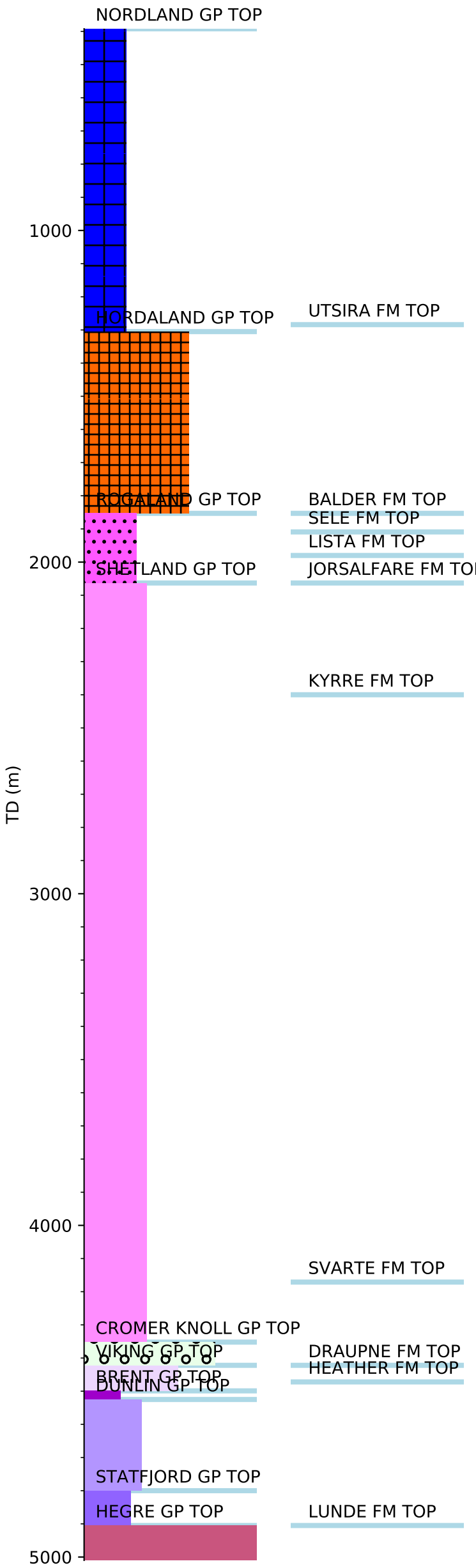
Groups

Formation Tops



Wellbore History

GENERAL

The exploration well Beta Statfjord 34/4-13 S was drilled on the Tampen Spur area in the northern North Sea to appraise the Beta Brent Discovery made by well 34/4-11 in 2009. The primary objective was to evaluate oil and or gas in sandstones of the Cook and Statfjord formations and Hegre Group. The original plan was a vertical well, but to meet the time slot available for the rig a site survey over the proposed target location was unable to be completed. Hence a deviated well from the ready surveyed 34/4-11 location was decided.

OPERATIONS AND RESULTS

Appraisal well 34/4-13 S was spudded with the semi-submersible installation West Alpha on 27 August 2010 and drilled to TD at 5010 m (4291 m TVD) in the Late Triassic Lunde Formation. The well was drilled directionally (J-shaped well) with a sail angle through the 17 1/2", 12 1/4" and 8 1/2" intervals of approximately 37 deg. Significant downtime with the BOP system was incurred prior to and during running the BOP. Otherwise no significant technical problems were encountered in the operations. The well was drilled with sea water and hi-vis pills down to 1480 m, with Versatec OBM from 1480 m to 4382 m, and with Versatherm OBM from 4382 m to TD.

Top Viking Group was penetrated at 4422 m, the Brent Group came in at 4499 m, and top Dunlin Group at 4525 m. The Brent and Dunlin groups were dominantly mudstones without hydrocarbons except from a silty interval from 4686 to 4710 m that had traces of sand with oil shows. The Statfjord Formation was encountered at 4800 m (4122 m TVD) and had a good quality porous hydrocarbon bearing sandstone interval at the top of the zone from 4801 to 4816.5 m and a smaller porous sandstone interval at 4841.5 m to 4845 m. Core and well log data supported an oil-down-to depth of 4847 m (4160 m TVD). However two additional porous sandstone units identified on logs lower down in the Statfjord Formation at 4871 m to 4872.3 m and 4893 m to 4895.4 m would suggest a potential oil-down-to depth of 4894.3 m (4197 m TVD). There was no oil/water contact identified on the well logs. Oil shows were recorded on core no 4 down to a depth of 4902 m. There were no shows discernible from the OBM below this depth or above 4686 m.

A total of 68.3 m core was recovered in three cores from 4801 to 4849.5 m and a fourth core from 4894 to 4916 m. MDT fluid samples were taken at 4805.1 m (oil with ca 9% mud filtrate) and at 4814.8 m (oil with ca 3% mud filtrate). Single stage separation of the samples, corrected for contamination, gave a GOR of ca 150 Sm3/Sm3, a stock tank gravity of ca 0.823 g/cm3, and a gas gravity of 0.955 (air = 1).

The well was permanently abandoned on 2 January 2011 as an oil appraisal well.

TESTING

One drill stem test was conducted from perforations at 4803 - 4815 m (4107 - 4116 m TVD) in the Statfjord Formation sandstone. The main flow produced 1399 Sm3 oil and ca 127000 Sm3 gas /day through a 34/64" choke with no signs of decline of the oil or gas rate. The GOR was ca 93 Sm3/Sm3. All flows were water free, with 3 ppm of H2S and CO2 of about 2% in the gas stream. Bottom hole temperature in the test was 144.8 deg C.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 34/4-13 S