



Wellbore History

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GENERAL

Well 34/7-16 R is a re-entry of well 34/7-16, which was suspended due to time schedule for the rig. The well is located between the Statfjord and Snorre Fields on Tampen Spur in the Northern North Sea. The purpose of the re-entry was to test the hydrocarbon-bearing Brent Group reservoir and also to drill through and test the Statfjord Formation.

OPERATIONS AND RESULTS

Well 34/7-16 was re-entered (34/7-16 R) on 4 September 1990 by the semi-submersible rig Treasure Saga and drilled through the Statfjord formation to TD at 2980 m, 35 m into the Late Triassic Lunde Formation. The well was drilled with KCl mud.

Both the Statfjord formation and the Lunde Formation proved to be water bearing. The Statfjord Formation (2821 - 2945 m) had an estimated average log porosity of 21.7% and a net to gross ratio of 0.56.

The well suspended on 15 October 1990 as an oil appraisal.

TESTING

Three DST tests were performed in well 34/7-16 R.

DST 1 tested the interval 2821 - 2837 m in the Statfjord Formation. The test was mainly designed to get representative samples of Statfjord Formation water. The initial pressure and temperature at the top perforation was 406 bar and 102 deg C. Clean water with very little gas was produced. The gas gravity was 0.64 (air = 1). It was not possible to maintain stable flowing conditions due to plugging at the choke manifold, but a flow-rate of 1450 m3/day at a wellhead pressure of 105 bar was measured at the end of the 12 hrs flow period.

DST 2 tested a four metres zone from 2454 - 2458 m in the Rannoch Formation. The main objective was to evaluate the lateral extension of the two calcite cemented layers (2451 - 2453 and 2459 - 2461 m). The initial pressure and temperature at the top perforation was 366 bar and 90 deg C. Oil with a GOR of 55 Sm3/Sm3 was produced. The gas gravity was 0.75 (air = 1) and the CO2 content was 0.27%. After a clean-up period, the well was flowed for 26 hours followed by a 25 hours build-up. At the end of the flow, the measured flow rate was 950 Sm3/day through an 11.1 mm choke at a wellhead pressure of 132 bar.

DST 3 tested the interval 2401 - 2414 m in the Etive Formation in order to investigate reservoir heterogeneities. The initial pressure and temperature at the top perforation was 362 bar and 89 deg C. Oil with a GOR of 47 Sm3/Sm3 was produced. The gas gravity was 0.71 (air = 1) and the CO2 content was 0.28%. After a clean-up period, the well was flowed for 25 hours followed by a 24 hours build-up period. At the end of the flow, the measured flow rate was 1310 Sm3/day through a 12.7 mm choke at a wellhead pressure of 159 bar.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 34/7-16 R