

## **Integrated Evaluation of Subsurface Data: Case Study of Exploration in the Miocene of Makassar Strait**

**Befriko S. Murdianto<sup>1</sup>, Kirandra Ferari Budhi Prasajo<sup>2</sup>, Lambok P. Marpaung<sup>2</sup>, and Lilik Iskandar<sup>1</sup>**

<sup>1</sup>Chevron Indonesia Company, Indonesia

<sup>2</sup>Chevron Pacific Indonesia, Indonesia

### **ABSTRACT**

The deepwater area of Kutei Basin, regarded as one of the most prolific basins in Indonesia, is actively explored by several players in Indonesia. The main reservoir sands are the Upper Miocene and Lower Pliocene, mostly saturated with gas. We present an integrated evaluation of a prospect in the deepwater Kutei, using high-quality 3D seismic and well data, calibrated to an analog from a nearby field, targeting the Upper Miocene sand rich interval in the deepwater Kutei system. The field analog is interpreted as a ponded system in the lower slope; meanwhile the prospect itself is interpreted as a lower slope – basin floor fan system. From the lower slope to basin floor, these deposits increase in width and areal extent. The techniques involved in this methodology comprised of application of high-resolution biostratigraphy, petrophysical analysis, basin modeling, amplitude versus offset (AVO) forward modeling and pre-stack simultaneous inversion, as well as spectral decomposition. As a result, we were able to locate the sand rich interval and illuminate areas with high probability of hydrocarbon presence.