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**Large Gas Fields in Submarine Fans, Deepwater Kutei Basin, Indonesia**

In greater than 4000 foot deep water, the Gendalo and Gandang gas discoveries mark the extension of Indonesia's hydrocarbon reserves into ultra-deep water. Combined, the fields contain in excess of 1TCF of gas trapped within submarine fan sands gently folded over broad, low-relief anticlines. The two gas fields are located offshore eastern Borneo, in the Kutei basin where Unocal has pioneered exploration offshore and into deep water.

Individual turbidite sand packages extend laterally over 10km in stacked sets reaching gross thickness greater than 500'. The reservoir sands have excellent quality, porosity greater than 25%, permeabilities greater than 1Darcy, and in pressure communication over at least 4km. Turbidite reservoirs are interlayered with hemipelagic shale which provide excellent top-seals, resulting in reservoirs with increasing overpressure with depth. The broad anticlines are devoid of faulting resulting in no structural compartmentalization. While the gas source has not been directly sampled in wells at the field, geochemical analysis of associated condensate indicates a gas-prone terrestrial organic material generating gas within the oil-window. Curiously, the Upper Miocene reservoirs contain organic material concentrated in the sands rather than shale. Organic material occurs as disseminated leaf material chaotically scattered in the massive part of sand beds (Ta) and occurs as layers associated with laminated sands in the upper part of turbidite beds. The migration pathway appears to be vertical distributed migration. Gas is common, encountered in most wells drilled in the basin. Faulting is not apparent on seismic data and is not expected to contribute to migration.