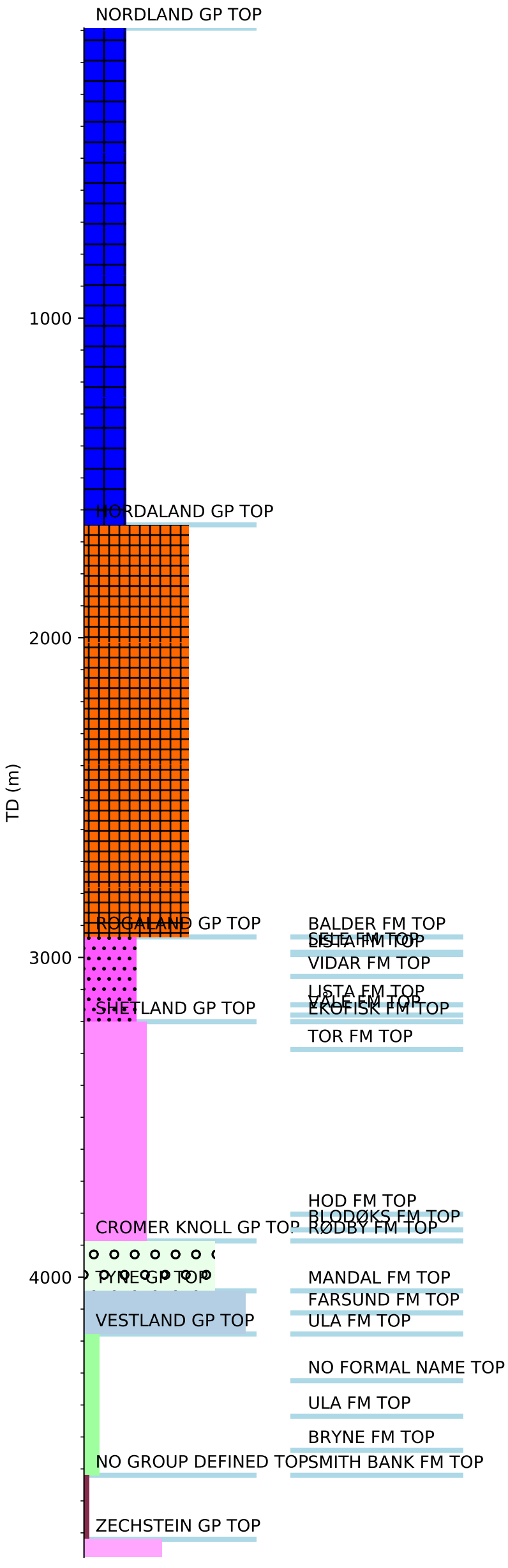

Wellbore History

GENERAL

Well 1/3-3 is located on the Cod Terrace in the North Sea. It was drilled to evaluate the hydrocarbon potential of both the Late Jurassic and the Triassic sandstone formations. Main target was the Late Jurassic Ula Formation found oil bearing in the Ula field, 17 km to the NW, and in the well 2/1-3. Secondary target was the Triassic sandstone found oil bearing in the well 7/12-6 in the Ula field.

OPERATIONS AND RESULTS

Wildcat well 1/3-3 was spudded with the semi-submersible installation Borgsten Dolphin on 22 August 1982 and drilled to TD at 4876 m logger's depth (4867 m driller's depth). The well was drilled using water based mud. Two drilling breaks occurred, one at 4127 m and one at 4180 m.

Thin layers of sandstone were found in the Palaeocene. The Chalk Group was 686 m thick. Less than 10 m of sandstones scattered in several thin layers were encountered and partially cored in the Farsund Formation, they were found tight. The Late Jurassic Ula Sandstones, which were the main objective, were found at 4178 m and they were oil bearing down to an OWC at 4221 m, but with only ca 5 m pay zone. The upper half with the best reservoir qualities was cored (cores 2 to 6). The coaly Bryne Formation is assigned at 4527 m, top Triassic Smith Bank Formation at 4620 m, and the Zechstein evaporitic rocks, anhydrite (26 m) and halite was penetrated from 4820 m to TD.

Residual hydrocarbon saturation based on electric logs were seen in the Paleocene at 3068 to 3093 m and in top Triassic at 4622 to 4637 m. Shows were reported as follows: Direct yellow fluorescence on cuttings at 2955 m; Weak direct fluorescence and poor streaming yellow cut fluorescence on cuttings at 3075 - 3145 m; Yellowish green direct fluorescence and dull bright yellow cut fluorescence on cores at 4186 - 4219 m; Weak direct fluorescence and pale cut fluorescence on cuttings at 4527 - 4542 m.

One core was cut from 4129 m to 4147 m in the Farsund Formation and five more from 4181 m to 4284 m in the upper half of the Ula Formation (core depths = log depths + 7 m for core 1 and + 6.4 m for cores 2 to 6). RFT wire line fluid samples were taken at 4212 m (2 l gas and 3.5 l light brown water with yellow green oil film), 4244 m (3.5 l water), 4214 m (3.5 l water with strong petroleum odour), and 4436 m (4.2 l fluid).

The well was permanently abandoned on 24 March 1983 as an oil discovery.

TESTING

Three DST's were performed in this well.

DST 1 tested the intervals 4528.5 - 4533.8 m + 4535.3 - 4538.3 m + 4546 -4552 m. It produced mud filtrate and formation water at a rate of 2.63 m3/day. The maximum temperature recorded in the test was 160.9 deg C.

DST 2 tested the interval 4233 - 4240 m. It produced formation water at a rate of 170 m3/day. The maximum temperature recorded in the test was 160.0 deg C.

DST 3A tested the interval 4202 - 4208 m. It produced mud filtrate and formation water at a rate of 0.6 m3/day. The maximum temperature recorded in the test was 158.3 deg C.

DST 3B tested the intervals 4202 - 4208 + 4211 - 4214 m. It produced 143 Sm3 oil and 28000 Sm3 gas/day. The GOR was 196 Sm3/Sm3, the oil density was 0.829 g/cm3, and the gas gravity was 0.820 (air = 1). The maximum temperature recorded in the test was 165.6 deg C.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 1/3-3