
Undiscovered Oil and Gas Resources in the Upper Jurassic Haynesville and Bossier Formations, U.S. Onshore Gulf Coast

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ABSTRACT

The Upper Jurassic Haynesville and Bossier formations are important oil- and gas-bearing units of the onshore U.S. Gulf Coast. Historically, these units have produced gas and/or oil from conventional carbonate and sandstone reservoirs extending from the East Texas Basin to south-central Alabama. More recently, industry has exploited the natural gas potential of continuous mudstone reservoirs basinward of the conventional fields. Many horizontally drilled and hydraulically fractured wells produce natural gas from the Haynesville and Bossier formations on the Sabine uplift of eastern Texas and northwestern Louisiana. These wells have exhibited some of the highest gas production rates and estimated ultimate recoveries in the United States.

In 2016, the U.S. Geological Survey (USGS) quantitatively assessed undiscovered, technically recoverable gas and oil resources in assessment units (AUs) within the Haynesville and Bossier formations. For the Haynesville Formation, two conventional (carbonate and sandstone) AUs and two continuous (mudstone) AUs were defined and assessed. Two conventional (sandstone) AUs and one continuous (mudstone) AU were defined and assessed for the Bossier Formation. Basinward from the continental shelf slope break, an organic-rich mudstone AU, temporally equivalent to the Haynesville-Bossier intervals and possibly the Upper Jurassic Smackover Formation, was defined but not quantitatively assessed because of lack of data.

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