

Analytical Method of Gas Hydrate Petroleum System Modeling Study in the Eastern Nankai Trough, Japan

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ABSTRACT

JOGMEC methane hydrate resource exploration team utilizes petroleum system modeling approach in methane hydrate resource assessment study of Japanese offshore areas. Since 2013, team has been performed two regional models focusing on the Daini Atsumi and Tokai Oki areas in the eastern Nankai Trough, Japan. Results of resource potential from regional models show a good match with the value depicted from seismic and log data. In 2015, a mega- scale model of the eastern Nankai Trough covering the two areas was been created to examine gas hydrate resource potential in unexplored areas. This study aims to establish an analytical method for gas hydrate petroleum system modeling study of the eastern Nankai Trough, Japan. The method describes applied information and key processes in considering and conducting gas hydrate petroleum system model of the eastern Nankai Trough. First process is confirmation of gas hydrate occurrence in the deep water turbiditic sedimentary formation with the observation of bottom simulating reflectors (BSRs) and gas hydrate distribution based on interpretation of 2D/3D high resolution seismic reflection, high density velocity data and high resistivity value from logging while drilling (LWD) and wireline logging data(Saeki et al., 2008).