.0	[m]	DC	HALIB
1580.0	[m]	DC	HALIB
1600.0	[m]	DC	HALIB
1620.0	[m]	DC	HALIB
1640.0	[m]	DC	HALIB
1650.0	[m]	DC	HALIB
1660.0	[m]	DC	HALIB
1670.0	[m]	DC	HALIB
1680.0	[m]	DC	HALIB
1690.0	[m]	DC	HALIB
1700.0	[m]	DC	HALIB
1710.0	[m]	DC	HALIB
1720.0	[m]	DC	HALIB
1730.0	[m]	DC	HALIB
1740.0	[m]	DC	HALIB
1750.0	[m]	DC	HALIB
1760.0	[m]	DC	HALIB
1770.0	[m]	DC	HALIB
1780.0	[m]	DC	HALIB
1790.0	[m]	DC	HALIB
1805.0	[m]	DC	HALIB
1812.0	[m]	DC	HALIB
1822.0	[m]	DC	HALIB
1832.0	[m]	DC	HALIB
1835.0	[m]	SWC	HYDRO
1842.0	[m]	DC	HALIB
1852.0	[m]	DC	HALIB
1860.0	[m]	SWC	HYDRO
1862.0	[m]	DC	HALIB
1872.0	[m]	DC	HALIB
1882.0	[m]	DC	HALIB

1885.0	[m]	SWC	HYDRO
1890.0	[m]	DC	HALIB
1895.0	[m]	DC	HALIB
1895.1	[m]	C	FUGRO
1899.0	[m]	C	HYDRO
1900.0	[m]	DC	HALIB
1905.6	[m]	C	FUGRO
1908.0	[m]	C	HYDRO
1908.5	[m]	C	FUGRO
1910.0	[m]	DC	HALIB
1915.0	[m]	C	HYDRO
1917.8	[m]	C	FUGRO
1920.0	[m]	DC	HALIB
1922.7	[m]	C	FUGRO
1922.7	[m]	C	HYDRO
1930.0	[m]	SWC	HYDRO
1930.0	[m]	SWC	HYDRO
1930.0	[m]	DC	HALIB
1940.0	[m]	DC	HALIB
1940.0	[m]	SWC	HYDRO
1950.0	[m]	DC	HALIB
1955.0	[m]	SWC	HYDRO
1960.0	[m]	DC	HALIB
1970.0	[m]	DC	HALIB
1980.0	[m]	DC	HALIB
1980.0	[m]	SWC	HYDRO
1990.0	[m]	DC	HALIB
1997.0	[m]	DC	HALIB
2000.0	[m]	DC	HALIB
2000.0	[m]	SWC	HYDRO
2007.0	[m]	DC	HALIB
2012.0	[m]	DC	HALIB
2022.0	[m]	DC	HALIB
2025.0	[m]	SWC	HYDRO
2032.0	[m]	DC	HALIB
2042.0	[m]	DC	HALIB
2052.0	[m]	DC	HALIB
2055.0	[m]	SWC	HYDRO
2062.0	[m]	DC	HALIB
2072.0	[m]	DC	HALIB

2082.0	[m]	DC	HALIB
2092.0	[m]	DC	HALIB
2100.0	[m]	SWC	HYDRO
2102.0	[m]	DC	HALIB
2112.0	[m]	DC	HALIB
2115.0	[m]	SWC	HYDRO
2122.0	[m]	DC	HALIB
2125.0	[m]	DC	HYDRO
2127.0	[m]	DC	HALIBURT
2132.0	[m]	DC	HALIBU
2142.0	[m]	DC	HALIBU
2144.0	[m]	SWC	HYDRO
2145.0	[m]	SWC	HYDRO
2150.0	[m]	SWC	HYDRO
2152.0	[m]	DC	HALIBURT
2157.0	[m]	SWC	HYDRO
2162.0	[m]	DC	HALIBURT
2163.0	[m]	C	FUGRO
2172.0	[m]	DC	HALIBURT
2172.0	[m]	SWC	HYDRO
2173.0	[m]	SWC	HYDRO
2176.0	[m]	SWC	HYDRO
2181.9	[m]	C	ICHRON
2182.0	[m]	DC	HALIBURT
2182.3	[m]	C	ICHRON
2183.0	[m]	C	HYDRO
2184.9	[m]	C	ICHRON
2185.0	[m]	C	HYDRO
2186.3	[m]	C	ICHRON
2188.5	[m]	C	ICHRON
2191.7	[m]	C	ICHRON
2192.0	[m]	DC	HALIBURT
2193.0	[m]	C	HYDRO
2193.8	[m]	C	ICHRON
2194.3	[m]	C	ICHRON
2195.9	[m]	C	ICHRON
2196.5	[m]	C	ICHRON
2197.8	[m]	C	ICHRON
2198.0	[m]	C	HYDRO
2200.0	[m]	DC	HALIBURT

2201.5	[m]	C	ICHRON
2201.5	[m]	C	HYDRO
2205.0	[m]	SWC	HYDRO
2210.0	[m]	DC	HALIBURT
2212.0	[m]	SWC	HYDRO
2220.0	[m]	DC	HALIBURT
2222.0	[m]	SWC	HYDRO
2224.0	[m]	SWC	HYDRO
2227.0	[m]	DC	HALIBURT
2235.0	[m]	DC	HALIBU
2240.0	[m]	DC	HALIBU
2246.0	[m]	SWC	HYDRO
2250.0	[m]	DC	HALIBURT
2255.0	[m]	SWC	HYDRO
2260.0	[m]	DC	HALIBURT
2270.0	[m]	DC	HALIBU
2275.0	[m]	SWC	HYDRO
2280.0	[m]	DC	HALIBURT
2286.0	[m]	SWC	HYDRO
2290.0	[m]	DC	HALIBURT
2299.0	[m]	SWC	HYDRO
2300.0	[m]	DC	HALIBURT
2310.0	[m]	DC	HALIBU
2310.0	[m]	SWC	HYDRO
2316.0	[m]	SWC	HYDRO
2320.0	[m]	DC	HALIBURT
2327.0	[m]	SWC	HYDRO
2330.0	[m]	DC	HALIBURT
2332.0	[m]	SWC	HYDRO
2335.0	[m]	SWC	HYDRO
2340.0	[m]	DC	HALIBURT
2350.0	[m]	DC	HALIBU
2350.0	[m]	SWC	HYDRO
2357.0	[m]	SWC	HYDRO
2360.0	[m]	DC	HALIBURT
2370.0	[m]	DC	HALIBU
2380.0	[m]	DC	HALIBU
2380.0	[m]	SWC	HYDRO
2389.0	[m]	SWC	HYDRO
2390.0	[m]	DC	HALIBURT

2394.8	[m]	C	ICHRON
2395.0	[m]	C	HYDRO
2395.4	[m]	C	ICHRON
2396.0	[m]	C	ICHRON
2397.5	[m]	C	ICHRON
2398.0	[m]	C	HYDRO
2399.7	[m]	C	ICHRON
2400.0	[m]	DC	HALIBURT
2400.0	[m]	C	HYDRO
2400.3	[m]	C	ICHRON
2401.0	[m]	C	HYDRO
2410.0	[m]	SWC	HYDRO
2410.0	[m]	DC	HALIBURT
2420.0	[m]	SWC	HYDRO
2420.0	[m]	DC	HALIBURT
2428.0	[m]	SWC	HYDRO
2428.0	[m]	SWC	HYDRO
2430.0	[m]	DC	HALIBURT
2440.0	[m]	DC	HALIBU
2448.0	[m]	SWC	HYDRO
2450.0	[m]	DC	HALIBURT
2454.0	[m]	SWC	HYDRO
2460.0	[m]	DC	HALIBURT
2470.0	[m]	DC	HALIBU
2470.0	[m]	SWC	HYDRO
2480.0	[m]	DC	HALIBURT
2490.0	[m]	DC	HALIBU
2494.0	[m]	SWC	HYDRO
2500.0	[m]	DC	HALIBURT
2506.0	[m]	SWC	HYDRO
2510.0	[m]	DC	HALIBURT
2520.0	[m]	DC	HALIBU
2527.0	[m]	SWC	HYDRO
2530.0	[m]	DC	HALIBURT
2535.0	[m]	SWC	HYDRO
2540.0	[m]	SWC	HYDRO
2540.0	[m]	DC	HALIBURT
2550.0	[m]	DC	HALIBU
2560.0	[m]	DC	HALIBU
2565.0	[m]	SWC	HYDRO

2570.0	[m]	DC	HALIBURT
2585.0	[m]	DC	HALIBU
2587.0	[m]	DC	HALIBU
2597.0	[m]	DC	HALIBU
2605.0	[m]	SWC	HYDRO
2607.0	[m]	DC	HALIBURT
2615.0	[m]	DC	HALIBU
2625.0	[m]	SWC	HYDRO
2627.0	[m]	DC	HALIBURT
2637.0	[m]	DC	HALIBU
2638.0	[m]	C	FUGRO
2638.8	[m]	C	FUGRO
2638.8	[m]	C	ICHRON
2639.7	[m]	C	ICHRON
2644.8	[m]	C	FUGRO
2645.0	[m]	SWC	HYDRO
2647.0	[m]	DC	HALIBURT
2655.0	[m]	SWC	HYDRO
2657.0	[m]	DC	HALIBURT
2665.0	[m]	SWC	HYDRO
2667.0	[m]	DC	HALIBURT
2675.0	[m]	SWC	HYDRO
2677.0	[m]	DC	HALIBURT
2680.0	[m]	SWC	HYDRO
2687.0	[m]	DC	HALIBURT
2688.0	[m]	SWC	HYDRO
2697.0	[m]	DC	HALIBURT
2707.0	[m]	DC	HALIBU
2717.0	[m]	DC	HALIBU
2725.0	[m]	DC	HALIBU
2737.0	[m]	DC	HALIBU
2747.0	[m]	DC	HALIBU
2780.0	[m]	SWC	HYDRO
2788.0	[m]	SWC	HYDRO
2790.0	[m]	DC	HALIBURT
2796.0	[m]	SWC	HYDRO
2799.3	[m]	DC	HALIBURT

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
360	NORDLAND GP
437	SOTBAKKEN GP
437	TORSK FM
1443	NYGRUNNEN GP
1443	KVITING FM
1450	ADVENTDALEN GP
1450	KOLMULE FM
1948	KOLJE FM
2120	KNURR FM
2503	HEKKINGEN FM
2656	FUGLEN FM
2692	KAPP TOSCANA GP
2692	STØ FM

Composite logs

Document name	Document format	Document size [MB]
1690	pdf	0.37

Geochemical information

Document name	Document format	Document size [MB]
1690_1	pdf	5.18
1690_2	pdf	5.19
1690_3	pdf	6.86

Documents - older Norwegian Offshore Directorate WDSS reports and other related documents

Document name	Document format	Document size [MB]
1690_01_WDSS_General_Information	pdf	0.64
1690_02_WDSS_completion_log	pdf	0.16

Documents - reported by the production licence (period for duty of secrecy expired)

Document name	Document format	Document size [MB]
1690_7120_2_2_COMPLETION_REPORT_AND_LOG	pdf	14.59

Logs

Log type	Log top depth [m]	Log bottom depth [m]
CST GR	1810	2783
CST GR	2326	2796
DIL LSS LDL CNL SP GR AMS	786	1268
DIL SDT LDL CNL SP NGT AMS	1785	2796
FMS GR AMS	1785	2798
MSFL DLL GR	2100	2798
MWD - GR RES DIR	359	1801
MWD - GR RES DIR	1974	2795
RFTA HP AMS	2483	2766
RFTB HP AMS	2134	2693
RFTB HP AMS	2395	2640
RFTB HP AMS	2395	2501
VSP	1065	2790

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	459.0	36	460.0	0.00	LOT
INTERM.	18 5/8	785.0	24	788.0	1.44	LOT
INTERM.	13 3/8	1785.0	17 1/2	1790.0	1.29	LOT
OPEN HOLE		2794.0	12 1/4	2794.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
360	1.08			WATER BASED	29.01.1991
380	1.14	16.0	9.0	WATER BASED	20.03.1991
421	1.08			WATER BASED	29.01.1991

445	1.08			WATER BASED	30.01.1991
459	1.08			WATER BASED	30.01.1991
459	1.08			WATER BASED	31.01.1991
583	1.08			WATER BASED	01.02.1991
720	1.14	9.0	12.0	WATER BASED	21.03.1991
800	1.08			WATER BASED	05.02.1991
800	1.05	18.0	15.0	WATER BASED	05.02.1991
800	1.05	18.0	15.0	WATER BASED	08.02.1991
800	1.05	18.0	15.0	WATER BASED	08.02.1991
800	1.05	18.0	15.0	WATER BASED	12.02.1991
853	1.06	9.0	5.0	WATER BASED	12.02.1991
1155	1.08	13.0	8.0	WATER BASED	12.02.1991
1350	1.09	13.0	9.0	WATER BASED	12.02.1991
1497	1.09	13.0	7.0	WATER BASED	13.02.1991
1544	1.08	13.0	9.0	WATER BASED	14.02.1991
1662	1.10	14.0	10.0	WATER BASED	15.02.1991
1685	1.14	16.0	9.0	WATER BASED	20.03.1991
1786	1.12	15.0	11.0	WATER BASED	19.02.1991
1805	1.12	15.0	10.0	WATER BASED	19.02.1991
1805	1.12	16.0	11.0	WATER BASED	19.02.1991
1805	1.12	15.0	9.0	WATER BASED	19.02.1991
1805	1.14	14.0	10.0	WATER BASED	21.02.1991
1805	1.14	15.0	10.0	WATER BASED	26.02.1991
1805	1.14	15.0	1.0	WATER BASED	20.02.1991
1805	1.14	15.0	10.0	WATER BASED	22.02.1991
1886	1.14	15.0	8.0	WATER BASED	26.02.1991
1895	1.14	15.0	8.0	WATER BASED	26.02.1991
1923	1.14	17.0	8.0	WATER BASED	26.02.1991
1933	1.14	17.0	8.0	WATER BASED	27.02.1991
2050	1.14	18.0	10.0	WATER BASED	28.02.1991
2162	1.14	16.0	9.0	WATER BASED	01.03.1991
2163	1.14	18.0	9.0	WATER BASED	05.03.1991
2180	1.14	18.0	11.0	WATER BASED	05.03.1991
2201	1.14	20.0	9.0	WATER BASED	05.03.1991
2205	1.14	19.0	10.0	WATER BASED	05.03.1991
2337	1.14	20.0	10.0	WATER BASED	06.03.1991
2402	1.15	18.0	7.0	WATER BASED	07.03.1991
2461	1.15	16.0	9.0	WATER BASED	08.03.1991
2568	1.14	19.0	9.0	WATER BASED	11.03.1991
2636	1.14	18.0	10.0	WATER BASED	11.03.1991

2646	1.14	17.0	9.0	WATER BASED	11.03.1991
2720	1.15	16.0	8.0	WATER BASED	12.03.1991
2726	1.14	15.0	8.0	WATER BASED	13.03.1991
2795	1.14	17.0	9.0	WATER BASED	14.03.1991
2800	1.14	16.0	12.0	WATER BASED	18.03.1991
2800	1.14	16.0	10.0	WATER BASED	18.03.1991
2800	1.14	15.0	9.0	WATER BASED	18.03.1991
2800	1.14	18.0	9.0	WATER BASED	15.03.1991
2800	1.14	18.0	9.0	WATER BASED	15.03.1991

Thin sections at the Norwegian Offshore Directorate

Depth	Unit
2163.00	[m]
2181.25	[m]
2184.25	[m]
2190.75	[m]
2393.25	[m]

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]
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