



Wellbore History

GENERAL

Wildcat well16/1-6 S is located on the Utsira High in the North Sea. The objective was to test the hydrocarbon potential of the Verdandi prospect on Paleocene level in a favourable position with respect to an observed DHI, interpreted tentatively as a gas-oil contact in a reservoir sand.

OPERATIONS AND RESULTS

Wildcat well 16/1-6 S was spudded with the semi-submersible installation Borgland Dolphin on 22 May 2003 and drilled to TD at 1997 m in the Late Cretaceous Ekofisk Formation. Sidewall coring and VSP logging could not be performed below 1762 m due to hole problems. Apart from this no significant problems were encountered in the operations. The well was drilled with seawater and viscous bentonite/polymer pills down to 551 m, with KCl/polymer/glycol (Glydril) mud from 551 m to 1200 m, and with oil based mud (Novatec pseudo oil based) from 1200 m to TD.

MWD logs and drill gas indicated shallow gas in a sandstone stringer at 603 m. This gas correlate well with nearby wells, particularly well 16/1-4.

Grid sandstones were encountered between 1489.5 m (1451 m TVD MSL) to 1685 m (1617.5 m TVD MSL). Top Heimdal Formation came in at 1861.5 m (1765 m TVD MSL). It proved to be slightly deeper and significantly thinner than expected. Hydrocarbons were proven in the Grid sands as well as in the Heimdal sand. A distinct gas peak of 2.55 %, C1 to C4, was recorded from 1498 m in the upper Grid Formation. Log responses indicated thin, hydrocarbon filled stringers of sand positioned above the massive Grid sandstone. Cuttings exhibited calcareous sand with traces of hydrocarbon stain and with spotty to even, bright, bluish white, direct fluorescence with instant, white cut fluorescence. MDT hydrocarbon samples confirmed the presence of oil, with a density of 0.857 g/cm³. No shows were seen in the underlying, massive Grid sandstone with logs confirming a water-wet sandstone. Furthermore gas was found in the Heimdal Formation with a ?gas down to? situation. One conventional core was cut from 1872 m to 1899 m in the Heimdal Formation. Sidewall cores were recovered from the Grid Formation sandstones. MDT hydrocarbon samples were collected from 1499 m in the Grid Formation and 1870.5 m in the Heimdal Formation. Oil based mud contamination was as high as 59 % in the Heimdal sample which gave limited value for PVT analysis. The oil sample collected in the Grid sandstone was of good quality with contamination calculated to 16 %.

The well was permanently abandoned on 7 June as an oil and gas discovery.

TESTING

No drill stem test was performed.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 16/1-6 S