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Miocene Clastic Play in South West Palawan: A New Playground for Hydrocarbon Exploration

Charmaine B. Mapaye, Jaime A. Bacud & Raymundo B. Savella*
PNOC Exploration Corporation, Energy Center, Rizal Drive, Bonifacio Global City, Taguig 1634, Philippines

The South West Palawan Basin has good potential among other frontier basins in the Philippines. Being on trend with the active petroleum system in Sabah (Malaysia), it is interpreted to be its northern extension. It is relatively underexplored with only 26 wells drilled to date and offers the following proven exploration play types:

1. Neogene pro-delta sequence
2. Miocene carbonates
3. Paleogene clastic section

This basin is characterized by two major tectonic units – the attenuated Eurasian continental crust and the Fold and Thrust Belt (FTB) of North West Borneo. The imbricate wedge was thrusted over the thinned Eurasian margin by gravity-related delta tectonics during the Early to Middle Miocene convergence between Palawan and North West Borneo. Growth faulting and compressional thrusting have affected the FTB deposits.

Recently acquired 3D and 2D seismic data better imaged these petroleum plays especially the Neogene deltaic sands found in less than 500m of water. A working petroleum system is indicated by oil and gas shows from wells. Adjacent seeps, DHI anomalies, gas chimneys as well as regional source rock presence suggest a mature source rock in the basin. The sand reservoirs, derived from the Borneo landmass, occur in various depositional settings (delta front to pro-delta). This reservoir package is sealed by intra-formational deepwater shales.

A better understanding of this deltaic play in this part of the South West Palawan Basin re-defines the Neogene clastic hydrocarbon prospectivity of the basin. Together with the proven Miocene Nido carbonate play and the Paleogene Synrift play, the Neogene structures identified in shallow water depths in the South West Palawan Basin present new insights into the proven petroleum system in Sabah and open exciting opportunities for exploration.