



Wellbore History

GENERAL

Well 15/5 4 was drilled on a structure that straddles the border between the U.K. and the Norwegian sector of the North Sea. Hydrocarbons were proven in the structure by three earlier wells drilled in the UK sector (U.K. 16/13a-3, 16/13a-4, and 16/13a-5). Well 16/13a-4 penetrated a gas cap at the top of the structure and an oil column down to base reservoir. The other two wells penetrated an oil zone and a water leg. The objective of well 15/5-4 was to assess the extension of hydrocarbon bearing Sele Formation sand towards the east into PL048. The well position was chosen for possible use as a producer in the event of a positive appraisal. Prognosed total depth was 2300 m.

OPERATIONS AND RESULTS

Appraisal well 15/5-4 was spudded by the semi submersible installation Vildkat Explorer on 6 June 1991 and drilled to TD at 2300 m in rocks of the Paleocene Heimdal Formation. No shallow gas was observed on the predicted sand/gas levels. Drilling proceeded without any significant problems. The well was drilled with spud mud down to 1027 m and with KCl/polymer mud from 1027 m to TD.

Thin sands of the Sele Formation were encountered at 2120 m and had good oil shows. The reservoir thickness was calculated to 7.5 m. The sandstones of the Heimdal Formation were penetrated below the oil/water contact and were totally water wet. Weak oil shows was described on sidewall cores from claystone at 1909 m in the Frigg Formation and sandstone at 2182 m in the Lista Formation.

A total of six cores were cut from 2106 m to 2147 m over the reservoir section. RFT fluid samples were attempted at 2125.1 m, 2125.3 m, 2125.8 m, and 2129.5 m. Sampling suffered from sand plugging and only the samples from run 1C (2129.5 m) contained traces of oil.

The well was permanently abandoned on 3 July 1991 as a well with oil shows.

TESTING

One DST test was performed over the interval 2123.4 to 2135.9 m in the Sele Formation. Water was produced, but not to surface.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 15/5-4