

POSSIBLE FUTURE PETROLEUM PROVINCES OF THE GULF COAST - JURASSIC

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ABSTRACT

Since the initial discovery of hydrocarbons in Jurassic strata in the 1930's, sediments of this age have produced prolific amounts of oil and gas. Most of the exploration, and all of the production to date have occurred in Upper Jurassic formations above the Louann Salt. This post-salt section still appears to provide the significant Jurassic hydrocarbon potential for the future. The available well control fails to provide favorable clues to reservoir potential at reachable depths in pre-salt Jurassic rocks.

The Smackover, Haynesville and Schuler formations have provided most of the Upper Jurassic production predominately from relatively simple structural traps (anticlinal and fault closures). Exploration for these traps will continue along the entire length of the Jurassic trend with the emphasis of the search being intensified in sparsely drilled areas such as South Texas and the trend from Mississippi eastward to Florida. More complicated structural traps (e.g. the flanks of salt piercements), combination structural-stratigraphic traps and wholly stratigraphic traps offer increasing potential in the well-developed areas of east Texas, southern Arkansas and north Louisiana. Stratigraphic traps are already important in Schuler accumulations.

Other formations such as the Denkman Sandstone, Cotton Valley Limestone and Knowles Limestone are prospective at least within local areas. These units have not been heavily explored to date but may provide important reserves in the future.

Reservoir variability, differing gas quality and areas of deep drilling depths add to the cost and risk of finding profitable hydrocarbons in much of the Jurassic province; however, it is anticipated that significant reserves will be discovered in the sparsely developed areas to justify the exploration. The essentials of entrapment which have resulted in important accumulations in the well developed areas also exist in the sparsely drilled areas and indicate the future potential of these areas.