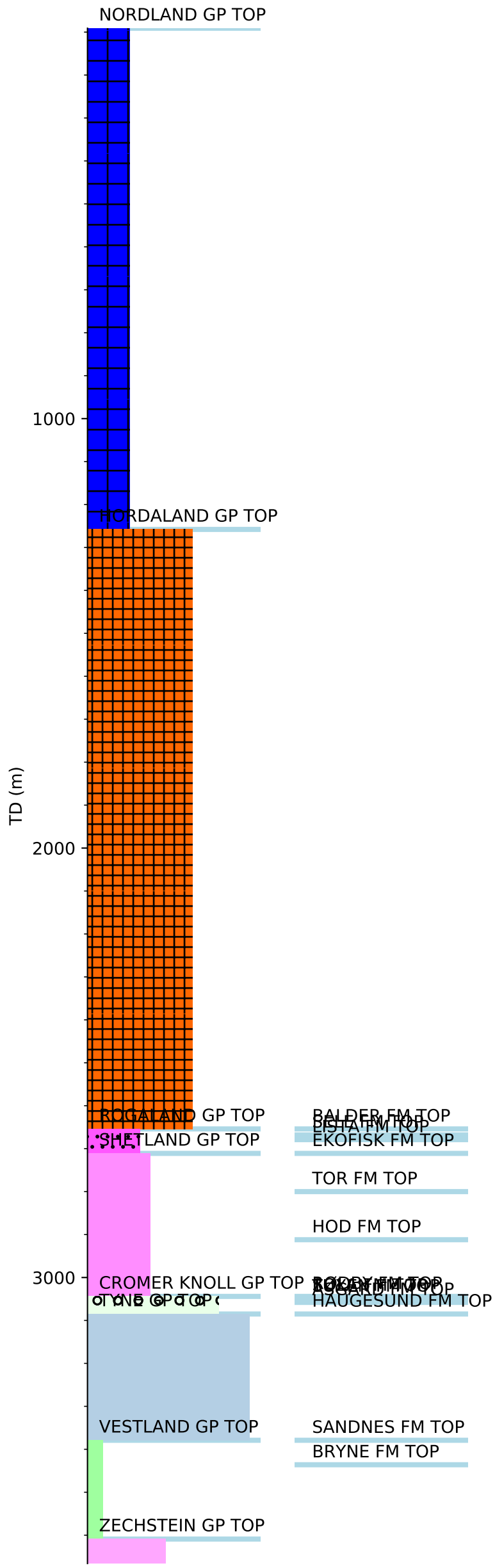
Groups

Formation Tops



Wellbore History

GENERAL

Well 3/7-5 was drilled on the Lemen structure, a fault bounded, salt induced trap located in the centre of the Søgne Basin in the North Sea. The Primary objective of the well was to test sandstones of the Sandnes and Bryne Formations. Secondary objectives were to evaluate the prospectivity of other possible reservoir levels (Late Cretaceous Chalk and Paleocene sandstones) within structural closure and thereby evaluate the charge potential of the local Søgne Basin hydrocarbon kitchen.

OPERATIONS AND RESULTS

Wildcat well 3/7-5 was spudded with the semi-submersible installation Dyvi Stena on 6 December 1991 and drilled to TD at 3666 m (3637.8 m TVD) in the Late Permian Zechstein Group. The well was drilled efficiently, but some problems with deviation and logging was encountered. The hole was practically vertical down to TD in the 12 1/4" section at 3085. The 8 1/2" section was however drilled with close to 20 deg deviation all through to TD, leading to ca 27 m difference between measured and true vertical depth at final TD. Due to hole problems no wire line logs were run between 2198 m and 3085 m in the 12 1/4" section. The 8 1/2" section was eventually logged to 3575 m, 90 m above final TD, but only after several logging attempts and a check trip. The well was drilled with spud mud and viscous pills down to 610 m, and with seawater/gypsum/polymer mud from 610 m to TD.

Above the objective Sandnes / Bryne formations there were no evidence of producible hydrocarbons, although it should be stated that this could not be completely confirmed by logs because a significant section could not be logged with wire line logs. Top Sandnes Formation was encountered at 3379 m and top Bryne Formation at 3436 m. FMT pressure plot indicated a water gradient throughout the Sandnes / Bryne reservoir. Petrophysical evaluation gave no indications of hydrocarbons in the cleaner parts of the reservoir but, there was some indication of (residual) oil of low saturation in the shalier sections.

No shows were reported in the samples above 3244 m in the Haugesund Formation, where a pale yellow solvent fluorescence was seen in silty claystones and sandstone stringers. The core cut in the Sandnes Formation sandstone was reported to contain some dead oil with a weak crush cut fluorescence. No direct fluorescence was seen in the core. Brownish-yellow cut fluorescence was reported on sidewall cores in Middle Jurassic siltstones and sandstones.

A core was taken from 3383 m to 3393 m in the top part of the Sandnes Formation. A segregated formation fluid sample was taken at a depth of 3390.5 m.

The well was permanently abandoned on 7 February 1992 as a dry well with shows.

TESTING

No drill stem test was performed.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 3/7-5