



Wellbore History

GENERAL

Well 15/12-9 S was drilled on the Varg Field in the North Sea. The Varg Field reservoir is in Upper Jurassic sandstones at a depth of approximately 2700 metres. The Varg Field is segmented and includes several isolated compartments with varying reservoir properties. The well was drilled from a location near to the Varg A and Petrojarl A production installations and targeted a southern compartment in the Varg structure. The objective for the well was to prove hydrocarbons in Late Oxfordian sandstone and to reduce the uncertainty in the reserve estimate for this part of the Varg Field.

OPERATIONS AND RESULTS

Appraisal well 15/12-9 S was spudded with the semi-submersible installation Deepsea Bergen on 17 July 1992 and drilled to TD at 3848 m (3213 m TVD) in the Triassic Skagerrak Formation. The well was drilled deviated from 623 m with a sail angle of ca 56 ° and then vertical again from ca 2400 m TVD through the target reservoir to TD. The well was drilled with seawater down to 620 m, with KCl/polymer mud from 620 m to 3226 m, and with Ancotemp/bentonite mud from 3226 m to TD.

The well penetrated top reservoir, the Oxfordian sandstones, at 3385 m (2750 m TVD). The reservoir was oil-bearing down to a well-defined OWC at 3501.5 m (2867.0 m TVD). Seven cores were cut with 100% recovery. Core 1 to 6 were cut in the interval 3689 m to 3555 m and core 7 was cut from 3649.5 m to 3668.0 m. The core to log depth shift was -2.45 m for core 7; for the other cores the core depth was equal to the logger's depth. Two segregated FMT oil samples were taken at 3498 m. Oil shows continued down to 3545m

The well is classified an oil appraisal well. It was suspended on 8 October 1992 and was later re-classified to oil production well 15/12-A-11 on the Varg Field.

TESTING

Two drill stem tests were performed in the Oxfordian sandstones.

DST 1 tested the water zone from 3545 m to 3552 m (2910 - 2917 m). The test produced water at a rate of 890 m³/day through a 48/64" choke.

DST 2 tested the oil zone from 3385 m to 3443 m (2750 - 2809 m). The test produced on average 132200 Sm³ gas and 1520 Sm³ oil /day through a 40/64" choke. The GOR was 87 Sm³/Sm³, the oil density was 0.852 g/cm³ and the gas gravity was 0.751 (air = 1) with 1.5% CO₂ and 4% H₂S. Maximum flowing temperature was 124.6 °C.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 15/12-9 S