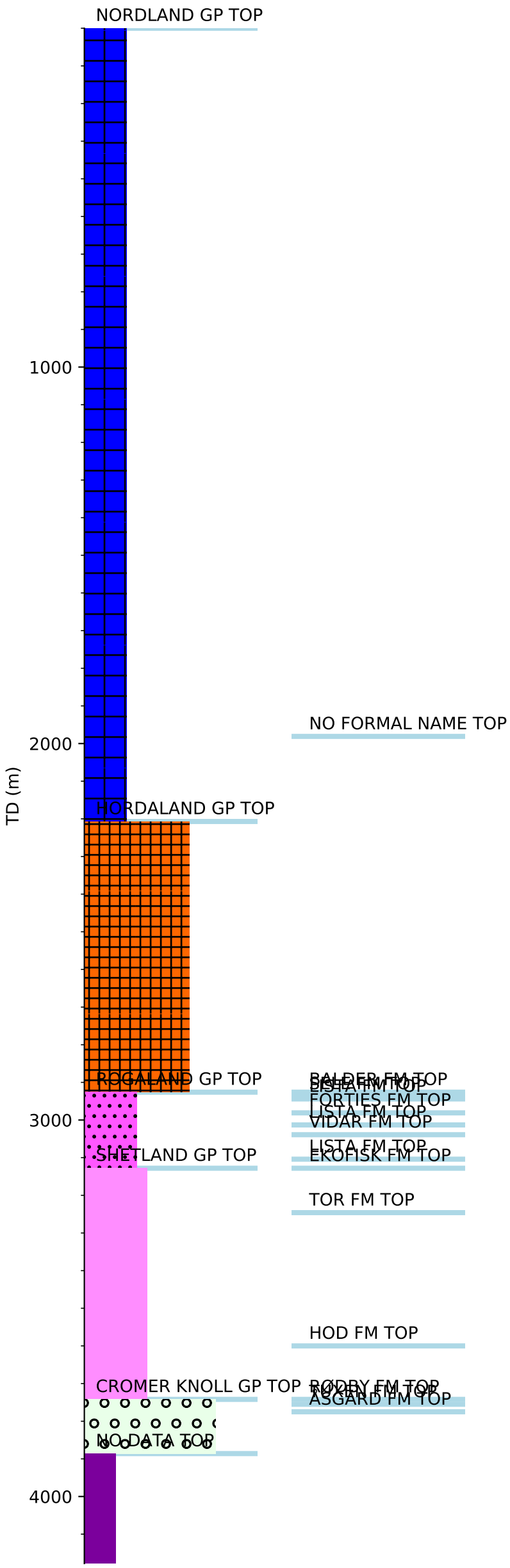
Groups

Formation Tops



Wellbore History

GENERAL

Well 2/1-1 was drilled on the Cod Terrace on the eastern margin of the Central Graben of the North Sea. The objectives were Danian - Late Cretaceous limestones and possible Jurassic sandstone.

OPERATIONS AND RESULTS

Wildcat well 2/1-1 was spudded with the jack-up installation Ocean Tide on 28 August 1972 and drilled to TD at 4178 m in sediments believed to be of Late Jurassic age. The hole was drilled without much problem down to TD in the 8 1/2" section at 3886 m where logs were run and a 7" liner was set with shoe at 3885 m. A 5 7/8" hole was drilled to 4178 (TD) where the well kicked and the pipe got stuck. During killing operations returns were lost and circulation could not be re-established. The kick was most likely caused by a salt water flow from a Late Jurassic sand lense. When trying to back off the drill pipe twisted off, leaving a 340 m fish in the hole. A cement retainer was set and the well was plugged back to 3789 m. Hence, no logs were run below 3886 m.

Oil shows (dull gold fluorescence with slow straw-yellow cut) were observed in the shales at the base of the Middle Palaeocene and at the top of the Danian limestone (3124 - 3178 m), especially at 3161 m where there was a good straw-yellow streaming cut (faster than the upper intervals) accompanied by a minor gas peak. In the lower part of the Maastrichtian limestone gas peaks with 10% C2+ components appeared. Oil shows were recorded in limestone horizons in the Campanian and in the Berriasian. Weak fluorescence was observed also in thin sandstone lenses in the Late Jurassic, above the kick-sand at TD.

A core was cut from 3165.3 to 3179.1 m (10385 to 10430 ft) in the Danian limestone (Ekofisk Formation).

The well was permanently abandoned on 14 November 1972 as a well with shows.

TESTING

Perforation intervals in the lower Chalk zone at 3619.8 - 3639.6 m, 3706.3 - 3719.2 m, and 3728.9 - 3742.6 m were tested before and after acidizing. The pre-acid test failed to unload the water cushion and the post acid test flowed gas at rates varying from 11412 to 11326 Sm3/day. A thick emulsion containing traces of condensate was also produced with the gas. Although the test tools and pressure gauges were lost in the hole, it is believed that the test was definitive of the zone tested, that is that the zone is extremely tight and contained gas or gas condensate.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 2/1-1