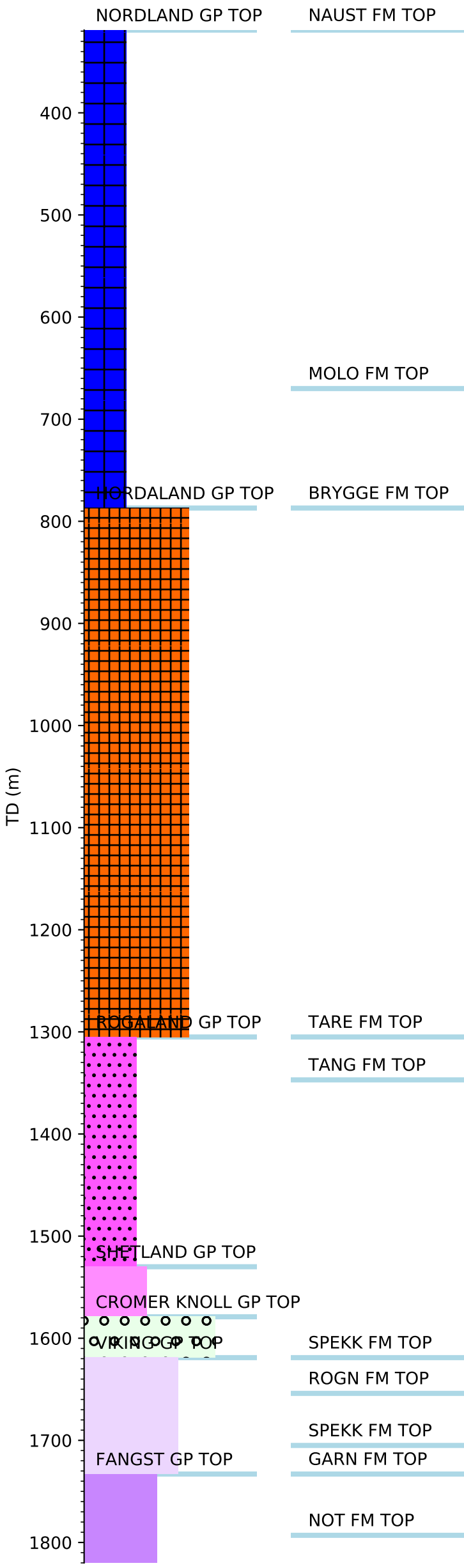

Wellbore History

GENERAL

Well 6407/9-5 was the fifth well drilled on the Draugen Field in the southern Haltenbanken area. Wells 6407/9-1, 6407/9-2 and 6407/9-3 delineated an areally extensive oil accumulation in relatively thin Late Jurassic Rogn Formation sandstone. Net oil sand thicknesses in these wells were 39, 12 and 34 m respectively. The oil gravity was 40 deg API. Well 6407/9-4, located on the west flank of the northern accumulation, confirmed pinch out of the Rogn Formation and encountered similar oil in the underlying Garn formation. The initial conditions of pressure and oil water contact in this well (1638.5 m MSL were similar to those in the Rogn Formation accumulation. The objectives of well 6407/9-5 were to delineate top structure and rock qualities in the southern culmination. Prognosed TD was 1805 m in rocks of Triassic age, or a maximum depth of 4000 m.

OPERATIONS AND RESULTS

Appraisal well 6407/9-5 was spudded with the semi-submersible installation West Venture on 12 September 1985 and drilled to TD at 1820 m in the Early Jurassic Not Formation. Drilling proceeded without serious problems, except for the sections trough glacial deposits were huge boulders caused minor problems. The well was drilled vertical. Deepest reported deviation survey was at 1675 m (1675 m TVD RKB). To this depth maximum deviation from vertical was 0.66 deg. The well was drilled with seawater and bentonite down to 811 m, with KCl/polymer mud from 811 m to 1625 m, and with chalk mud from 1625 m to TD.

The Rogn Formation was encountered at 1654 m, 15 m deeper than prognosed. Light oil was discovered, as known from the other wells in the Draugen field. The oi1/water contact was found at 1671 m (1639 m MSL), the same contact as in the other wells drilled on the Draugen Field. Average reservoir quality over this 17 m interval was good, with a calculated hydrocarbon saturation of 76% and a porosity of 27%. Core permeabilities from the oil interval typically ranged between 1 and 10 Darcy. The base of the Rogn Formation, from 1704.0 - 1734.0 was laminated, bituminous shales with occasionally sandy and silty beds, which were strongly pyrite cemented. This interval forms a thick impermeable layer between the Rogn and the underlying Garn sands. The underlying water bearing Garn Formation contained 32 m of sandstone with 32 % average porosity. Oil shows were recorded only in the Rogn Formation reservoir from top and down to 1675 m. No shows were seen elsewhere in the well.

Four cores were cut in the interval 1654 - 1703 m in the Rogn Formation. No fluid samples were acquired on wire line, although several attempts were made.

On completion of the testing the well was suspended on 13 November 1985 as a possible future oil producer. It was re-entered in April 1993. It was taken in use as an oil producer and renamed 6407/9-A-55 H.

TESTING

One DST test was performed in the interval 1654 - 1661 m (1621 to 1628 m MSL).

The well produced up to a maximum of 1210 Sm3 oil /day of 40 deg API oil through a 1" choke. Separator GOR was measured at 18.2 Sm3/Sm3. The gas gravity was 0.818 (air = 1) with 0.35% CO2 and 0 ppm H2S. Initial reservoir pressure was calculated as 2394 psia at 1663 m (1630 m MSL). The previously established Draugen reservoir pressure of 2392 psia (at datum) was within the accuracy of the gauges.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 6407/9-5