

Paleogene Syn-Rift Play Identification in Palembang Sub-Basin, South Sumatera, Indonesia

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Abstract : The Palembang Sub-Basin (PSB) located in southern part of South Sumatera basin (SSB) consist of half-graben complex trending N-S to NW-SE. These geometries are believe as an impact of strike-slip regime developed in Eocene-Oligocene. Generally, most of the wells in this area produced hydrocarbon from late stage of syn-rift sequences called Lower Talang Akar (LTAF) and post-rift sequences called Batu Raja Formation (BRF) and drilled to proved hydrocarbon on structural trap; three-way dip anticline, four-way dip anticline, dissected anticline, and stratigraphy trap; carbonate build-up and stratigraphic pinch out. Only a few wells reached the deeper syn-rift sequences called Lahat Formation (LAF) and Lemat Formation (LEF). The new interpretation of subsurface data was done by the tectonostratigraphy concept and focusing on syn-rift sequence. Base on seismic characteristic on basin centre, it divided into four sequences: pre-rift sequence, rift initiation, maximum rift and late rift. These sequences believed as a new exploration target on PSB mature basin. This paper will demonstrate the paleo depositional setting during Paleogene and exploration play concept of syn-rift sequence in PSB. The main play for this area consists of stratigraphic and structure play, where the stratigraphic play is Eocene-Oligocene sediment consist of LAF sandstone, LEF-Benakat formation, and LAF with pinch-out geometry. The pinch-out, lenses geometry and on-lap features can be seen on the seismic reflector and formed at the time of the syn-rift sequence. The structural play is dominated by a 3 Way Dip play related to reverse fault trap.

Keywords : syn-rift, tectono-stratigraphy, exploration play, basin center play, south sumatera basin

Conference Title : ICGSE 2018 : International Conference on Geological Sciences and Engineering

Conference Location : Paris, France

Conference Dates : August 27-28, 2018