



Wellbore History

GENERAL

Well 2/8-3 is located in the Feda Graben, ca 2 km north-east of the Valhall Field in the southern North Sea. The primary objective was to test the Jurassic hydrocarbon potential. The secondary objective was the chalk of the Shetland Group.

The well is reference well for the Haugesund and Farsund Formations.

OPERATIONS AND RESULTS

Wildcat well 2/8-3 was spudded with the jack-up installation Zapata Explorer on 16 June 1972 and drilled to TD at 4115 m in Late Jurassic shales of the Haugesund Formation. The well took 48 days to complete and was drilled with unical/lignosulphonate/caustic based mud.

Reservoir quality rock was absent throughout the well. The first signs of oil were seen in Palaeocene tight siltstones with poor porosities. These were described as bright gold yellow fluorescence with a bright white streaming cut. Gas levels in the Shetland Group were low and no shows were seen in this group. A DST was run over part of this section but yielded only drilling mud. From 3267.3 m, within the Early Cretaceous, gas levels rose significantly and were associated with fair to poor shows in the Marls. The fluorescence was described as gold in colour with a slow pale yellow cut. From 3444 m, gas and shows increased and were contained in slightly argillaceous, hard limestone. Oil staining was seen and the fluorescence described as dark yellow gold with a pale yellow to very light brown cut. Mandal Formation shale was the first Jurassic age rocks seen. Gas levels were very high through these shales and the shows were described as bituminous with no direct fluorescence and a pale yellow cut. Between 3578 - 3600 m a gross sandstone unit was indicated by the gamma ray log. In roughly the same interval (3593.6 and 3605.8 m) abundant free oil appeared in the mud and abundant bright yellow gold fluorescence and a bright yellow straw cut were observed. This interval tested low rates of oil and gas. Dolomite stringers around 3858.8 and 3907.5 m gave good gas and oil shows with a dull yellow fluorescence and a pale yellow streaming cut.

No conventional cores were cut in this well. Four wire line core slices were cut in the Tor and Hod Formations, each 3 foot long at core points: 2999.2, 2967.8, 2956.6, and 2785 m. All had 100 % recovery. Sidewall cores were not taken. No wire line fluid samples were taken.

The well was permanently abandoned on 3 September 1972 as a well with oil and gas shows.

TESTING

Three DST tests were performed, two in the Jurassic and one in the Tor Formation. Small amounts of Oil and gas were recovered from the Jurassic Tests. Only mud was recovered from the Cretaceous Tor Test.

DST 1 from 3570.7 - 3587.5 m in the Mandal Formation recovered 3.8 Sm³ of oil and 278 Sm³ gas. The formation shut in Pressure was 4443 psi and the Formation flowing pressure was 3632 psi after 332 minutes.

DST 2 3600 - 3571 m, flowed 32 Sm³ oil and 2019 Sm³ gas with a Final Shut in Pressure of 4037 psi and a final flowing pressure of 3537 psi after 980 minutes. 80 barrels of acid were used to stimulate the well test.

DST 3 2871-2882 m, flowed only mud despite acidising. The final shut in pressure was 5477 psi and the final flowing pressure was 4455 psi after 491 minutes.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 2/8-3