

Characteristics and Correlations of Hydrocarbons Found in the Miocene Formations in Western Taiwan

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ABSTRACT

Based on the results of source rock evaluation and hydrocarbons correlation, the origin of hydrocarbons and its characteristics in Miocene reservoirs in western Taiwan have been predicted. There are hydrocarbon generating potentialities in the Miocene formations in CS, TCS, and CHK fields of northwestern Taiwan. The origin of hydrocarbons found in Miocene reservoirs, such as Shiti Formation, Mushan Formation in the CS field and Mushan Formation, Wuichishan Formation in CHK field are indigenously derived from the mature organic rich shale. On the contrary, the hydrocarbons, especially gas found in the Talu shale (0.6%Ro) in TCS gas field are mainly derived from more mature formations, such as Shiti Formation (0.8%Ro) or the formations of equal maturity.

The origin of high CO₂ content in the gas reservoir found in deep strata of western Taiwan is inferred to be mainly of the foreign deep inorganic sources associated with the mantle. The rich CO₂ migrates through the fractures and faults caused by the tectonic activity and orogenic movements. CO₂ derived from real organic matter and marine carbonate are not the major origins.

Key words: Source rock, Biomarkers.