

Exploration Opportunities in the Davis Strait Offshore Southwest Greenland

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Since 2002 the hydrocarbon potential offshore West Greenland has attracted several oil companies and during the last 10 years hundreds of millions of US dollars have been invested in the acquisition of new data to reduce exploration risk and focus licensing and further data acquisition.

Several DHIs, onshore oil seepage and high confidence offshore satellite slicks strongly suggest that a regional working petroleum system is present. The hydrocarbon potential is significant with a tempting opportunity to discover huge accumulations within relatively simple structural traps.

It is possible to define four key areas: The Manitsq Basin, the Ikermiut Trend, the Kangamiut Area and the Fylla Structural Complex and Surroundings. Within these areas an extensive database is available consisting of both released public domain and proprietary data. Structurally well defined traps are relatively easily mapped out.

The Manitsq Basin is a Cretaceous- Paleocene extensional rift basin slightly modified by Paleogene strike-slip tectonics.

The Kangamiut Ridge within the Kangamiut Area is a giant Cretaceous or older horst structure. A significant gas-kick in the Kangamiut-1 well at the western flank of the ridge underlines the hydrocarbon potential of the structure itself as well as the deep sedimentary basin west of it, where several Cretaceous tilted fault block closures are present.

Fylla Structural Complex and Surroundings consist of a Cretaceous-Paleocene structural high with a relatively complex character surrounded by deep extensional rift basins, where several tilted fault block closures are present.

In the Ikermiut Trend area Paleogene strike-slip tectonics overprints the Cretaceous-Paleocene extensional rift topography and traps consist primarily of complex flower structures and simple hanging wall anticlines.

The primary reservoirs are Early-Mid Cretaceous shallow marine and shelf sandstones in addition to Late Cretaceous deep marine sandstones. Late Cretaceous mudstones will work both as source and seal. A secondary Paleogene play will be an opportunity in deep strike-slip basins, where a Paleocene source rock is mature and transpressional or transtensional structures are forming traps. In addition contribution from an Ordovician source rock is an option.