Sequence Stratigraphy Analysis and Facies Modeling of Submarine Fan Reservoir, Pari Field, Kutai Basin, Offshore East Kalimantan, Indonesia

Roy Rahadi, author

Abstrak

ABSTRAK
Seismic sequence stratigraphy analysis was performed to identify a chronostratigraphic evolution of submarine fan reservoir in Pari field, Makassar Strait, offshore East Kalimantan. A complete sequence stratigraphy in Pari field was divided into three systems tract: lowstand systems tract (LST), transgressive systems tract (TST) and highstand systems tract (HST). The ?X? reservoir unit was deposited during the lowstand systems tract (LST). Based on core data and well log, the reservoir is dominated by few massive thick sandstone, thin interbedded sandstone and shale. Well data and 3D seismic multiattribute analysis indicated a submarine fan depositional system feature. However, the available 3D seismic data could not image the submarine fan elements feature like channels and splay lobes due to low seismic resolution. A shallow Pleistocene submarine fan located in the northern part of the study area is clearly imaged using 3D seismic data. That Pleistocene submarine fan provides analog dimensions for sub-seismic reservoir elements in the ?X? reservoir unit, Pari field. The dimensions of channels and splay lobes within Pleistocene submarine fan were used to define stochastically reservoir elements in Pari field. The Pleistocene submarine fan are approximately the same size as the seismically mapped the ?X? reservoir unit. Three facies model were generated to provide multiple realizations of facies model. Those are 70% channel and 30% splay lobe (more channels dominated), 50% channel and 50% splay lobe (proportional between channel and splay lobe), and 30% channel and 70% splay lobe (more splay lobe dominated).