



LITHOSTRATIGRAPHY & HISTORY FOR WELL: 34/8-4 A

Wellbore History

GENERAL

Well 34/8-4 A on the Visund Field was initiated as a sidetrack to well 34/8-4 S, which had been temporarily plugged and abandoned. The original well had missed the planned Statfjord Formation target due to structural complexities of the area. The sidetrack should reach the target location, Statfjord Formation, approximately 420 m north-northwest of the surface location in an area of good seismic control. The main objective was to test Statfjord Formation hydrocarbon potential, fluid composition and aquifer characteristics. Secondary objectives were to evaluate the Lunde Formation B/C aquifer characteristics, to establish stratigraphic control of the Base Cretaceous - top Statfjord interval, and to determine the mechanism for hydraulic communication with the Brent reservoir in well 34/8-4S through gravity slide Brent segment and/or through Dunlin Group reservoir.

OPERATIONS AND RESULTS

Well 34/8-4 S was re-entered with the semi submersible installation Transocean 8 on 18 February 1992. The sidetrack 34/8-4 A was kicked off from below the 13 3/8" shoe at 2187 m in the primary well bore and drilled to TD at 3567 m in the late Triassic Lunde Formation. No significant problems were encountered during drilling. The well was drilled with a KCl / polymer mud from kick-off to TD.

A major unconformity was found between the top of the Early Jurassic (Pliensbachian) at 2902.5 m and the overlying Early Cretaceous (Hauterivian). A sandstone member of the Amundsen Formation was encountered from 2942 m to 2989.5 m. One core was taken in this unit and recorded good hydrocarbon shows. Subsequent wire line logs and DST results confirmed that the interval is oil bearing. A gross reservoir thickness of 31.0 m was defined, giving a net pay thickness of 22.38 m. The Statfjord Formation occurred between 3057 m and 3143 m. A total of 7 cores were cut through this interval. Good oil shows were observed throughout. The Lunde Formation was present from 3143 m to TD, at 3567 m and consisted of claystone and distinct interbedded sandstone units. Good shows were recorded in cores in individual sandstone bodies in the upper part of the formation. A total gross reservoir of 205.5 m and a net pay of 115.5 m were defined. An OWC was identified at 3340.5 m.

Altogether sixteen cores were cut from the Dunlin Group and Statfjord and Lunde Formations with a total of 174 m recovered. RFT samples were taken at 3294.5 m (46 °API oil, gas and water/filtrate) and at 3326.5 m (42 °API oil, gas and water/filtrate). The first oil show was recorded at 2909 m at the top of the Jurassic section and the last at 3342 m in the Lunde Formation.

The well was suspended on 27 May 1992 as an oil appraisal.

TESTING

Five DST tests were performed in this well, one in the Lunde Formation, three in the Statfjord Formation, and one in the Dunlin Group. The following flow data are from end of main flow.

DST 1 in the Lunde Formation perforated the interval 3322.9 m to 3340.9 m and flowed 936 Sm3 oil and 212000 Sm3 gas / day. The GOR was 226 Sm3/Sm3, oil density (@15 °C) was 0.815 g/cm3, and the gas gravity (air = 1) was 0.77 with 1.4 % CO2 and <0.1 ppm H2S.

DST 2 in the Statfjord Formation perforated the interval 3214.0 m to 3228.0 m and flowed 35 Sm3 oil and 15700 Sm3 gas / day. The GOR was 448 Sm3/Sm3, oil density (@15 °C) was 0.802 g/cm3, and the gas gravity (air = 1) was 0.81 with 1.2 % CO2 and <0.1 ppm H2S.

DST 3 in the Statfjord Formation perforated the interval 3160.6 m to 3184.6 m and flowed 821 Sm3 oil and 171000 Sm3 gas / day. The GOR was 208 Sm3/Sm3, oil density (@15 °C) was 0.820 g/cm3, and the gas gravity (air = 1) was 0.74 with 1.2 % CO2 and no H2S.

DST 4 in the Statfjord Formation perforated the interval 3056.0 m to 3108.0 m and flowed 831 Sm3 oil and 181000 Sm3 gas / day. The GOR was 218 Sm3/Sm3, oil density (@15 °C) was 0.821 g/cm3, and the gas gravity (air = 1) was 0.74 with 1.2 % CO2 and 0.5 ppm H2S.

DST 5 in the Dunlin Group perforated the interval 2988.5 m to 3019.5 m and flowed 992 Sm3 oil and 225000 Sm3 gas / day. The GOR was 227 Sm3/Sm3, oil density (@15 °C) was 0.820 g/cm3, and the gas gravity (air