



Wellbore History

GENERAL

Well 30/9-14 is located in the western part of block 30/9, on the Southern Oseberg complex. The primary objectives of the well were to appraise oil within the G-North prospect and verify the potential resources of the G-North and G-West prospect, leaving a minimum of untested resources up dip of the well on the G-North prospect; to define fluid contacts, primarily the OWC in the Tarbert Formation; and to verify the structural mapping, depth conversion and the geological model for the G-North area. Secondary objectives were to verify the lateral extent of the lower Heather sand, to test a possible hydrocarbon potential within the Ness and ORE (Oseberg/Rannoch/Etive) Formations, and to obtain a good well tie of the base Brent reflector and the intra Dunlin reflector.

OPERATIONS AND RESULTS

Appraisal well 30/9-14 was spudded with the semi-submersible installation "Polar Pioneer" on 16 March 1993 and drilled to total depth at 3680 m in the Early Jurassic Drake Formation. The well was drilled water based with sea water and hi-vis pills in the 36", 24", and 17 1/2" sections, down to 1040 m, and with a KCl / PHPA / Polymer mud from 104 m to TD. Sedimentological and lithological development was similar to 30/9-13 S, but approximately 250 m of Early Oligocene sand encountered in well 30/9-13 S was not present in well 30/9-14 where the same interval is dominated by clay stone. The Viking Group came in at 2967 m and the Top Tarbert Formation came in at 3059.5 m, 84 m deeper than prognosis due to too low velocities in the Tertiary section. Sixty-six m of Intra Heather Sandstone was verified from 2993.5 m to 3059.5 m. Poor to moderate shows were observed in the Draupne and Heather Formations from 2968.5 m to 3059.5 m. Moderate to good shows were seen from 3059.6 m to 3130 m in the Tarbert Formation. Good shows (residual oil) were also observed in the ORE Formation from 3503 - 3514 m. The Lower Heather and upper Tarbert Formations were proven to be gas bearing, with a GDT at 3163 m. Oil was encountered in Tarbert with an OWC at 3218 m. There was a four bar pressure difference, in the oil zone, between 30/9-13S and 30/9-14. The water gradient was similar to 30/9-13S. Eight conventional cores with near 100% recovery were cut in the interval 2968 m to 3219 m (Draupne, Heather, and Tarbert Formations). Three further cores were cut from 3470 m to 3534 m (Ness, ORE, and Drake Formations). Wireline MDT samples were recoverd from 3154.3 m (Tarbert Formation, water), 3126 m (Tarbert Formation, oil), and 3060.5 m (top Tarbert, Gas). An additional RFT sample containing gas was recovered from 3060.5 m. The well was plugged back and permanently abandoned as an oil and gas appraisal well on 14 May 1993.

TESTING

The well was production tested from two intervals. Test no. 1 was perforated at 3144.5 m - 3157.5 m and produced water. Test no. 2 was perforated at 3084.0 m - 3127.0 m and produced saturated oil. Production test no. 1 was interpreted to flow from a net pay interval of 22.5 m with an average permeability of 478 mD. Test no. 2 was producing from a net pay interval of 14.25 m with an average permeability of 123 mD.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 30/9-14