

# IMPLICATION OF FACIES IN EXPLORATION IN SOUTH LOUISIANA

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## ABSTRACT

The middle Tertiary (Oligo-Miocene) sediments of the Gulf Coast consist of a complex succession of overlapping stratigraphic wedges thickening toward the present Gulf of Mexico. These strata comprise the lower portion of the great Gulf Coast Geosyncline which is composed dominantly of thick masses of deltaic deposits interfingering seaward with normal marine sediments. The rapid sedimentation during the middle Tertiary marks the first development of a true geosyncline. This rapid deposition produced the thick sand and shale sequence of South Louisiana which abruptly changes facies laterally and downdip with marked discontinuity of sands and consequent difficulties in effecting electric log correlations. In the Miocene of South Louisiana where dependable regional correlations are accomplished only with great difficulty, this facies change is particularly evident.

Accurate interpretation of stratigraphy clearly is necessary to interpret regional geology. The application of all available techniques is required to unravel the complicated stratigraphy of South Louisiana. It is suggested that the contribution to exploration of the concepts of facies and biostratigraphy has been overlooked by most exploration geologists. The type of depositional environment should dictate quite different approaches to exploration in different areas and also at different depths within a single prospect area. Geographic drilling bands and depth plateaus may be established based on the economic risk and exploration probabilities of various facies provinces. The recognition of such facies divisions may be effected through detailed regional studies of electric logs on which paleontological zone data have been plotted with the application of interpretative paleocology. Once established, such drilling plateaus become invaluable to company management in deciding whether the economics of drilling ahead and the prospects of deeper production justify the added cost of deepening the test into another facies province.

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