



Wellbore History

GENERAL

The well 6506/9-2 S was drilled on the Fogelberg prospect in a rotated fault block located on the Halten terrace north-northwest of the Smørbukk and Åsgard fields. The overall objective for the well was to test the hydrocarbon potential in the Middle/Lower Jurassic sandstones of the Fangst and Båt Groups. The expected hydrocarbon phase was light oil with associated gas similar to the nearby 6506/11-7 Morvin light oil discovery. The planned total depth for the well was 4783 m TVD RKB, fulfilling the license obligation of drilling 50 m into the Åre Formation (Båt Group). The well was defined as a HPHT well.

OPERATIONS AND RESULTS

Wildcat well 6506/9-2 S was spudded with the semi-submersible installation West Alpha on 11 February 2010 and drilled to TD at 4805 m (4736 m TVD) in the Early Jurassic Åre Formation. The well started with a 9 7/8" pilot hole down to 1227 m to check for shallow gas. No shallow gas was encountered. The well was drilled vertical down to 1213 m. From there angle was built up to 13 deg at ca 1600 m and kept at approximately this angle down to ca 3900 m, and then falling off to vertical again from ca 4000 m to TD. The well was drilled without significant operational problems. It was drilled with seawater and sweeps down to 1219 m, with Glydril water based mud from 1219 m to 2126 m, and with Versatherm oil based mud from 2126 m to TD.

No hydrocarbons were encountered in the Lysing or Lange formations. High gas readings were encountered in the Lange Formation at 4022 m (3954 m TVD). This coincided with maximum recorded pore pressure in the well and low mud weight. With the correct mud weight circulated in place, the background gas returned to normal level and the drilling operation resumed. Base Cretaceous Unconformity was encountered at 4138 m (4069 m TVD) with 20 m MD Spekk Formation overlying 174 m MD Melke Formation. The target reservoir was penetrated at 4332 m (4263.5 m TVD) with 107.5 m TVD gross gas/condensate in Garn and Ile collectively and a possible GWC at 4440 m (4372 m TVD). Garn and Ile consisted of slightly tighter reservoir sands than initially anticipated. The results of the MDT pressure measurements showed a gas/condensate gradient, equal to 0.029 bar/m, in the Garn and Ile formations. The Tofte Formation was very tight and no gradient could be established. In the Tilje Formation a water gradient is established at 0.096 bar/m. No clear oil shows above OBM were recorded in the well.

Two conventional cores were cut at 4342 - 4369 m in the Garn Formation and 4416 - 4471 m in the Ile Formation, both with approximately 100% recovery. MDT fluid samples were taken at 4357.98 m in upper Garn Formation (gas/condensate), 4377 m in lower Garn Formation (gas/condensate), 4411.1 m in upper Ile Formation (gas/condensate), 4428 m in lower Ile Formation (gas/condensate), and 4676 m in the Tilje Formation (water).

The well was permanently abandoned on 28 April 2010 as a gas/condensate discovery.

TESTING

No drill stem test was performed.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 6506/9-2 S