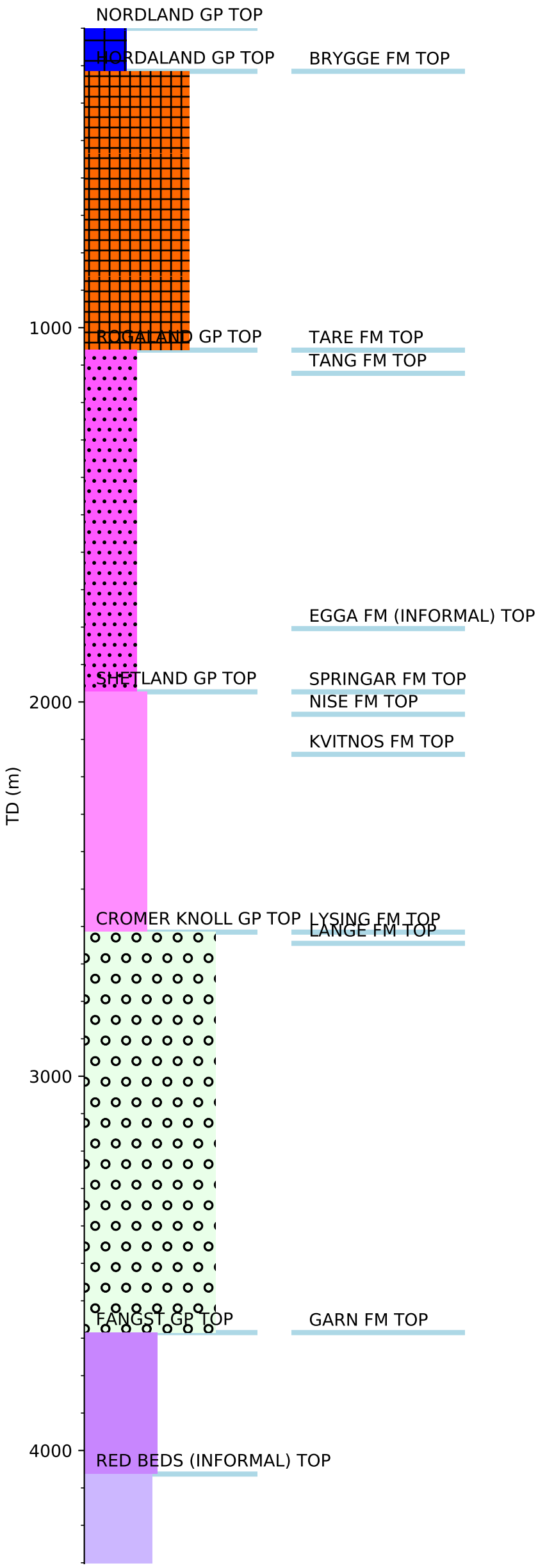
## Groups

## Formation Tops




## Wellbore History

GENERAL

Well 6305/12-1 is located in the southwestern part of block 6305/12 in the Slørebotn Sub-basin, approximately 12 km west of the island of Vigra. The C-prospect is an easterly tilted fault block bounded to the west by the Gossa High. The primary objective of the well was to prove hydrocarbons in Early to Middle Jurassic sandstones. Late Triassic sandstones were secondary objectives. The well was designed to leave only non-commercial resources up-dip with a total depth of 4300 m in rocks of presumed Late Triassic age. If the encountered stratigraphy below the base Cretaceous was younger than expected, deeper drilling for stratigraphic information would be considered.

OPERATIONS AND RESULTS

Wildcat well 6305/12-1 was spudded with the semi-submersible installation Transocean 8 on 29 July 1991 and drilled to TD at 4302 m in Triassic Red Beds conglomerates. No significant problems were encountered during drilling, which was completed in 55 days compared to prognosed 81 days. The well was drilled with seawater and hi-vis pills down to 721 m and with KCl/polymer mud from 721 m to TD.

The Egga Informal Sand Unit was encountered at 1804 m. It contained ca 145 m net sand with 19.7% average porosity. Thinly developed sandstones were encountered from 3260 m in the Late Cretaceous Lange Formation and down through to base Early Cretaceous at 3685 m. At 3685 m there was a hiatus from Late Albian (Base Lange Formation) to Bathonian, hence the Late Jurassic source rocks were not present in the well. The Middle Jurassic unit exhibited interbedded thin sandstones, coals and claystones. No shows were recorded while drilling the Egga sandstone, but post-well organic geochemical extraction proved a weak show at 1810 m. The logs showed a water wet Egga reservoir. The Lange sandstones generally displayed poor direct and cut fluorescences while being drilled, and proved later to be oil-bearing, though tight, in subsequent RFT runs. Moveable oil in this section was confirmed by petrophysical evaluation, which detected a 3.75 m net pay with an average of 14.4 % porosity. Chromatographic analysis of drilled gas showed C4's to be present from ca 3150 m in the Late Cretaceous through to the Early Cretaceous and Jurassic, where they gradually diminished towards the base, and disappeared below 3970 m. A trace of oil was observed to be seeping from fractures in a thin coal band at 3692 m in core l in the Middle Jurassic. Organic geochemical analyses showed that the best source rocks were the coals and shales of the Middle Jurassic. In addition a Blodøks Formation Equivalent at 3140 m to 3158 m within the Lange Formation may have some potential (TOC = 2.2% and HI = 165 mg HC/g TOC in a single SWC sample), but this unit is only 18 m thick. The well is immature for petroleum generation down to 2600 m, early mature from 2600 m to 2900 m, and in the oil window from 2900 m to ca 4000 m. Analyses of the oils and extracts showed that the Egga and Lange oils and extracts probably derived from a marine source rock while the oil from the Middle Jurassic was confirmed as a locally sourced coal-bleed.

Three cores were cut: one in the Middle Jurassic and two in the Triassic Red Beds, including one at TD. Two cased-hole RFT runs were performed, obtaining two sets of fluid samples from 3331 m and 3455.6 m in the Lange Formation sandstones. No reliable pressures were obtained, however small volumes of (ca 0.2 litre) of heavy, emulsified oil were recovered in both samples. A total of 240 sidewall cores were attempted and 160 were recovered.

The well was permanently abandoned on 18 September 1991. It proved non-commercial volumes of live oil and is classified as a well with shows.

TESTING

No drill stem test was performed.

# LITHOSTRATIGRAPHY & HISTORY FOR WELL: 6305/12-1