



Wellbore History

GENERAL

Well 31/5-4 A was drilled as a horizontal side track to well 31/5-4 S in the Troll West oil and gas province. The well objective was test production from the 13 m oil layer in the Sognefjord Formation. The test production should evaluate the oil production potential from the Troll West Gas Province, obtain dynamic data from a potential development type well, and obtain static reservoir and geological data to provide proper understanding of well behaviour.

OPERATIONS AND RESULTS

Well bore 31/5-4 A was kicked off from 31/5-4 S at 1569 m on 10 October 1990, using the semi-submersible installation Transocean 8. Due to difficulties in building sufficient angle, the well was plugged back and technically sidetracked from 1604 m. The 9 5/8" casing was set horizontally at 1803 m, and the well drilled horizontally for another 800 m to TD at 2603 m in the Late Jurassic Sognefjord Formation. The well was drilled with Carbotec oil based mud from kick-off to TD. The horizontal section was drilled in the oil bearing part, approximately 1 meter above the oil-water contact. No cores were cut and no fluid samples taken. The well was completed with a prepacked screen in the horizontal section. A clean-up test and a production logging test was conducted with the Transocean 8 before the well was suspended on 13 Dcember 1990 and connected to the vessel Petrojarl I for a long-term production test. Well 31/5-4 A is classified as an oil and gas appraisal well.

TESTING

The well was tested from the horizontal interval in the Sognefjord Formation beyond the 9 5/8" casing shoe , i.e. 1801-2603 m RKB / 1578.5 m TVD RKB +/- 0.3 m. The measured test data from the end of the second and final production logging period, with the production logging tool (PLT) at 1825 m / 1578.5 m TVD RKB, were reported as follows: Oil rate = 217 Sm3/day, gas rate = 11869 Sm3/day, water rate = 318 Sm3/day, GOR = 55 Sm3/Sm3, CO2 content = 1%, oil density = 0.893 g/cm3, relative gas density = 0.64 (air = 1), flowing bottom hole pressure (FBHP) = 158.85 bar, and flowing bottom hole temperature (FBHT) = 69.5 deg. C.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 31/5-4 A