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The Burgos Basin - a Geological Summary

A thick (10,000 meters) basin of Gulf Coast Tertiary clastic sediments occurs along the Mexican-US border; south of which is referred to as the Burgos Basin. Basic Gulf Coast stratigraphy and structure are the same in both areas throughout the Tertiary.

Productive sandstone reservoirs are arranged in distinct depositional belts, which record a retreat of the sea through the Tertiary. Belts of production correspond to deltaic, bar, and shoreface sands, flushed out from the rising Sierra Madre Oriental and high terrain to the north. From west to east, producing shoreface and deltaic sand belts are of Late Cretaceous, Paleocene (Midway), Lower Eocene (Wilcox), Oligocene (Frio-Vicksburg), and Miocene age. The Oligocene (Frio-Vicksburg) trend has the most production.

Local structures consist of typical Gulf Coast growth faults with roll-over anticlines on their downthrown sides, but stratigraphic traps also occur. Many of the growth faults are traceable for long distances and may reflect basement structural relief. Relatively few salt dome structures are seen in the Burgos Basin, although they are more common to the north in the US portion of the basin.

Downdip shales with moderate TOC values comprise the source rocks; they have continental kerogen of types III and IV and are thermally mature. Four basic families of hydrocarbons are recognized in the basin.

About 750 exploratory wells and over 2000 development wells have been drilled to date; total original volumes of hydrocarbons are estimated by Pemex (1999) at 240 MMBO and 18.9 TCFG.