Main Characteristics on Geology and Hydrocarbon Potential in the Southeastern Gulf of Mexico (Deepwater)

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ABSTRACT

The Cuban sector of the Gulf of Mexico includes a large sedimentary basin integrated by rocks deposited since the opening of Pangaea. The synrift section is largely unknown but in seismic section is relatively easy to recognize filling graben and half-graben of basement rocks. The syndrift sediments include rocks of carbonate platforms of Yucatan and Florida with a very thick section of mostly carbonate rocks. At the same time, in the neighboring deepwater basins a mainly turbiditic section is developed. Deepwater sediments have several levels of source rocks of well studied and documented in Cuba.

During the collision with the Caribbean Volcanic Arc, the southern sector of North American continental margin was intensively deformed. Deformation reached not only the deepwater section but also carbonate platforms. Large folds extend beyond the triangle zone resulting in large structures. Source rocks are largely recognized in several levels or deepwater marine sediments showing a high potential for hydrocarbon generation. Reservoir rocks related to carbonate rocks were particularly improved by an active diagenesis which included a regional deep karst episode. Finally, several levels of seals are recognized regionally. All existing information support the prediction of large oil fields in the offshore area north of Cuba.

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