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**LOWSTANDS AND HIGHSTANDS IN THE LACUSTRINE BROWN SHALE OF CENTRAL  
SUMATRA: FIELD EXAMPLES FROM THE TESO BLOCK**

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**ABSTRACT**

Two distinct lacustrine basin-fill sequences from the Pematang Formation brown shale are described from the Teso area, Central Sumatra. The exposures at the Karbindo Coal Mine in the Kiliran Basin suggests a long established, relatively deep, stratified lacustrine setting (prolonged highstand conditions), whereas the section at Bukit Susah in the Bukit Susah-Sumai Basin is punctuated by periodic lowstands related to episodic tectonic uplift.

An 80m thick, well exposed, continuous sequence at the Karbindo Coal Mine illustrates the rapid establishment of lacustrine conditions above a thick coal-palaeosol sequence. Lacustrine brown shale facies are typically of sub mm laminated mudstones, reflecting a strongly seasonal character, with algal-rich laminae representing a drier season (algal bloom at lake surface) and the more mud-rich laminae were deposited during a wetter season. The lack of fluvial clastics and palaeosol development throughout the entire lake-fill sequence indicates that lake water levels remained relatively stable over a prolonged period of time, approximately 240,000 years, based on the occurrence of annual laminae.

In the Sumai Basin at Bukit Susah, brown shale lacustrine fines are punctuated by pebbly fluvial sandstones and sharply defined palaeosols, indicating rapid lake level fall and subsequent rise. Five clearly definable "lowstand" sequences have been identified, which are interpreted to reflect a strong tectonic control on sedimentation related to periodic uplift within an accommodation zone controlling half-graben polarity. This accommodation zone is associated with a major E-W trending fault system, the "Timpe Linear", which also affected the Kiliran Basin.

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