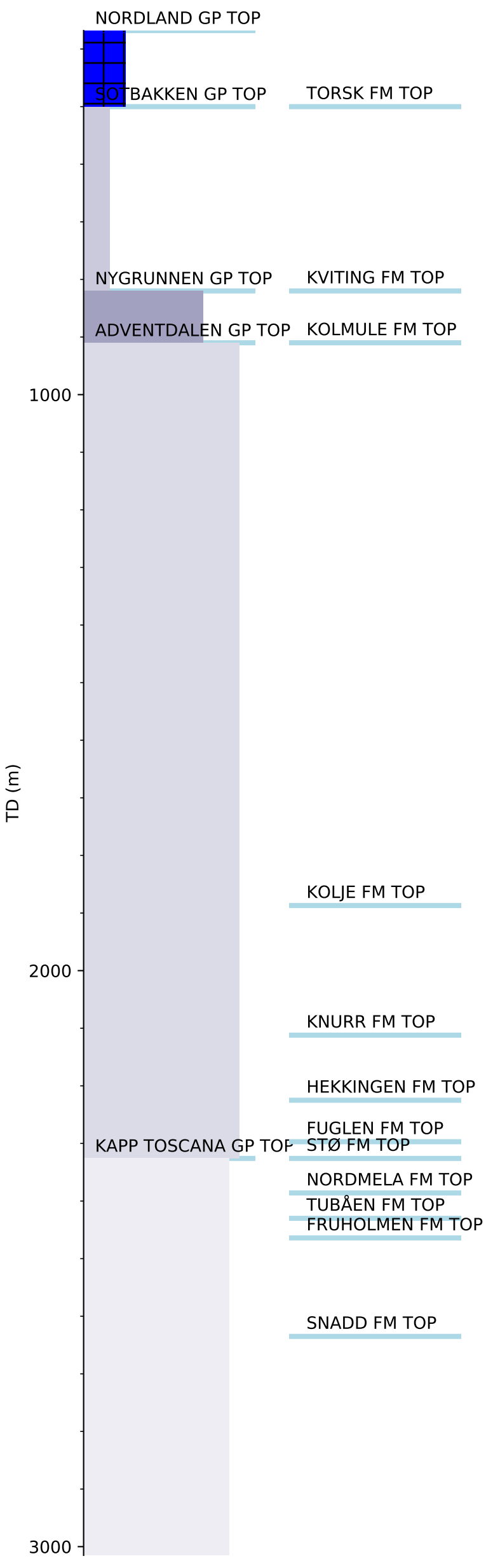

Wellbore History

GENERAL

Wildcat well 7122/4-1 was drilled in the Northern part of the Hammerfest Basin. The objective of the well was to test the Åsgard prospect, a large, tilted horst with Middle-Lower Jurassic sandstones of the Stø formation as the primary objective. The underlying Nordmela and Tubåen formations were also considered to have potential for reservoired hydrocarbons. The trap was formed by a horst structure dipping towards the North-Northwest. Well 7122/4-1 was the first well on this prospect.

OPERATIONS AND RESULTS

Well 7122/4-1 was spudded with the semi submersible installation Sonate Arcade Frontier on 13 November 1991 and drilled to a total depth of 3015 m in the Triassic Snadd Formation. The well was drilled with seawater and gel down to 815 m, with KCl/polymer from 815 m to 2015 m, and with KCl/NaCl/Polymer from 2015 m to TD.

Good reservoir quality sandstones were encountered in the Stø and Nordmela Formations. Core analysis indicated generally good porosity and permeability. FMT's run in the Stø confirmed good permeability. However, analysis of the wire line logs indicated clearly that the Stø and Nordmela sandstones are water wet. The Tubåen Formation consisted primarily of sandstone, but was very thin in this well. Log analysis indicated that these sandstones are also water wet. Thin, tight sandstones (interbedded with claystone and siltstone) were present through much of the Triassic, generally decreasing in thickness with depth. From 2970 to 2990 m a Carnian sandstone was penetrated. The drill gas was higher through this zone than in any other sandstone in the well, averaging about 0.8 %. The cutting samples showed the reservoir quality to be quite poor, with no visible porosity. Numerous unsuccessful attempts with the FMT tool to obtain a pressure measurement indicated that this zone has extremely low permeability. This was confirmed by the log analysis.

Hydrocarbon shows were first observed in the Early Cretaceous Knurr Formation. There was no fluorescence however a slow, pale milky-white cut was received from the claystone. At 2240 m in the Hekkingen Formation there was again no direct fluorescence, but with a milky-white cut being present. The Hekkingen is quite rich and is a good source rock. Residual hydrocarbon shows are present throughout the Stø and Nordmela Formations. The fluorescence varies from white to yellow and green in colour. The cuts also vary, from milky-white to yellow-white and to greenish. The differences in colour possibly represent variations in the gravity of the residual hydrocarbons. No shows were observed in the Carnian sandstone apart from the elevated drill gas.

Geochemical analysis indicated that the Hekkingen Formation contains rich organic matter with fair to good potential for a mixed gas/oil generation. Poor to fair potential for generating gas exists in parts of the Knurr, Nordmela and Fruholmen formations. The pore pressure remained at 9.1 ppg EMW until approximately 2175 m, just above the top of the Jurassic. From this depth the pore pressure increased to just over 10 ppg EMW, at approximately 2250 m. The pressure then decreased to, and remained at, 9.5 ppg EMW. The top of the organic rich, Jurassic, Hekkingen Formation roughly coincides with the interpreted increase in pore pressure. Four conventional cores were cut, starting 7 meters into the Stø at 2333 m and continuing to 2410 m, 24 m into the Nordmela Formation. One FMT sample consisting predominantly of mud filtrate was obtained at 2327.5 m.

The well was permanently abandoned on 13 January 1992 as a dry hole with shows.

TESTING

No drill stem test was performed

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 7122/4-1