General information

Wellbore name	34/10-14
Type	EXPLORATION
Purpose	APPRAISAL
Status	P&A
Factmaps in new window	link to map
Main area	NORTH SEA
Field	GULLFAKS
Discovery	34/10-1 Gullfaks
Well name	34/10-14
Seismic location	3D - 136 SP 285
Production licence	050
Drilling operator	Den norske stats oljeselskap a.s
Drill permit	312-L
Drilling facility	ROSS RIG (1)
Drilling days	86
Entered date	24.12.1981
Completed date	19.03.1982
Release date	19.03.1984
Publication date	09.12.2014
Purpose - planned	APPRAISAL
Reentry	NO
Content	OIL
Discovery wellbore	NO
1st level with HC, age	MIDDLE JURASSIC
1st level with HC, formation	BRENT GP
Kelly bushing elevation [m]	25.0
Water depth [m]	227.0
Total depth (MD) [m RKB]	2647.0
Bottom hole temperature [°C]	98
Oldest penetrated age	LATE TRIASSIC
Oldest penetrated formation	HEGRE GP
Geodetic datum	ED50
NS degrees	61° 14' 0.5'' N
EW degrees	2° 15' 18.87'' E
NS UTM [m]	6789182.27
EW UTM [m]	460013.70
UTM zone	31
NPDID wellbore	95

Wellbore history

General

Well 34/10-14 was drilled on a horst block in the north-eastern part of the Gullfaks field. The objectives of the well were to prove the structural position of the middle- and early Jurassic sandstones and to establish the oil-water contact in the Brent Group in this part of the field.

Operations and results

Appraisal well 34/10-14 was spudded with the semi-submersible installation Ross Rig on 24 December 1981 and drilled to TD at 2647 m in the Triassic Hegre Group. Significant downtime (17% of total rig time) was caused by the combined effect of bad weather and the need to pull the BOP three times to detect leaks. The well was drilled with gel/lignosulphonate/seawater mud all through.

Weak shows on limestone and claystone cuttings were recorded intermittently from 1506 m in the Hordaland down to top Shetland Group at 1729 m. Sandstones of the Ness Formation were oil-bearing from 1908 m to the oil-water contact, indicated by pressure measurements and logs to be at 1972 m. This corresponds to the OWC found in the wells 34/10-3, 5 and 8. Shows on cores continued down to 2002 m.

Ten cores were recovered, nine in the interval from 1889 to 2047m KB and one core from 2210 to 2228 KB. RFT fluid sampling was performed at 1917.5 m and 1961.5 m but the fluids recovered were not representative for the reservoir fluid.

The well was permanently abandoned on 19 March 1982 as an oil appraisal well.

Testing

One drill stem test was performed in the interval 1933.5 m to 1937.5 m in the Ness Formation. The test produced 713 Sm3 oil/day through a 34/64” choke. The GOR was 67 Sm3/Sm3, separator oil gravity was 29.4 °API, and gas gravity was 0.67 (air = 1). The maximum temperature at gauge depth was 75 °C.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
310.00	2643.00

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	1889.0	1895.9	[m]
2	1907.8	1921.9	[m]

3	1925.0	1932.7	[m]
4	1939.5	1949.4	[m]
5	1957.0	1972.5	[m]
6	1972.5	1990.4	[m]
7	1991.0	2009.4	[m]
8	2010.0	2028.0	[m]
9	2028.0	2047.0	[m]
10	2210.0	2224.5	[m]

Total core sample length [m]	141.9
Cores available for sampling?	YES

Core photos


1889-1893m


1893-1895m


1907-1912m


1912-1916m


1916-1921m


1921-1922m


1925-1929m


1929-1932m


1939-1944m


1944-1948m


1948-1949m


1957-1961m


1961-1966m


1966-1970m


1970-1972m


1972-1977m


1977-1981m


1981-1986m


1986-1990m


1990-1995m


1995-2000m


2000-2004m


2004-2009m


2009-2010m


2010-2014m


2014-2019m


2019-2023m


2023-2028m


2028-2032m


2032-2037m


2037-2041m


2041-2046m


2046-2047m


2210-2214m


2214-2219m


2219-2223m


2223-2224m

Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
1465.0	[m]	DC	GEOCH
1490.0	[m]	DC	GEOCH
1505.0	[m]	DC	GEOCH
1545.0	[m]	DC	GEOCH
1615.0	[m]	DC	GEOCH
1645.0	[m]	DC	GEOCH
1655.0	[m]	DC	GEOCH
1705.0	[m]	DC	CGG

1725.0	[m]	DC	GEOCH
2156.0	[m]	SWC	RRI
2165.0	[m]	SWC	RRI
2190.0	[m]	SWC	RRI
2202.0	[m]	SWC	RRI
2209.0	[m]	SWC	RRI
2229.4	[m]	SWC	RRI
2241.0	[m]	SWC	RRI
2255.0	[m]	SWC	RRI
2269.0	[m]	SWC	RRI

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
252	NORDLAND GP
926	UTSIRA FM
953	HORDALAND GP
1554	ROGALAND GP
1554	BALDER FM
1621	LISTA FM
1729	SHETLAND GP
1908	BRENT GP
1908	NESS FM
1976	ETIVE FM
2003	RANNOCH FM
2069	BROOM FM
2080	DUNLIN GP
2080	DRAKE FM
2159	COOK FM
2203	AMUNDSEN FM
2372	STATFJORD GP
2596	HEGRE GP

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

Document name	Document format	Document size [MB]
95_01_WDSS_General_Information	pdf	0.18
95_02_WDSS_completion_log	pdf	0.21

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

Document name	Document format	Document size [MB]
95_34_10_14_Biostratigraphy	pdf	2.28
95_34_10_14_Compppletion_Report	pdf	21.54
95_34_10_14_Geco_Core_1-10	pdf	1.70
95_34_10_14_PVT_analysis	pdf	0.19
95_34_10_14_Residuell_Oljemetning_i_oljesonen	pdf	0.94
95_34_10_14_Surface_Pressures	pdf	0.61
95_34_10_14_TBP_Destillation_of_oil_DST1	pdf	0.23
95_34_10_14_Well_Test_Report	pdf	1.91

Drill stem tests (DST)

Test number	From depth MD [m]	To depth MD [m]	Choke size [mm]
1.0	1934	1937	12.7

Test number	Final shut-in pressure [MPa]	Final flow pressure [MPa]	Bottom hole pressure [MPa]	Downhole temperature [°C]
1.0				

Test number	Oil [Sm3/day]	Gas [Sm3/day]	Oil density [g/cm3]	Gas grav. rel.air	GOR [m3/m3]
1.0	850	81000	0.820	0.650	95

Logs

Log type	Log top depth [m]	Log bottom depth [m]
C H CNL GR	1896	2000
CBL VDL GR	780	2292
CYBERDIP	1796	2645
DIR	1796	2649
DLL MSFL GR	1796	2116
FDC CNL GR	785	2644

HDT	1796	2645
ISF SON MAFL GR	242	2643
TDT GR	1900	2050
VDL LSS	1900	2150

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	313.0	36	314.0	0.00	LOT
SURF.COND.	20	785.0	26	800.0	1.80	LOT
INTERM.	13 3/8	1554.0	17 1/2	1568.0	1.85	LOT
INTERM.	9 5/8	1799.0	12 1/4	1810.0	1.93	LOT
LINER	7	2297.0	8 1/2	2300.0	2.38	LOT
OPEN HOLE		2647.0	6	2647.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
365	1.07			waterbased	
830	1.15			waterbased	
1340	1.30			waterbased	
1570	1.50			waterbased	
1810	1.72			waterbased	
1930	1.80			waterbased	
2320	1.64			waterbased	

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]
95_Formation_pressure_(Formasjonstrykk)	pdf	0.22