TRANSGRESSIVE-REGRESSIVE SEQUENCES IN THE CANYON FORMATION (MISSOURIAN) AT THE SALT CREEK FIELD, KENT COUNTY, TEXAS, CORRELATE TO WORLDWIDE DEPOSITIONAL EVENTS

J.M. Jensen and D.A. Walker
Mobil Exploration and Producing U.S., Inc., Midland, Texas

ABSTRACT

At least nine transgressive-regressive depositional units have been delineated for the Late Pennsylvanian (Missourian) Canyon Formation within the Salt Creek reef of the Horseshoe Atoll of West Texas. The nine lithostratigraphic units consist of shoaling-upward carbonate sequences bounded by unconformities. These units coincide with fusulinid biostratigraphic zonations established for the Permian Basin. The lithostratigraphic-biostratigraphic units correlate to other transgressive-regressive sequences and faunal successions found on widely separated cratonic shelves from around the world. These correlative sequences are the result of eustatic sea-level changes due to repeated glaciation during the Pennsylvanian. The Salt Creek reef is unique in that these sequences were deposited in a siliciclastics-starved basin as a freestanding carbonate buildup on a preexisting platform. This is significant in that other contemporaneous sequences, of mixed lithologies, were deposited on broad, stable cratonic shelves.