

New Exploration Discoveries Thanks to the Low Prices Era Using Sequence Stratigraphy, Seismic Attributes and Seismic Inversion: Case of Study in an Oil Field in the Foreland Llanos Basin, Colombia

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ABSTRACT

In the last two years, most of the companies starts to increase the reserves and production rates aiming to improve their operational costs in the low prices era. This has shown an increment in the exploration of new reservoirs a long of different Colombian basins. Among them the Llanos Foreland Basin. This is one of the basins with major amount of 3D seismic information acquired and oil wells drilled in the last ten years. This allows to have plenty of information to developed sequence stratigraphy, seismic attributes and seismic inversion analysis aiming to identify new reservoirs and understand their lateral facies variation. Willing to increase the reserves of the different companies operating in the basin, a regional research project was created looking to identify the stratigraphic potential of the Gachetá Formation. The Research project was developed in three stages. 1) Create a regional model of the Gachetá Formation in the Basin, 2) Identify the most suitable areas to drill a well, and finally 3) The drilling of a wildcat. The second stage of the project help us to identify different areas with the most suitable characteristics for the drilling of a wildcat. Only our company accepts the challenge to drill the wildcat and test the prospect. the result was the drilling and subsequent discovery of the Gachetá Formation reservoir with a 24 API, 1200 BOPD and a BSW of 0% the two first years and 2% in the last year. This paper pretends to show the sequence stratigraphy analysis, seismic attributes extraction and seismic inversion developed in the Gachetá Formation to understand a reservoir with thickness and facies lateral variation of a reservoir related to a Fluvial Dominated Delta environment deposited 85 Ma ago, in the Llanos Foreland Basin.