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Abrupt Margins - Dawn of a New Exploration Era

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SUMMARY

Within the last few years, exploration companies have applied principles of plate tectonics to extend and relate upper cretaceous turbidites fan plays westward from West Africa across the Equatorial Atlantic to French Guiana and Brazil and other countries of South America. Before Ghana oil discoveries, gravity tectonic was seen as for the main success key of the deep water exploration activities with the most favorable environment to preserve large accumulations in structural closures, highly prolific when HC charging is recent.

Introduction

Within the last few years, exploration companies have applied principles of plate tectonics to extend and relate upper cretaceous turbidites fan plays westward from West Africa across the Equatorial Atlantic to French Guiana and Brazil and other countries of South America. Before Ghana oil discoveries, gravity tectonic was seen as for the main success key of the deep water exploration activities with the most favorable environment to preserve large accumulations in structural closures, highly prolific when HC charging is recent. Negative perception of stratigraphic trap did not lead to strong exploration efforts. Abrupt margins clearly represent new promising targets for the exploration of the deep offshore environments. The Jubilee, TEN (Tweneboa, Enyenra and Ntomme in Ghana) , Zaedyus (French Guiana) discoveries since 2007 show the successful exploration concepts developed in Upper Cretaceous-age lowstand turbidite fans deposited during seafloor spreading and buried under thick sequence of marine shales. They inferred the presence of Cretaceous source rocks and stratigraphic traps. Transform margins are believed to be some of the interesting areas characterized by shallow dipping, often narrow, continental margins, bordered by marginal ridges that backstop steep continental slopes across abrupt continent-ocean boundaries leading to oceanic abyssal plains. Others margins also are examined for being potentially attractive or already proven with this type of new concepts (North Sea, Black Sea, East Africa, Australia, SE Asia, ..). This new exploration success story causes for reexamining basins that have been explored but deemed either hydrocarbon poor or too risky to develop.