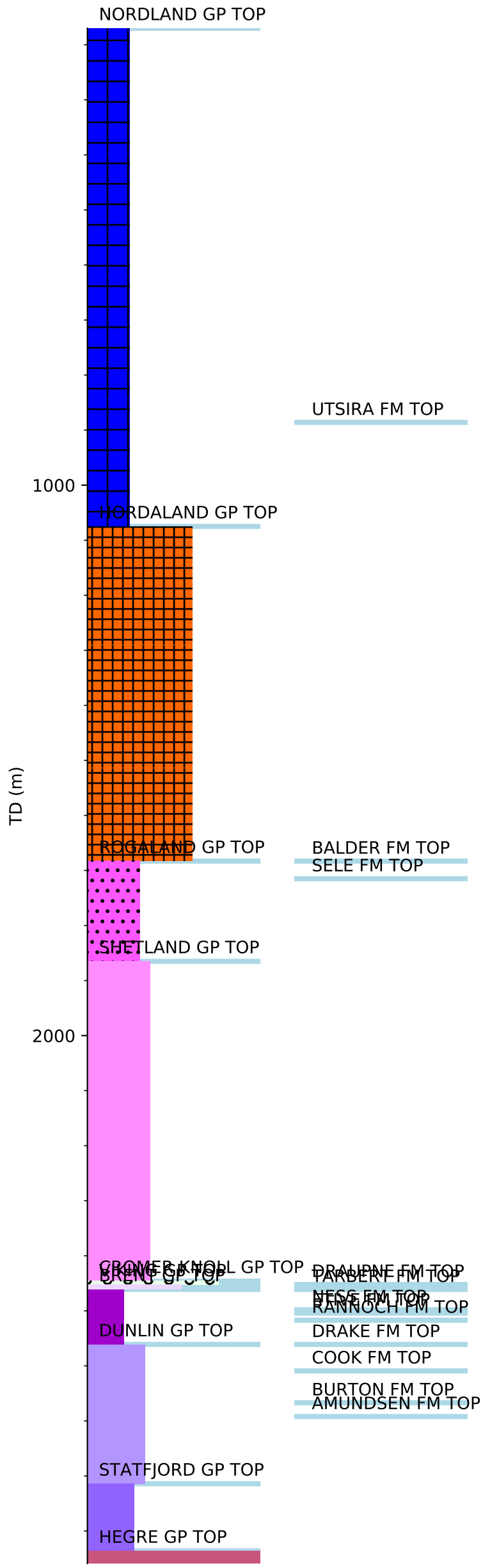
Groups

Formation Tops



Wellbore History

GENERAL

Well 33/9-12 was drilled on the Statfjord Øst Discovery on Tampen Spur in the North Sea. The field was discovered in late 1976 by well 33/9-7, which proved oil in the upper portion of the Brent Group. The well 34/7-5, which was drilled on the northerly segment of the structure, penetrated an oil-bearing Brent section down to the same structural level as seen in well 33/9-7, suggesting communication between the wells. However, neither well was drilled in a location that could demonstrate oil in the major Lower Brent reservoir or allowed a clear definition of the oil water contact. The objective of well 33/9-12 was to test the Lower Brent Group and to establish the oil-water contact.

OPERATIONS AND RESULTS

Appraisal well 33/9-12 was spudded with the semi-submersible installation Ross Isle on 19 June 1987 and drilled to TD at 2959 m in the Triassic Hegre Group. The well was drilled with spud mud down to 360 m, with gypsum/polymer mud from 360 m to 2120 m, and with gel/lignosulphonate mud from 2120 m to TD.

Weak shows in traces of sand was described from 2220 m and down in the Shetland Group. Top Brent Group, Tarbert Formation was penetrated at 2461 m. The Brent Group had a total oil leg of 52.25 metres above the oil-water contact in the Etive formation at 2513.75 m (2491. 75 m TVD MSL). Oil shows continued down to 2530 m; below this depth shows became weak and patchy. The Statoil Group was encountered at 2814 m. It was water wet and pressure measurements showed that the Statfjord formation is not in pressure communication with the Brent group.

Three cores were cut in the interval 2467 m to 2566 m in the Brent Group and into the Uppermost Dunlin Group with 95 to 99.7% recovery. The core-log depth shifts for cores 1, 2, and 3 were -2 m, -4 m and -4.5 m, respectively. A segregated FMT fluid sample was taken at 2464 m. The sample recovered oil and gas.

The well was permanently abandoned on 3 August 1987 as an oil appraisal.

TESTING

Three drill stem tests were performed in the Brent Group.

DST 1 tested the interval 2526.0 to 2538.0 m in the Upper Rannoch Formation. The test produced 795 m3 water /day through a 12.7 mm choke. The DST reservoir temperature was 91.6 °C.

DST 2 tested the interval 2505.0 to 2508.0 m in the Etive Formation. The test produced 113740 Sm3 gas and 1050 Sm3 oil /day through a 14.1 mm choke. The GOR was 111 Sm3/Sm3, the oil density was 0.846 g/cm3, and the gas gravity was 0.725 (air = 1). The DST reservoir temperature was 91.5 °C. At the end of this test the well started producing water. The water cut was approximately 8 % when the well was shut in.

DST 3 tested the interval 2463.0 to 2489.0 m in the Tarbert Formation. The test produced 153880 Sm3 gas and 1470 Sm3 oil /day through a 19.05 mm choke. The GOR was 105 Sm3/Sm3, the oil density was 0.827 g/cm3, and the gas gravity was 0.712 (air = 1). The DST reservoir temperature was 90.0 °C.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 33/9-12