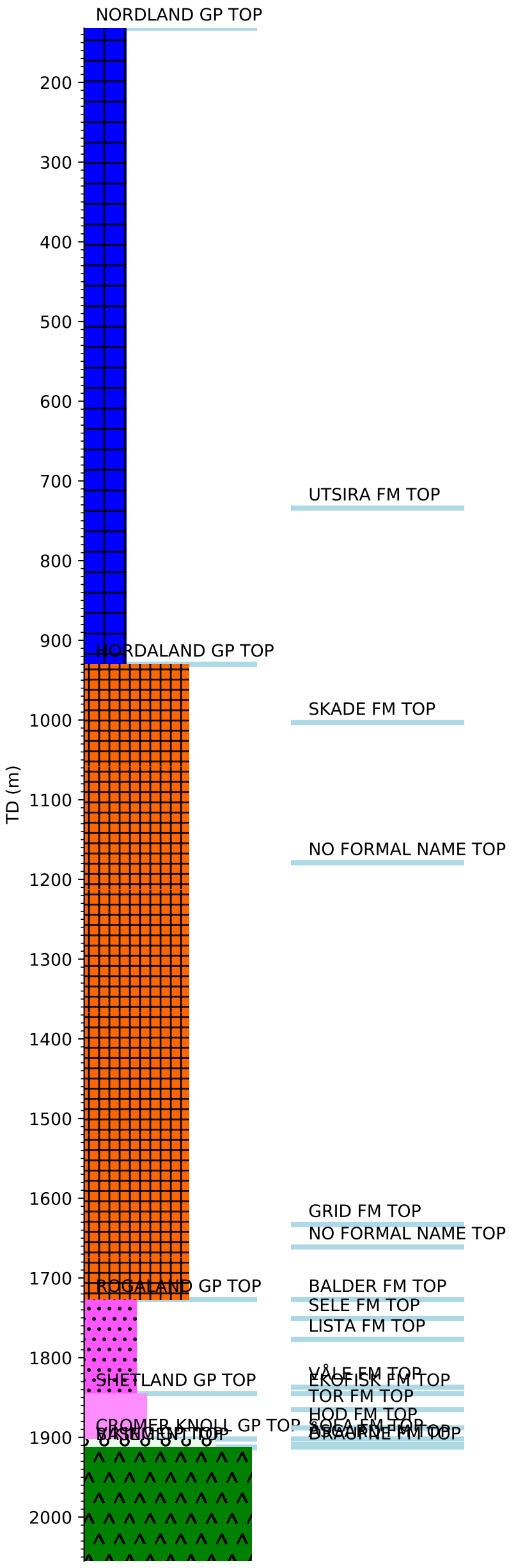
Groups

Formation Tops



Wellbore History

GENERAL

Well 16/1-12 was drilled south of the Luno Discovery on the south-western part of the Utsira High. The Luno Discovery sits in an inlier basin where well 16/1-8 Luno Discovery well proved a 275 m thick Late Triassic to Jurassic sequence, overlain by a 25 m thick Late Cretaceous chalk sequence. The purpose of the well is to prove oil-filled sediments of Late - Middle Jurassic fluvial/marine and pre-Jurassic sediments south of the established Luno sediment basin. The potential reservoir was expected from the top of the Jurassic conglomeratic sandstones to the base of the Triassic sandstones and conglomerates (TD).

OPERATIONS AND RESULTS

Well was spudded with the semi-submersible installation Songa Dee on 29 July 2009 and drilled to TD at 2055 m in pre-Devonian Basement rock. The well was drilled with seawater and sweeps down to 603 m and with Glydril mud from 603 m to TD.

Well 16/1-12 proved oil in weathered and faulted/fractured granitic basement beneath a thin, 20 - 30 cm, Early Cretaceous conglomerate. An oil/water contact was established at approximately 1954 m. An extensive data acquisition program was undertaken and the oil column was confirmed by oil sampling, pressure measurements and observations in both cores and sidewall cores. The weathered and fractured basement showed moderate reservoir characteristics with an average porosity of 9% and an average permeability of 1 mD. As fractured basement plays are rare on the Norwegian continental shelf, a large uncertainty applied to both reservoir properties and the lateral outline of the discovery. The latter being due to seismic image quality and to difficulties mapping the fracture/fault density.

The first oil shows in well 16/1-12 were observed in Core 4 at 1912 m after penetrating the thin, Cretaceous age, conglomerate layer below the Cromer Knoll marls. Moderate oil shows continued throughout the remainder of the cored interval, which consisted of fractured basement rocks. In cuttings from the subsequent drilling below the cored interval oil shows were more difficult to detect, however, poor shows were reported down to 1956 m. Oil was present in both the fractures and in secondary pore spaces.

A total of 8 conventional cores were taken in well 16/1-12. As planned, coring operations commenced at 1864 m in the Shetland Group limestones in order to core the transition into the reservoir. Mini DSTs were performed at 1922.5 m, 1946.8 m, and 1956.6 m. Test interpretation indicated permeability ranges of 2-30 mD, 5-100 mD, and approximately 700 mD respectively, for the three tests. Oil samples were obtained from the first two DSTs and water from the last.

The well was permanently abandoned on 8 September 2009 as an oil discovery.

TESTING

No drill stem test was performed.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 16/1-12