



Wellbore History

GENERAL

Well 16/1-3 is located on the Gudrun Terrace west of the Utsira High. The main objective of the well was to evaluate the hydrocarbon potential of Jurassic sand reservoirs. Eocene and Paleocene sands were secondary objectives. 16/1-3 was drilled on the flank of a seismically defined structure. The prime crestal location could not be tested due to the presence of a telephone cable on the sea floor.

OPERATIONS AND RESULTS

Well 16/1-3 was spudded with the semi-submersible installation Glomar Biscay II on 29 July 1982 and drilled to TD at 3498 m in granite basement. After losing returns while drilling at 210 m, the 30" casing was re-cemented. Shallow gas was encountered between 400 and 444 meters. Tight hole, swabbing on trips and reaming were recurrent problems in the 12 1/4" hole due mainly to swelling of claystone and siltstone. Mud was lost when drilling through a flint layer at 2638 m. The well was drilled with seawater and bentonite down to 702 m, with a lignosulphonate/CMC mud from 702 m to 2282 m, and with lignosulphonate/lignite mud from 2282 m to TD.

Mechanical log analysis over the Jurassic interval indicated the presence of about 60 meters of gross sand. Two thin zones of approximately 4 meters each in thickness were interpreted to be hydrocarbon bearing. The remaining sands were judged to be water bearing or non-reservoir. No reservoir was believed to be present in the Triassic sand, siltstones and shales. Minor shows, consisting of stain, fluorescence and/or mud gas manifestations were recorded in the Pliocene-Eocene, Miocene and Paleocene sections. In addition, oily mud was recovered in one of the MFT samples from the Jurassic Sleipner Formation. The Zechstein formation contained generally tight anhydritic dolomites at the top. A porous but interpreted water bearing limestone section was found in the middle portion of the Zechstein Group. Below the limestone a 36 m thick sandstone sequence was encountered. At the base of the Zechstein Group 3 m of Kupferschiefer Formation was encountered. The Kupferschiefer Formation is present in several wells in the area. The Permian Rotliegendes formation contained poor reservoir quality felspathic sandstones, siltstones and shales. Also the Permian reservoirs appeared to be water bearing on wire line logs.

One core was cut from 2282 m to 2290.5 m in the Lista Formation. Two Multi Formation Test (MFT) samples were taken at 2742 m and 2742.5 m in a thin sand in the Jurassic Sleipner Formation. The first sample contained mud filtrate only. The second sample contained mud filtrate and 75 cc of light gravity oil. The well was permanently abandoned as a dry well with shows on 27 September 1982.

TESTING

No drill stem test was performed

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 16/1-3