
Southwest Speaks Lower Wilcox Structural Complex, Lavaca County, Texas

Frank G. Cornish¹ and Robert W. Parker²

¹Center Imagine Resources, LLC, 711 N. Carancahua St., Ste. 514, Corpus Christi, Texas 78412

²Findmor Natural Gas, Inc., 4210 Canary Isle Court, Katy, Texas 77450

ABSTRACT

The United Oil and Minerals #1 Pilgreen discovery in January 1996 opened a significant Lower Wilcox play throughout Lavaca and Colorado counties, Texas. The prospect concept was to drill a large Upper Wilcox high-side fault trap deeper, testing a feature with three show wells from different sands. Adjacent downthrown Lower Wilcox production was quantitatively insignificant. The target sands had never produced anywhere in these counties.

The key trapping fault was not recognized in 2D data or well control until the second well. The main trap is a classic up thrown high-side closure on a buried fault with multiple pays. The best pay, the Rainbow Sand (total cumulative production > 87 BCF), includes two upthrown closures and a splinter fault trap in two reservoirs, the largest covering 1400 acres with a 515-ft pay column.

Five wells were drilled before 3D seismic acquisition was completed in 1997. Although the 3D enhanced field development, allowed accurate well placement, and uncovered satellite prospects, it did not answer every question. The data was part vibroseis and dynamite acquired at different times. Fault shadows caused sag and relative amplitude problems. Having two data types added to trace balance problems. Thus, amplitude versus offset (AVO) techniques were not used by the original operator to pick Lower Wilcox locations.

Twelve pay sands below producing upper Wilcox zones were added. Four sands—Roeder (a misnomer), Rainbow, Simpson, and Magnolia—established new exploration targets for these counties. Generally, the highest wells produce the most with the best porosity and permeability, but off-structure “sweet spots” in Rainbow and Simpson sands have been found.