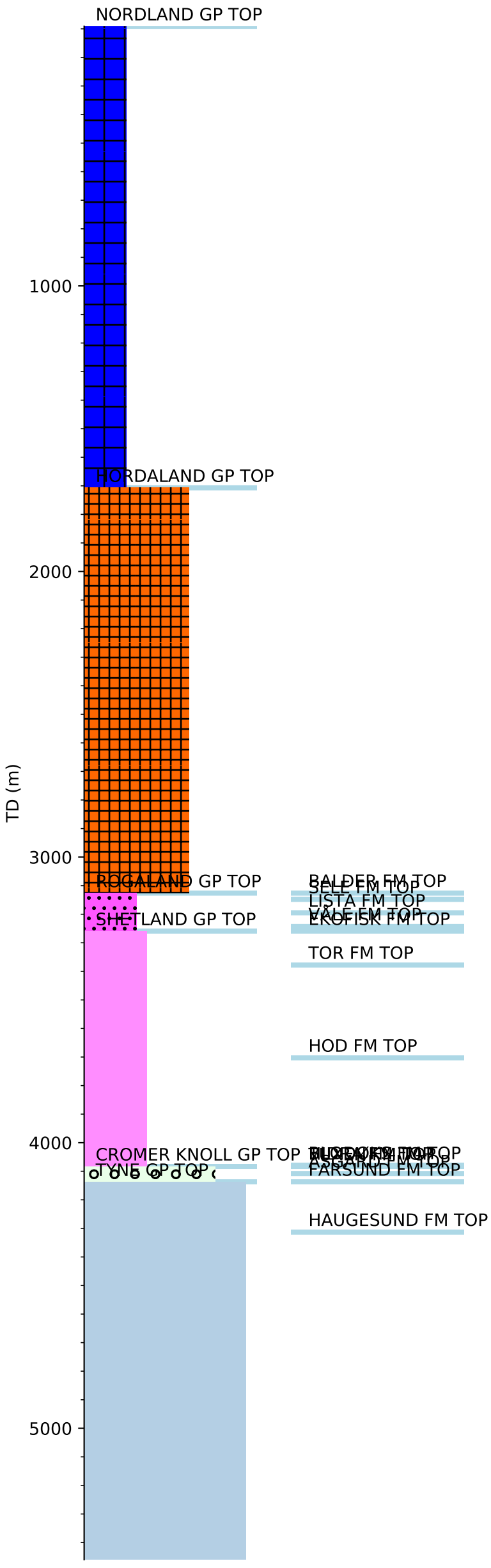
Groups

Formation Tops



Wellbore History

Well 2/5-9is located in the vicinity of the 2/5-3 Sørøst Tor and the 2/5-4discoveries on the Steinbit Terrace in the southern North Sea. The main objective was to test the hydrocarbon potential of the Late Jurassic sands in a rotated fault block, designated as the Magne structure. Secondary objectives were to determine the reservoir quality of any sand prone intervals penetrated in the well, to determine the Jurassic stratigraphy in this easterly part of the Central Graben, and to establish seismic well ties into prospective acreage surrounding the Magne prospect.

OPERATIONS AND RESULTS

Wildcat well 2/5-9 was spudded with the semi-submersible installation West Vanguard on 10 September 1991 and drilled to TD at 5460 m (5443 m TVD) in the Late Jurassic Haugesund Formation. Pore pressure reached a maximum estimated value of 15.9 ppg at TD. The well was kept vertical down to 4350 m, where angle started to build up to a maximum of 12.5 deg deviation at 4744 m. The deviation at TD was 10.4 deg. The well took 131 days to to complete, from spud to abandonment. A total of 36.8 days was unscheduled events, of which rig repair, malfunction of drilling equipment, and hole problems were the major contributors. Also an additional deepening from the authorized TD at 5337 m to 5460 m in order to penetrate a reflector identified by wire line seismic logging (QSST checkshot) increased the pre-drill schedule. The well was drilled with seawater and bentonite pills down to 960 m, with KCl polymer mud from 960 m to 2880 m, and with PHPA/KCl polymer mud from 2880 m to TD. No shallow gas zones were penetrated in the well.

The top Rogaland at 3126 m and top Shetland Group at 3259 m came in 10 m and 17 m shallow to prognosis, respectively. The top Early Cretaceous at 4083 m came in 64 m shallow to prognosis and was 54 in thick, 31 m thicker than prognosed. The top Jurassic Tyne Group came in at 4137 m, 33 m shallow to prognosis, and after that a total of 1323m of Jurassic section were penetrated without encountering any sandstone. The Mandal Formation and uppermost section of the Farsund Formation were absent, represented by the Base Cretaceous unconformity.

In the Nordland and Hordaland Groups very poor oil shows were noted in silty claystones and shales at 1215 - 1250 m and at 2740 - 2800, respectively. An oil bearing section of 33.5 m consisting of interbedded marly limestones, claystones and thin sandstone stringers was encountered at 4074 - 4107.5 m in the lowermost Shetland Group and uppermost Cromer Knoll Group. Good shows were recorded in the section, but it was tight and non-productive with a net pay of only 8.6 m. Weak shows were recorded also throughout the shales of the Tyne Group, but these are interpreted as in-situ generated hydrocarbons typical of these source rocks, when sufficiently buried.

No cores were cut and no wire line fluid samples were taken.

The well was permanently abandoned on 18 January 1992 as a dry well with shows.

TESTING

No drill stem test was performed.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 2/5-9