
Delineating Parasequence Boundaries with High-Density Digital Well-Log Displays in the Olmos Formation, Webb County, Texas

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ABSTRACT

The Upper Cretaceous Olmos Formation is a major source of low permeability gas sands in the Maverick Basin of southwestern Texas. The Olmos has been characterized by previous workers as a progradational clastic wedge that conformably overlies the San Miguel Formation and in turn is unconformably overlain by the Escondido Formation. The current study utilizes geophysical well-logs to identify sequence stratigraphic boundaries within the Olmos Formation. Allostratigraphic correlation was performed on geophysical logs from 466 wells located in the northwestern portion of Webb County, Texas. High-density well-log displays were used to identify and correlate characteristic log responses. These correlated surfaces were interpreted based upon sequence stratigraphic principles and found to correspond to major flooding surfaces, third and fourth order sequence boundaries, and parasequence boundaries. The results of this study indicate the visualization power of high-density digital well-log displays as a means to build sequence stratigraphic interpretations.