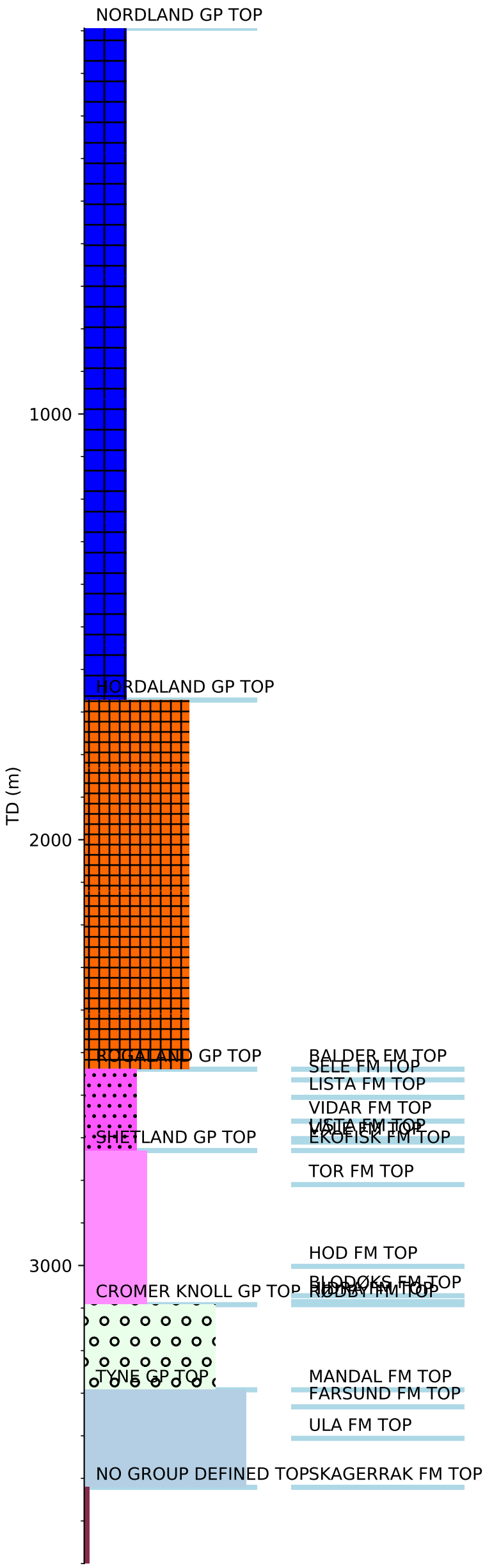

Wellbore History

GENERAL

Well 7/12-6 was drilled as an appraisal well on the Ula Field in the southern North Sea. The objective was to determine sand distribution in northern part of the Ula field, and production and injection properties of reservoir and aquifer.

OPERATIONS AND RESULTS

Appraisal well 7/12-6 was spudded with the semi-submersible installation Sedco 707 on 10 April 1981 and drilled to TD at 3700 m in the Triassic Skagerrak Formation. Some hole problems and excessive cavings due to underbalanced drilling occurred in the 12 1/4" section between 2633 and 3353 m, otherwise the well was drilled without significant technical problems or delay. The well was drilled with gel/seawater and fluid loss additives down to 480 m and with gypsum/lignosulphonate and fluid loss additives from 480 m to TD.

The Ula Formation sandstones were penetrated at 3406 m. The sandstones were 115 m thick, very fine to fine grained with porosities from 10 to 25% and permabilities from 1 to 2000 mD. The reservoir was oil bearing throughout, no OWC was established. An unexpected Triassic reservoir of good quality was found below the Ula Formation. The well drilled 179 m into it without reaching the OWC. The reservoir consisted of various types of micaceous sandstones with porosities from 4 to 23% and permabilities from 0.03 to 2600 mD. The first hydrocarbon indication was recorded as a weak oil show at 2440 in siltstone. Further shows were recorded in the Late Cretaceous between 3010 m and 3060 m, however the logs did not indicate any significant mobile hydrocarbon. Hydrocarbon shows were recorded throughout the Upper Jurassic Ula Formation between 3407 m and 3521 m. Patchy shows were recorded in the Triassic interval between 3521 m and TD.

A total of 240 m core was cut in 9 cores over the interval 3407.7 to 3647.17 m in the Ula and Skagerrak formations. RFT fluid samples were taken at 3437 m (oil), 3533.5 m (mud filtrate), and at 3530.5 m (mud filtrate).

The well was permanently abandoned on 24 July 1981 as an oil appraisal well.

TESTING

Both reservoirs were tested.

DST 1C in the Triassic Skagerrak Formation reservoir (3543 - 3612 m) flowed 160 Sm3 oil and 5720 Sm3 gas through a 12/64" choke. The GOR was 36 Sm3/Sm3. The oil density was 0.810 g/cm3 and the separator gas gravity was 0.806 (air = 1). The bottom hole temperature measured at 3531 m, was 149.4 deg C.

DST 2 in the Ula Formation sandstone reservoir (3434 - 3511 m) flowed 1269 Sm3 oil and 84526 Sm3 gas through a 32/64" choke. The GOR was 67 Sm3/Sm3. The oil density was 0.842 g/cm3 and the separator gas gravity was 0.840 (air = 1). The bottom hole temperature measured at 3425 m, was 143.3 deg C.

DST 2 was followed by an injection test. The maximum injection rate was 1407 Sm3/day at a wellhead injection pressure of 3100 to 3200 psi. As no OWC was seen the no injection test could be performed in the aquifer.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 7/12-6