

Geological History of the Late Mesozoic Phu Quoc Basin and the Related Petroleum System

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The Late Mesozoic Phu Quoc Basin developed on Devonian - Middle Triassic basement rocks. The basin belongs to the Mesozoic, Central Indochinese Khorat Group, which formed in a backarc setting. The depositional area of the Khorat group decreased in Late Cretaceous time when subduction culminated due to continental collision. During early Paleogene times the Phu Quoc and Dong Duong areas suffered regional uplift and peneplanisation. During the period lasting from Late Eocene through Miocene time, the western and southeastern part of the Phu Quoc Basin subsided due to right - lateral pull - apart movements on the Three Pagoda Fault System, which caused the formation of the Malay Basin and the deep burial of the western part of the Phu Quoc Basin.

Meanwhile the area east of the basin suffered uplift and erosion. During late Cenozoic times the eastern part of the Phu Quoc Basin subsided causing a thin late Neogene sedimentary package to blanket this part of the basin. Based on the result of seismic interpretations and outcrop investigations, it is shown that Upper Mesozoic shales have a good source and seal potential. Furthermore, Permian Carbonates are suggested as potential traps similar to Permian Carbonates in the Nam Phong field in the Khorat Basin.