



Wellbore History

GENERAL

Wildcat well 16/7-8 S was drilled in a water depth of 79.5 m in PL072B to test the hydrocarbon potential of the Beta West prospect 3km north of the Sigyn field, 3km east of the Sleipner East Field.

The Beta West prospect is located in the Ling Graben, south of the Utsira High, on the eastern margin of the South Viking Graben. The primary reservoir and the main target of the well were continental, fluvial sandstones (red beds) of the Skagerrak Formation with thin Upper Jurassic shallow marine sandstone, overlaying the Skagerrak Formation. The Beta West structure is defined by a 4-way dip closure.

OPERATIONS AND RESULTS

The well was spudded with the semi-submersible installation "Deepsea Bergen" on 17 December 2002 and drilled deviated to a total depth of 2900 m MD (2645.5 mTVD) in the Triassic Skagerrak Formation. The well was drilled as a deviated well due to shallow gas concerns on the vertical well location. The well was drilled using sea water/high viscosity sweeps down to 445 m, with Glydril (KCl/Glycol WBM) from 445 m to 1319 m and Versavert OBM from 1319 m to TD. Shallow gas was expected at 234 m TVD and at 634 m TVD. Sandstones were observed in both intervals but proved to be water wet. The top of the reservoir was penetrated at 2585 m TVD, 25 m deeper than prognosed. The reservoir consists of approx. 21 m (vertical thickness) with Jurassic sandstone above the Skagerrak Formation. The base of the Skagerrak Formation was not penetrated in this well. The reservoirs proved to be water bearing without any indications of hydrocarbons.

No wireline logs were run in this well. MWD logs were run as follows: gamma ray and resistivity in all sections from the 30" casing shoe to TD. Pressure while drilling was recorded in the 9 7/8" pilot hole and in the 8 1/2" section. Neutron and density were logged in the 8 1/2" hole. One oriented core was cut in the interval 2827 - 2874.5 m MD, but only 2.9 m out of 47.5 m were recovered. The recovered interval (2827 - 2829.9 m MD) represents the Hugin Formation. The low core recovery (6.1%) was due to jamming of the bit when the drillstring was rotated without circulation with the bit at bottom. This is not according to procedures and should be avoided. Acquisition of the orientation data proved to be trouble-free. No fluid sample was collected. No formation pressure data was measured in this well. The pore pressure evaluation is based on MWD log data and drilling parameters. A normal pore pressure gradient is estimated down to approximately 1400 m TVD RKB where an increase starts and continues through the Hordaland Group. The highest pore pressure is assumed at 2000 m TVD RKB, in the Balder Formation, with a gradient of 1.20 g/cm³. A decrease of the gradient is calculated through the Sele and Lista formations. A low gradient is assumed through the Ekofisk Formation, and a slight increase is assumed in the Cromer Knoll shale sequence. At the top of the Upper Jurassic/Skogerrak sandstone a pore pressure gradient of 1.16 g/cm³ is estimated in the water filled reservoir. At TD a pore pressure of 1.14 g/cm³ is assumed. No pressure points were conducted so the pore pressure in the reservoir is based on prognosis.

The well was permanently plugged and abandoned on 19 January 2003 as a dry well.

TESTING

No drill stem test was performed.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 16/7-8 S