

Unlocking the Mystery of Zawtika Biogenic Gas Accumulations, Offshore Gulf of Moattama, Myanmar

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ABSTRACT

For the past decade, biogenic gas production from the offshore Gulf of Moattama has significantly contributed to both the domestic and international gas market in this region. Despite success in exploring for biogenic gas, our understanding of how these generative and trapping systems work, to some extent, remains a mystery. The primary goal of our study has been to unlock the mysteries of biogenic gas generation through a review of available literature and a detailed analysis of the geology and hydrocarbon occurrence in PTTEP's Zawtika Field. Our study began with a detailed literature review in order to develop an understanding of the fundamental mechanisms of biogenic gas generation. We realized at this point that while biogenic gas generation is a common phenomenon, trapping of such gas in commercial quantities is unusual. Through a process of intensive lab analysis of hydrocarbons and sediments, the geochemical properties of hydrocarbon gas and potential biogenic source rocks were determined. 1D burial history modeling applying biogenic gas kinetics was conducted to determine the key parameters contributing to the Zawtika Field success case. Success case analysis outputs integrated with latest literature findings has resulted in formulation of the recipe for biogenic gas generation and accumulation.