

Austin Chalk Deep Gas Play

Gerry Drake (gerrydrake@upr.com; 817/321-6747)
Union Pacific Resources
Advanced Resources International, Inc.
777 Main Street
Fort Worth, TX 76102

Abstract

The Late Cretaceous Austin Chalk formation is present in the subsurface paralleling the U.S. Gulf Coast from Mexico to Florida and produces from numerous fields in Texas and Louisiana along a trend over 300 miles in length and over 40 miles in width. Conventional drilling with vertical wells was marginally successful in developing the fractured Austin Chalk reservoir. The development of horizontal techniques greatly enhanced the productivity of the wells by intersecting multiple fracture sets. Various methods of exploration have been used to explore for the sweet spots within the chalk with mixed results. No one method has worked in all areas and seldom in many of the sweet spots.

The Austin Chalk reservoir is described as tight, fossiliferous, fractured limestone interbedded with shales and marls. Although the matrix contributes to production, the high initial rates result from fracture permeability. The thickness of the Austin Chalk ranges from 50 to more than 600 feet with specific targets within this interval. The depth of the main productive chalk trend ranges from 5500' to 16000'.

The deep gas play of Giddings Field began in Washington County of central Texas and has expanded into Austin, Colorado, and Grimes counties of central Texas. The Austin Chalk lies at a depth of 12500' to 16500' with a total thickness from 295' to over 400'. The primary target, the "B" zone, is 23-50' thick and is characterized by less than 3% porosity and resistivity values greater than 40 Ohms. The wells are drilled with a single lateral, 5000' in length, or as opposing laterals, each 3000 to 4000 feet long and perpendicular to N65°E fracture strike. Production is generally dry gas with small amounts of water and completions are based on the quantity and quality of shows encountered while drilling.