

Tracing Groundwater Recharge dynamics in the Kelantan Malaysia, Using Environmental Isotopes

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The present paper explains the use of stable isotopes to have a unique perceptible of recharge mechanism and determine relative contributions from season to season. Stable isotope (¹⁸O and ²H) contents of groundwater, rainwater and some surface waters from the Northern/Southern parts of Kelantan, Malaysia were studied. The results showed that local precipitation is the main source of groundwater recharge in the area. The primordial isotopic signatures (pre-evaporation) of post-season groundwater samples fall well within the isotopic range of post-season rainwater signifying direct recharge from precipitation without any major fractionation. The narrow isotopic range for post-season implies that groundwater recharge for post-season occurs during limited interval compared to pre-season. The aquifer in the area is isotopically heterogeneous and show enrichment towards north-west during post-season and south-east during pre-season.

Key words: Groundwater recharge, Environmental isotopes, Malaysia,