

**General information**

Wellbore name	30/9-2 R
Type	EXPLORATION
Purpose	APPRAISAL
Status	P&A
Factmaps in new window	<a href="#">link to map</a>
Main area	NORTH SEA
Field	<a href="#">OSEBERG</a>
Discovery	<a href="#">30/6-9</a>
Well name	30/9-2
Seismic location	ST 8006 - 117 SP 1505
Production licence	<a href="#">079</a>
Drilling operator	Norsk Hydro Produksjon AS
Drill permit	370-L2
Drilling facility	<a href="#">TREASURE HUNTER</a>
Drilling days	38
Entered date	01.06.1986
Completed date	07.07.1986
Plugged and abondon date	07.07.1986
Release date	07.07.1988
Publication date	28.05.2003
Purpose - planned	WILDCAT
Reentry	YES
Reentry activity	TESTING/PLUGGING
Content	OIL/GAS
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]	105.0
Total depth (MD) [m RKB]	2830.0
Final vertical depth (TVD) [m RKB]	2830.0
Maximum inclination [°]	12
Bottom hole temperature [°C]	107
Oldest penetrated age	EARLY JURASSIC
Oldest penetrated formation	DRAKE FM
Geodetic datum	ED50
NS degrees	60° 27' 53" N
EW degrees	2° 49' 13.03" E

NS UTM [m]	6703339.30
EW UTM [m]	490116.41
UTM zone	31
NPDID wellbore	937

### **Wellbore history**

## General

The wildcat 30/9-2 was planned as the first well on the Gamma structure in block 30/9. Well 30/6-9 had previously penetrated the structure but this well failed to encounter the oil/water contact. The primary objectives of 30/9-2 were to verify the reserve estimate for the main part of the gamma structure and penetrate the oil/water contact in the lower part of the Brent Group. Additional objectives were to obtain core material from the oil zone in the Etive Formation and perform a water injection test in this, obtain information on the quality of the reservoir in the water zone and stratigraphical information on the southern part of the Gamma structure.& The well was temporarily abandoned for about one year and then re-entered for an extended test.

## Operations and results

Wildcat well 30/9-2 was spudded with the semi-submersible installation "Nortrym" on 1 April 1983 and drilled to a total depth of 2830 m in the Early Jurassic Dunlin Group. The well was drilled using water-based mud down to the 12 1/4" hole at 1715 m. The 12 1/4" hole was drilled to TD using oil based mud ("ENVIROMUL" and "IL 2832 oil" as oil base). While running the 13 3/8" casing, this got stuck at 1334 m. The casing was worked free using diesel in the mud and the casing was set at 1680 m. After drilling the 12 1/4" hole to 2203 m the drill pipe got stuck with the bit at 2170 m. Several unsuccessful attempts were made to free the pipe. The drill pipe was then backed off and the well was cemented back and sidetracked from 1482.5 m.

The Brent Group sandstones (2578-2767 m) RKB were hydrocarbon bearing down to 2737m where an oil/water contact was encountered within the Etive Formation sandstones (2698-2767m).& No additional hydrocarbon bearing reservoirs were encountered by this well. Poor hydrocarbon shows reported from Upper Cretaceous limestones were considered uninteresting. The Ness Formation (2578-2698 m) consisted of very fine to coarse-grained sandstones with interbedded shales, coals and occasional siltstones.& The Etive Formation consisted of very fine to predominantly medium grained homogeneous sandstones with pebble beds in the upper part.& The sandstones were locally micaceous and carbonaceous and contained stringers with abundant calcareous cement.& Twelve conventional cores were cut continuously from 2591 m near the top of the Ness Formation and down into the top of the Drake Formation shales at 2777 m. FMT pressure recordings and sampling were performed in the well.& Samples of oil and gas were obtained from the FMT samples at 2599.5 m (Ness Formation) and 2728 m (Etive Formation).& Samples of water/filtrate were obtained from the samples at 2639.5 m (Ness Formation) and 2755 m (Etive Formation).

The well was temporarily abandoned as an oil and gas appraisal on 12 July 1983. The well was re-entered as 30/9-2 R on 1 June 1986 for a test production. The re-entry was formally completed on 7 July, and subsequently re-classified to 30/9-T-2 for the test production.&

## Testing

Four DST's were performed in the well, two in the Etive Formation (DST1 from 2738 m to 2737 m and DST2 from 2704 m to 2728 m) and two in the Ness Formation (DST3 2685 m to 2693 m and DST4 from 2595 m to 2604 m). The DST performed in the lower part of the Etive Formation was a combined production and injection test, which produced water. The other DST's produced oil and gas.

## Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
129	<a href="#">NORDLAND GP</a>
655	<a href="#">UTSIRA FM</a>
715	<a href="#">UNDIFFERENTIATED</a>
867	<a href="#">HORDALAND GP</a>
1114	<a href="#">SKADE FM</a>
1155	<a href="#">NO FORMAL NAME</a>
1167	<a href="#">SKADE FM</a>
1180	<a href="#">NO FORMAL NAME</a>
1233	<a href="#">SKADE FM</a>
1244	<a href="#">NO FORMAL NAME</a>
1269	<a href="#">SKADE FM</a>
1359	<a href="#">NO FORMAL NAME</a>
2014	<a href="#">ROGALAND GP</a>
2014	<a href="#">BALDER FM</a>
2084	<a href="#">SELE FM</a>
2199	<a href="#">LISTA FM</a>
2290	<a href="#">VÅLE FM</a>
2303	<a href="#">SHETLAND GP</a>
2303	<a href="#">HARDRÅDE FM</a>
2420	<a href="#">KYRRE FM</a>
2505	<a href="#">TRYGGVASON FM</a>
2507	<a href="#">CROMER KNOLL GP</a>
2509	<a href="#">VIKING GP</a>
2509	<a href="#">HEATHER FM</a>
2578	<a href="#">BRENT GP</a>
2578	<a href="#">NESS FM</a>
2698	<a href="#">ETIVE FM</a>
2767	<a href="#">DUNLIN GP</a>
2767	<a href="#">DRAKE FM</a>

## Geochemical information

Document name	Document format	Document size [MB]
<a href="#">937_1</a>	pdf	1.86
<a href="#">937_2</a>	pdf	1.33



**Drill stem tests (DST)**

Test number	From depth MD [m]	To depth MD [m]	Choke size [mm]
1.0	2738	2757	19.0
2.0	2704	2728	10.3
3.0	2685	2693	11.1
4.0	2595	2604	11.1

Test number	Final shut-in pressure [MPa]	Final flow pressure [MPa]	Bottom hole pressure [MPa]	Downhole temperature [°C]
1.0	11.000			104
2.0				107
3.0				104
4.0				100

Test number	Oil [Sm <sup>3</sup> /day]	Gas [Sm <sup>3</sup> /day]	Oil density [g/cm <sup>3</sup> ]	Gas grav. rel.air	GOR [m <sup>3</sup> /m <sup>3</sup> ]
1.0					
2.0	401	41000	0.865	0.708	102
3.0	495	51000	0.865	0.695	102
4.0	479	58000	0.842	0.730	120

**Drilling mud**

Depth MD [m]	Mud weight [g/cm <sup>3</sup> ]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
2724	1.25	18.0		WATER BASED	