

Redevelopment of the Deep Tuscaloosa Gas Trend: A 3-D Seismic Case History of Judge Digby Field, Pointe Coupee Parish, Louisiana

by David Wright,
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In October 1996, Amoco Production Company completed the Parlange #5 well in Judge Digby Field, Louisiana, with an initial flow rate of 18 million cubic feet of gas per day (MMCF/D) and 460 barrels of condensate. This well marked a new phase in Amoco's continuing successful redevelopment of deep Tuscaloosa gas fields using modern 3-D seismic technology.

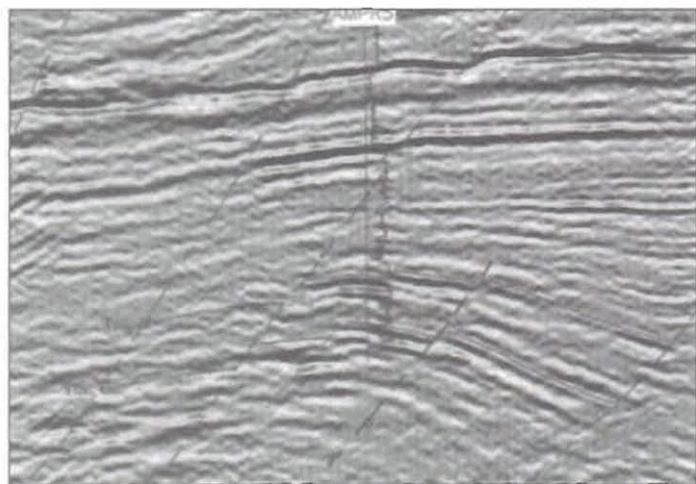


Figure 1: 1995 3-D Seismic profile through the Amoco #5 Parlange discovery. Note clear image of buried faults.

Since implementing 3-D technology, Amoco has drilled 18 consecutive discoveries in areas once thought to be near the end of their productive lives. 3-D seismic technology has added value to Tuscaloosa gas fields by defining untested fault blocks in known productive intervals and revealing previously unseen deeper gas sand packages. This technology has also helped Amoco avoid the costly and potentially catastrophic drilling of depleted reservoirs, where current pressures are in the 4000 pounds per square inch (psi) range. Additionally, 3-D seismic has provided a tool for prospect risk assessment, leading to better decisions for very expensive, deep wells, where dry hole costs average about \$7,000,000.

In Judge Digby Field, 3-D seismic has been directly responsible for gross gas reserve additions of over 200 billion cubic feet (BCF).

The Amoco Parlange #5 is currently the deepest commercial gas well in the state of Louisiana with the deepest perforations at 21,500 ft. Amoco's Deep Tuscaloosa redevelopment program continues today in Judge Digby, False River, and Profit Island Fields.

BIOGRAPHICAL SKETCH

David Wright has a B.S. degree in geology from the University of Texas at Arlington. His career began at Amoco (then Pan American) in 1970 in New Orleans as an operations/exploration geologist. Projects included work in the Oligocene and Miocene trends of coastal Louisiana and the Gulf of Mexico Pleistocene trend. He has also worked as the unitization geologist for Amoco's New Orleans region. David is currently a senior geological associate in Amoco's Houston office where he is working the Tuscaloosa trend.



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