



Wellbore History

GENERAL

Well 25/4-5 was drilled ca 1 km SW of the 25/4-1 Heimdal Discovery well. The primary objective was to test the Vestland Group and the Statfjord Formation on a down-thrown panel west of the high drilled by the 25/4-1 well, which found several hydrocarbon bearing Jurassic levels in addition to the main Heimdal Discovery. The secondary objective was to appraise the gas-bearing section in the Paleocene Heimdal Formation.

OPERATIONS AND RESULTS

Wildcat well 25/4-5 was spudded with the semi-submersible installation Dyvi Alpha on 26 June 1980 and drilled to TD at 4355 m in the Triassic Smith Bank Formation. Operations were interrupted by a strike that led to 4.5 days down time.

The Heimdal reservoir was found at 2150 m with gas down to a GOC at 2172 m and a 7 m oil column down to the oil-water contact at 2179 m. Drill with 8 1/2" bit from 3600 m to 4198.5 m When running in hole in the 8 1/2" section the bit stuck at 4174. The hole was then backed off to 3891 m and a technical sidetrack was made from 3769 m.

A 128 m thick Vestland Group was penetrated from 3692 m to 3820 m. The Hugin and Sleipner formations were found water bearing with residual hydrocarbons with the exception of a thin oil bearing interval from 3777.5 m to 3781.5 m. RFT sampling over this zone indicated a water gradient, but an RFT fluid sample recovered both oil (0.25 l) and gas (139 l).

The Statfjord was encountered at 3949 m and was 178 m thick. It contained sandstones in the upper 50 m and in the interval from 4064 to 4098 m. The upper interval could be interpreted as hydrocarbon bearing. Direct fluorescence (yellow) and cuts (yellow -pale blue) were observed on the cores from this formation, and migrated hydrocarbons were also found by post-well organic geochemical analyses. Tests (DST and RFT) recovered only water.

The triassic Group contained a 50 meters sandstone reservoir, which was drilled with good shows. The tests showed that the sandstones had to be considered as tight, producing only small volumes of water.

Nine cores were cut between 2130 and 2235 m in the Lista and Heimdal Formations, 2 cores were cut between 3695 and 3730.7 m in the Hugin Formation, 4 cores were cut between 3954.5 m and 4014.6 m in the Statfjord Formation, and two cores were cut from 4140 m to 4158 m and 4183.5 m to 4198.5 m in the Skagerrak Formation. Wire line fluid samples (FIT and RFT) were taken at 3698 m (water without gas), 3779.2 m (139 l gas and 0.25 l oil), 3779.5 m (85 l gas and 2 l water), 4072 m (water without gas), 3996.8 m (water without gas), and at 4160 m (81 l gas and 10 l water).

The well was permanently abandoned on 26 March 1981 as a gas and oil appraisal well.

TESTING

The Heimdal Formation was not tested. Three drill stem tests were conducted in the Jurassic and Triassic. DST 1 from 4154 m to 4176 m in the Triassic Skagerrak Formation did not produce any reservoir fluid to surface, even after acid treatment. Tight reservoir was concluded. DST2 from 3960 m to 3999 m in the middle Statfjord Formation produced water with gas bubbles at a rate of 19 Sm3/day. DST3 in the upper Statfjord Formation produced water with gas bubbles at a rate of 34 Sm3/day.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 25/4-5