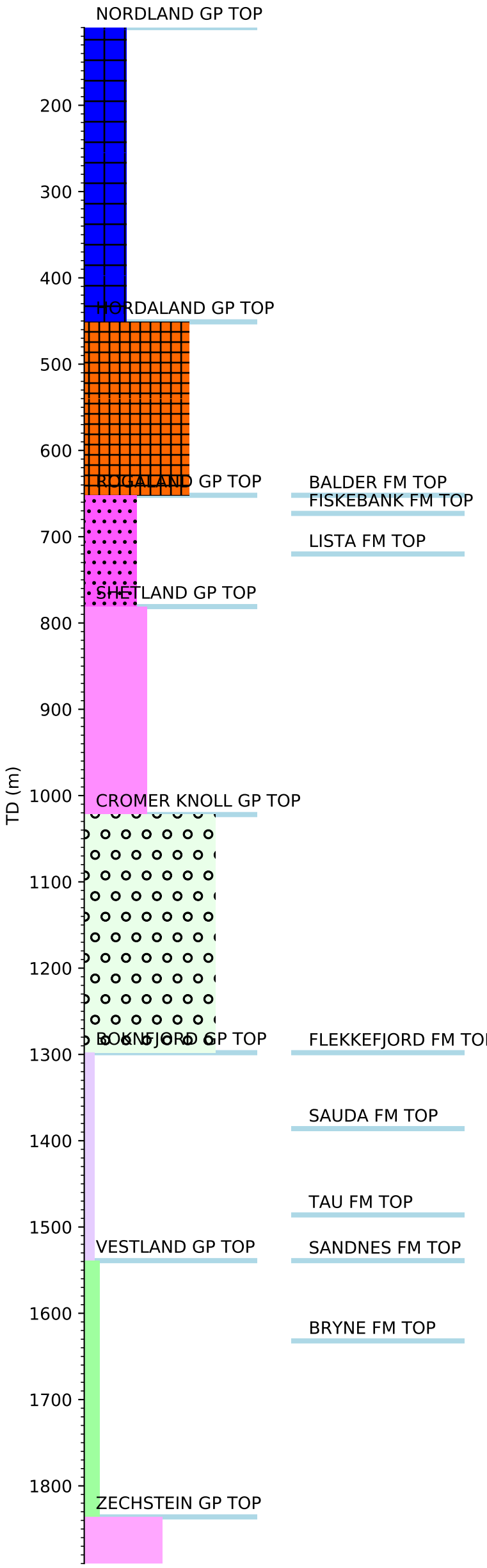
Groups

Formation Tops



Wellbore History

GENERAL

Well 10/7-1 is located at the southeastern end of the Egersund Basin in the North Sea. The objective of the well was to test the Tott prospect, a faulted anticline over a salt wall. The Middle Jurassic Bryne formation was the primary objective. A thin Sandnes formation sandstone overlying the Bryne was interpreted to be possible at the drilled location.

OPERATIONS AND RESULTS

Wildcat well 10/7-1 was spudded with the semi-submersible installation Sonat Arcade Frontier on 28 June 1992 and drilled to TD at 1890 m in the Late Permian Zechstein Group. The well was drilled with seawater and gel down to 793 m and with KCl/polymer mud from 793 m to TD.

Good reservoir quality sandstones were encountered in both the Sandnes and Bryne formations of the Vestland group. The top of the Sandnes formation was penetrated at 1539 m; top of the Bryne at 1632 m. Total thickness of the Vestland group is 297 m. From drill cuttings, fair to good visible porosity was observed in fine to coarse-grained sandstones throughout the Vestland group. Reservoir quality is good, with a net sand/gross thickness ratio of 54.5% using a 12% porosity cut-off. Using the same cut-off value the average porosity of the reservoir sandstones in the Vestland group is 23.3%. Bathonian age sediments (Bryne Formation) rested directly on Late Permian Zechstein salt at 1836 m. Occasional, spotty shows were observed in cuttings from the Sandnes and Bryne Formations. These marginal shows were interpreted to be sourced from in-situ carbonaceous material and not as migrated hydrocarbons. Analysis of the wire line logs and wire line pressure data clearly indicated that the sandstones of the Vestland group were water bearing. Organic geochemical analyses showed Total Organic Carbon (TOC) from 1.0 to 3.19 % and Hydrogen Index (HI) from 79 to 224 mg HC/g TOC in the Late Jurassic shales, which was classified as a poor oil and gas source. Associated with coals in the Vestland group were gas prone sediments with TOC values ranging from 1.64 - 6.14% and HI values of 118 to 223. The well was found immature for oil and gas generation; maximum vitrinite reflectance, recorded near TD, was 0.45 %Ro. Extractable organic matter contained low to modest amounts of immature hydrocarbons associated with local shales and coals, consistent with the trace shows recorded during drilling.

One conventional core was cut in the Sandnes formation, from 1561 to 1566.5 m, where the core jammed. The recovered core (3.95 m) consisted of sandstone with a thin claystone/shale bed at the base. Shows were not observed in the core. Core analysis indicated generally fair to good porosity and permeability. FMT pressures also indicated fair to good permeability throughout the Vestland group. No fluid sample was taken.

The well was permanently abandoned on 30 July 1992 as a dry hole.

TESTING

No drill stem test was performed.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 10/7-1