

**General information**

Wellbore name	30/9-6
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Factmaps in new window	link to map
Main area	NORTH SEA
Field	OSEBERG SØR
Discovery	30/9-6 Oseberg Sør
Well name	30/9-6
Seismic location	NH 8502 320 KOL1080
Production licence	104
Drilling operator	Norsk Hydro Produksjon AS
Drill permit	539-L
Drilling facility	POLAR PIONEER
Drilling days	44
Entered date	08.03.1987
Completed date	21.04.1987
Release date	21.04.1989
Publication date	08.01.2015
Purpose - planned	WILDCAT
Reentry	NO
Content	OIL
Discovery wellbore	YES
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]	23.0
Water depth [m]	103.0
Total depth (MD) [m RKB]	3034.0
Final vertical depth (TVD) [m RKB]	3033.0
Maximum inclination [°]	2.8
Oldest penetrated age	EARLY JURASSIC
Oldest penetrated formation	STATFJORD GP
Geodetic datum	ED50
NS degrees	60° 23' 3.77" N
EW degrees	2° 49' 55.59" E
NS UTM [m]	6694389.17



EW UTM [m]	490743.78
UTM zone	31
NPDID wellbore	1027

Wellbore history

General

Well 30/9-6 was drilled on the C-prospect on the southeast flank of the Oseberg Fault block. The structure is a rotated fault block with overall easterly dips towards the Horda Platform fault. The prospect is further bounded by faults to the west and to the northwest. The primary objective was to prove hydrocarbons in the Brent Group and verify possible pressure communication between the C-structure and the Oseberg Field Alpha structure to the North.

Operations and results

Wildcat well 30/9-6 was spudded with the semi-submersible installation Polar Pioneer on 8 March 1987 and drilled to TD at 3034 m in the Early Jurassic Statfjord Group. Drilling proceeded without significant problems. The well was drilled with spud mud down to 970 m and with KCl/polymer mud from 970 m to TD.

The Brent Group was encountered at 2591 m and had oil in three differently pressured sand bodies, one in the Tarbert Formation and two in the Ness Formation. The lowest seen oil was at 2645 m in the Ness Formation. Four different pressure regimes were found in the Brent group. The Tarbert Formation has 6 m gross with 4.5 m net pay. The average porosity is 19% and the average water saturation is 44%. The Ness Formation has 49 m gross (hydrocarbon-bearing interval) with 13.3 m net pay (combining the two oil bearing sand bodies). The average porosity is 23% and the average water saturation is 39%.

Weak shows were described in limestones in the interval 2318 m to 2358 m in the top of the Shetland Group. Otherwise, no oil shows were described outside of the oil-bearing Brent reservoirs.

Five conventional cores were cut in the Brent Group from 2593.5 - 2686 m. RFT fluid samples were taken at 2619 m in both runs 2A and 2B. Run 2B was performed in order to verify the previous run.

The well was permanently abandoned on 21 April as an oil discovery.

Testing

Two drill stem tests were performed.

DST 1 tested the interval 2637.9 m to 2645.5 m in the lowermost oil bearing section in the Ness Formation. This test produced 185 Sm³ oil and 17175 Sm³ gas /day through a 20/64" choke. The GOR was 92.8 Sm³/Sm³, the oil density was 0.855 G/cm³, and the gas gravity was 0.698 (air = 1) with 1% CO₂ and no detectable H₂S. The bottom hole temperature was 100 °C.

DST2 tested the interval 2591.5 m to 2596.5 m in the Tarbert Formation. This test produced 166 Sm³ oil and 16980 Sm³ gas /day through a 20/64" choke. The GOR was 102 Sm³/Sm³, the oil density was 0.856 g/cm³, and the gas gravity was 0.698 with 1% CO₂ and no detectable H₂S. The bottom hole temperature was 100 °C.



Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
970.00	3032.00

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	2593.5	2603.3	[m]
2	2608.0	2623.5	[m]
3	2628.0	2636.0	[m]
4	2649.0	2665.2	[m]
5	2671.0	2676.8	[m]

Total core sample length [m]	55.2
Cores available for sampling?	YES

Core photos



2593-2597m



2597-2601m



2601-2603m



2604-2608m



2608-2612m



2612-2616m



2616-2620m



2620-2623m



2624-2628m



2628-2632m



2632-2636m



2636-2640m



2640-2644m



2644-2648m



2648-2652m



2632-2636m 2645-2649m 2649-2653m 2653-2657m 2657-2661m



2661-2665m



2665-2670m



2670-2674m



2674-2676m

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	2637.90	2645.50	OIL	08.04.1987 - 00:00	YES
DST	DST2	2591.50	2596.50	OIL	12.04.1987 - 00:00	YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
126	NORDLAND GP
690	UTSIRA FM
828	HORDALAND GP
2020	ROGALAND GP
2020	BALDER FM
2080	SELE FM
2138	LISTA FM
2302	MAUREEN FM
2317	SHETLAND GP
2547	VIKING GP
2547	HEATHER FM
2591	BRENT GP
2591	TARBERT FM
2597	NESS FM
2693	RANNOCH FM
2699	NO FORMAL NAME
2723	DUNLIN GP



2723	DRAKE FM
2835	COOK FM
2845	BURTON FM
2907	AMUNDSEN FM
2981	STATFJORD GP

Geochemical information

Document name	Document format	Document size [MB]
1027_GCH_1	pdf	0.19
1027_GCH_2	pdf	0.24
1027_GCH_3	pdf	1.32
1027_GCH_4	pdf	1.08

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

Document name	Document format	Document size [MB]
1027_01_WDSS_General_Information	pdf	0.38
1027_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]
1027_30_9_6_Completion_log	pdf	5.83
1027_30_9_6_Completion_Report	pdf	10.66

Drill stem tests (DST)

Test number	From depth MD [m]	To depth MD [m]	Choke size [mm]
1.0	2638	2646	7.9
2.0	2592	2597	7.9

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





2.0				
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Test number	Oil [Sm3/day]	Gas [Sm3/day]	Oil density [g/cm3]	Gas grav. rel.air	GOR [m3/m3]
1.0	185	17175	0.855	0.698	93
2.0	166	16980	0.856	0.698	102

Logs

Log type	Log top depth [m]	Log bottom depth [m]
CBL VDL CET	1600	2962
CST	2165	2570
CST	2583	2999
DIL LSS LDT CNL GR SP CAL	950	3028
DLL MSFL NGT	2567	2800
MWD GR SON NEU RES	126	2587
RFT	2591	3002
RFT	2592	2643
RFT	2619	0
RLL GR EWR COND	2565	2655
SHDT	950	3033
VSP	680	2950

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	213.0	36	214.0	0.00	LOT
INTERM.	13 3/8	954.0	17 1/2	970.0	1.71	LOT
INTERM.	9 5/8	2567.0	12 1/4	2587.0	1.81	LOT
LINER	7	3031.0	8 1/2	3034.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
124	0.00			WATER BASED	21.04.1987



131	0.00			WATER BASED	21.04.1987
160	1.03			WATER BASED	09.03.1987
165	0.00			WATER BASED	21.04.1987
214	1.03			WATER BASED	10.03.1987
863	1.03			WATER BASED	11.03.1987
970	1.03			WATER BASED	12.03.1987
970	1.34	27.0	11.0	WATER BASED	13.03.1987
1438	1.34	28.0	12.0	WATER BASED	16.03.1987
1527	1.40	37.0	18.0	WATER BASED	16.03.1987
1888	1.40	31.0	12.0	WATER BASED	16.03.1987
2136	1.40	30.0	12.0	WATER BASED	17.03.1987
2267	1.40	32.0	12.0	WATER BASED	18.03.1987
2350	1.21	25.0	9.0	WATER BASED	21.04.1987
2399	1.40	34.0	13.0	WATER BASED	19.03.1987
2465	1.21	22.0	7.0	WATER BASED	21.04.1987
2472	1.40	32.0	10.0	WATER BASED	20.03.1987
2528	1.40	33.0	9.0	WATER BASED	
2587	1.40	31.0	9.0	WATER BASED	
2587	1.21	17.0	6.0	WATER BASED	24.03.1987
2593	1.21	27.0	10.0	WATER BASED	25.03.1987
2624	1.21	27.0	10.0	WATER BASED	26.03.1987
2634	1.21	26.0	10.0	WATER BASED	13.04.1987
2634	1.21	26.0	9.0	WATER BASED	14.04.1987
2634	1.21	20.0	7.0	WATER BASED	21.04.1987
2651	1.21	26.0	10.0	WATER BASED	30.03.1987
2686	1.21	27.0	10.0	WATER BASED	30.03.1987
2759	1.21	24.0	9.0	WATER BASED	30.03.1987
2858	1.21	24.0	8.0	WATER BASED	30.03.1987
2965	1.21	28.0	11.0	WATER BASED	06.04.1987
2965	1.21	27.0	11.0	WATER BASED	06.04.1987
2965	1.21	27.0	11.0	WATER BASED	07.04.1987
2965	1.21	27.0	11.0	WATER BASED	08.04.1987
2965	1.21	27.0	11.0	WATER BASED	13.04.1987
2965	1.21	25.0	10.0	WATER BASED	13.04.1987
3034	1.21	24.0	10.0	WATER BASED	31.03.1987
3034	1.21	24.0	10.0	WATER BASED	01.04.1987
3034	1.21	24.0	9.0	WATER BASED	02.04.1987
3034	1.21	25.0	9.0	WATER BASED	03.04.1987

**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]
1027 Formation pressure (Formasjonstrykk)	pdf	0.23

