Formation Tops Groups NORDLAND GP TOP **UTSIRA FM TOP** <mark>HO</mark>RDALAND GP TOP 1000 GP TOP **BALDER FM TOP** 2000 **SELE FM TOP** LISTA FM TOP SHETLAND GP TOP **VIKING GP TOP** ABAHAPE EM TOB **NESS FM TOP BRENT GP TOP** ETIVE FM TOP DUNLIN GP TOP DRAKE FM TOP **COOK FM TOP** AMUNDSEN FM TOP

Wellbore History

GENERAL

Well 30/6-4 was drilled on the Alpha structure on the Gullfaks fault block in the North Sea. The primary objective was to test hydrocarbon accumulations in Middle Jurassic sandstones and to define the hydrocarbon contacts. Gas was the expected hydrocarbon phase.

OPERATIONS AND RESULTS

Well 30/6-4 was spudded with the semi-submersible installation Deepsea Saga on 17 February 1981 and drilled to TD at 2942 m in the Early Jurassic Amundsen Formation. Total depth for the well was reached 10 days before prognosed although 5 days were spent on rig repair when the heave compensator fell down. Apart from this accident no major problems were encountered in the drilling phase. The well was drilled in favourable weather condition. The well was drilled with spud mud down to 962 m, with KCl/polymer mud from 962 m to 1862 m, and with gel/lignosulphonate mud from 1862 m to TD.

Sporadic fluorescence was recorded on cuttings from limestone/siltstone stringers in the Paleocene and Cretaceous. Top Cretaceous had good shows on cuttings and sidewall core in the interval 2300 - 2305 m, and two valid RFT pressure points indicated a gas gradient over the interval.

Top Brent Group, Ness Formation was encountered at 2597 m with an oil-filled Etive Formation from 2630 m to 2686 m. No oil/water contact was found, but combined pressure data from the well and three previous wells on the structure indicated a gas/oil contact at 2528 m.

Four cores were cut from 2638 m in the Etive Formation to 2692.5 m, a few meters into the underlying Drake Formation. One RFT oil sample of good quality was taken at 2633 m.

The well was permanently abandoned on 11 May 1981 as an oil appraisal.

TESTING

Two drill stem tests were performed in the Etive Formation.

DST 1 tested the interval 2655 m to 2665 m. It produced 712 Sm3 oil and 84400 Sm3 gas /day through a 48/64" choke. The GOR was 118 Sm3/Sm3, the oil density was 0.855 g/cm3 and the gas gravity was 0.678 (air = 1).

DST 2 tested the interval 2630.5 m to 2638 m. It produced 715 Sm3 oil and 81550 Sm3 gas /day through a 48/64" choke. The GOR was 113 Sm3/Sm3, the oil density was 850 g/cm3 and the gas gravity was 0.675. Maximum bottom hole flowing temperature was 101.7 deg C.