



General information

Wellbore name	7121/5-1
Type	EXPLORATION
Purpose	APPRAISAL
Status	P&A
Factmaps in new window	link to map
Main area	BARENTS SEA
Field	SNØHVIT
Discovery	7121/4-1 Snøhvit
Well name	7121/5-1
Seismic location	ST 8310 - 377 SP. 1090
Production licence	110
Drilling operator	Den norske stats oljeselskap a.s
Drill permit	468-L
Drilling facility	WEST VANGUARD
Drilling days	114
Entered date	07.06.1985
Completed date	28.09.1985
Release date	28.09.1987
Publication date	04.01.2005
Purpose - planned	WILDCAT
Reentry	NO
Content	OIL/GAS
Discovery wellbore	NO
1st level with HC, age	EARLY JURASSIC
1st level with HC, formation	STØ FM
Kelly bushing elevation [m]	22.0
Water depth [m]	336.0
Total depth (MD) [m RKB]	3200.0
Final vertical depth (TVD) [m RKB]	3197.0
Maximum inclination [°]	4.75
Bottom hole temperature [°C]	115
Oldest penetrated age	LATE TRIASSIC
Oldest penetrated formation	SNADD FM
Geodetic datum	ED50
NS degrees	71° 35' 54.88" N
EW degrees	21° 24' 21.78" E
NS UTM [m]	7944421.61
EW UTM [m]	514306.93



UTM zone	34
NPDID wellbore	479

Wellbore history

General

Wildcat well 7121/5-1 is located on the eastern part of the Snøhvit Field. It was drilled about 75 m down flank on the Alpha-structure in the block. The Snøhvit structure consists of an east-west running horst and a rotated normal faulted block. The main objective in the well was to test possible reservoir rocks of Jurassic/Triassic age as seen in neighbouring wells.

Operations and results

Well 7121/5-1 was spudded with the semi-submersible installation West Vanguard on 7 June 1985 and drilled to TD at 3200 m. The rig was shut down from 16 June to 30 June due to a strike. Otherwise drilling proceeded without significant problems. The well was drilled with spud mud down to 865 m, with a gypsum/polymer mud from 865 m to 1925 m, and with polymer mud from 1925 m to TD.

Top reservoir came in at 2369 m with hydrocarbons. From RFT pressure measurements the gas/oil contact was found at 2427.5 m and the oil/water contact at 2442 m. Logs displayed sands with possible hydrocarbons in Triassic sandstones, but increasing shale down hole reduced porosity/permeability and DST test confirmed a tight formation. Geochemical analyses showed immature rocks until 2250 m and marginal to significant maturity in Triassic/Jurassic rocks respectively. Nine cores were cut in the interval 2365 m to 2523 m in the Stø, Nordmela and Tubåen Formations. One core was cut from 3088 m to 3109 m in the Triassic Snadd Formation. Four RFT segregated samples were taken in the upper part of the Stø and Nordmela Formations from 2370 m to 2434 m, one in the Tubåen Formation at 2507 m, and one at 2802.7 m in the Snadd Formation. A small amount of condensate in the sample from 2370 m was the only reported liquid hydrocarbons from the RFT samples. Otherwise gas was recovered in the samples from 2424 m and 2370 m, while the sample from 2507 recovered mainly water/mud filtrate and minor gas. The sample from 2802.7 m contained only minor amounts of mud filtrate and no hydrocarbons. Some weak shows were recorded in the Snadd Formation. The well was permanently abandoned on 28 September 1985 as an oil and gas appraisal.

Testing

Three drill stem tests were performed. DST IA from 2802 m to 2820 m in Triassic sandstones gave no response from the formation. DST I tested the interval 2436 m to 2439 m near base of the Stø Formation. The 9-5/8" casing was first perforated with 6 shots/foot, and after that the well was re-perforated by 12 shots/foot (DST I RR) in an attempt to improve flowing rates. DST 1 produced oil and gas during the main flow at a rate of 229.1 Sm³ and 27190 Sm³, respectively through a 12.7 mm choke. The gas/oil ratio was 119 Sm³/Sm³. DST 2 perforated the interval 2394 m to 2403 m in the upper part of the Stø Formation. This test gave no response and the formation was considered tight.

Cuttings at the Norwegian Offshore Directorate



Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
420.00	3197.00

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	2365.0	2392.0	[m]
2	2392.0	2400.4	[m]
3	2400.4	2428.0	[m]
4	2428.3	2442.0	[m]
5	2442.0	2470.0	[m]
6	2470.0	2498.0	[m]
7	2498.0	2509.0	[m]
8	2509.0	2509.0	[m]
9	2509.4	2536.0	[m]
10	3082.0	3103.0	[m]

Total core sample length [m]	191.3
Cores available for sampling?	YES

Core photos



2365-2370m



2370-2375m



2375-2380m



2380-2385m



2385-2390m



2390-2392m



2392-2397m



2397-2400m



2400-2405m



2405-2410m



2410-2415m



2415-2420m



2420-2425m



2425-2428m



2428-2433m



2433-2438m



2438-2442m



2442-2447m



2447-2452m



2452-2457m



2457-2462m



2462-2467m



2467-2470m



2470-2475m



2475-2480m



2480-2485m



2485-2490m



2490-2495m



2495-2498m



2498-2503m



2503-2506m



2506-2508m



2508-2509m



2509-2514m



2514-2519m



2519-2524m



2524-2529m



2529-2534m



2534-2536m



3082-3088m



3088-3094m



3094-3100m



3100-3103m

Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
500.0	[m]	DC	GERH
510.0	[m]	DC	GERH
520.0	[m]	DC	GERH
530.0	[m]	DC	GERH
550.0	[m]	DC	GERH
560.0	[m]	DC	GERH
570.0	[m]	DC	GERH
600.0	[m]	DC	GERH
610.0	[m]	DC	GERH
620.0	[m]	DC	GERH
630.0	[m]	DC	GERH
640.0	[m]	DC	GERH
650.0	[m]	DC	GERH
660.0	[m]	DC	GERH
670.0	[m]	DC	GERH
680.0	[m]	DC	GERH
690.0	[m]	DC	GERH
700.0	[m]	DC	GERH
710.0	[m]	DC	GERH
720.0	[m]	DC	GERH
730.0	[m]	DC	GERH
740.0	[m]	DC	GERH
750.0	[m]	DC	GERH
760.0	[m]	DC	GERH
770.0	[m]	DC	GERH
780.0	[m]	DC	GERH
790.0	[m]	DC	GERH
800.0	[m]	DC	GERH
810.0	[m]	DC	GERH



820.0 [m]	DC	GERH
830.0 [m]	DC	GERH
840.0 [m]	DC	GERH
850.0 [m]	DC	GERH
870.0 [m]	DC	GERH
900.0 [m]	DC	GERH
910.0 [m]	DC	GERH
920.0 [m]	DC	GERH
930.0 [m]	DC	GERH
940.0 [m]	DC	GERH
962.0 [m]	DC	GERH
974.0 [m]	DC	GERH
986.0 [m]	DC	GERH
998.0 [m]	DC	GERH
1019.0 [m]	DC	GERH
1031.0 [m]	DC	GERH
1043.0 [m]	DC	GERH
1067.0 [m]	DC	GERH
1079.0 [m]	DC	GERH
1091.0 [m]	DC	GERH
1115.0 [m]	DC	GERH
1127.0 [m]	DC	GERH
1139.0 [m]	DC	GERH
1151.0 [m]	DC	GERH
1169.0 [m]	DC	GERH
1181.0 [m]	DC	GERH
1193.0 [m]	DC	GERH
1200.0 [m]	SWC	GERH
1217.0 [m]	DC	GERH
1232.0 [m]	DC	GERH
1247.0 [m]	DC	GERH
1262.0 [m]	DC	GERH
1277.0 [m]	DC	GERH
1292.0 [m]	DC	GERH
1307.0 [m]	DC	GERH
1322.0 [m]	DC	GERH
1337.0 [m]	DC	GERH
1367.0 [m]	DC	GERH
1382.0 [m]	DC	GERH
1397.0 [m]	DC	GERH



1412.0 [m]	DC	GERH
1427.0 [m]	DC	GERH
1445.0 [m]	DC	GERH
1469.0 [m]	DC	GERH
1481.0 [m]	DC	GERH
1496.0 [m]	DC	GERH
1511.0 [m]	DC	GERH
1511.0 [m]	DC	GERH
1526.0 [m]	DC	GERH
1550.0 [m]	DC	GERH
1562.0 [m]	DC	GERH
1574.0 [m]	DC	GERH
1589.0 [m]	DC	GERH
1604.0 [m]	DC	GERH
1616.0 [m]	DC	GERH
1646.0 [m]	DC	GERH
1661.0 [m]	DC	GERH
1676.0 [m]	DC	GERH
1691.0 [m]	DC	GERH
1721.0 [m]	DC	GERH
1736.0 [m]	DC	GERH
1751.0 [m]	DC	GERH
1766.0 [m]	DC	GERH
1775.0 [m]	DC	GERH
1781.0 [m]	DC	GERH
1796.0 [m]	DC	GERH
1811.0 [m]	DC	GERH
1826.0 [m]	DC	GERH
1841.0 [m]	DC	GERH
1871.0 [m]	DC	GERH
1886.0 [m]	DC	GERH
1901.0 [m]	DC	GERH
1910.0 [m]	DC	GERH
1925.0 [m]	DC	GERH
1934.0 [m]	DC	GERH
1949.0 [m]	DC	GERH
1952.0 [m]	DC	GERH
1964.0 [m]	DC	GERH
1979.0 [m]	DC	GERH
1994.0 [m]	DC	GERH



2009.0	[m]	DC	GERH
2024.0	[m]	DC	GERH
2028.0	[m]	DC	GERH
2039.0	[m]	DC	GERH
2054.0	[m]	DC	GERH
2069.0	[m]	DC	GERH
2084.0	[m]	DC	GERH
2099.0	[m]	DC	GERH
2114.0	[m]	DC	GERH
2129.0	[m]	DC	GERH
2142.0	[m]	SWC	GERH
2144.0	[m]	DC	GERH
2159.0	[m]	DC	GERH
2174.0	[m]	DC	GERH
2189.0	[m]	DC	GERH
2204.0	[m]	DC	GERH
2218.0	[m]	SWC	GERH
2234.0	[m]	DC	GERH
2249.0	[m]	DC	GERH
2256.0	[m]	SWC	GERH
2264.0	[m]	DC	GERH
2270.0	[m]	DC	GERH
2285.0	[m]	DC	GERH
2294.0	[m]	DC	GERH
2305.0	[m]	DC	GERH
2310.0	[m]	SWC	GERH
2313.5	[m]	C	GERH
2314.0	[m]	SWC	GERH
2323.0	[m]	C	GERH
2327.0	[m]	SWC	GERH
2334.0	[m]	SWC	GERH
2344.0	[m]	SWC	GERH
2349.0	[m]	SWC	GERH
2355.0	[m]	SWC	GERH
2359.0	[m]	SWC	GERH
2365.0	[m]	C	GERH
2372.0	[m]	C	GERH
2380.0	[m]	C	GERH
2390.0	[m]	C	GERH
2391.0	[m]	C	GERH



2395.0 [m]	C	GERH
2399.0 [m]	DC	GERH
2400.0 [m]	C	GERH
2407.0 [m]	C	GERH
2429.0 [m]	C	GERH
2445.0 [m]	C	GERH
2452.0 [m]	C	GERH
2464.0 [m]	C	GERH
2473.0 [m]	C	GERH
2483.0 [m]	C	GERH
2490.7 [m]	C	ICHRON
2492.0 [m]	C	GERH
2501.0 [m]	C	GERH
2509.0 [m]	C	GERH
2509.0 [m]	C	ICHRON
2520.0 [m]	C	GERH
2531.0 [m]	C	GERH
2535.0 [m]	C	GERH
2535.9 [m]	C	ICHRON
2546.0 [m]	C	GERH
2546.0 [m]	DC	RRI
2555.0 [m]	DC	RRI
2558.0 [m]	DC	GERH
2564.0 [m]	DC	RRI
2567.0 [m]	DC	RRI
2570.0 [m]	DC	GERH
2582.0 [m]	DC	GERH
2594.0 [m]	DC	GERH
2606.0 [m]	DC	GERH
2618.0 [m]	DC	GERH
2630.0 [m]	DC	GERH
2643.0 [m]	SWC	GERH
2654.0 [m]	DC	GERH
2666.0 [m]	DC	GERH
2672.0 [m]	SWC	GERH
2678.0 [m]	DC	GERH
2682.0 [m]	SWC	GERH
2687.0 [m]	SWC	GERH
2695.0 [m]	SWC	GERH
2702.0 [m]	DC	GERH



2714.0	[m]	DC	GERH
2726.0	[m]	DC	GERH
2738.0	[m]	SWC	GERH
2750.0	[m]	DC	GERH
2762.0	[m]	DC	GERH
2786.0	[m]	DC	GERH
2796.0	[m]	SWC	GERH
2810.0	[m]	DC	GERH
2822.0	[m]	DC	GERH
2842.0	[m]	SWC	GERH
2914.0	[m]	SWC	GERH
2948.0	[m]	SWC	GERH
2951.0	[m]	DC	GERH
3074.0	[m]	DC	GERH
3084.0	[m]	C	GERH
3091.0	[m]	C	GERH
3093.0	[m]	C	GERH
3116.0	[m]	DC	GERH
3164.0	[m]	DC	GERH

Oil samples at the Norwegian Offshore Directorate

Test type	Bottle number	Top depth MD [m]	Bottom depth MD [m]	Fluid type	Test time	Samples available
DST	DST1	2436.00	2439.00		04.09.1985 - 00:15	YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
358	NORDLAND GP
460	SOTBAKKEN GP
460	TORSK FM
1005	NYGRUNNEN GP
1005	KVITING FM
1036	ADVENTDALEN GP
1036	KOLMULE FM
1930	KOLJE FM



2236	KNURR FM
2292	HEKKINGEN FM
2357	FUGLEN FM
2369	KAPP TOSCANA GP
2369	STØ FM
2445	NORDMELA FM
2507	TUBÅEN FM
2572	FRUHOLMEN FM
2572	KRABBE MBR
2660	REKE MBR
2738	AKKAR MBR
2793	SNADD FM

Composite logs

Document name	Document format	Document size [MB]
479	pdf	0.58

Geochemical information

Document name	Document format	Document size [MB]
479_1	pdf	2.05
479_2	pdf	5.05

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

Document name	Document format	Document size [MB]
479_01_WDSS_General_Information	pdf	0.31
479_02_WDSS_completion_log	pdf	0.25

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

Document name	Document format	Document size [MB]
479_7121_5_1_COMPLETION_REPORT_AND_LOG	pdf	44.00





Drill stem tests (DST)

Test number	From depth MD [m]	To depth MD [m]	Choke size [mm]
1.1	2802	2820	0.0
1.2	2436	2439	12.7
2.0	2394	2403	0.0

Test number	Final shut-in pressure [MPa]	Final flow pressure [MPa]	Bottom hole pressure [MPa]	Downhole temperature [°C]
1.1				
1.2	3.500		16.300	90
2.0				

Test number	Oil [Sm3/day]	Gas [Sm3/day]	Oil density [g/cm3]	Gas grav. rel.air	GOR [m3/m3]
1.1					
1.2	229	27190	0.860		119
2.0					

Logs

Log type	Log top depth [m]	Log bottom depth [m]
CBL VDL GR	475	2726
CET GR	1500	2726
CNL GR CASED	2350	2500
CST	860	1903
CST	1952	2738
CST	2755	3178
DLL MSFL SP GR	2349	2534
ISF SONIC SMFL SP GR	419	3200
LDL CNL GR	419	3200
NGS	1907	3201
RFT HP	2370	2518
RFT HP	2508	2662
RFT ST	2370	2507
RFT ST	2802	3118





SHDT	848	3180
TDT GR	2350	2500
TDT GR	2350	2500
TEMP	1000	2000
VSP	405	3200

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	419.5	36	423.0	0.00	LOT
SURF.COND.	20	849.5	26	879.0	1.43	LOT
INTERM.	13 3/8	1912.0	17 1/2	1929.0	1.59	LOT
INTERM.	9 5/8	2739.0	12 1/4	2755.0	1.74	LOT
LINER	7	3200.0	8 1/2	3200.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
877	1.06	600.0	16.0	WATER BASED	13.06.1985
877	1.06	600.0	13.5	WATER BASED	14.06.1985
877	1.06	600.0	13.5	WATER BASED	14.06.1985
879	1.17	1200.0	9.3	WATER BASED	17.06.1985
879	1.17			WATER BASED	17.06.1985
879	1.17			WATER BASED	19.06.1985
879	1.17			WATER BASED	20.06.1985
879	1.00	1400.0	6.8	WATER BASED	01.07.1985
879	1.06	600.0	11.4	WATER BASED	17.06.1985
879	1.17			WATER BASED	24.06.1985
879	1.00	1400.0	6.8	WATER BASED	01.07.1985
879	1.17			WATER BASED	24.06.1985
879	1.17	1200.0	9.3	WATER BASED	17.06.1985
879	1.17			WATER BASED	17.06.1985
879	1.17			WATER BASED	19.06.1985
879	1.17			WATER BASED	20.06.1985
885	1.10	1500.0	7.6	WATER BASED	03.07.1985
885	1.11	1600.0	8.9	WATER BASED	05.07.1985
885	1.11	1600.0	8.9	WATER BASED	05.07.1985



1393	1.11	1500.0	9.7	WATER BASED	05.07.1985
1723	1.12	1500.0	6.3	WATER BASED	08.07.1985
1860	1.12	1500.0	7.2	WATER BASED	08.07.1985
1925	1.14	1700.0	8.4	WATER BASED	09.07.1985
1925	1.14	6000.0	6.8	WATER BASED	10.07.1985
1925	1.14	6000.0	6.8	WATER BASED	10.07.1985
2083	1.15	1500.0	8.1	WATER BASED	15.07.1985
2161	1.15	1600.0	8.0	WATER BASED	15.07.1985
2254	1.15	1600.0	7.6	WATER BASED	15.07.1985
2309	1.15	1600.0	8.0	WATER BASED	16.07.1985
2353	1.30	1900.0	8.5	WATER BASED	19.07.1985
2353	1.30	1900.0	8.5	WATER BASED	19.07.1985
2353	1.30	1900.0	7.6	WATER BASED	18.07.1985
2365	1.30	1900.0	10.2	WATER BASED	18.07.1985
2392	1.30	1900.0	7.6	WATER BASED	18.07.1985
2453	1.34	1800.0	11.0	WATER BASED	22.07.1985
2500	1.34	1700.0	9.3	WATER BASED	29.07.1985
2536	1.34	1700.0	10.0	WATER BASED	29.07.1985
2537	1.34	1700.0	10.0	WATER BASED	29.07.1985
2539	1.34	1700.0	9.3	WATER BASED	29.07.1985
2540	1.23	1200.0	5.0	WATER BASED	04.09.1985
2540	1.23	1000.0	4.6	WATER BASED	05.09.1985
2540	1.23	1000.0	5.5	WATER BASED	06.09.1985
2540	1.23	1000.0	5.1	WATER BASED	09.09.1985
2540	1.23	900.0	4.2	WATER BASED	10.09.1985
2540	1.23	900.0	4.2	WATER BASED	11.09.1985
2540	1.23	900.0	4.2	WATER BASED	12.09.1985
2540	1.23	800.0	4.2	WATER BASED	13.09.1985
2544	1.23	1400.0	6.3	WATER BASED	30.08.1985
2544	1.23	1400.0	5.9	WATER BASED	02.09.1985
2546	1.23	1500.0	7.2	WATER BASED	30.08.1985
2548	1.34	1700.0	9.7	WATER BASED	30.07.1985
2572	1.34	1900.0	9.3	WATER BASED	31.07.1985
2600	1.34	2200.0	9.7	WATER BASED	01.08.1985
2607	1.34	2000.0	9.7	WATER BASED	01.08.1985
2628	1.34	2100.0	9.3	WATER BASED	02.08.1985
2653	1.34	1900.0	10.2	WATER BASED	05.08.1985
2697	1.34	2100.0	10.6	WATER BASED	05.08.1985
2747	1.34	2100.0	9.7	WATER BASED	06.08.1985
2747	1.34	2100.0	9.7	WATER BASED	06.08.1985



2747	1.34	2100.0	9.7	WATER BASED	05.08.1985
2755	1.16	8.0	1900.0	WATER BASED	12.08.1985
2755	1.34	2100.0	9.3	WATER BASED	08.08.1985
2755	1.16	8.0	1900.0	WATER BASED	12.08.1985
2792	1.16	1700.0	8.5	WATER BASED	12.08.1985
2802	1.23	1500.0	6.7	WATER BASED	28.08.1985
2855	1.16	1700.0	8.0	WATER BASED	12.08.1985
2933	1.16	1500.0	8.5	WATER BASED	13.08.1985
2980	1.16	1500.0	8.0	WATER BASED	14.08.1985
3044	1.16	1600.0	7.2	WATER BASED	15.08.1985
3082	1.16	1600.0	7.2	WATER BASED	16.08.1985
3161	1.16	1500.0	7.6	WATER BASED	26.08.1985
3161	1.23	1400.0	7.2	WATER BASED	27.08.1985
3161	1.23	1500.0	7.2	WATER BASED	26.08.1985

Thin sections at the Norwegian Offshore Directorate

Depth	Unit
2505.00	[m]
2507.00	[m]
2512.35	[m]
2514.35	[m]
2517.00	[m]
2524.65	[m]
2526.65	[m]
2530.00	[m]
2535.35	[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]
479 Formation pressure (Formasjonstrykk)	pdf	0.28

