



**LITHOSTRATIGRAPHY & HISTORY FOR WELL: 6506/12-3**

**Wellbore History**

**GENERAL**

Wildcat well 6506/12-3 is a replacement well for 6506/12-2, which was abandoned at 955 m due to technical problems. The new well was designed to test the hydrocarbon potential of the Beta structure in the southeast part of the block. The main object was Middle Jurassic sandstones, secondary targets were possible Cretaceous sands, Early Jurassic sandstones and sandstones within the Coal Beds.

**OPERATIONS AND RESULTS**

Well 6506/12-3 was spudded with the semi-submersible installation Ross Isle, 47 m from the junked well 6506/12-2. It was spudded on 2 March 1985 and drilled to TD at 4360 m in the Early Jurassic Tilje Formation (formerly called the Aldra Formation). No significant technical problems occurred during the operations. From 0600 hours on 15 June, during the testing phase, the rig was on strike for 13 days. The well was drilled with seawater/gel down to 955 m, with gypsum/lignosulphonate mud from 955 m to 3831 m, and with gel/lignosulphonate mud from 3831 m to TD. The shallow gas present at 572 m in 6506/12-2 was not encountered in 6506/12-3.

Top Middle Jurassic Garn Formation (formerly Tomma Formation) came in at 3822 m, 80 m above the prognosis. The Early Jurassic Tilje Formation sandstone (Aldra Formation) came in at 4147 m. Hydrocarbons were encountered both in the Middle and the Early Jurassic sandstones, with a hydrocarbon/water contact at 4216 m in the Tilje Formation. Late Cretaceous Lysing sandstones at the top of the Cromer Knoll Group (Finnvær Group) was also hydrocarbon bearing. A total of 242 m of hydrocarbon bearing sands was proven. Shows were only recorded in association with the hydrocarbon bearing sections.

A total of 289 m core was recovered in 15 cores from the Garn, Not, Ile, Ror, and Tilje Formations between 3836 and 4269 m. Six RFT runs were completed in the Early - Middle Jurassic section in well 6506/12-3. A total of 47 pressure tests gave reliable results. In addition, segregated fluid samples were collected at 3863 m, 4231 m, 4308.1 m, and 4310.9 m.

The well was permanently abandoned on 17 July as an oil/condensate/gas discovery.

**TESTING**

Six DST tests were performed:

- DST 1 at 4222 - 4241 m in the Tilje Formation flowed 742 Sm<sup>3</sup> light oil and 373300 Sm<sup>3</sup> gas /day through a 22.2 mm choke. The GOR was 503 Sm<sup>3</sup>/Sm<sup>3</sup>, the oil density was 0.802 g/cm<sup>3</sup> and the gas gravity was 0.847 (air = 1). The DST temperature was 150 deg C.
- DST 2 at 4165 - 4170 m in the Tilje Formation flowed 53.8 Sm<sup>3</sup> light oil and 66800 Sm<sup>3</sup> gas /day through a 25.4 mm choke. The GOR was 1241 Sm<sup>3</sup>/Sm<sup>3</sup>, the oil density was 0.820 g/cm<sup>3</sup> and the gas gravity was 0.907 (air = 1). The DST temperature was 143.8 deg C.
- DST 3 at 3960 - 3980 m in the Ile Formation flowed 328.9 Sm<sup>3</sup> condensate and 453100 Sm<sup>3</sup> gas /day through a 31.8 mm choke. The GOR was 1378 Sm<sup>3</sup>/Sm<sup>3</sup>, the oil density was 0.787 g/cm<sup>3</sup> and the gas gravity was 0.745 (air = 1). The DST temperature was 143.4 deg C.
- DST 4 at 3880 - 3890 m in the Garn Formation flowed 777.3 Sm<sup>3</sup> light oil and 396500 Sm<sup>3</sup> gas /day through a 23.8 mm choke. The GOR was 510 Sm<sup>3</sup>/Sm<sup>3</sup>, the oil density was 0.820 g/cm<sup>3</sup> and the gas gravity was 0.764 (air = 1). The DST temperature was 141.8 deg C.
- DST 5 at 3822 - 3836 m in the topmost Garn Formation flowed 156.2 Sm<sup>3</sup> oil and 60050 Sm<sup>3</sup> gas /day through a 20 mm choke. The GOR was 241 Sm<sup>3</sup>/Sm<sup>3</sup>, the oil density was 0.830 g/cm<sup>3</sup> and the gas gravity was 0.787 (air = 1). The DST temperature was 141 deg C.
- DST 6 at 3162 - 3173 m in the Lysing Formation flowed 582.7 Sm<sup>3</sup> light oil, 712.2 m<sup>3</sup> water, and 109600 Sm<sup>3</sup> gas /day through a 19.1 mm choke. The GOR was 188 Sm<sup>3</sup>/Sm<sup>3</sup>, the oil density was 0.807 g/cm<sup>3</sup> and the gas gravity was 0.780 (air = 1). This was the only test with water production.