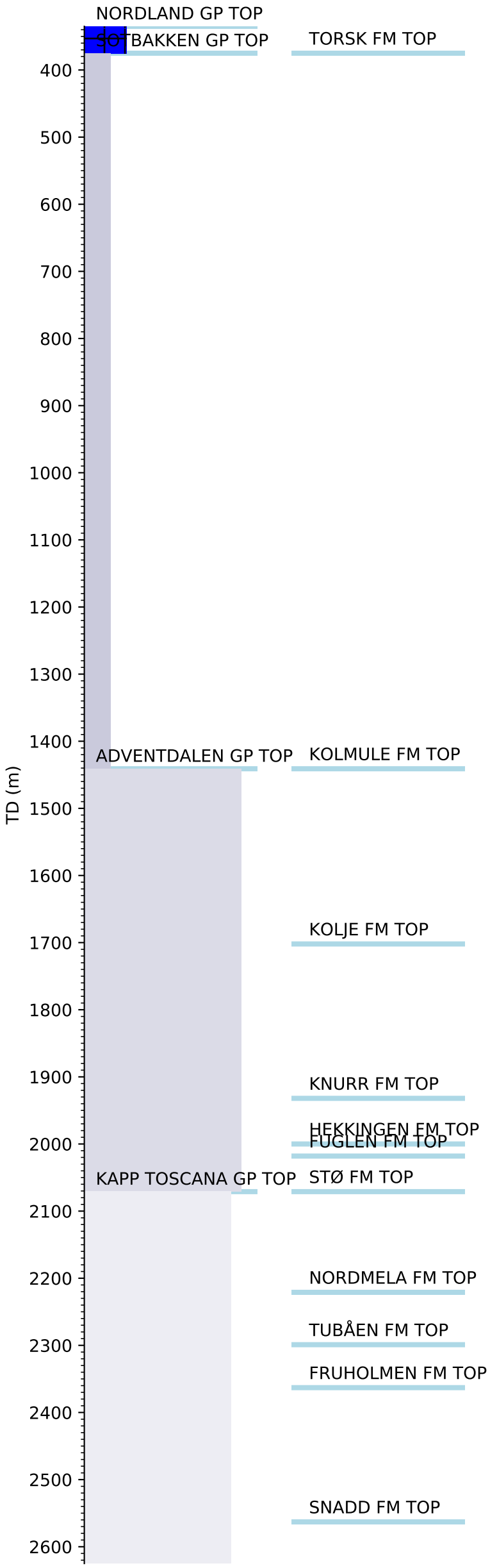
Groups

Formation Tops



Wellbore History

GENERAL

The 7120/2-3 S well was drilled on the Skalle prospect north-west of the Snøhvit Field at a location between the Loppa High to the north and the Hammerfest Basin south. The objective was to explore the reservoir potential of the Mesozoic succession, with sandstones of the Kolmule and Stø Formations as the primary target.

OPERATIONS AND RESULTS

A 9 7/8" pilot hole, named 7120/2-U-1 was drilled to 655 m to check for shallow gas. None was encountered. Wildcat well 7120/2-3 was spudded with the semi-submersible installation Transocean Leader on 15 May 2011 and drilled to TD at 2625 m (2620 m TVD) in the Late Triassic Snadd Formation. No significant problem was encountered in the operations. The well was drilled with seawater and sweeps down to 650 m and with KCL/polymer/GEM mud from 650 m to TD. In the 17 1/2" section from 650 m to 1522 m mud from the recent 7220/8-1 Skrugard well was re-used in this well. This mud proved to contain oil that made shows evaluation difficult and was replaced before drilling the next section.

The well encountered hydrocarbons at three stratigraphic levels; a gas column from 1576 m to a free gas-water contact at 1639.4 m in the Early Cretaceous Kolmule Formation, gas in a down-to situation in the Early Cretaceous Knurr Formation, and a gas column from 2071 m to a free gas-water contact at 2095.9 m in the Early to Middle Jurassic, Stø Formation. The Kolmule reservoir had a gross thickness of 150 m, consisting of several sandstone bodies with reservoir facies ranging from shallow marine sandstones to conglomerates and homogenous slope turbidites. The Knurr Formation reservoir was a 5 m thick partly carbonate cemented sandstone resting on the Hekkingen Formation. The Stø reservoir consisted of 149 m thick, clean sandstone. Water bearing sandstone reservoirs were also present in the Tubåen, Fruholmen, and Snadd formation. The reservoir quality in the sandstones from Stø level and down was affected by quartz diagenesis. Due to interference from the mud system oil shows were difficult. However minor oil shows were recorded in intervals on the cores from all three gas bearing reservoir sections. In addition, above average gas levels (3 to 3.5 % Total Gas) were observed through the upper Nordmela Formation in the interval from 2220 to 2255 m, and these had a high level of heavy components.

A total of 9 conventional cores were cut, 4 from 1583 to 1639 m in the Kolmule Formation sandstone, 2 from 2002 m to 2025 m in the Hekkingen and Fuglen Formations, and 3 from 2074.8 m to 2170 m in the Stø Formation sandstones. Depth shifts to match with logs were -2.3 m for the cores 1 to 4, -2.9 to -4.0 m for cores 5 and 6, +0.45 m for core 7, and no shift for cores 8 and 9. MDT fluid samples were taken at 1585.5 m (gas) and 1635 (gas) m, and 1664.8 m (water) in the Kolmule Formation, 1998.9 m (gas) in the lower Knurr Formation, 2079 m (gas) in the Stø Formation, and 2139 m (water) in the Stø Formation.

The well was permanently abandoned on 9 July 2011 as a gas discovery.

TESTING

No drill stem test was performed.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 7120/2-3 S