

**General information**

Wellbore name	30/6-17 R
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Factmaps in new window	link to map
Main area	NORTH SEA
Field	OSEBERG
Discovery	30/6-17 R
Well name	30/6-17
Seismic location	NH 82 - 214 cell point 424
Production licence	053
Drilling operator	Norsk Hydro Produksjon AS
Drill permit	478-L2
Drilling facility	TREASURE HUNTER
Drilling days	83
Entered date	14.11.1985
Completed date	04.02.1986
Release date	04.02.1988
Publication date	01.01.2012
Purpose - planned	WILDCAT
Reentry	YES
Reentry activity	DRILLING
Content	OIL/GAS
Discovery wellbore	YES
1st level with HC, age	EARLY JURASSIC
1st level with HC, formation	COOK FM
Kelly bushing elevation [m]	25.0
Water depth [m]	110.0
Total depth (MD) [m RKB]	2650.0
Final vertical depth (TVD) [m RKB]	2650.0
Maximum inclination [°]	2.75
Bottom hole temperature [°C]	104
Oldest penetrated age	EARLY JURASSIC
Oldest penetrated formation	STATFJORD GP
Geodetic datum	ED50
NS degrees	60° 34' 15.77" N
EW degrees	2° 44' 59.84" E
NS UTM [m]	6715194.48



EW UTM [m]	486293.49
UTM zone	31
NPDID wellbore	849

Wellbore history

General

Well 30/6-17 was drilled on the Alpha structure on the western side of the Oseberg Field in the northern North Sea. The structure is a tilted and rotated fault block with a Jurassic sequence dipping towards the east. The main objective was to prove hydrocarbons in the Statfjord Formation. Prognosed depth was 200 m into the Statfjord Formation with TD at ca 2682 m. Well 30/6-17 was drilled by Vildkat Explorer to a depth of 615 m where it was temporary abandoned due to technical problems. The re-entry 30/6-17 R was made to fulfil the original objectives.

Operations and results

Wildcat well 30/6-17 was re-entered with the semi-submersible installation Treasure Hunter on 14 August 1985 and drilled to TD at 2650 m in the Early Jurassic Statfjord Formation. The well was drilled without significant technical problems, but about one third of the time was counted as downtime. The main contribution to the excessive downtime was waiting on weather. The well was drilled with KCl/polymer mud from 615 m to 2409 m and with NaCl/polymer mud from 2409 m to TD.

Oil shows were recorded on limestone and dolomite stringers in the Tertiary and Late Cretaceous, beginning at 1650 m and all the way down to near BCU at 2290 m. These oil shows were most frequent, and strongest, in the interval 1750 to 1810 m in the lower part of the Tertiary Hordaland Group. Two gas bearing sandstones units, possibly reworked Brent Group, were found at the BCU (2296 - 2300 m and 2303 - 2308 m).

The prognosed target for the 30/6-17 well was the Statfjord Formation. The well was, however, drilled ca 600 m east of the proposed location at a structurally down flank position. At this position also the Cook Formation was penetrated.

The Cook Formation (2401.5 - 2441 m) consists of medium to fine grained sand sandstones in the upper part, becoming fine to very fine with depth. The sandstones were found oil bearing down to 2419.5 m (free water level from RFT). No gas/oil contact was seen in the well, but the presence of a gas cap was indicated in the DST. The net pay is calculated from logs to 15.9 m, with an average porosity of 26.4% and average water saturation of 40.1%. Cut off criteria were: PHI < 12%, Vsh > 40%, Sw > 60%. The Statfjord Formation (2563 m - TD) was encountered water bearing. Of a gross thickness of 73 m (log) penetrated by the well, 57.6 m was net sand with an average porosity of 24.3%. The RFT results indicate no pressure communication between the Statfjord and the Cook Formations.

A total of six cores were cut. Core 1 at 2324 - 2342.15 m was an attempt to cut a core from the gas bearing sands at BCU, but did not really capture the sands. Cores 2 - 4 were cut in the Cook Formation, while cores 5 and 6 were cut in the Statfjord Formation. There is a discrepancy between loggers and drillers depth of 2 m for cores no 1 - 4, and 4 m for cores no 5 and 6, the logger's depth being the shallower. SFT/RFT pressure tests and sampling were performed in the Cretaceous and Jurassic. In the Cretaceous interval sixteen SFT good pressure tests were taken. A segregated SFT fluid sample was unsuccessfully attempted taken at 2297.9 m in one of the gas sands. RFT was used for pressure recordings and sampling in the Cook and Statfjord Formations. Twenty one pressure measurements were recorded, and one segregated sample was taken in the Cook Formation at 2408.5 m (5.82 litre oil with some gas and water/filtrate in 1st.



chamber).

4 February the well bore was plugged back to the 13 3/8" casing shoe for an up-dip sidetrack to the original target Statfjord Formation. The well is classified as an oil and gas discovery.

Testing

One DST was performed in the Cook Formation at 2401.7 - 2414.7 m. Seven flow periods with different chokes and rates were tested. In the second flow period the well produced oil at a rate of 701.1 Sm³/d and gas at a rate of 110 000 Sm³/d Through a 14.29 mm choke. The gas/oil ratio was 156.9 Sm³/Sm³. The oil gravity was measured to 0.824 g/cc (40.1 API) and gas gravity was 0.662 (air = 1). The GOR varied from 130 to 274 Sm³/Sm³. When the well was produced at higher rates the GOR increased substantially. This indicated the presence of a gas cap, and that the well penetrated the reservoir just below the gas/oil contact. In the three final flows the measured bottom hole temperature stabilised at 97.8 deg C, independent of very variable flow rate and GOR.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
240.00	2650.00

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	2324.0	2342.2	[m]
2	2411.0	2417.0	[m]
3	2423.0	2443.9	[m]
4	2444.0	2445.4	[m]
5	2570.0	2588.3	[m]
6	2588.3	2612.6	[m]

Total core sample length [m]	88.9
Cores available for sampling?	YES

Core photos



2324-2329m



2329-2334m



2334-2339m



2339-2342m



2411-2417m



2417-2423m



2423-2429m



2429-2435m



2435-2441m



2441-2443m



2444-2445m



2570-2576m



2576-2582m



2582-2588m



2588-2588m



2488-2594m



2594-2600m



2600-2606m



2606-2612m



2612-2613m

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	2401.00	2414.00		28.10.1986 - 00:00	YES

Lithostratigraphy



Top depth [mMD RKB]	Lithostrat. unit
135	NORDLAND GP
652	UTSIRA FM
876	NO FORMAL NAME
890	HORDALAND GP
942	NO FORMAL NAME
960	NO FORMAL NAME
1280	NO FORMAL NAME
1301	NO FORMAL NAME
1405	NO FORMAL NAME
1463	NO FORMAL NAME
1915	ROGALAND GP
1915	BALDER FM
1993	SELE FM
2057	LISTA FM
2168	VÅLE FM
2181	SHETLAND GP
2181	JORSALFARE FM
2296	UNDEFINED GP
2309	DUNLIN GP
2309	DRAKE FM
2402	COOK FM
2441	AMUNDSEN FM
2563	STATFJORD GP

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

Document name	Document format	Document size [MB]
849_01_WDSS_General_Information	pdf	0.24
849_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]
849_30_6_17_R_Completion_log	pdf	3.65
849_30_7_17_R_Completion_report	pdf	18.67





Drill stem tests (DST)

Test number	From depth MD [m]	To depth MD [m]	Choke size [mm]
1.0	2401	2415	14.3

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	701	110000	0.820	0.660	157

Logs

Log type	Log top depth [m]	Log bottom depth [m]
CBL VDL	492	2544
CDL CNL CAL GR	601	2643
DIL LSS GR SP	560	2643
DLL MSFL	2147	2642
FED	1899	2638
GR	2084	2405
ISF LSS GR	221	609
RFT	2405	2628
SFT	2172	2307
SGR	2378	2644
X-Y CAL	601	2638

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.	20	601.0	26	615.0	0.00	LOT
INTERM.	13 3/8	1593.0	17 1/2	1621.0	1.74	LOT
INTERM.	9 5/8	2386.0	12 1/4	2406.0	0.00	LOT
LINER	7	2638.0	8 1/2	2650.0	1.70	LOT

**Drilling mud**

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
2397	1.50	33.0		water based	
2399	1.50	30.0		water based	
2421	1.32	18.0		water based	
2554	1.32			water based	
2554	1.32	15.0		water based	
2613	1.32	17.0		water based	
2650	1.32	17.0		water based	

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]
849 Formation pressure (Formasjonstrykk)	PDF	0.21

