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Pennsylvanian Tyler Strat-Seis Concepts

Recent drilling in the Central Montana Rattler Butte Area has renewed interest in the Pennsylvanian Tyler as an objective. New production in this area, coupled with the surrounding well density, provides an ideal situation for further development of Tyler strat-seis exploration concepts and methods.

Both geological and geophysical Tyler thickness maps have proven to be useful tools in delineating eroded Heath and subsequent Lower Tyler deposition. Seismic modeling has revealed several possible Tyler-Heath erosional edge characteristics, providing another tool for Tyler-Heath boundary definition.

Detailed mapping of the study area also revealed a new environmental interpretation of the Tyler. Unlike the fluvial system to the north, the Tyler regime in the Rattler Butte area appears to be fluctuating between deltaic and marine.

In modeling specific seismic sand signatures it was found that seismic character and amplitude are dependent upon both formation thickness and lithology.

Two hydrocarbon-occurrence patterns have been noted within the Tyler: 1) although reservoir-quality sands are present throughout the Tyler, those within the Lower Tyler are more likely to contain hydrocarbons, and 2) close proximity to the Tyler-Heath erosional edge increases the chances of discovering oil-filled Tyler sands.

Combined use of these exploration tools should greatly enhance the chances for successful Lower Tyler exploration.