

## **Reactivated ancient slides at the Sungai Kelalong dam site, Bintulu, Sarawak, East Malaysia**

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The Sungai Kelalong Dam site is founded in the interbedded mudstone-sandstone of the Miocene age Nyalau Formation. The formation has been mildly deformed resulting in very broad, open syncline-anticlinal folds plunging in the E-NE direction. The rock mass is dissected by at least 4 sets of discontinuities, mainly the bedding planes, joints and faults. The occurrence of a massive landslide on the spillway slope and part of the neighbouring core trench wall is largely attributed to the intersection of a low angle, listric normal fault and the subvertical, E-W striking fault zone. The former is interpreted as a sliding plane of an ancient slide, which probably took place during the Pliocene uplifting in a condition of wet soft sedimentary deformation, to allow for the formation of a well-developed normal listric faults system. Reactivation of the ancient slide caused by extensive earthworks activities for the dam construction resulted in a massive landslide to the spillway slope. This case study gives clear examples of the importance of geological inspection during the construction stage to check and detect any structural defects not identified in previous site investigation works.