General information

Wellbore name	25/11-19 S
Type	EXPLORATION
Purpose	APPRAISAL
Status	P&A
Factmaps in new window	link to map
Main area	NORTH SEA
Field	BALDER
Discovery	25/11-1 Balder
Well name	25/11-19
Seismic location	B88 Inline 207 Xline 687
Production licence	001
Drilling operator	Esso Exploration and Production Norway A/S
Drill permit	811-L
Drilling facility	VILDKAT EXPLORER
Drilling days	25
Entered date	24.04.1995
Completed date	18.05.1995
Release date	18.05.1997
Publication date	29.08.2003
Purpose - planned	APPRAISAL
Reentry	NO
Content	OIL/GAS
Discovery wellbore	NO
1st level with HC, age	EOCENE
1st level with HC, formation	INTRA BALDER FM SS
2nd level with HC, age	PALEOCENE
2nd level with HC, formation	HERMOD FM
Kelly bushing elevation [m]	25.0
Water depth [m]	129.0
Total depth (MD) [m RKB]	2250.0
Final vertical depth (TVD) [m RKB]	2044.0
Maximum inclination [°]	39.16
Oldest penetrated age	LATE TRIASSIC
Oldest penetrated formation	STATFJORD GP
Geodetic datum	ED50
NS degrees	59° 12' 48.48'' N
EW degrees	2° 24' 6.88'' E

NS UTM [m]	6564126.95
EW UTM [m]	465849.93
UTM zone	31
NPDID wellbore	2562

Wellbore history

General

Well 25/11-19 S was drilled on Licence 001, awarded in the first licence round in 1965. It was the last appraisal well on the Balder Field before it was decided to go ahead with Plan for Development in 1995. The well was located to penetrate the top reservoir of " Balder Mound 6" in a well-defined structurally high position. The primary target was a massive sand in the Hermod Formation; the secondary target was the Eocene Balder Formation Sand. The general objective of well 25/11-19 S was to reduce the range of uncertainty associated with the reserve basis for Balder Mound 6. The well was drilled as a directional well for potential re-entry as a future horizontal producer.

Operations and results

Appraisal well 25/11-19 S was spudded with the semi-submersible installation "Vildkat Explorer" on 24 April 1995 and drilled to TD at 2250 m (2019 m TVD SS) in Triassic (Late Rhaetian) sediments of the Statfjord Formation. The well was drilled with seawater spud mud down to 1015 m and with oil based "Safemul" mud from 1015 m to TD. Shallow gas was neither prognosed nor observed. The well was drilled vertically down to 1032 m before starting to build angle and at top of the primary target, the Hermod sand, the deviation was 38.2 deg. . An 8 1/2" inch hole was drilled to an intermediate depth of 2096 m where an extensive wire line logging program was performed. Then an 8 1/2" hole was drilled to TD of 2250 m and final logging was performed. The 25/11-19 S confirmed oil in the Hermod sand. A good oil water contact was defined by wire line logs, extensive MDT sampling and pressures at 1922.5 m (1760.5 m TVD SS) in the Hermod reservoir sand. Furthermore, gas reserves were proved in the secondary target, the Balder Formation sand, and pressure data indicated a potential GOC at 1839.2 m (1694.8 m TVD SS). Three cores were cut in the Sele and Hermod Formations from 1871 to 1937 m. Wire line fluid samples were taken at 9 different depths using the MDT tool: gas was sampled at 1815.5 m, 1815.6 m, 1816.1 m, and 1834.1 m in the Balder Formation; oil was sampled at 1898 m, 1901.9 m, and 1920 m in the Hermod Formation; and water was sampled at 1182.7 m& in the Skade Formation and at 1961.6 m in the Hermod Formation. The well was plugged below the 13 3/8" casing and temporarily abandoned for possible re-entry as a horizontal oil producer. The well (25/11-19 S R) was re-entered and plugged using the semi-submersible installation "West Alpha" on 1 May 1997. It was permanently abandoned as an oil and gas appraisal well on 6 May 1997.

Testing

No drill stem test was performed.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
1020.00	2250.00

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	1871.0	1889.4	[m]
2	1889.4	1908.5	[m]
3	1908.5	1936.7	[m]

Total core sample length [m]	65.7
Cores available for sampling?	YES

Core photos


1871-1875m


1875-1879m


1879-1883m


1883-1887m


1887-1889m


1889-1893m


1893-1897m


1897-1901m


1901-1905m


1905-1908m


1908-1912m


1912-1916m


1916-1920m


1920-1924m


1924-1928m







1928-1932m 1932-1936m 1936-1937m

Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
1030.6	[m]	SWC	STRATLAB
1064.0	[m]	SWC	STRATL
1159.5	[m]	SWC	STRATL
1291.5	[m]	SWC	STRATL
1296.0	[m]	SWC	STRATL
1311.5	[m]	SWC	STRATL
1325.5	[m]	SWC	STRATL
1329.0	[m]	SWC	STRATL
1331.0	[m]	SWC	STRATL
1351.0	[m]	SWC	STRATL
1374.0	[m]	SWC	STRATL
1393.0	[m]	SWC	STRATL
1405.0	[m]	SWC	STRATL
1435.0	[m]	SWC	STRATL
1456.0	[m]	SWC	STRATL
1462.2	[m]	SWC	STRATL
1520.0	[m]	SWC	STRATL
1546.4	[m]	SWC	STRATL
1678.0	[m]	SWC	STRATL
1738.0	[m]	SWC	STRATL
1760.0	[m]	SWC	STRATL
1777.0	[m]	SWC	STRATL
1785.5	[m]	SWC	STRATL
1790.5	[m]	SWC	STRATL
1792.5	[m]	SWC	STRATL
1795.5	[m]	SWC	STRATL
1798.0	[m]	SWC	STRATL
1803.5	[m]	SWC	STRATL
1808.0	[m]	SWC	STRATL
1813.5	[m]	SWC	STRATL
1821.0	[m]	SWC	STRATL
1823.5	[m]	SWC	STRATL
1834.0	[m]	SWC	STRATL
1847.0	[m]	SWC	STRATL

1860.5	[m]	SWC	STRATL
1860.5	[m]	SWC	STRATL
1866.4	[m]	SWC	STRATL
1872.0	[m]	SWC	STRATL
1881.9	[m]	SWC	STRATL
1887.5	[m]	SWC	STRATL
1895.8	[m]	SWC	STRATL
1901.8	[m]	SWC	STRATL
1910.0	[m]	SWC	STRATL
1916.0	[m]	SWC	STRATL
1928.8	[m]	SWC	STRATL
1931.7	[m]	SWC	STRATL
1988.5	[m]	SWC	STRATL
1992.5	[m]	SWC	STRATL
2000.0	[m]	SWC	STRATL
2005.5	[m]	SWC	STRATL
2026.0	[m]	SWC	STRATL
2031.5	[m]	SWC	STRATL
2042.9	[m]	SWC	STRATL
2047.0	[m]	SWC	STRATL
2170.0	[m]	SWC	STRATL
2180.0	[m]	SWC	STRATL
2190.0	[m]	SWC	STRATL
2195.0	[m]	SWC	STRATL
2200.0	[m]	SWC	STRATL
2210.0	[m]	SWC	STRATL
2220.0	[m]	SWC	STRATL
2230.0	[m]	SWC	STRATL
2240.0	[m]	SWC	STRATL
2250.0	[m]	SWC	STRATL

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
154	NORDLAND GP
597	UTSIRA FM
713	NO FORMAL NAME
763	HORDALAND GP
763	SKADE FM

953	UNDIFFERENTIATED
1077	NO FORMAL NAME
1087	UNDIFFERENTIATED
1169	NO FORMAL NAME
1190	UNDIFFERENTIATED
1792	ROGALAND GP
1792	BALDER FM
1823	INTRA BALDER FM SS
1833	BALDER FM
1865	SELE FM
1891	HERMOD FM
1893	SELE FM
1897	HERMOD FM
1985	SELE FM
1996	LISTA FM
2045	SHETLAND GP
2045	EKOFISK FM
2050	TOR FM
2085	HOD FM
2137	CROMER KNOLL GP
2168	VIKING GP
2168	DRAUPNE FM
2200	STATFJORD GP

Composite logs

Document name	Document format	Document size [MB]
2562	pdf	0.42

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

Document name	Document format	Document size [MB]
2562_25_11_19_S_COMPLETION_REPORT_AND_LOG	pdf	82.40

Logs

Log type	Log top depth [m]	Log bottom depth [m]
AIT LDT APS HNGS NGT	1000	2093
CST GR	1030	2230
LDT CNL DSI GR	1793	2248
MDT GR	1081	1983
MDT GR	1179	1920
MDT GR	1855	2232
MWD - GR RES DEN NEU DIR	1015	2250
MWD - GR RES DIR	229	1015
UBI DSI GR	1000	2096
VSP-MULTI TOOL	1000	2145

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
SURF.COND.	30	227.0	36	230.0	0.00	LOT
INTERM.	13 3/8	1000.0	17 1/2	1015.0	0.00	LOT
OPEN HOLE		2250.0	8 1/2	2250.0	1.60	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
229	1.13			DUMMY	
230	1.08			DUMMY	
950	1.08			DUMMY	
1018	1.42	53.0		WATER BASED	
1224	1.35	49.0		OIL BASED	
1718	1.37	50.0		WATER BASED	
1871	1.37	37.0		OIL BASED	
1909	1.37	44.0		OIL BASED	
1937	1.37	40.0		OIL BASED	
2096	1.37	49.0		OIL BASED	
2250	1.37	65.0		OIL BASED	

Thin sections at the Norwegian Offshore Directorate

Depth	Unit
1908.56	[m]
1910.13	[m]
1910.80	[m]
1911.80	[m]
1912.85	[m]
1913.80	[m]
1914.80	[m]
1915.85	[m]
1917.14	[m]
1917.80	[m]
1919.15	[m]
1922.93	[m]
1924.38	[m]
1935.30	[m]
1921.30	[m]
1921.05	[m]
1920.05	[m]
1922.05	[m]
1922.85	[m]
1923.35	[m]
1925.30	[m]
1926.40	[m]
1928.05	[m]
1932.05	[m]
1934.05	[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]
2562_Formation_pressure_(Formasjonstrykk)	pdf	0.22