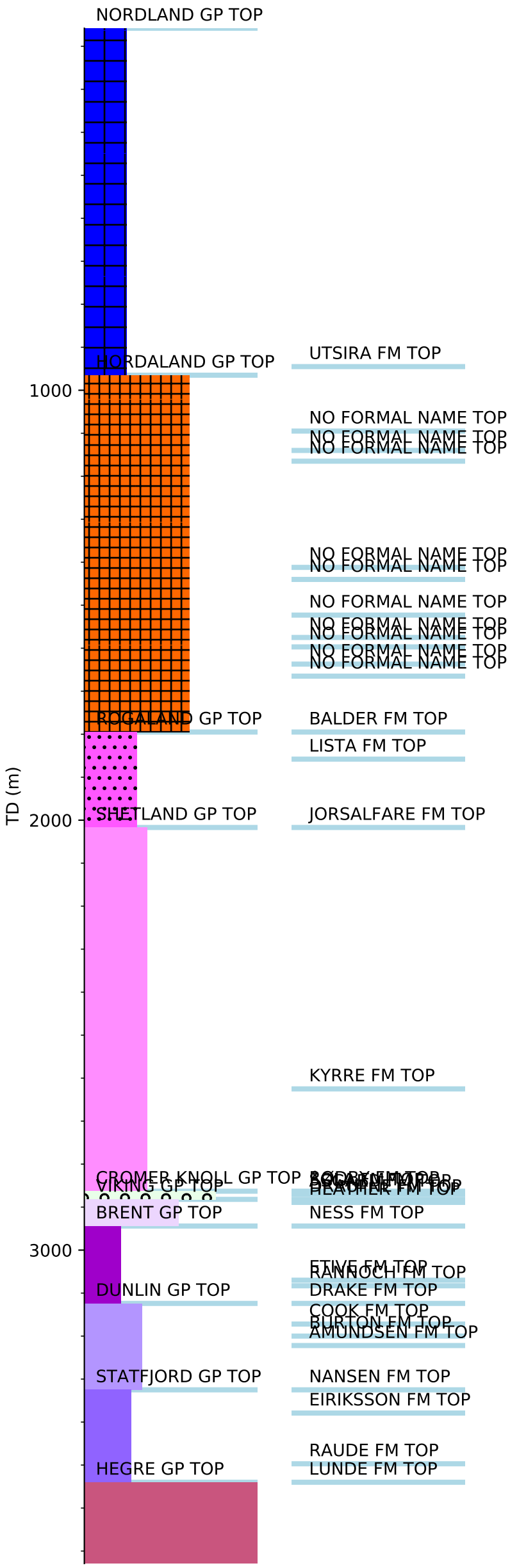

Wellbore History

GENERAL

Well 34/10-2 was drilled on the "Alpha closure" in the northern North Sea, ca 8 km south of the 34/10-1 Gullfaks discovery drilled three months earlier on the "Delta structure". The primary objective of 34/10-2 well was to test sandstones of the Middle Jurassic series. The secondary objectives were sandstones of the Paleocene and Early Jurassic series.

OPERATIONS AND RESULTS

Wildcat well 34/10-2 was spudded with the semi-submersible installation Ross Rig on 9 September 1978 and drilled to TD at 3729 m in the Late Triassic Lunde Formation. No significant problem was encountered during drilling, but close to15 days were spent as WOW due to severe weather conditions, and final logging at TD suffered from the weather. The well was drilled with spud mud down to 517 m, with gel/lignosulphonate mud from 517 m to 1723 m, and with gel/lignosulphonate/"ADF Chrome Lignite" mud from 1723 m to TD.

Well 34/10-2 proved the presence of gas in sandstones of Middle Jurassic Brent Group and oil in sandstones of the Early Jurassic Statfjord Formation. The Brent Group was hydrocarbon bearing all through from top at 2944 m down to top Dunlin Group (Drake Formation) at 3124 m. A total of 109 m was net pay sandstone with average porosity 20.8% and average water saturation 13.8%. The gas/oil/water contact was not seen. The Statfjord Formation was oil bearing from 3325 m down to ca 3390 m based on the well logs. It contained 31.75 m of net pay oil bearing sandstone with average porosity 15.9% and average water saturation 21.6%.

Shows started at 1640 m. These were described typically as gold yellow fluorescence and fast streaming milky cut on claystones with trace sandstone. These shows continued down to 1845 m. From there and down to top Brent reservoir level only occasional fluorescence in limestone was recorded. Below the OWC in the Statfjord Formation shows on sandstones were recorded down t a depth of 3500 m.

A total of eight cores were cut; two in the Middle Jurassic Ness and Rannoch formations and six in the Early Jurassic Statfjord Formation. An attempt to run the RFT was made but failed, so no pressure points or fluid samples were taken on wire line.

The well was suspended on 8 December 1978 as an oil and gas discovery well.

TESTING

Testing was postponed to a later re-entry.

RE-ENTRY

The well was re-entered with the semi-submersible installation Ross Rig on 8 July 1979. The purpose was formation testing and to take fluid samples

No significant problems occurred in the operations

No new formation was drilled.

The RFT was run on wire line and pressure points and fluid samples were taken. Fluid samples were taken at 2964.5 m, 3024 m, 3105 m, and at 3592 m. Based on the pressure data and DST the OWC in the Statfjord Formation was estimated to be at 3385 m.

The well was permanently abandoned on 10 August 1979.

TESTING

Five drill stem tests were performed in the well.

DST 1 tested the interval 3385 - 3395 m in the Statfjord Formation. It produced pure water at rates declining from 700 m3 to 570 m3 /day through a 48/64" choke. The bottom hole maximum temperature in the main flow was 130.6 deg C.

DST 2 tested the interval 3355 - 3365 m in the Statfjord Formation. The

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 34/10-2