



Wellbore History

GENERAL

Wildcat well 6/3-1 was drilled on the Pi-structure in the northwestern part of the block. The well is situated less than 1 km from the UK-Norwegian median line, where the UK Drake Field, an oil/gas field in UK block 2215 was discovered close to the median line. Well 6/3-1 was designed to test possible hydrocarbon accumulations at different levels. The main target was Jurassic and Triassic sandstones. Secondary targets were Paleocene sandstones (Heimdal Formation), and Late Cretaceous porous/fractured chalk.

OPERATIONS AND RESULTS

The well was spudded with the semi-submersible installation Deepsea Bergen 2 November 1984 and drilled to TD at 3560 m in the Triassic Skagerrak Formation. Drilling of the well proceeded without significant problems, but five and a half rig days were spent waiting on weather. The well was drilled with gel/seawater to 520 m, with gypsum/polymer from 520 m to 2926 m, and with lignite/lignosulphonate from 2926 m to TD.

Target reservoir sandstones of Jurassic/Triassic age came in at 2965 m with oil and gas/condensate. A hydrocarbon column of 72 m was proven with oil/water contact at 3037 m. FMT gradients and oil stain on cores indicated a GOC at 3013 m. Secondary target sand (Heimdal Formation) was not found. Logs and shows indicated hydrocarbons in Late Cretaceous chalk/limestone, most strongly from 2900 m to 2925 m, but test of this interval was negative. FMT pressure measurements in the larger interval from 2804 m to 2918.5 m in the chalk were all unsuccessful and showed a tight formation. Eight cores were cut in the well from 2968 m to 3116.5 m. Segregated FMT samples were taken at 3021.5 m (0.87 g/cm³-oil and gas), at 3007.5 m (0.780 g/cm³-condensate, gas, and mud filtrate), at 3016 m (oil, mud filtrate, and gas), at 2992 m (0.77 g/cm³-condensate, mud filtrate, and gas), at 2998.5 m (condensate and gas), and at 2966 m (0.77 g/cm³-condensate, mud filtrate, and gas).

The well was permanently abandoned as an oil and gas discovery on 2 January 1985.

TESTING

Three Drill Stem Tests were performed. DST 1 at 3015 m to 3023 m produced 907.5 m³ oil/day and 140 700 Sm³ gas/day on a 64/64" choke and wellhead pressure equal to 51.7 bar. CO₂ content in the gas was 2.2 % and H₂S content was 1.1 ppm. DST 2 at 2978 m to 2993 m produced 409.4 m³ oil/day and 889 900 Sm³ gas/day on a 72/64" choke and wellhead pressure equal to 95.8 bar. CO₂ content in the gas was 2.0 % and H₂S content was 2.0 ppm. DST 3 at 2902-2921 m was opened up on a 12/64" choke. It gave no response from the well. Acid was pumped to stimulate flow, but only 2.6 m³ diesel cushion was produced before the well died. Mud with traces of oil was recovered when reversing out the string volume above the circulating valve.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 6/3-1