

Coal Bed Methane Potential of the Barco - Los Cuervos Formation in the Cesar Valley Sub Basin, Colombia

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The Barco - Los Cuervos Formation in the Cesar Valley Sub Basin constitutes one of the most important coal reserves in Colombia. The objective of this study is to determine if this formation has potential to be a coal bed methane reservoir as an unconventional resource. The structural interpretations of eleven 2D seismic lines in the Sub Basin show several characteristics of a coal bed methane reservoir. The Barco - Los Cuervos Formation is a tertiary unit influenced by the Cesar Thrust System. A compressive regime has led to the formation of the HT-2 syncline which covers the whole study area, also the seismic shows an interesting phenomenon in which the seismic amplitude is strongly reduced, this may be caused by the gas saturation of the coal beds. The 1D, 2D and 3D geochemical model show that the Barco - Los Cuervos Formation was in the gas window since 15 Million years ago but no accumulations were found because the lack of efficient seals. But is important to take in account that the seismic lines don't cover the entire HT-2 syncline, so in other parts of the structure we could find structural traps as well as efficient seals. The structural maps of the Barco - Los Cuervos top shows potential plays in several zones of the study area, these possible plays are the result of the tectonic influence of the Cesar Thrust System.