Characteristic of East Java carbonate: The backbone of carbonate reservoir producer in Indonesia

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East Java area carbonate contributes significant oil production for Indonesia with production around 145 MBOPD (18% national production) and next year will contribute around 240 MBOPD (30% national production). Based on the seismic section from North to South, shows Kujung Reservoir in Northern area of East Java shallower than the Southern areas. Implication of this morphology, Northern part have been exposed with good reservoir properties, such as in West Madura offshore indicate patch reef morphology with intensive vuggy porosity. When transgressions happened at the end of Kujung Formation, Southern part carbonate experiencing drowning and can’t grow up, but northern part Kujung Formation still grow up. Subsurface modeling in Northern and Southern area required different method. Northern area, focused on using seismic attributes that can detect hydrocarbon potential, such as AVO that used for mapping hydrocarbon potential in each patch reef. Southern part, the focus is for interpreting reservoir properties with Amplitude impedance. For production performance, Southern part produces more than Northern part. Dimensions of build-up reef in Southern area is quite large with connected pressure (pressure maintenance are applicable). One well in northern part can be produced with initial production 300–1,000 BOPD, cumulative production 500–800 MBO. Southern part one well can be produced 7,000–14,000 BOPD with cumulative production 17,000–20,000 MBO. Because of the unique carbonate system, detail evaluation is needed on geological conditions, reservoir characterization, and production analysis of East Java carbonate, so it could be a reference for developing other carbonate reservoirs in other area.

Biography
Heri Safrizal has joined Executive Agency for Upstream Oil and Gas Business Activities, Republic of Indonesia (SKK Migas) for 6 years. Mainly jobdesk at his company is monitoring all of oil and gas activity including technical review to optimized oil and gas development startegy. He joined special task force for some projects for reservoir characterization and production forecast from carbonate reservoir at Banyu Urip Field with ExxonMobil, Sukowati Field with PetroChina, West Madura Offshore Area with Pertamina, and the others. He has completed his Master’s Program at Gadjah Mada University with thesis research, “Carbonate reservoir characterization in West Java Basin”.

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