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ABSTRACT

DEEPWATER EXPLORATION: COLUMBUS BASIN OFFSHORE TRINIDAD

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Trinidad has a long and successful history of hydrocarbon exploration, dating back to the early twentieth century. In an effort to arrest declining production, the State has regularly awarded blocks for exploration through the competitive bidding process. During the period 1996 to 2000, in an attempt to extend exploration into frontier areas, the State licensed six deepwater blocks in the Columbus Basin off the island east coast. Eleven wells have been drilled in these blocks, all of which failed to discover commercial volumes of hydrocarbons. The objectives of these wells were Middle Pleistocene to Lower Pliocene channel levee systems deposited in a middle to upper slope setting. Container geometry varied between four way closures, over which channel systems were draped, and combination structural/stratigraphic traps. These prospects were predicted to be charged with hydrocarbons generated from the same aged Middle to Late Cretaceous source rock that has generated hydrocarbons in the Eastern Venezuela Basin. Reservoirs were predicted to have some lateral extent and were mapped unto bleed-off structures; hence effective stress and column heights were not expected to be high risk elements. Although all the elements necessary for a working petroleum system were predicted to be present, these wells failed to discover hydrocarbons in commercial volumes. This paper reviews the results of these wells, discusses the failure mode and examines the implications on the continued deepwater exploration in the Columbus Basin.