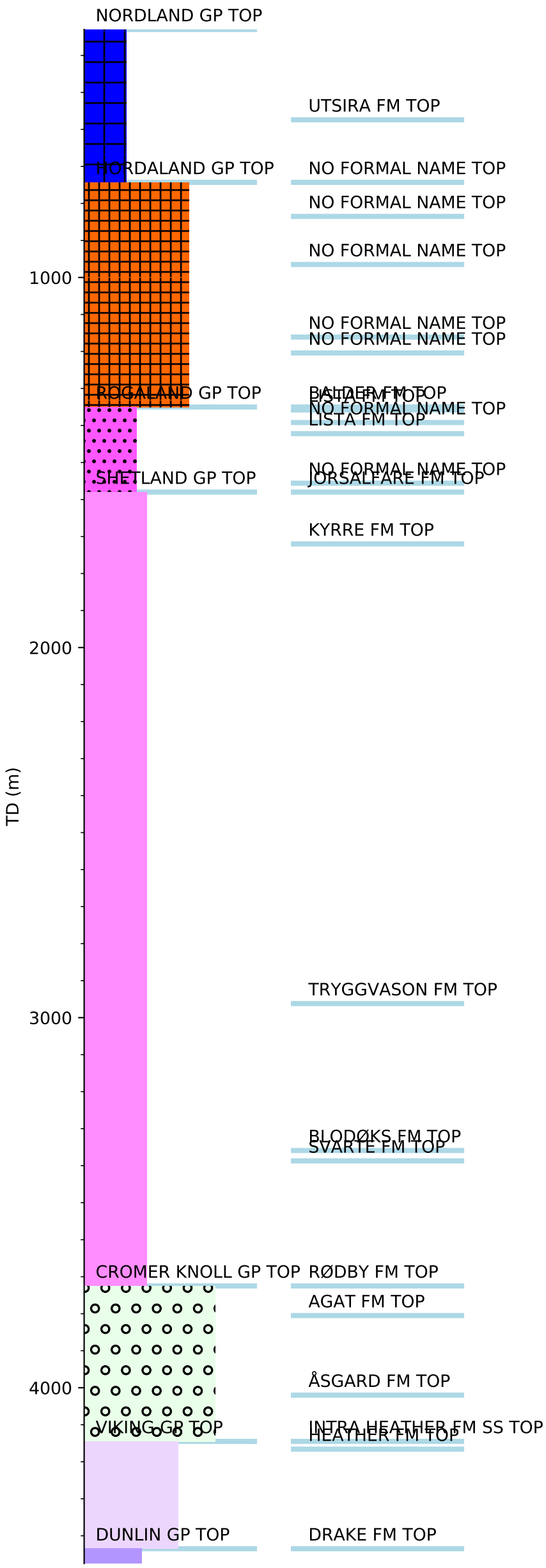

Wellbore History

The exploratory well, 35/3-1, was drilled on block 35/3 in the northern Norwegian North Sea, approximately 65 km west of Måløy in western Norway. The location is east of the Norwegian Trench. The general objective was to test the total stratigraphical sequence down to pre-Jurassic strata. Within the sequence, sand development was predicted for the Lower Cretaceous and the Early Jurassic, with a possibility for minor sands in Middle-Late Jurassic. The well should penetrate two seismic reflectors believed to represent top Early-pre Jurassic and basement, respectively. Planned TD was at 5250 m.

OPERATIONS AND RESULTS

Wildcat well 35/3-1 was spudded with the semi-submersible installation Deepsea Saga on 19 July 1976. The well was terminated at 4475 m in the Dunlin Group (Middle Jurassic, Bajocian age). This was not the planned TD, but due to high pressure the well was abandoned at this depth for safety reasons. Because of this the two deep seismic reflectors were not tested in this well. The well was drilled with seawater and salt water gel/Milben mud down to 982 m, with gypsum mud from 982 m to 2474 m, and with lignosulphonate mud from 2474 m to TD.

A number of Tertiary sands not normally encountered in this part of the North Sea, were penetrated in this well. In the Early Jurassic, at 3805 m, a 215 m sequence of Agat Formation sandstone was penetrated. At 4145 m a 21 m sequence of Late Jurassic Intra Heather Formation sandstone was penetrated. Shows were encountered and described as follows:

"The first traces of hydrocarbons were encountered in Early Cretaceous sand at 3865 m. The sand gave a poor show of dead oil with no direct fluorescence, but with slow, streaming, cream cut fluorescence. Similar shows were occasionally encountered over the interval 3865 - 3975 m, partly with a fast, streaming, white cut fluorescence. At 3900 m a relatively clean, fine to medium grained silica cemented sand showed light brown stain, traces of pale yellow fluorescence, and fast, streaming, white cut fluorescence. In the Jurassic, two sand beds around 4220 m had a fair gas show of 350,000 ppm C1, 35000 ppm C2, and 13000 ppm C3 as recorded in The Analyst's unit. The sand had no stain and no direct fluorescence, but showed some scattered white cut fluorescence. A dirty sand stringer at 4225 m showed 130000 ppm C1, 23000 ppm C2 and 9500 C3, with associated scattered white cut fluorescence. General background gas in the Jurassic was 1000 ppm total."

Geochemical analyses showed oil maturity below ca 3200 m (%Ro > 0.5). Below ca 4100 m analyses showed abundant light hydrocarbons, indicating condensate/gas generation from Heather shales below this depth. These shales had 1.9% organic carbon on average, representing a massive source rock for condensate and gas. No conventional cores were cut and no fluid sample taken. Fifty-one sidewall cores were recovered from 2975 m to TD.

The well was plugged and abandoned on 26 October as a well with shows.

TESTING

No drill stem test was performed.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 35/3-1