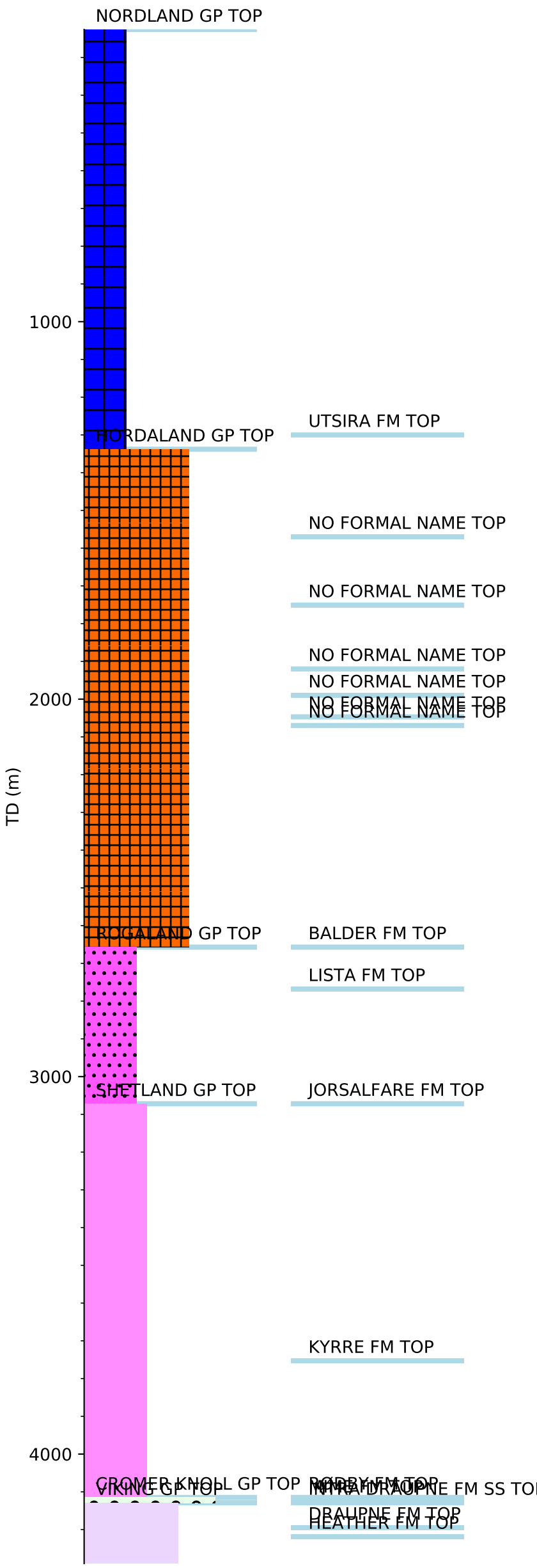

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 34/7-26 A

Wellbore History

Appraisal well 34/7-26 A was drilled as a sidetrack from well 34/7-26 S in the in the "H-central" prospect in the Tampen area in the Northern North Sea. The H-Central is located between the Gullfaks and the Vigdis Fields. The well had two primary objectives. Firstly, to perform an optimum data collection programme in the Top Intra Draupne sandstone, and possible deeper Intra Draupne sandstone and also in possible base Cretaceous sandstone. Secondly, to perform a long term production test if the well was to encounter at least 20 m with Top Intra Draupne Formation sand. The two previous wells with this objective, 34/7-26 S and re-entry 34/7-26 SR, did not penetrate prognosed Top Intra Draupne sandstone in a position that fulfilled the test criteria.

OPERATIONS AND RESULTS

Well 34/7-26A was kicked off from below 13 3/8" casing shoe in well 34/7-26 S, on 6 January 1998. The well was entered through slot J-3 on Tordis Extension Template and drilled deviated with the semi-submersible installation Scarabeo 5 to TD at 4290 m (2573 m TVD) in Late Jurassic sediments of the Heather Formation. Some problems were encountered getting the wire line tools to TD during final log runs, otherwise operations went without significant problems. The well bore was drilled all through to TD with a pseudo oil based mud (Ancotec with Novamul).

The Top Cromer Knoll Group was penetrated at 4115 m (2429 m TVD) and consisted of the Rødby Formation down to 4123 m, and the Mime Formation from 4123 m to 4129 m (2436 - 2441 m TVD). There were no sandstones in the Cromer Knoll Group.

The main reservoir interval, the Top Intra Draupne sandstone, came in at 4129 m (2441.1 m TVD) with a thickness of 50 m TVD. The underlying Draupne Formation shale was 20 m TVD thick. The top Intra Draupne Formation reservoir in well 34/7-26 A consisted of coarsening-upwards sandstones, which mostly were structureless, parallel bedded, and less frequent, graded bedded. The upper four meters consisted of medium to coarse grained sands, which were structureless. The lower part of the reservoir was more bioturbated than the upper part. The net-to-gross was 93%, the average porosity 28%, the average permeability 1320 mD, and the average water saturation 7%. In addition to the Top Intra Draupne Formation sandstone, a second Intra Draupne Formation sandstone was encountered at 4204 m (2502 m TVD). This sandstone was 1.6 m thick TVD, and the bottom half was completely tight (carbonate cemented). Faint parallel lamination could be distinguished in the base, otherwise it was structureless. The sandstone was medium grained. The upper part had a net-to-gross of 62%, 29% porosity, 750 mD in permeability (from core), and 19% water saturation.

No oil water contact was encountered in the well. The deepest oil down-to was observed at 4206 m (2504 m TVD). No shows were observed above or below the Intra Draupne Formation sands. Pressure point measurements in the reservoir section show depletion caused by production from the Tordis field.

Coring commenced at a depth of 4104 m, circa 20 m MD above estimated Base Cretaceous depth. Four continuous cores were taken to a depth of 4216 m. Two MDT fluid samples were taken. The first was taken in the Top Intra Draupne Formation sand at a depth of 4153 m, and the other in the second Intra Draupne Formation sand at a depth of 4205 m. Laboratory measurements indicated the fluid samples were contaminated by base oil from the mud.

After two drill stem tests the well was re-classified to development well 34/7-J-3 H for a long term test to the Gullfaks C platform.

TESTING

Two drill stem tests were conducted in 34/7-26 A.

DST 1 tested the interval 4203.5 - 4207.5 m (2502.0 - 2405.3 m TVD) in the deepest Intra Draupne Formation Sand. It flowed 31560 Sm3 gas and 2466 Sm3 oil on a 20/64" choke in the main flow. The GOR was 91 Sm3/Sm3. The maximum recorded temperature, measured during maximum flow, was 89.6 deg C.

DST 2 tested the intervals 4161.5-4179.5 m (2467.7-2482.4 m TVD) plus 4140.0-4149.0 m (2450.1-2457.4 m TVD) in the top Intra Draupne Formation Sand. It flowed 99664 Sm3 gas and 1361 Sm3 oil on a 44/64" choke in the main flow. The GOR was 73 Sm3/Sm3. The maximum recorded temperature was 88.4 deg C.