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**DEPOSITIONAL MODEL OF THE MIOCENE KAIS FORMATION  
IN THE WALIO FIELD, SALAWATI BASIN, INDONESIA**

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**ABSTRACT**

A depositional model of the upper Kais Formation in the eastern part of the Walio field was reconstructed based on sedimentological, biostratigraphic and sequence stratigraphic analysis. The database used in the study include cores, ditch cuttings and electric logs from nine key wells and other selected wells.

Eight carbonate facies were delineated in the Kais and Klasafet Formations as follows; (1) restricted back reef (FA1i), (2) open back reef (FA1ii), (3) reef flat (FA2), (4) reef crest (FA3), (5) reef front (FA4), (6) shallow fore reef (FA5), (7) fore reef talus (FA5i), and (8) deep fore reef (FA6).

The reefal carbonate facies of the upper Kais Formation is interpreted to have been deposited during a third order cycle (5.5 Ma - 4.2 Ma) of late Miocene to early Pliocene age. The Kais reefal carbonate facies

was overlain by the Klasafet Formation claystone possibly after a maximum flooding surface (MFS) approximately at 5.0 Ma. A transgressive surface (TS) at 5.2 Ma of a third order cycle and a MFS at 5.4 Ma possibly of a fourth order cycle are interpreted to be present in the Kais Formation.

The interval between the 5.4 Ma MFS and 5.5 Ma sequence boundary (SB) has only FA1i and FA1ii facies. The interval between the 5.2 Ma TS and the 5.4 Ma MFS consists of FA1i, FA1ii, FA2, FA3, FA4 and FA5 facies in the reefal core, and these facies change into FA5 facies in the reef margin. The interval between the 5.0 Ma MFS and 5.2 Ma TS is composed of FA2, FA3, FA4 and FA5 facies in the reefal core, and these facies change into FA6 facies of the Klasafet Formation in the reef margin.

The back step of the reefal facies is considered to have occurred on the reefal margin. The end of reef growth in the Walio field possibly at 5.0 Ma is interpreted to have been caused by transgressive and periodic influxes of detrital clay-rich sediments towards the end of the Kais.

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