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ABSTRACTS

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Abstract No. 45

THE QUATERNARY AND THE MIOCENE BASEMENT OF THE KALPITIYA PENINSULA, SRI LANKA

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Core drilling investigations in the Kalpitiya Peninsula reveal near-surface, well graded, dense, dune sands of Quaternary origin. The horizon of unconsolidated sand provides an excellent perennial fresh water aquifer. These sands grade into a sandstone basement at a depth between 6.00 m and 9.00 m. The top level of the sandstone basement, in relation to the existing sea level shows a variation from –3.6 m to –11.2 m MSL. This shows a maximum regression of the MSL up to –11.2 m during the Quaternary Period. Within the sandstone bed are patches of mudstone and sandstone, with complete maxiation of mud, which shows that marine/estuarine environs overlapped periodically with MSL fluctuations. Below the sandstone, a limestone basement at an elevation of -11.4 m MSL to –14.2 m forms an unconformity of approximately 20 million years in the geologic history. It formed during the Miocene –Quaternary period of transition. The thickness of the clastic fossiliferous limestone is more than 60 m in the Kalpitiya peninsula. A thin bed of mudstone within the limestone indicates that a complete marine environment of sustained deposition did not exist during the Miocene Period. The Miocene boundary indicated in geological maps needs to be extended at least up to south of Mundal Lake and even beyond upto the Deduru Oya mouth. Only further core drilling can exactly demarcate this boundary.