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**Composite Sequences, Seismic Facies, and Reservoir Distributions in the Dianna Hoover Basin: Gulf of Mexico**

The Plio-Pleistocene succession in the Dianna-Hoover Basin can be subdivided into 6 Composite Sequences or large-scale stratigraphic packages bounded by surfaces of onlap (above) and erosional truncation (below). Once identified, these Composite Sequences provide insights into periods of structural movement, shifting depocenters, and variations in the type of sediment input within the basin.

In the Diana-Hoover Basin Composite Sequences dominated by Opaque Chaotic Seismic Facies are Mudstone-prone. These intervals consist primarily of Mass-Transport Complexes. Composite Sequences dominated by subparallel continuous reflections are reservoir prone. Through time the Diana-Hoover Basin shows a change from Composite Sequences dominated by turbidite deposition to Composite Sequences dominated by Mass Transport Complexes

Within the reservoir-prone intervals, sheet sandstones, passive shale fills, and mass transport complexes can be defined. The reservoir sheets do not always extend or remain the same thickness across the minibasin. Distribution and thickness variations of the sand sheets are dependent on primary depositional patterns and post-depositional modification. Most of the reservoir sheets in the Diana-Hoover basin display erosionally modified upper boundaries.