

Deepwater Opportunities in Suriname

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One third of offshore Suriname is classified as deepwater (55,000 km²) located north of the Suriname shelf. During the Cretaceous and Tertiary mainly sand was deposited, originating from a proto-Orinoco/Amazon river system. This system drained northern South America, before the continuing uplift of the Andes and eastern tilt of the continent caused the Amazon to swing further south. During the drifting apart of South America and Africa, offshore Suriname was affected by the transcurrent E-W trending Guyanas transfer zone. Pull-apart basins developed in which pelagic clay was deposited. From the steep boundary scarps slumps originated, which caused clay diapirism. During lowstand periods rivers cut canyons in the sandy shelf, and turbidite sands were deposited in a number of lowstand fans, clearly confined by the ridges induced by clay diapirism and toe-thrusts of slumps. Cenomanian-Turonian oil-prone source rocks have been encountered in all wells to date in deepwater basin offshore Suriname. Oils produced from fields on the shelf suggest that source rocks are fully mature, indicating that the source rock in the deepwater basin is underlain by an intermediate crust.

Several classes of prospects have been mapped. Turbidite fans (confined by the clay diapir ridges and slump fold belts), lowstand fans and incised valleys on and down the shelf. On the shelf, amplitude anomalies suggest the widespread presence of stratigraphic traps, possibly in coastal marine settings similar to the Tambaredjo/Calcutta oil fields. Amplitude anomalies are conformable with structure.
