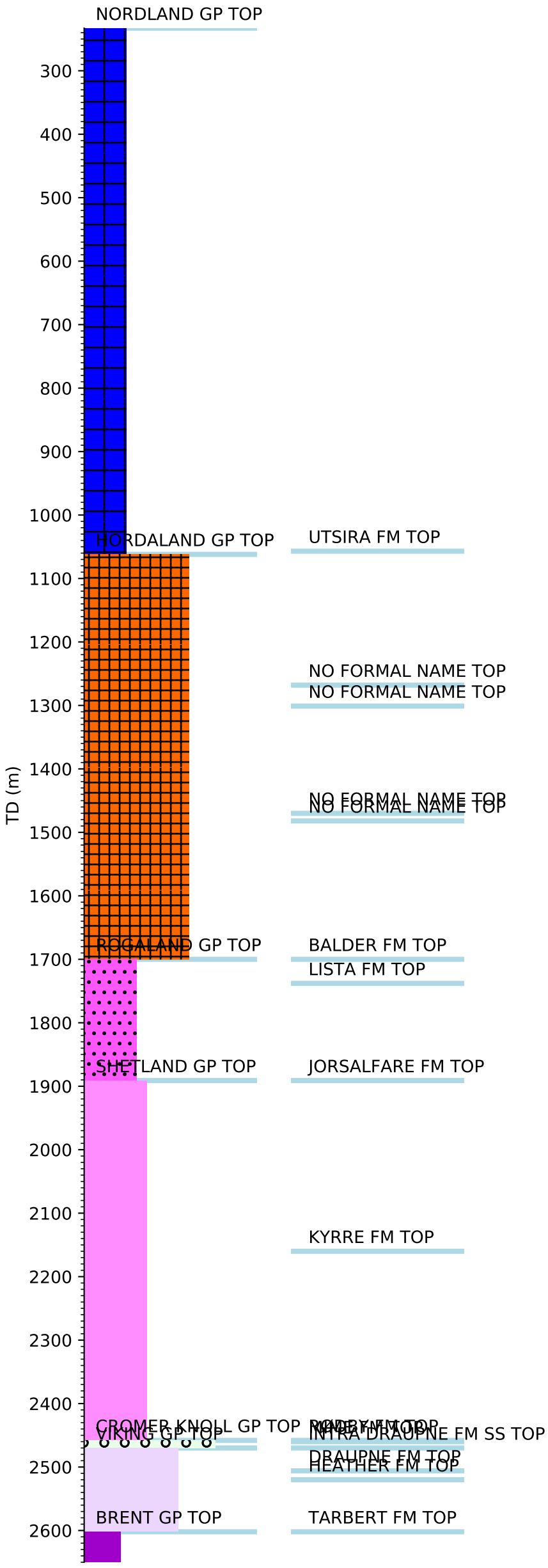
Groups

Formation Tops



Wellbore History

GENERAL

Well 34/7-31 was drilled in the Borg structure, which is situated on the western side of the Vigdis and Tordis Fields. The primary objective was to appraise the 34/7-23 Discovery in Intra-Draupne Formation Sandstone in this structure. Proven reserves, if sufficient, would most probably be produced through the Vigdis Field installations. Secondary objectives were Paleocene sand (Sele/Lista Formations) in a down-flank position from well 34/7-18 were these sands were oil-filled, and Early Cretaceous sands, found oil filled in well 34/7-21. The well was to be drilled 50 m into the Brent Group, which was expected to be water bearing at well location. In case of encountering an oil-filled Intra-Draupne sand thicker than 10 m TVD in the well, a sidetrack should be drilled, kicked off below the 13 3/8" casing to further appraise the Borg structure.

OPERATIONS AND RESULTS

Well 34/7-31 was spudded with the semi-submersible installation Scarabeo 6 on 10 March 2001 and drilled to TD at 2650 m in the Middle Jurassic Tarbert Formation. A 9 7/8" pilot hole was drilled from seabed 233 m to 1150 m. Logs (MWD) presented from seabed 233 m to 1150 m were recorded in the 9-7/8" pilot hole. The 9 7/8" pilot hole was then opened to 36" and 30" casing run to 306 m. The 26" hole (using 26" hole opener) deviated from the original 9 7/8" pilot hole below 306 m and the two holes were ca 27 m apart at 1150 m. Well 34/7-31 was drilled with returns to Seabed down to 1150 m. Sampling started at 1170 m. The well was drilled with seawater and hi-vis pills down to1150 m, and with Glydril KCl/polymer mud from 1150 m to TD. No gas related problems were experienced in the well. However, the MWD logs show possible gas levels at 280 m - 282 m, 372 m - 374,5 m and 558 m - 561 m.

The Intra-Draupne Formation Sandstone was encountered at 2470 with ca 35 meters net oil-bearing reservoir. Then, fourteen m of Draupne Formation shale was penetrated before entering the Heather formation. For the secondary objectives, both were water-filled and only Brent had significant sand (Tarbert Formation). Pressure points were taken with the MDT-tool in order to obtain formation pressures and fluid gradients from all reservoirs encountered in well 34/7-31. Especially the degree of depletion in the Intra-Draupne Sandstone was regarded as crucial information. The measured Intra-Draupne reservoir pressure was the same as the shut-in pressure in the Main Borg field. The gradient and reservoir fluid density was well defined, 0.69 g/cc or 0.067 bars/meter, and the reservoir pressure was measured to 307.04 bar at 2494.7 m. There was an ODT situation; hence the OWC is still not defined. Six high quality MDT oil samples were recovered from the Draupne Formation at 2496 m. Four of these were 250 cc single-phase samples. Two conventional cores were cut from 2472 m to 2506m in the Intra-Draupne Formation Sandstone.

The well bore was plugged back to the 13 3/8" casing and permanently abandoned on 13 April 2001 as an oil Appraisal well.

TESTING

No drill stem test was performed

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 34/7-31