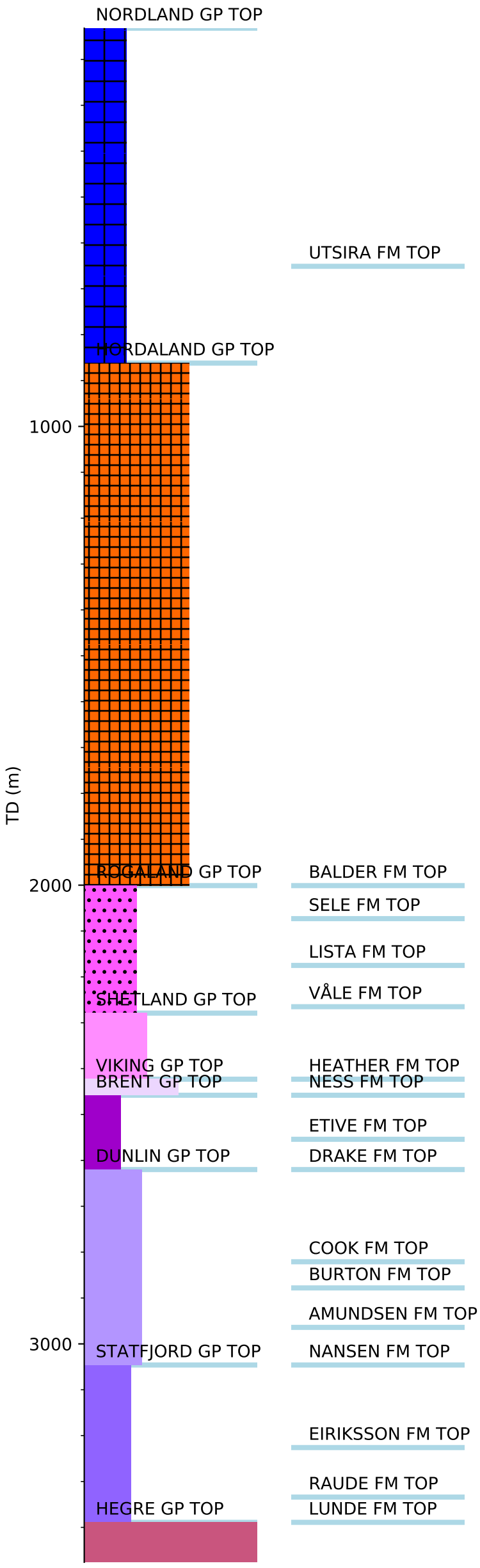

Wellbore History

GENERAL

Well 30/6-9 was drilled on the Gamma structure on the Oseberg Field in the northern North Sea. The Gamma structure lies on the west side of the Alpha structure and is separated from it by a large northwest-southeast fault. The primary objectives of well 30/6-9 were to test hydrocarbon accumulations in the Brent Group and find additional hydrocarbon accumulations within the Early Jurassic. This was the first well located on the Gamma structure. Planned depth for the well was ca 3360 m or 75 m into the Triassic Lunde Formation.

OPERATIONS AND RESULTS

Wildcat well 30/6-9 was spudded with the semi-submersible installation Nortrym on 28 August 1982 and drilled to TD at 3476 m in the Late Triassic Lunde Formation. No significant problems occurred while drilling the well. The well was drilled with seawater, bentonite and hi-vis pills down to 975 m, with KCl/polymer mud from 975 m to 2750 m, and with lignite/lignosulphonate/freshwater mud from 2750 m to TD

Weak to strong shows were reported mainly in soft limestone stringers in the lowermost part of the Lista Formation in the Late Paleocene, in the Danian, and through the Maastrichtian. Further shows above the Brent Group were reported in cuttings in limestones from 2410 to 2422.5 m, just above the Late Jurassic unconformity.

The main target, Brent Group was penetrated from 2458 to 2620 m. It was hydrocarbon bearing over the entire interval with the gas/oil contact calculated from FMT pressure recordings at ca 2520 m. This is the same, as the GOC on the Alpha structure. No oil/water contact was encountered. The net pay in the Brent Group is calculated to be 98 m giving a net/gross ratio of 0.60. The average porosity is 22.7% with an average water saturation of 20%. Below the Brent Group weak shows were reported from 2622 to 2630 m in the Drake Formation and in thin sandstone and siltstone stringers at 3000 to 3046 m in the Early Jurassic Amundsen Formation. The Early Jurassic Statfjord Group was found to be water bearing.

Ten cores were cut from 2462 m to 2624.5 m in the Ness, Etive, and Drake formations. FMT fluid samples were taken in the Bent Group at 2461.5 m (gas and mud filtrate), 2489.5 m(2 3/4 gal chamber empty), 2543 m (gas, oil and mud filtrate), 2567 m (gas, oil and trace mud filtrate), and at 2617.5 m (gas, oil and mud filtrate).

The well was suspended on 16 December 1982 as an oil and gas discovery.

TESTING

Five DST's were performed in this well, two in the gas zone and three in the oil zone.

DST No 1 (2612.5 - 2615.5 m) at the base of the Etive Formation tested 528.7 Sm3/day of oil and 58581 Sm3 /day of gas through a 32/64" choke. GOR was 110 Sm3/Sm3. Oil gravity was 33.2 deg API and gas gravity was 0.679 (air = l). Maximum temperature recorded at reference depth 2594.3 m was 103.1 deg C.

DST No 2 (2554 - 2559 m) at the very top of the Etive Formation tested 554 Sm3 oil /day and 65656 Sm3 gas /day through a 32/64" choke. GOR was 118 Sm3/Sm3. Oil gravity was 33.5 deg API and gas gravity was 0.678 (air = 1). Maximum temperature recorded at reference depth 2553 m was 100 deg C. This test was interrupted by technical problems during sampling. A re-test over the same interval (DST No 2A) was done to complete the test programme.

DST No 3 (2537.3 - 2540 m and 2542.5 - 2547 m) in the lower Ness Formation tested 429 Sm3oil and 52072 Sm3 associated gas /day) through a 30/64" choke. GOR was 121 Sm3/Sm3. Oil gravity was 34 deg API and gas gravity was 0.675 (air = 1). Maximum temperature recorded at reference depth 2519.1 m was 99.8 deg C.

DST No 4 (2498 - 2501 m) in the middle Ness Formation gas zone tested 200 Sm3 condensate and 624400 Sm3 gas /day through a 40/54" choke. Gas/Condensate Ratio was 3210 Sm3/Sm3. Condensate gravity was 54.8 deg API and gas gravity was 0.662 (air = 1). Maximum temperature recorded at reference depth 2485.8 m was 98.2 deg C.

DST No 5 (2460 - 2463 m) at the top of the Ness Formation tested 189 Sm3