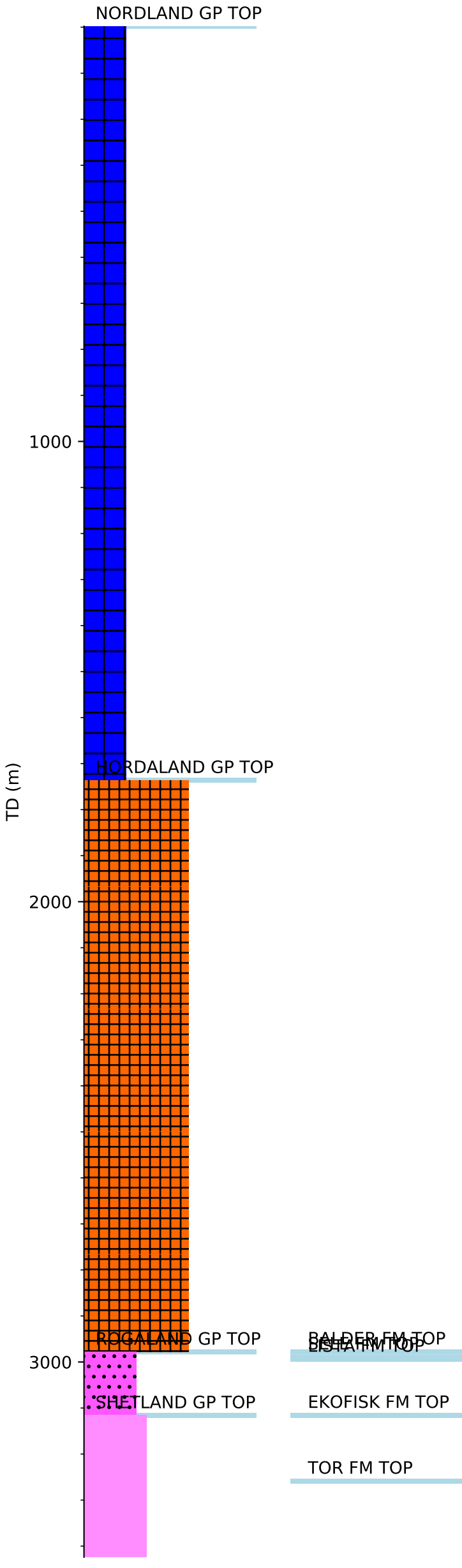
Groups

Formation Tops



Wellbore History

GENERAL

Well 2/4-4 (named 2/4-3X by operator Phillips) was drilled to appraise the southern segment of the 2/4-2 Ekofisk discovery. The Ekofisk discovery is located in the Central Trough in the southern Norwegian North Sea and its structure is an anticline, uplifted by halokinetic movements of Permian salt. The objective of well 2/4-4 was to test the Tertiary and the top of the Late Cretaceous. Planned total depth was 11000 ft (3352 m).

OPERATIONS AND RESULTS

Well 2/4-4 was spudded with the semi-submersible installation Ocean Viking on 2 June 1970 and drilled to TD at 3424 m in the Late Cretaceous Tor Formation. The well was drilled with seawater and hi-vis mud down to 622 m, and with seawater/drill-aid mud from 622 m to TD. Two - six percent oil was added to the mud below 622 m.

The Shetland Group was encountered with top Ekofisk Formation at 3116 m and top Tor Formation at 3259 m. Oil was tested in the Ekofisk Formation in various zones in the interval 3127 - 3225 m. The Tor Formation produced only water.

Two short cores were cut in the Ekofisk Formation and one 8-m core was cut in the Tor Formation. No fluid samples were taken on wire line.

The well was permanently abandoned on 1 August 1970 as an oil appraisal.

TESTING

Eight drill stem tests through perforations in the 7" liner were carried out, one in the Tor Formation, the rest in the Ekofisk Formation. The Tor test produced only water, the lowermost test in Ekofisk did not produce liquid to the surface, but 100 ft (30.5 m) gas cut mud was reversed out of the test string. The next lowermost Ekofisk test, DST 3 from 3233 - 3236 m, also produced water and no hydrocarbons. The remaining tests, all in the Ekofisk Formation gave oil. Maximum flow was obtained from the interval 3162 - 3200 m in DST 8 with 601 Sm3 oil /day on two 3/4" chokes. The oil gravity was in the range 34.2 - 35.6 deg API and the GOR was in the range 165 - 251 Sm3/Sm3.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 2/4-4