
Stratigraphic and Tectonic Control on Sweet Spots in the Haynesville Shale

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ABSTRACT

The Haynesville Shale play is designated by a ubiquitous organic shale interval approximately 200 ft thick that stretches across approximately 6,000 square mi of East Texas and Northwest Louisiana. The rapid development of this play has resulted in an unprecedented explosion of new data that significantly contributes to understanding Jurassic stratigraphy and tectonics. The productivity of the play is much less consistent than the structure and stratigraphy originally indicated. The fundamental determinants of Haynesville productivity are the pre-Jurassic, tectonic influence on Haynesville stratigraphy, and variation of the Haynesville stress state caused by Late Cretaceous volcanic and halokinetic tectonics and differential subsidence of the Gulf Coast passive margin. Additional influence on productivity is caused by stratigraphic variation of the juxtaposed Smackover, Cotton Valley Lime, and Cotton Valley–Bossier intervals. The ability of these intervals to act as conduits, baffles or seals to gas generated in the Haynesville has a profound effect on the pressure and thereby on the natural fracturing and energy within the Haynesville Shale.