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New Oil and Gas Plays in the Pearl River Mouth Basin

The Pearl River Mouth Basin, located in the northern shelf of the South China Sea, is a large Cenozoic rifting basin. Combining with the underlying Mesozoic depressional basin, it formed a petroliferous province producing over 70 MMBO per year for 6 consecutive years. It is being rejuvenated dramatically by the new play concepts.

The following five points are summarized as the rules for the enrichment of hydrocarbons in this Tertiary basin: 1). Rich source kitchen confined the initial accumulation occurrences; 2). Northwest trending faults control the distribution of major accumulations and the latest tectonics defined the present-day accumulation occurrences; 3). Numerous discoveries have proved the transgressive systems tract and highstand systems tract as the major reservoirs; 4). Majority of reservoirs were charged by lower source rocks with only a few in-situ reservoirs; 5). Majority of traps are rollover and compressive anticlines, drape anticlines and large carbonate buildups with some faulted anticlines, faulted blocks and small stratigraphic. These rules is continue to be the guides for the future exploration in the immature areas.

Future exploration focuses in the basin include 1) chasing Mesozoic reservoirs, 2) delineation of deep-water lowstand fan, 3) new concepts in existing production area, and 4) natural gas exploration. The basin will still be a resplendent pearl in oil and gas exploration in the 21st century in China.