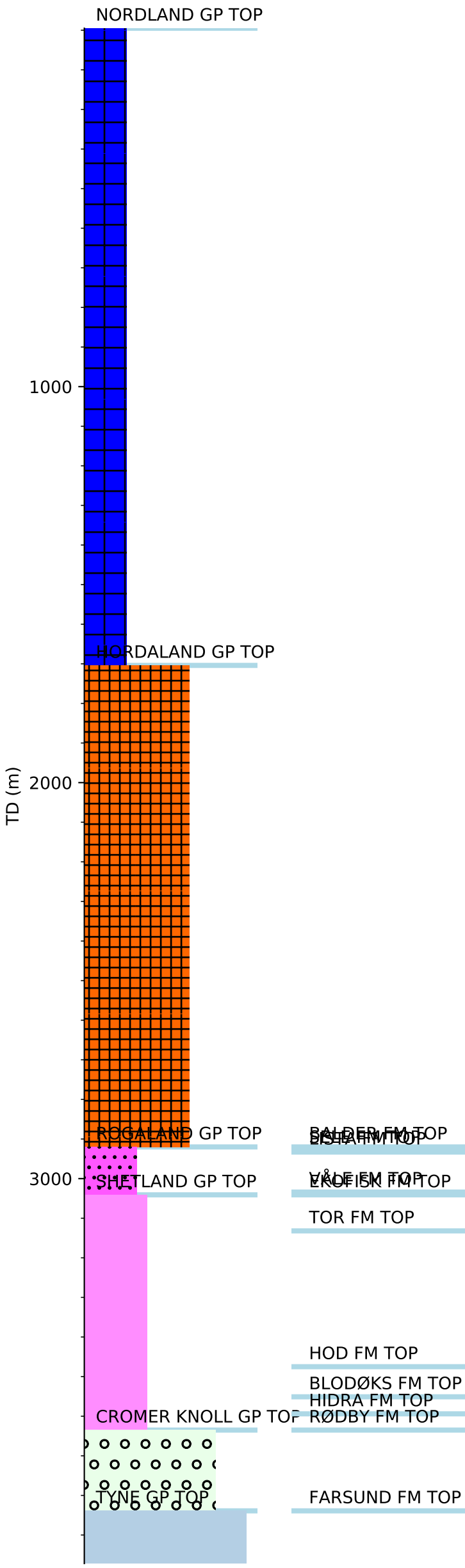
Groups

Formation Tops



Wellbore History

GENERAL

Wildcat well 2/5-1 is located ca 10 km northeast of the Ekofisk Field. It was drilled on an essentially northwest - southeast striking anticlinal seismic structure extending into the adjacent block 2/4.

The well is Reference Well for the Ekofisk Formation.

OPERATIONS AND RESULTS

Well 2/5-1 was spudded with the jack-up installation Orion on 1 August 1970 and drilled to TD at 3972 m in Late Jurassic shales. At 2997 m cones of the bit was lost in the hole and five days were spent fishing for them. The well was planned vertical, and was essentially vertical with maximum deviation 1.5 deg down to 3238 m. From there deviation increased to 7.1 deg at 3639 m, 12.5 deg at 3821 m, 19.2 deg at 3932 m, and 21.9 deg at 3967 m. The well was drilled with seawater and bentonite down to 381 m and with a Drill aid/XP-20 mud with 3- 6 % diesel from 381 m to TD.

The Danian limestone (Ekofisk Formation) was encountered at 3041. Then a Late Cretaceous succession was penetrated with chalks of the Tor and Hod Formations at 3132 m and 3475 m, respectively, followed by the Blodøks Formation shales at 3551 m and the Hidra Formation chalk at 3594 m. Commercial quantities of hydrocarbons were encountered and tested in the Ekofisk and Tor Formations. The well also penetrated 133 m of Late Jurassic source rock quality shales. Organic geochemical analyses of these shales showed TOC in the range 2 - 4 % and thermal maturity corresponding to late oil window (%Ro around 0.8), in well position.

Twenty-three conventional cores were cut in the chalk. Ten were cut in the Ekofisk Formation (75.2 m recovered), and thirteen in the Tor Formation (171.6 m recovered). No wire line fluid samples were taken.

The well was permanently abandoned on 22 November 1970 as an oil discovery.

TESTING

One open-hole DST and eight DSTs through liner perforation were performed. The open-hole DST (DST 1) tested the interval 3042 - 3101 m in the Ekofisk Formation. It flowed at maximum 209 Sm3 oil /day. The GOR was 190 and the oil gravity was 41.5 deg API.

The tests through perforations and after acid stimulation (DST 2 to DST 8) revealed flow rates from individual zones up to 731 Sm3 oil /day. This highest flow was obtained in DST 7 through a 24/64" choke from the interval 3154 - 3191 m in the Tor Formation. The gas/oil ratio and oil gravity in this test were 251 Sm3/Sm3 and 41.9 deg API, respectively.

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LITHOSTRATIGRAPHY & HISTORY FOR WELL: 2/5-1