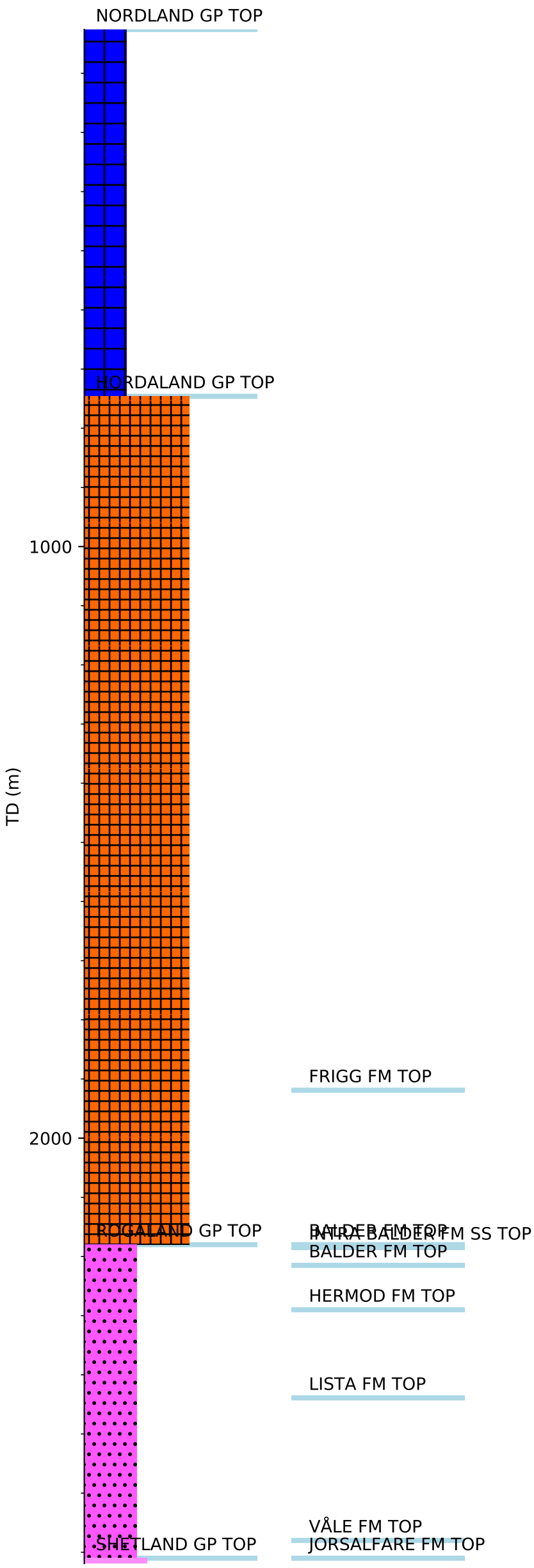
Groups

Formation Tops



Wellbore History

GENERAL

Well 25/1-7 was drilled on the main Frigg structure close to the UK border. The Frigg Field was discovered by well 25/1-1 in 1971. Production from the field started in 1977. Well 25/1-7 was designed to monitor the remaining producible gas accumulation in the Frigg Field, and to determine the Frigg Formation heterogeneity north of the producing platforms including the integrity and nature of the barrier between the Frigg sands and the Cod aquifer (Hermod Formation). The main objectives were to observe changes in gas/oil and oil/water contacts as the Frigg Field is produced, and to core the whole Frigg and Balder Formations. The prognosed depth was 2700 m.

OPERATIONS AND RESULTS

Appraisal well 25/1-7 was spudded with the semi-submersible installation Byford Dolphin on 8 March 1985 and drilled to TD at 2719 m in the Late Cretaceous Jorsalfare Formation. Drilling proceeded without significant problems. The well was drilled water based.

The Frigg Formation came in at 1919 m, 34 m deeper than prognosed. The Frigg Formation in this well consist of an upper part down to 1977 m with fine grained shale interbedded with sand layers; a massive fine to very fine sand, occasionally micaceous and glauconitic, slightly shaly down to 2044 m; and a basal part consisting of sand and sandstone (calcareous), occasionally micaceous, with shale and silt layers down to 2180 m. The oil/water and gas/oil contacts were in the upper part and were difficult to define from the logs due to the shale. The following contacts were however defined for later reference: base of deepest gas at 1964.5 m (1938.7 m MSL), top of highest oil at 1965.8 m (1940 m MSL), and top of highest water at 1976.5 m (1950.7 m MSL). Residual oil was seen down to 1999.5 m.

Twenty-nine cores were cut in the interval 1876 m, (43 m above top Frigg Formation) to 2271 m (lower Balder Formation). Four more cores were cut in the Hermod, Lista, and Jorsalfare formations further down in the hole. Sixty-three good RFT pressure points were acquired over the Frigg, Balder, and Hermod Formations. No wire line fluid samples were taken. From the RFT pressures it was estimated that the gas/oil contact in the well had been lifted ca 7 m above the pre-production gas/oil contact (1972 m) in the area.

After setting the 9 5/8" casing at 2187 m the well was logged through casing with a Thermal Neutron Decay (TDT) log from 2127.5 m to 1900 m. This log measures primarily the content of chlorine (salt water) in the formation and the run made at this point will serve as reference for later monitoring of the fluid contacts.

The well was suspended on 26 May 1985 as a gas appraisal well. It will be re-entered several times in order to check the hydrocarbon contacts.

TESTING

No drill stem test was performed.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 25/1-7