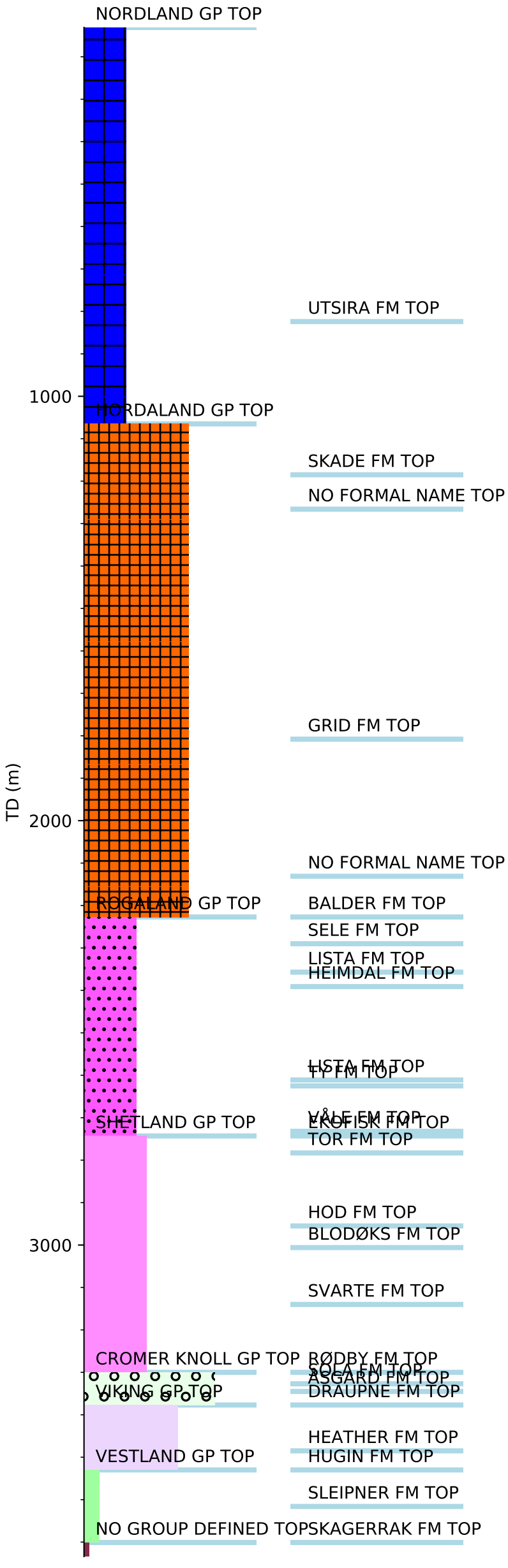

Wellbore History

GENERAL

Well 15/9-1 is located in the Sleipner Field. It was drilled on a seismic structure in order to evaluate the Dogger sandstone (Hugin and Sleipner Formations) of Middle Jurassic age.

OPERATIONS AND RESULTS

Wildcat well 15/9-1 was spudded with the semi-submersible installation Ross Rig on 24 February 1977 and drilled to TD at 3734 m in the Late Triassic Skagerrak Formation. Severe weather occurred on 31 March, at 3539 m, when the drill string was hung off in the wellhead and the lower marine package disconnected. Drilling commenced on 2 April. When washing/reaming back to TD at 3675 m with a bit to open up the rat hole the pipe stuck at 3647m. Jarring/fishing action was unsuccessful and the string was backed off at 3507 m. The hole was then plugged back, sidetracked and drilled to TD. The well was drilled with seawater and hi-vis pills to 415.5 m and with a seawater/conditioned bentonite/spersene mud system from 415.5 m to TD.

Top of the Dogger sandstone (Hugin Formation) was encountered at 3530 m. Log evaluation gave a net productive pay of 56 m, of which 38 m was gas bearing and 18 m was oil bearing. Lowest producible hydrocarbon depth was top of coal bed at 3672 m. Good shows were recorded on cuttings in the interval 3633 m to 3687 m, and in porous sandstones on cores from 3545 m to 3667 m. The Jurassic sandstone was cored in nine cores between 3521 m and 3675.5 m. RFT fluid samples were taken at 9 depths in the interval 3525.5 m to 3701 m. Most of them recovered traces of condensate or oil together with mud filtrate and gas. Only three samples recovered measurable quantities of fluid hydrocarbons: 3528.8 m (5 - 15 ml condensate), 3596.5 m (500 ml condensate), and 3621 m (5 - 15 ml oil).

The well was permanently abandoned on 30 May 1977 as an oil and gas appraisal.

TESTING

Two DST's were performed.

DST 1 perforated the interval 3660 m to 3655 m and flowed 1330 STBOPD (211.5 Sm3 oil /day) and 1420000 SCF/D (40210 Sm3 gas/day). This gives a GOR of 1070 SCF/STB (191 Sm3/Sm3). The gas gravity was 0.738 (air = 1), and oil gravity was 26 °API. Foam problems made it difficult to get reliable separator data: oil rates are probably maximum rates and GOR could thus be substantially higher.

DST 2 perforated 3602 m to 3607 m and flowed 812 STBOPD (129.1 Sm3 oil/day) and 26000000 SCF/D (7362400 Sm3 gas/day). This gives a GOR of 32000 SCF/STB (5700 Sm3/Sm3). The gas gravity was 0.704 (air = 1) and oil gravity was 45.5 °API.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 15/9-1