Is 3-D Seismic Data the Bass-Finder of Oil and Gas? Examples of some "Honey-Holes" in Southwest Alabama

Kevin B. Hill

Hill Geophysical Consulting, 415 Texas Street, Suite 200, Shreveport, LA 71101

Abstract

The market place for oil and gas deals has undergone a rapid and dramatic change. Buyers of deals want the "perfect deal" with no risk. The best way to do this is to integrate a proper geologic model with a properly acquired, processed, and interpreted 3- D seismic program. It is sort of like going fishing with a good bass-finder. If you go to the best spots, but your bass-finder doesn't see any fish, you should move on. When you see the action on your bass-finder, you can be assured that you have a much better chance of making the "BIG" catch.

The 3-D seismic tool helps in locating the elusive structural and stratigraphic traps that are hiding in the murky sub-surface "honey-holes" of the world. A prime example of the success of 3-D seismic is found in the Southwest Alabama Jurassic trend. Over the past 12 years over 350 square miles of 3-D seismic data has been acquired in the up-dip Jurassic trend of Monroe, Baldwin, and Escambia Counties, Alabama. Wells drilled with the help of 3-D seismic programs have yielded an estimated success rate of 75-85%, and resulted in new reserves estimated at over 50 MMBO. With a cost of about \$40 MM (using \$15/bbl) for the product, it is evident that 3-D seismic exploration is an economic success.

A comparison of 2-D versus 3-D seismic data will be shown. Examples of successes and failures of exploration with 3-D seismic will be covered.