

Well Log and 2D Seismic Data Character of the Wilcox Group in South-Central Louisiana

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ABSTRACT

Well logs and 2D seismic data were used to interpret the depth and morphology of potential Paleocene and lower Eocene Wilcox Group slope and basin-floor reservoirs in south-central Louisiana. These may occur in a poorly explored area previously estimated by the U.S. Geological Survey to contain a mean undiscovered conventional resource potential of 26,398 billion cubic feet of gas and 423 million barrels of natural gas liquids.

The Wilcox Group is 15,000 to 26,000 feet deep in south-central Louisiana. Previously published paleogeographic maps suggest the sediment transport direction during the Paleocene and lower Eocene was west to east, parallel to the relict Cretaceous shelf margin, and north to south due to the development of the Holly Springs delta system in Louisiana. Inclined reflectors on the 2D seismic data suggest high-energy deposition of clastic sediments. There is minimal well control downdip of currently productive areas.

The Wilcox Group is productive in updip areas of Texas and Louisiana from fluvial, deltaic, and near-shore marine shelf sandstones. The reported presence of porous sandstones at 29,000 feet within the Wilcox Group containing about 200 feet of gas in the Davy Jones 1 discovery well in the offshore Louisiana South Marsh Island area illustrates a sand-rich system developed during the Paleocene and early Eocene. This study describes some of the well log and reflection seismic data characteristics of the slope and basin-floor reservoirs with gas-discovery potential that may be in the area between the producing trend onshore Louisiana and the offshore discovery.