

## **POSSIBLE FUTURE PETROLEUM PROVINCES IN WESTERN GULF BASIN**

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### **A B S T R A C T**

Will additional significant crude oil reserves be added in the Western Gulf Basin? A task force of industry geologists working in Region 6—Western Gulf Basin, for the National Petroleum Council study, "Possible Future Petroleum Provinces of the United States," attempts to answer this question. The potential of currently nonproducing areas is stressed; however, possible extensions to producing trends are also analyzed from a geologic and production controls standpoint. This paper summarizes the thoughts and ideas from eight industry papers covering the Western Gulf Basin.

## **GEOPHYSICAL STUDIES OF THE NORTHERN FLORIDA PLATFORM GULF OF MEXICO**

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### **A B S T R A C T**

The western edge of the North Florida Platform has been delineated in some detail by seismic reflection investigations. The platform boundary is not apparent from topographic surveys due to the thick sediment cover. The platform edge appears to coincide with the trend of a probable offshore extension of the Lower Cretaceous (Washita-Fredericksburg) reef trend.

The existence of a more recent reef, normal to the Lower Cretaceous reef, is indicated from interpretation of additional reflection records. This feature trends almost east-west and crosses the buried edge of the North Florida Platform. It can be traced for approximately 30 miles and can be aligned with an old buried shore line toward the east.

The top of the Upper Cretaceous has been traced over most of the continental slope south of the Florida Panhandle by seismic reflection profiling. The studies on the outer slope indicate that this horizon rises near the center of the platform, along longitude  $86^{\circ}30'$ , to less than 5000 feet below sea level. Toward the west, near the edge of the platform at  $87^{\circ}30'$ , the top of the Upper Cretaceous is at 7000 feet while toward the east where the Florida Escarpment intersects  $85^{\circ}30'$ , the indicated depth is over 5700 feet below sea level.

The reflection surveys show that erosion has played a very important role in the formation of the western portion of the platform. It is evident that erosional processes have been active at least since the Upper Cretaceous. This can be interpreted to indicate that the circulation in the Gulf of Mexico, and the loop current in particular, has been essentially the same during the entire Cenozoic period.