

Layered Model Juxtaposition for Determination of the Seal Fault Capacity of the Carito Field, North of Monagas, Venezuela

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The Furrial trend is a 50 km long and 8 km wide anticline structure broken by transverse saddles into three giant producing structures: Furrial, Carito, and Santa Barbara/ Bosque. These fields produce from late Cretaceous to Early Miocene sandstone. The crest of the anticline is typically cut by minor backthrusts and backfolds in all areas, and by major imbrications in Carito and Santa Bárbara, the product of a younger tectonic pulse from Pirital thrust located further North. The structural saddles limit Carito field with the The Furrial field to the east, and to the West with the Santa Bárbara field. These structures segmenting the hangingwall anticline are transverse extensional growth normal faults with large-displacements. The growth faults and the growth synclines are contemporaneous with the deposition of Carapita Formation as well the emplacement and compressional folding of the thrust sheet. The Furrial, Carito and Santa Bárbara fields present second order entrapment and the Carito field, divided into four areas (North Carito, West Carito, Central Carito and South Carito) forms third order entrapment, what makes necessary the acquaintance of reservoir compartmentalization model. This lead to the development of juxtaposition model using FAPS (Fault Analysis Projection System) by means of the algorithm of seal fault analysis SGR (Shale Gouge Ratio), with the purpose of determining the seal capacity in North Carito area. As a result, it was found that the faults with a small displacements act a conduit and the others act as a seal.
