

ABSTRACT

3D SEISMIC SEQUENCES INTERPRETATION IN DEEP WATER DEPOSITIONAL ENVIRONMENT ON “SOE” FIELD, PAPUA

By

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Eastern Indonesia has a much different geological structure than the other Indonesia's Region. Eastern Indonesia's geological structure, especially West Papua, is affected by Indo-Australian Plate which is much older than Eurasian Plate that forms the Western Indonesia. It makes a unique and complicated geological structure in West Papua. Seismic interpretation has been done at intervals Last Cretaceous through to Middle Eocene. Overall, the orientation of its depositional environment is about N135°E. The basin physiography is interpreted on seismic section by flattening the BASE-Z horizon. The clinofold dip angle of Paleocene is about 1.6° (BASE-Z - MID-Z) to 2.5° (MID-Z - TOP-Z). The slope of the Paleocene is quietly flat and long, so that the Paleocene slope-break which is outside the observation area cannot be determined. The MID-Z shelf-edge is in the northern EM-8 wells, while the TOP-Z is in the northern EM-5 wells. In the Late Paleocene to Middle Eocene occurred progradation where the slope is formed has a dip angle of about 4° (BER-A and BER-B) to 6° (BER-C). Its slope-break is stopped right at the TOP-Z. Based on seismic data, clinofold that formed in the Middle Eocene cut off by fairly extensive erosion along the Middle Eocene. The erosion also eliminates the shelf-edge of the clinofold in the Middle Eocene. That erosion is identified as the upper boundary of this sequence depositional environment. Depositional environment of Late Cretaceous to Late Paleocene has two segments of the system tract that begins with Lowstand System Tract (LST) between BASE-Z and MID-Z, and followed by Highstand System Tract (HST) between MID-Z and TOP-Z. In between these two segments system tracts is expected there are Transgressive System Tract (TST) which separates the LST and HST in the Paleocene, but this remains to be proved by clearer seismic data. While progradation in the Middle Eocene is part of the Shelf Margin System Tract (SMST) which is truncated by erosion (TOP-ABC).

Key words : 3D Seismic, *system tract*, *slope*