



## **The search for hydrocarbons in the Fylla Area, offshore West Greenland**

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**Geologisk Museum, Øster Voldgade 5–7**

**DGF – Oliegeologisk foredragsrække**

Seismic 'flat-spots' associated with thick sedimentary sequences in large, tilted fault blocks were first recognised in the Fylla area, offshore West Greenland, on regional 2D seismic lines shot by the GGU in 1992. Their interpretation as possible gas associated DHI's (Direct Hydrocarbon Indicators) led to the acquisition of a semi-regional 2D survey of approximately 1700 line kms by Nunaoil in 1994. This confirmed the presence of locally thick sedimentary sequences, confirmed the presence of large Mesozoic tilted fault blocks draped by Tertiary sediments and confirmed the widespread occurrence of the 'Fylla flat-spot'. The latter seemed to be associated with a discrete stratigraphic interval and appeared to be confined within structural closures. All these observations strengthened the interpretation that the 'flat-spot' could represent a gas fluid interface within a porous reservoir sequence.

The occurrence of oil seepages and oil staining in Palaeocene volcanic lavas and hyaloclastites in the Disko and Nuusuaq areas, onshore in west central Greenland, have been well documented by GEUS. These data indicate the existence of several working petroleum systems in the underlying Cretaceous to Palaeocene fluvio-deltaic sequences. Significant wet-gas discoveries have been made on the Canadian margin, off the east coast of Labrador and the south coast of Ellesmere Island, in similar sedimentary basins. The possibility of gas accumulations in the Fylla area was therefore, in terms of regional geological understanding, not unreasonable. These considerations led to the Bureau of Minerals and Petroleum (BMP), in 1995, to designate the Fylla Bank area for petroleum exploration and to invite bids for exploration licences from the international petroleum industry.

From the outset, exploration activity focused on the 'Fylla flat-spot'. If it truly represented a gas-fluid contact in porous sandstones, it was clear that potential gas volumes were extremely large. However economic screening studies had established that however large the volume, dry gas alone would not be commercially attractive due to the great water depths (1000 to 1500m), the remote location and distance from potential markets, and the lack of onshore infrastructure. Commercial viability depended on the discovery of rich, wet gas or the presence of a significant oil leg beneath the assumed gas cap.

This presentation reviews the exploration work carried out by the Statoil / Phillips / DONG / Nunaoil Group following the award of the Fylla Licence in 1996. The exploration programme culminated in the drilling of the Qulleq #1 exploration well in the summer of 2000. The well fully achieved its purpose in evaluating the 'Fylla flat-spot' and, although it failed to find oil or gas, it provides a key data point to assist in the ongoing exploration of the West Greenland offshore.

**The presentation will be held in English. Non-DGF members are welcome.**