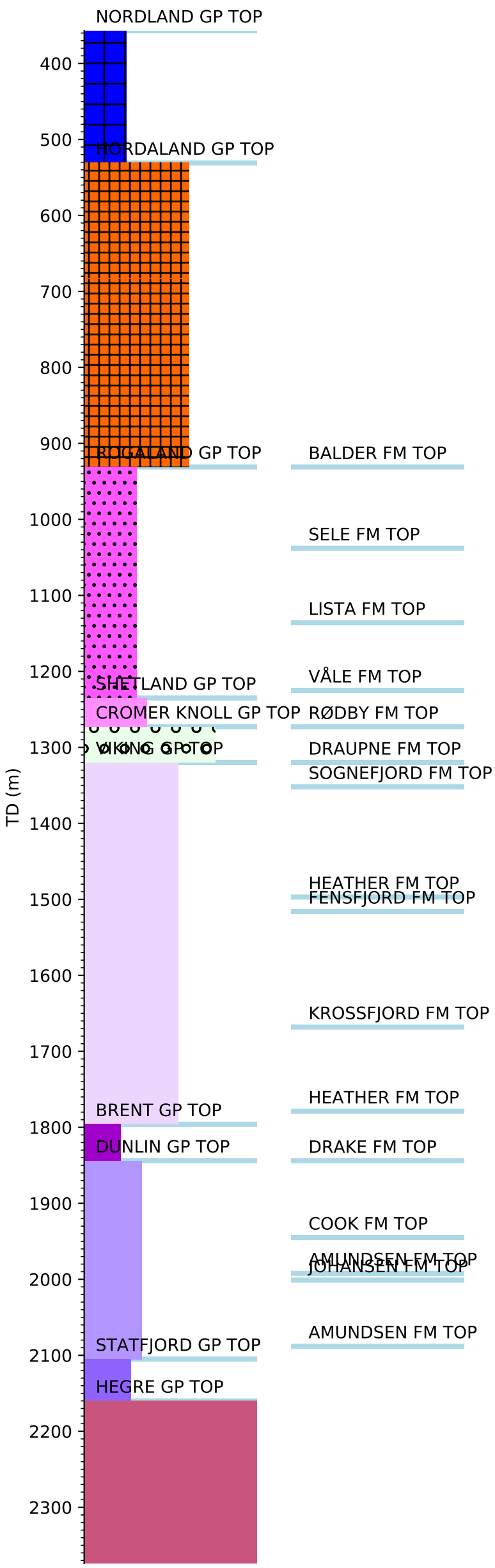

Wellbore History

GENERAL

The wildcat 31/3-1 was drilled ca 17 km NNE of well 13/6-1 in the Troll East area. The two wells were drilled at the same time and together they established the existence of a Troll East gas field. The objective of 31/3-1 was to test possible gas and oil accumulations in sandstones of Late to Middle Jurassic age. Secondary objective was to test possible hydrocarbon accumulations in Middle to Early Jurassic and Late Triassic.

OPERATIONS AND RESULTS

Wildcat well 31/3-1 was spudded with the semi-submersible installation Deepsea Bergen on 17 July 1983 and drilled to TD at 2374 m in the Triassic Hegre Group. No significant problems occurred during drilling except some technical problems when running the BOP for the 26" section. The well was drilled with spud mud down to 865 m, with KCl/polymer from 865 m to 1300 m, with gel/lignosulphonate from 1300 m to 1833 m, and with lignite/lignosulphonate from 1833 m to TD.

Top reservoir (Sognefjord Formation) was encountered at 1351.5 m. The Sognefjord, Heather, and Fensfjord Formations were found to hold a gas column of ca 220 m gas down to an approximate 4 m oil column. The OWC was at ca 1576m.Geochemical analyses of the reservoir gas show clear signs of biodegradation. Neither the Early Jurassic nor the Late Triassic contained hydrocarbons.

Twelve cores were cut continuously from 1351 m to 1610 m in the Late and Middle Jurassic reservoir sequences. FMT fluid samples were taken at 1374.2 m, 1570 m, 1574.2 m, and 1579.2 m.

The well was permanently abandoned on 13 October 1983 as a gas appraisal well.

TESTING

Two DST's were performed, and gas was produced from both. DST 1 was performed from the interval 1519 m to 1529 m and produced 842400 Sm3 gas /day on a 22 mm choke. The gas had a gravity of 0.635 (air = 1). DST2 was performed from the interval 1373 m to 1383 m and produced 733500 Sm3 gas /day on a 19 mm choke. The gas had a gravity of 0.635 (air = 1). Turbulence was a problem during the tests. Although stable static bottom hole temperatures were not obtained the data indicated a reservoir temperature of 54.8 deg C at 1353 m. With a seafloor temperature of 4 deg C this correspond to a linear temperature gradient of 51 deg C/km from top reservoir to the sea floor.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 31/3-1