

**General information**

Wellbore name	34/7-16 R
Type	EXPLORATION
Purpose	APPRAISAL
Status	SUSPENDED
Factmaps in new window	link to map
Main area	NORTH SEA
Field	VIGDIS
Discovery	34/7-8 Vigdis
Well name	34/7-16
Seismic location	G/E 83 (RP) RAD 253& KOL 933.
Production licence	089
Drilling operator	Saga Petroleum ASA
Drill permit	640-L2
Drilling facility	TREASURE SAGA
Drilling days	42
Entered date	04.09.1990
Completed date	15.10.1990
Release date	15.10.1992
Publication date	28.02.2008
Purpose - planned	WILDCAT
Reentry	YES
Reentry activity	DRILLING
Content	OIL
Discovery wellbore	NO
1st level with HC, age	MIDDLE JURASSIC
1st level with HC, formation	ETIVE FM
2nd level with HC, age	MIDDLE JURASSIC
2nd level with HC, formation	RANNOCH FM
Kelly bushing elevation [m]	26.0
Water depth [m]	286.0
Total depth (MD) [m RKB]	2980.0
Final vertical depth (TVD) [m RKB]	2978.0
Maximum inclination [°]	5.3
Bottom hole temperature [°C]	106
Oldest penetrated age	LATE TRIASSIC
Oldest penetrated formation	LUNDE FM
Geodetic datum	ED50
NS degrees	61° 23' 13.06" N



EW degrees	2° 6' 59.12" E
NS UTM [m]	6806371.84
EW UTM [m]	452792.04
UTM zone	31
NPDID wellbore	1677

Wellbore history



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General

Well 34/7-16 R is a re-entry of well 34/7-16, which was suspended due to time schedule for the rig. The well is located between the Statfjord and Snorre Fields on Tampen Spur in the Northern North Sea. The purpose of the re-entry was to test the hydrocarbon-bearing Brent Group reservoir and also to drill through and test the Statfjord Formation.

Operations and results

Well 34/7-16 was re-entered (34/7-16 R) on 4 September 1990 by the semi-submersible rig Treasure Saga and drilled through the Statfjord formation to TD at 2980 m, 35 m into the Late Triassic Lunde Formation. The well was drilled with KCl mud.

Both the Statfjord formation and the Lunde Formation proved to be water bearing. The Statfjord Formation (2821 - 2945 m) had an estimated average log porosity of 21.7% and a net to gross ratio of 0.56.

The well suspended on 15 October 1990 as an oil appraisal.

Testing

Three DST tests were performed in well 34/7-16 R.

DST 1 tested the interval 2821 - 2837 m in the Statfjord Formation. The test was mainly designed to get representative samples of Statfjord Formation water. The initial pressure and temperature at the top perforation was 406 bar and 102 deg C. Clean water with very little gas was produced. The gas gravity was 0.64 (air = 1). It was not possible to maintain stable flowing conditions due to plugging at the choke manifold, but a flow-rate of 1450 m3/day at a wellhead pressure of 105 bar was measured at the end of the 12 hrs flow period.

DST 2 tested a four metres zone from 2454 - 2458 m in the Rannoch Formation. The main objective was to evaluate the lateral extension of the two calcite cemented layers (2451 - 2453 and 2459 - 2461 m). The initial pressure and temperature at the top perforation was 366 bar and 90 deg C. Oil with a GOR of 55 Sm3/Sm3 was produced. The gas gravity was 0.75 (air = 1) and the CO2 content was 0.27%. After a clean-up period, the well was flowed for 26 hours followed by a 25 hours build-up. At the end of the flow, the measured flow rate was 950 Sm3/day through an 11.1 mm choke at a wellhead pressure of 132 bar.

DST 3 tested the interval 2401 - 2414 m in the Etive Formation in order to investigate reservoir heterogeneities. The initial pressure and temperature at the top perforation was 362 bar and 89 deg C. Oil with a GOR of 47 Sm3/Sm3 was produced. The gas gravity was 0.71 (air = 1) and the CO2 content was 0.28%. After a clean-up period, the well was flowed for 25 hours followed by a 24 hours build-up period. At the end of the flow, the measured flow rate was 1310 Sm3/day through a 12.7 mm choke at a wellhead pressure of 159 bar.

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	DST2	2454.00	2458.00	OIL	30.09.1990 - 09:25	YES

**Lithostratigraphy**

Top depth [mMD RKB]	Lithostrat. unit
312	NORDLAND GP
1066	UTSIRA FM
1083	HORDALAND GP
1272	NO FORMAL NAME
1308	NO FORMAL NAME
1514	NO FORMAL NAME
1561	NO FORMAL NAME
1679	ROGALAND GP
1679	BALDER FM
1735	LISTA FM
1862	SHETLAND GP
1862	JORSALFARE FM
2151	KYRRE FM
2380	CROMER KNOLL GP
2380	RØDBY FM
2387	MIME FM
2391	BRENT GP
2391	ETIVE FM
2435	RANNOCH FM
2515	DUNLIN GP
2515	DRAKE FM
2604	COOK FM
2661	BURTON FM
2686	AMUNDSEN FM
2821	STATFJORD GP
2945	HEGRE GP
2945	LUNDE FM

Geochemical information

Document name	Document format	Document size [MB]
1677_1	pdf	0.29
1677_2	pdf	5.75



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

Document name	Document format	Document size [MB]
1677 34 7 16 R COMPLETION REPORT AND LOG	pdf	13.67

Drill stem tests (DST)

Test number	From depth MD [m]	To depth MD [m]	Choke size [mm]
1.0	2454	2458	111.0
2.0	2401	2414	12.7
3.0	2821	2837	0.0

Test number	Final shut-in pressure [MPa]	Final flow pressure [MPa]	Bottom hole pressure [MPa]	Downhole temperature [°C]
1.0	13.200		36.600	90
2.0	15.900		36.200	89
3.0				102

Test number	Oil [Sm3/day]	Gas [Sm3/day]	Oil density [g/cm3]	Gas grav. rel.air	GOR [m3/m3]
1.0	950	52250	0.860	0.710	55
2.0	1310	62040	0.860	0.710	47
3.0					

Logs

Log type	Log top depth [m]	Log bottom depth [m]
CBL VDL GR	1900	2684
CDL CNL GR	2684	2977
DIFL ACL GR	2684	2977
DIPLOG	2686	2978
FMT	2832	2943
MWD - GR RES DIR TEMP	2701	2980
VELOCITY	850	3000



**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
LINER	7	2976.0	8 1/2	2980.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
362	1.55	21.0	9.0	WATER BASED	07.09.1990
2400	1.68	16.0	22.0	DUMMY	30.06.1994
2400	1.68	17.0	22.0	DUMMY	01.07.1994
2400	1.45	20.0	13.0	DUMMY	04.07.1994
2400	1.68	27.0	23.0	DUMMY	04.07.1994
2400	1.53	17.0	17.0	DUMMY	04.07.1994
2686	1.65	37.0	14.0	WATER BASED	14.09.1990
2686	1.65	34.0	13.0	WATER BASED	18.09.1990
2686	1.65	28.0	15.0	WATER BASED	08.10.1990
2686	1.67	29.0	15.0	WATER BASED	15.10.1990
2686	1.65	39.0	18.0	WATER BASED	18.09.1990
2686	1.65	39.0	20.0	WATER BASED	18.09.1990
2686	1.65	36.0	17.0	WATER BASED	21.09.1990
2686	1.65	39.0	18.0	WATER BASED	21.09.1990
2686	1.65	39.0	20.0	WATER BASED	21.09.1990
2686	1.65	34.0	12.0	WATER BASED	25.09.1990
2686	1.65	33.0	13.0	WATER BASED	25.09.1990
2686	1.65	42.0	22.0	WATER BASED	25.09.1990
2686	1.65	33.0	18.0	WATER BASED	25.09.1990
2686	1.65	33.0	18.0	WATER BASED	26.09.1990
2686	1.65	36.0	21.0	WATER BASED	28.09.1990
2686	1.65	36.0	19.0	WATER BASED	02.10.1990
2686	1.65	36.0	21.0	WATER BASED	02.10.1990
2686	1.65	36.0	21.0	WATER BASED	02.10.1990
2686	1.65	36.0	17.0	WATER BASED	03.10.1990
2686	1.65	29.0	14.0	WATER BASED	05.10.1990
2686	1.65	28.0	16.0	WATER BASED	05.10.1990
2686	1.65	29.0	14.0	WATER BASED	08.10.1990
2686	1.65	28.0	15.0	WATER BASED	08.10.1990



2686	1.65	28.0	14.0	WATER BASED	10.10.1990
2686	1.65	28.0	14.0	WATER BASED	11.10.1990
2686	1.65	28.0	14.0	WATER BASED	11.10.1990
2686	1.67			WATER BASED	16.10.1990
2686	1.67			WATER BASED	16.10.1990
2686	1.65	26.0	20.0	WATER BASED	16.10.1990
2885	1.65	54.0	14.0	WATER BASED	14.09.1990
2885	1.65	54.0	14.0	WATER BASED	13.09.1990

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]
1677 Formation pressure (Formasjonstrykk)	pdf	0.22

