

**General information**

Wellbore name	34/7-14
Type	EXPLORATION
Purpose	APPRAISAL
Status	P&A
Factmaps in new window	link to map
Main area	NORTH SEA
Field	TORDIS
Discovery	34/7-12 Tordis
Well name	34/7-14
Seismic location	SG 8431 ROW 183 COL. 528
Production licence	089
Drilling operator	Saga Petroleum ASA
Drill permit	620-L
Drilling facility	VILDKAT EXPLORER
Drilling days	66
Entered date	28.09.1989
Completed date	02.12.1989
Release date	02.12.1991
Publication date	28.05.2003
Purpose - planned	APPRAISAL
Reentry	NO
Content	OIL
Discovery wellbore	NO
1st level with HC, age	MIDDLE JURASSIC
1st level with HC, formation	TARBERT FM
2nd level with HC, age	MIDDLE JURASSIC
2nd level with HC, formation	NESS FM
Kelly bushing elevation [m]	25.0
Water depth [m]	148.0
Total depth (MD) [m RKB]	2653.0
Final vertical depth (TVD) [m RKB]	2652.0
Maximum inclination [°]	5.1
Bottom hole temperature [°C]	102
Oldest penetrated age	EARLY JURASSIC
Oldest penetrated formation	BURTON FM
Geodetic datum	ED50
NS degrees	61° 15' 32.24" N
EW degrees	2° 6' 58.05" E



NS UTM [m]	6792113.82
EW UTM [m]	452583.17
UTM zone	31
NPDID wellbore	1278

Wellbore history

General

Well 34/7-14 was drilled in on the "B-structure", today named the Tordis Field, in the southern part of block 34/7. The Middle Jurassic Brent Group reservoir is located in tilted fault blocks dipping in a westerly direction within the southern fault segment about 1.4 km south of the well 34/7-12. The structure has a NE-SW trend and is bounded to the east and north by major faults, i.e. Northern Main Fault and Southern Main Fault with throws of 50-200 m. The primary purpose of well 34/7-14 was to further delineate and appraise the Tordis Field. The main target of the well was the sandstones in the Brent Group. Secondary objective was the sandstones of the Early Jurassic Cook Formation.

Operations and results

Appraisal well 34/7-14 was spudded with the semi-submersible installation "Vildkat Explorer" on 28 September 1989 and drilled to a total depth of 2653 m in the Early Jurassic Burton Formation. Shallow seismic indicated gas at 246 & 285 m, 344 m, 376 m, and 511 m. Measurement and logging while-drilling (MWD) verified the indication at 511 m as a thin, gas-filled sand. The upper part of the well was drilled as a 9 1/2" pilot hole without a riser and was plugged back from 511 m due to lack of reliable gas readings in the sand layer. Lost circulation occurred at 2137 m, and the well was plugged back to the 13 3/8" casing shoe. The well was drilled with gel mud (barite, bentonite, caustic soda, soda ash) down to 495 m and with KCl mud from 495 m to TD.

Down to 2189 m, the top of the Brent reservoir, the well proved mainly claystones. Exceptions to this were the sandy Utsira Formation of Miocene/Pliocene age encountered at 856 m, and sandstones within the Hordaland Group encountered in the interval 1167 - 1456 m. The Jurassic comprised the Middle Jurassic Viking and Brent Groups and the Early Jurassic Dunlin Group. & Top Brent Group was encountered at 2189 m. & The Brent Group sandstones proved oil bearing. Exact determination of an OWC was not established due to pressure depletion effects, but oil down to (ODT) 2247 m was proven by logs.

Eleven conventional cores were attempted. Nine were recovered in the interval 2194 m - 2408 m (Tarbert and Ness Formation), two in the interval 1950 m - 1959.5 m were unsuccessful, and one was recovered in the interval 1610 m - 1619 m (Hordaland Group). Two FMT segregated samples were taken on wire line at 2223 m (base Tarbert Formation: gas, oil, and water) and one at sample point 2247 (Ness Formation: gas, oil, water, mud). Three runs were made with core gun. One hundred and fifty sidewall cores were attempted, 72 were recovered. The well was permanently abandoned as an oil appraisal on 2 December 1989.

Testing

Two DST tests were carried out in the oil zone. Test no 1 (Ness Formation, 2232.3 m - 2241.3 m) produced fluid at a rate of 960 Sm³/d during the main flow period, with a GOR of 80 Sm³/Sm³. Test no 2 (Tarbert Formation, 2204.7 m - 2210.7 m) produced fluid at a rate of 1150 Sm³/d during main flow, with a GOR of 67 Sm³/Sm³.



Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
500.00	2652.00

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	1610.9	1614.2	
2	1617.2	1618.7	
3	1959.0	1959.5	
4	2194.0	2222.0	[m]
5	2222.0	2249.2	[m]
6	2249.5	2275.7	[m]
7	2276.5	2300.0	[m]
8	2300.0	2325.5	[m]
9	2325.5	2353.5	[m]
10	2353.5	2380.2	[m]
11	2380.5	2408.2	[m]

Total core sample length [m]	212.7
Cores available for sampling?	YES

Core photos



2194-2199m



2199-2204m



2204-2209m



2209-2214m



2214-2219m





2219-2222m

2222-2227m

2227-2232m

2232-2237m

2237-2242m



2242-2247m

2247-2249m

2249-2254m

2254-2259m

2259-2264m



2264-2269m

2269-2274m

2274-2275m

2276-2281m

2281-2288m



2286-2291m

2291-2296m

2298-2300m

2300-2305m

2305-2310m



2310-2315m

2315-2320m

2320-2325m

2325-2326m

2325-2330m



2330-2335m

2335-2340m

2340-2345m

2345-2350m

2350-2353m





2353-2358m

2358-2363m

2363-2368m

2368-2373m

2373-2378m



2378-2380m



2380-2385m



2385-2390m



2390-2395m



2395-2400m



2400-2405m



2405-2408m

Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
990.0	[m]	DC	SAGA
1010.0	[m]	DC	SAGA
1020.0	[m]	DC	SAGA
1040.0	[m]	DC	SAGA
1050.0	[m]	DC	SAGA
1070.0	[m]	DC	SAGA
1080.0	[m]	DC	SAGA
1100.0	[m]	DC	SAGA
1110.0	[m]	DC	SAGA
1130.0	[m]	DC	SAGA
1140.0	[m]	DC	SAGA
1160.0	[m]	DC	SAGA
1170.0	[m]	DC	SAGA
1190.0	[m]	DC	SAGA
1200.0	[m]	DC	SAGA
1220.0	[m]	DC	SAGA
1230.0	[m]	DC	SAGA
1250.0	[m]	DC	SAGA
1260.0	[m]	DC	SAGA
1280.0	[m]	DC	SAGA
1290.0	[m]	DC	SAGA



1310.0	[m]	DC	SAGA
1320.0	[m]	DC	SAGA
1340.0	[m]	DC	SAGA
1350.0	[m]	DC	SAGA
1370.0	[m]	DC	SAGA
1380.0	[m]	DC	SAGA
1400.0	[m]	DC	SAGA
1410.0	[m]	DC	SAGA
1430.0	[m]	DC	SAGA
1440.0	[m]	DC	SAGA
1460.0	[m]	DC	SAGA
1490.0	[m]	DC	SAGA
1500.0	[m]	DC	SAGA
1520.0	[m]	DC	SAGA
1530.0	[m]	DC	SAGA
1550.0	[m]	DC	SAGA
1560.0	[m]	DC	SAGA
1580.0	[m]	DC	SAGA
1590.0	[m]	DC	SAGA
1600.0	[m]	DC	SAGA
1608.0	[m]	SWC	SAGA
1630.0	[m]	DC	SAGA
1641.0	[m]	SWC	SAGA
1662.0	[m]	SWC	SAGA
1674.0	[m]	SWC	SAGA
1692.0	[m]	SWC	SAGA
1697.0	[m]	SWC	SAGA
1720.0	[m]	DC	SAGA
1732.0	[m]	SWC	SAGA
1750.0	[m]	DC	SAGA
1760.0	[m]	DC	SAGA
1790.0	[m]	DC	SAGA
1800.0	[m]	DC	SAGA
1822.0	[m]	SWC	SAGA
1830.0	[m]	DC	SAGA
1850.0	[m]	DC	SAGA
1861.0	[m]	SWC	SAGA
1865.0	[m]	DC	SAGA
1871.0	[m]	SWC	SAGA
1880.0	[m]	DC	SAGA



1895.0	[m]	DC	SAGA
1903.0	[m]	SWC	SAGA
1915.0	[m]	DC	SAGA
1920.0	[m]	DC	SAGA
1935.0	[m]	DC	SAGA
1952.0	[m]	SWC	SAGA
1965.0	[m]	DC	SAGA
1980.0	[m]	DC	SAGA
1985.0	[m]	DC	SAGA
1995.0	[m]	DC	SAGA
2010.0	[m]	DC	SAGA
2025.0	[m]	DC	SAGA
2036.0	[m]	SWC	SAGA
2055.0	[m]	DC	SAGA
2070.0	[m]	DC	SAGA
2083.0	[m]	SWC	SAGA
2100.0	[m]	DC	SAGA
2115.0	[m]	DC	SAGA
2127.0	[m]	SWC	SAGA
2130.0	[m]	DC	SAGA
2133.0	[m]	DC	SAGA
2145.0	[m]	DC	SAGA
2161.0	[m]	DC	SAGA
2180.0	[m]	SWC	SAGA
2186.0	[m]	SWC	SAGA
2189.0	[m]	SWC	SAGA
2194.0	[m]	C	SAGA
2213.5	[m]	C	SAGA
2229.0	[m]	C	SAGA
2233.0	[m]	C	SAGA
2251.0	[m]	C	SAGA
2257.5	[m]	C	SAGA
2265.0	[m]	C	SAGA
2269.0	[m]	C	SAGA
2277.5	[m]	C	SAGA
2289.0	[m]	C	SAGA
2289.6	[m]	C	SAGA
2308.5	[m]	C	SAGA
2325.5	[m]	C	SAGA
2346.0	[m]	C	SAGA



2360.0	[m]	C	SAGA
2380.5	[m]	C	SAGA
2395.0	[m]	C	SAGA
2408.0	[m]	C	SAGA
2410.0	[m]	SWC	SAGA
2424.0	[m]	DC	SAGA
2436.0	[m]	DC	SAGA
2451.0	[m]	DC	SAGA
2466.0	[m]	DC	SAGA
2481.0	[m]	DC	SAGA
2496.0	[m]	DC	SAGA
2511.0	[m]	DC	SAGA
2526.0	[m]	DC	SAGA
2541.0	[m]	DC	SAGA
2556.0	[m]	DC	SAGA
2580.0	[m]	SWC	SAGA
2586.0	[m]	DC	SAGA
2601.0	[m]	DC	SAGA
2616.0	[m]	DC	SAGA
2631.0	[m]	DC	SAGA
2652.0	[m]	DC	SAGA

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	2207.30	2216.30	OIL	19.11.1989 - 10:00	YES
DST	DST2	2179.70	2185.70	OIL	25.11.1989 - 05:30	YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
173	NORDLAND GP
962	UTSIRA FM
996	HORDALAND GP
1267	NO FORMAL NAME
1314	NO FORMAL NAME



1350	NO FORMAL NAME
1412	NO FORMAL NAME
1456	NO FORMAL NAME
1653	ROGALAND GP
1653	BALDER FM
1705	LISTA FM
1836	SHETLAND GP
1836	JORSALFARE FM
2007	KYRRE FM
2173	CROMER KNOLL GP
2173	RØDBY FM
2178	MIME FM
2182	VIKING GP
2182	HEATHER FM
2189	BRENT GP
2189	TARBERT FM
2227	NESS FM
2305	ETIVE FM
2343	RANNOCH FM
2413	DUNLIN GP
2413	DRAKE FM
2543	COOK FM
2629	BURTON FM

Composite logs

Document name	Document format	Document size [MB]
1278	pdf	0.33

Geochemical information

Document name	Document format	Document size [MB]
1278_1	pdf	1.87
1278_2	pdf	0.34

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





Document name	Document format	Document size [MB]
1278_01_WDSS_General_Information	pdf	0.27
1278_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]
1278_34_7_14_COMPLETION_REPORT_AND_LOG	pdf	18.67

Drill stem tests (DST)

Test number	From depth MD [m]	To depth MD [m]	Choke size [mm]
1.0	2232	2241	12.7
2.0	2204	2210	14.3

Test number	Final shut-in pressure [MPa]	Final flow pressure [MPa]	Bottom hole pressure [MPa]	Downhole temperature [°C]
1.0	15.400		32.500	84
2.0	15.700		33.000	83

Test number	Oil [Sm3/day]	Gas [Sm3/day]	Oil density [g/cm3]	Gas grav. rel.air	GOR [m3/m3]
1.0	960		0.716		
2.0	1120		0.712		

Logs

Log type	Log top depth [m]	Log bottom depth [m]
AC WAVETRAIN	1982	2650
CBL VDL GR	1555	1985
CBL VDL GR	1988	2651
CDL CN GR	1982	2650
CDL CN SL	2156	2377
COREGUN	0	0





COREGUN	0	0
DIFL ACL CDL GR	490	1572
DIFL ACL CDL GR	1555	2002
DIFL ACL GR	1982	2650
DIPLOG	1982	2650
DIPLOG GR	1555	1999
DLL MLL GR	2135	2377
FMT	2191	2365
MWD - GR RES DIR	173	2651
VSP	500	2600

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	234.0	36	238.0	0.00	LOT
INTERM.	20	491.0	26	495.0	1.49	LOT
INTERM.	13 3/8	1559.0	17 1/2	1610.0	1.79	LOT
INTERM.	9 5/8	1988.0	12 1/4	2010.0	1.80	LOT
LINER	7	2653.0	8 1/2	2653.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
306	1.20			WATER BASED	29.09.1989
355	1.20			WATER BASED	03.10.1989
355	1.20			WATER BASED	03.10.1989
355	1.20			WATER BASED	03.10.1989
491	1.20	13.0	15.0	WATER BASED	30.11.1989
491	1.20	13.0	4.0	WATER BASED	04.12.1989
523	1.10	14.0	12.0	WATER BASED	10.10.1989
530	1.20			WATER BASED	05.10.1989
530	1.05			WATER BASED	09.10.1989
530	1.05			WATER BASED	06.10.1989
1201	1.18	20.0	11.0	WATER BASED	10.10.1989
1575	1.30	16.0	12.0	WATER BASED	11.10.1989
1575	1.30	18.0	9.0	WATER BASED	16.10.1989
1610	1.40	18.0	12.0	WATER BASED	16.10.1989



1751	1.40	17.0	12.0	WATER BASED	16.10.1989
1950	1.63	27.0	10.0	WATER BASED	16.10.1989
1959	1.63	26.0	11.0	WATER BASED	18.10.1989
2010	1.68	31.0	10.0	WATER BASED	31.10.1989
2010	1.60	26.0	14.0	WATER BASED	27.10.1989
2032	1.68	30.0	13.0	WATER BASED	31.10.1989
2065	1.62	26.0	12.0	WATER BASED	19.10.1989
2125	1.68	32.0	15.0	WATER BASED	31.10.1989
2189	1.68	29.0	10.0	WATER BASED	02.11.1989
2189	1.68	30.0	15.0	WATER BASED	02.11.1989
2191	1.65	27.0	14.0	WATER BASED	14.11.1989
2191	1.65	26.0	13.0	WATER BASED	15.11.1989
2191	1.65	27.0	10.0	WATER BASED	16.11.1989
2191	1.65	26.0	11.0	WATER BASED	17.11.1989
2191	1.65	23.0	13.0	WATER BASED	20.11.1989
2191	1.65	24.0	13.0	WATER BASED	20.11.1989
2191	1.65	24.0	13.0	WATER BASED	20.11.1989
2191	1.65	28.0	24.0	WATER BASED	21.11.1989
2191	1.65	25.0	14.0	WATER BASED	23.11.1989
2191	1.65	23.0	14.0	WATER BASED	24.11.1989
2191	1.65	23.0	14.0	WATER BASED	27.11.1989
2191	1.65	24.0	13.0	WATER BASED	27.11.1989
2191	1.65	20.0	12.0	WATER BASED	28.11.1989
2191	1.65	22.0	11.0	WATER BASED	29.11.1989
2191	1.65	23.0	14.0	WATER BASED	27.11.1989
2191	1.65	22.0	14.0	WATER BASED	27.11.1989
2380	1.68	33.0	12.0	WATER BASED	08.11.1989
2380	1.68	33.0	10.0	WATER BASED	08.11.1989
2381	1.68	36.0	18.0	WATER BASED	08.11.1989
2408	1.68	27.0	11.0	WATER BASED	08.11.1989
2490	1.65	28.0	15.0	WATER BASED	08.11.1989
2620	1.65	27.0	16.0	WATER BASED	09.11.1989
2653	1.68	32.0	12.0	WATER BASED	10.11.1989
2653	1.65	24.0	12.0	WATER BASED	13.11.1989
2653	1.65	25.0	12.0	WATER BASED	13.11.1989
2653	1.65	27.0	10.0	WATER BASED	13.11.1989

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]
1278 Formation pressure (Formasjonstrykk)	pdf	0.22

