

Sandakan Basin: From Wildebeest to Zebra – Where are the Elephants?

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The circum-Borneo basins such as the Sarawak, Sabah, Kutei and Tarakan, are prolific oil and gas producers and have seen exploration activity since the late 1800s. However, the Sandakan has been poorly explored with only twenty-five wells drilled to date. Thirteen have been drilled on the Malaysian side and eleven on the Philippine, most with at least hydrocarbon shows. The only deepwater well drilled in SC41, Wildebeest-1 (2000) found 24ft of oil, testing a turbidite slope setting while Zebra-1 (2204) and Rhino-1 (2004) drilled the shelf setting.

The basin was formed in the E. Miocene following the opening of the Sulu Sea and is characterised by Mid/U. Miocene to Recent deltaic, shallow marine and turbidite sediments. The provenance of the sediments is the rapidly rising Sabah hinterland. Oceanic crust of varying ages (Jur/Cretaceous & Early Miocene) forms the basement. The south-eastern side of the basin is bounded by a buried island arc.

Mapped palaeoenvironments from the Sandakan Delta to the deepwater contribute to the understanding of the reservoir distribution and quality. Amplitude anomalies interpreted as DHI's suggest a working petroleum system. These exhibit responses within the range of those predicted by stochastic modelling for commercial saturations of light oil in thick, high porosity and N:G sands.

The integration of well and seismic models in a robust analysis of the prospectivity of the SC 56 has led to the upgrading of the Sandakan Basin for deepwater exploration. The “elephants” are waiting to be tested.