

Geological Interpretation of the Reservoir Distribution of the G3.2 and G5.2 Series of the Shwe Field, Myanmar

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ABSTRACT

The Shwe, Shwe Phyu, and Mya gas fields were discovered between 2004 and 2006 by Daewoo International in Blocks A-1 and A-3 offshore Myanmar (Heungbum et al., 2015). Daewoo drilled the Shwe 1, the first gas discovery after the vertical Shwe 1 well was found to be devoid of reservoir. Subsequent to the discovery of the Shwe Field, Daewoo drilled the Shwe Phyu gas discovery north of Shwe in 2005 and the Mya gas discovery south of Shwe in 2006. Pay sands in the Shwe Field occur in two reservoir series, the G5.2 and the G3.2. The lower G5.2 reservoir series is characterized by multiple stacked lobe elements consisting of amalgamated and layered sheet sandstones. In contrast, the upper G3.2 reservoir series consists of channel and overbank deposits, which are characterized by thin-bedded sandstones with low net-to-gross ratio as well as low-resistivity pays (Yang and Kim, 2014). The distribution of reservoirs and pays across the Shwe Field is complicated as pay sands are commonly juxtaposed against wet sands. Various models have been proposed to explain the complexities observed in the reservoir connectivity and in the distribution of gas-bearing versus wet reservoirs. Kim et al. (2012) use a depositionally simple mode in which the G5.2 reservoirs were deposited in multiple lobes and the G3.2 reservoirs were deposited in multiple channel levee complexes. Other authors call on a more complex model of interbedded lobes, channels, and slumps sourced from both the northwest and the northeast (Yang et al., 2015) whereas others invoke an even more complex model with several reservoirs consisting of injectites (Cossey et al., 2013; Yang and Kim, 2014).