

**GEOLOGY AND SEQUENCE STRATIGRAPHY ANALYSIS
WITH RESERVOIR ROCK PROSPECTION ON TALANG
AKAR FORMATION, CLK FIELD, SOUTH PALEMBANG
SUB –BASIN, SOUTH SUMATRA BASIN**

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ABSTRACT

The study focused on Talang Akar Formation interval at CLK Field, South Palembang Sub-basin, South Sumatra Basin which have an area of $\pm 223 \text{ km}^2$. The method that used in this research is sequence stratigraphy analysis with the source of data include wireline log, sidewall core, mudlog, FMI and dipmeter log, paleontology and 3D seismic data. The log data used to construct stratigraphic framework which be integrated with seismic data to know its extension.

The studied area compiled by in order from older to younger of Basement, Lemat sandstone unit, Talangakar sandstone unit, and Baturaja limestone unit. The geological structure that developed in this area include normal fault with northeast-southwest and northwest-southeast trend, the paleo-high on eastern studied area and paleo-low on southern-southwestern studied area, as well as the closures potential to trap hydrocarbon.

Electrofacies analysis on the available data shows the depositional facies that develop in this area include tidal channel, swamp, tidal flat, offshore bar, and shelf mud facies on mixed terrigenous-carbonate shoreline environment. The sequences that can be recognized as much as 10 (ten) sequences that bounded by sequence boundary which the Talangakar sandstone unit lied down at 5th sequence to 10th sequence. The overall of depositional environment shows the transgression phase that accompanied by basement high on northern and southeastern studied area with dynamics changes of depositional environment occurs during the transgression phase.

The facies that potential as reservoir rock on the studied area include tidal channel sand facies at interval 1667 – 1675 m MD and 1682 – 1685 m MD in FLN4 well, at interval 1644 – 1650 m MD in FLN3 well, and offshore bar facies at interval 1655 – 1666 m MD and 1645 – 1651 m MD in FLN2 well.

Keyword : Talang Akar Formation, sequence stratigraphy, reservoir rock