

Sedimentary Facies Analysis and Sequence Stratigraphy of Late Eocene Yaw Formation in Southern Part of Chindwin Basin, Myanmar

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ABSTRACT

The study area situated in Kalewa and Mawleik Townships in Sagaing Region, in the Southern part of Chindwin Basin mainly composed of the Eocene to Miocene clastic sedimentary rocks. Sedimentary facies analysis and sequence stratigraphic implications of the Late Eocene Yaw Formation were conducted in the present study. By the facies analysis sedimentary facies such as Bluish grey nodular shale facies, Heterolithic facies, Trough cross- stratified sandstone with mud clast facies, Rippled sandstone facies, Thinly laminated fine sandstone facies, Large-scale horizontal to low-angle stratified sandstone, Fine-grained sandstone with slump structure facies, Hummocky cross-stratified sandstone facies and Coal seam, carbonaceous shale or coaly shale with fine sand and silt alternation facies were recognized. These recorded facies representing five facies associations deposited in prodelta/offshore, lower shoreface, delta front, delta plain, tidal flat and flood plain areas of a deltaic system. In the stratigraphic sequence of the area, Yaw Formation commenced deposition as shallow marine prodelta clays on the fluvial Pondaung sandstone as the transgression taken place rapidly as forced transgression. A deltaic sequence can be divided into two transgressive-regressive cycles during the deposition of the Yaw Formation. The Transgressive Systems Tract and Highstand Systems Tract characterized by the retrogradational and progradational parasequences indicating the sea level changing through the Late Eocene time. Lowermost part of the Yaw Formation immediately overlying on the sequence boundary between the Pondaung Formation shows characteristics of transgression where as HST developed in the Yaw Formation characterized by progradational parasequences forming with delta front and delta plain facies bordered by inferred maximum flooding zone. The depositional setting indicating the relative sea-level falls whilst the next transgression favored the deposition of shelf prodelta facies on the progradational parasequences. The uppermost horizon of the Yaw Formation unconformably overlain by thick-bedded fluvial sandstone of the Letkat Formation showing with erosional features characteristic of incised fluvial channels can also be regarded as a sequence boundary.