



Wellbore History

GENERAL

Well 7121/1-1 was drilled on the Loppa High in the northern part of the Tromsøflaket area, offshore Northern Norway.

The primary objective of the 7121/1-1 exploration well was to test the reservoir and hydrocarbon potential of a possible Early Permian (Artinskian) mounded carbonate facies (biohermal build-ups) identified by seismic. Secondary objectives were Late Permian carbonates and Early Carboniferous to Devonian sandstones, Late Carboniferous - Early Permian carbonates, and Triassic sandstones. Finally, the exploration well was designed to fulfill the license's obligatory work program which committed the licensees to drill one wildcat well to test prospects down to rocks of Devonian age or 5000 m, whichever came first.

OPERATIONS AND RESULTS

Exploration well 7121/1-1 was spudded on 10 October 1985 in 369 m water depth with the semi-submersible installation "Zapata Ugland". Due to NPD winter season regulations drilling was stopped at 916 m. Drilling of well 7121/1-1R commenced on 19 March 1986 and reached total depth of 5000 m in Late Carboniferous sediments of the Ørn Formation. The well was drilled with sea water and gel down to 1978 m, and with Sea water / gel / polymer from 1978 m to TD. Lost Circulation Material was used below 3370 m. Triassic rocks were encountered at 698 m, unconformably underlying 178 meters of Tertiary claystone and siltstone. The Triassic sediments (2295 m thick) consisted predominantly of very fine clastics with minor interbeds of sandstone, stringers of dolomite and limestone and traces of coal.

Fair to poor hydrocarbon shows were encountered in some thin and tight sandstones of Late and Middle Triassic age. The only significant hydrocarbon show was encountered in a 11.5 m thick sandstone bed, between 1932.0 and 1943.5 m, where 18.7 % gas (C1 & C4) was measured by the gas detectors. The Paleozoic section (Permian - Late Carboniferous Ørn Formation) was encountered at 2990 m. The section, +2007 m thick, consists predominantly of carbonates (silicified limestones, limestones, dolomitic limestones, dolomitized limestones and dolomites) with minor interbeds of chert, siltstones and anhydrites. Silicification, re-crystallization and dolomitization are common and only a few intervals show reasonably fair preservation of original depositional textures.

The prognosed primary objective, Early Permian (Artinskian) mounded carbonate facies (biohermal build-ups), was encountered at 3765-3994 m (thickness 229 m). However, biostratigraphic analysis dates the interval as Late Gzhelian - Early Asselian. Only 12% of the carbonate rocks have porosities above 6.0 % (6.0 - 10.0 %). The porosity types recognized in these thin, widely spaced intervals are intercrystalline - interparticle, moldic and fracture porosities.

No hydrocarbon shows were encountered while drilling the Paleozoic section and the interpretation of the wireline logs confirmed that the section is 100% water bearing.

Wellsite and laboratory geochemical analyses of the sediments drilled indicated that the most significant source rock sequences were Early - Middle Triassic shales between 2200 and 2800 m. Source rocks of Permian age were not found. The well was permanently abandoned as a dry hole 23 August 1986.

TESTING

No drill stem test was performed.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 7121/1-1