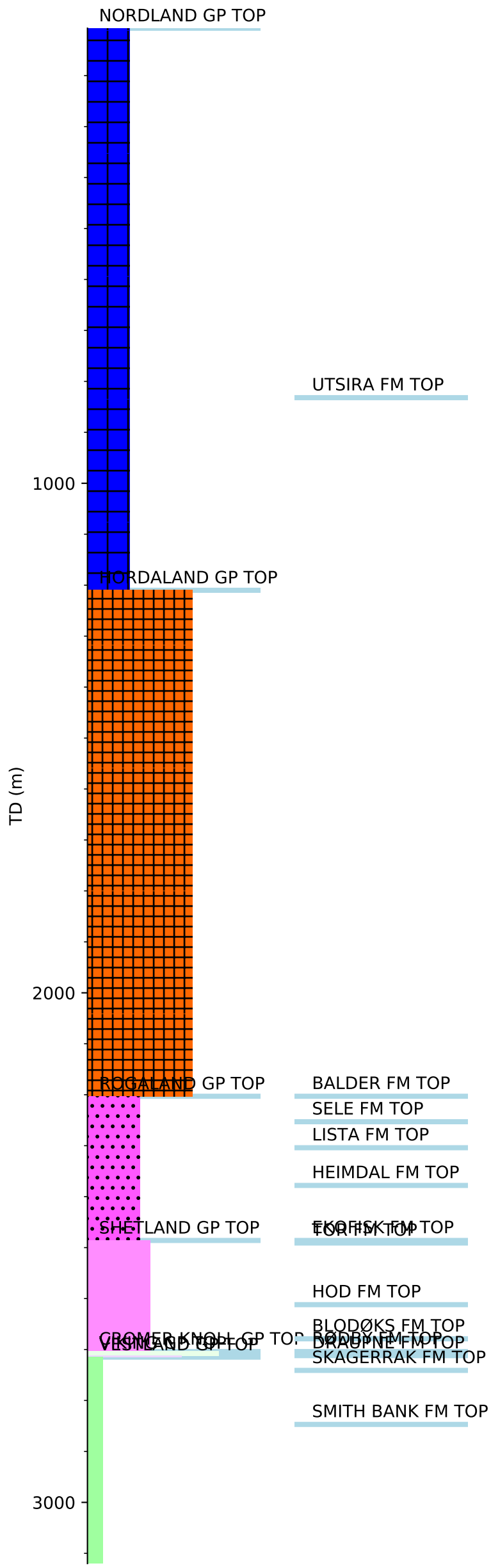
Groups

Formation Tops



Wellbore History

GENERAL

Well 15/9-17 was drilled on the Sleipner Terrace in the Viking Graben of the North Sea. The primary objectives were to test possible hydrocarbon accumulations in the Paleocene Heimdal Formation and in Jurassic/Triassic sandstones.

OPERATIONS AND RESULTS

Wildcat well 15/9-17 was spudded with the semi-submersible installation West Vanguard and drilled to 3120 m in the Triassic Smith Bank Formation. A 12 1/4" pilot hole was drilled down to 519 m, but no indications of shallow gas was found. Bad weather caused some delay. Bad weather and repeated BOP problems caused some down time. The well was drilled with spud mud down to 500 m, with gypsum/polymer mud from 519 m to 2616 m, with Lignosulphonate/Drispac mud from 2616 m to 2950 m, and with Drispac from 2950 m to TD.

Both the Heimdal Formation and the Mesozoic sandstones contained gas and were tested.

The log evaluation indicated top of the hydrocarbon column in the Heimdal Formation at 2377.5 m. The logs indicated the gas/water contact at 2418.5 m, while pressure data gave a gas/water contact a bit shallower, at 2413 m. Weak and spotted shows were recorded on cored sandstones in the Heimdal Formation below the contact down to 2425 m, and from 2442 to 2450 m.

The top of the hydrocarbon column in the Mesozoic sandstones was at 2715 m (top Vestland Group). The column extended down into the Triassic. No definite gas/water contact was found but could be as deep as 2848 m. Shows were recorded on cored sandstones throughout this reservoir, getting weaker with depth.

No shows were seen outside of the hydrocarbon bearing sections in the well

Ten cores were cut. Cores 1 to 5 were cut from 2382 to 2460 m. The recovery was 100% except for core 4, which had only 46% recovery. No core-log depth shift was required for these cores. Cores 6 to 9 were cut from 2714 to 2775.4 m with 100% recovery. The core-log shift was from 1.1 m to 0.45 m. Core 10 was cut from 2810 to 2828.9 m with 100% recovery. The core-log shift was 1.0 m. wire line logs were run in the well. RFT fluid samples were taken at 2308.3 m (mud filtrate), 2729.3 m (gas, condensate and mud filtrate), 2802.7 m (gas, condensate and mud filtrate), and 2844.8 m (gas, condensate and mud filtrate).

The well was suspended on 30 March 1983 as a gas and condensate discovery.

TESTING

Three Drill Stem Tests were conducted.

DST 1 tested the interval 2802 to 2814.5 m. It produced 590000 Sm3 gas and 210 Sm3 condensate /day through a 19.05” choke. The GOR was 2800 Sm3/Sm3. Traces of sand and water were produced. Dräger measurements indicated 0.5 - 1.0% of CO2 and no H2S. The downhole temperature was 100 °C.

DST 2 tested the interval 2726.5 to 2741.5 m. It produced 570000 Sm3 gas and 205 Sm3 condensate /day through a 19.05” choke. The GOR was 2780 Sm3/Sm3. An average BSW of 0.5% was produced throughout the test. Dräger measurements indicated 0.5% of CO2 and no H2S.The downhole temperature was 97.8 °C.

DST 3 tested the interval 2381.5 to 2414 m. It produced 525000 Sm3 gas and 280 Sm3 condensate /day through a 19.05” choke. The GOR was 1875 Sm3/Sm3. Between 0.4 - 0.9% BSW was measured during the final flow. No. CO2 and H2S was measured. The downhole temperature was 90 °C.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 15/9-17