



Wellbore History

GENERAL

Block 7/11 was awarded in 1965 to the Phillips Group. The first commercial discovery (Cod) was found in this block in 1968. Both Norsk Hydro wells (7/11-5 and 7/11-6) were drilled in the relinquished area awarded to them in Licence 070. The main objective of well 7/11-5 was the Late Jurassic sandstones. The secondary objective was the Triassic sands.

OPERATIONS AND RESULTS

Well 7/11-5 was spudded with the semi-submersible installation Treasure Seeker on 9 February 1982 and drilled to TD at 4478 m in the Triassic Smith Bank Formation. The drilling went forth without incident except for gumbo problems in the top of the 17 1/2" section and minor problems with tight hole in the 8 3/8" section. The well was drilled with sea water and hi-vis pills down to 615 m and with KCl/Drispac mud from 615 m to 2115 m. From 2115 m to TD the well was drilled with KCl/Drispac mud, converted to a fully dispersed gel-lignosulphonate mud in the limestone section.

The well encountered hydrocarbon bearing sandstones in the Late Jurassic Ula Formation with a gross sand interval of 86 m between 4155 and 4241 m. An oil water contact has been estimated to be at 4201 m (from logs). RFT pressure measurements and sampling were performed over the sandstone interval. Below 4202 m, however, no formation pressures were obtained due to seal problems caused by bad hole. Thus a contact based on formation pressure data could not be obtained. The Ula Formation rests unconformably on the Triassic at 4241 m. In the Triassic, thin stringers of sandstones were encountered with a total net sand of 2.25 m and an average porosity of 18%. These sandstones were 100% water saturated. Oil shows were recorded from 3694 m in the Late Cretaceous and down to 4217 m in the Ula Formation. Below 4217 m shows were weak and scattered, and no shows were reported from the Triassic.

Five cores were taken in the Ula Formation from 4159 m to 4231 m. Cores 1 - 4 bled hydrocarbons at the surface. Two RFT segregated samples taken at 4193 m and 4188 m recovered only mud filtrate.

The well was permanently abandoned on 10 June 1982 as an oil discovery.

TESTING

Two drill stem tests were performed. DST 1 was taken over the interval 4185 - 4197 m and flowed 470 Sm3/day of 39.2 deg API gravity oil and 118080 Sm3/day of gas. The GOR was measured to 251 Sm3/Sm3 and the gas gravity was 0.876 (air = 1). The second DST over the interval 4165 - 4174 m was abandoned due to the very low permeability and no hydrocarbons were produced to surface. However, calculated flow rates from the flow/unloading of the water cushion indicated 280 STB/day (after 4 hrs 18 minutes) and the oil was found to be of the same type as for DST 1. The maximum temperature during DST 2 was 161 deg C, which was assumed too low. No temperature is available from DST 1. The choke size for both tests was 36/64".

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 7/11-5