

Estimate of groundwater behavior by water quality and stable isotope of pore water that is included in the Alluvium marine clay

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The subsurface of Nakagawa Lowland distribute the sediments which have deposited since ca.13 ka in the buried valley. The sediments are able to divide into 4 sedimentary systems; artificial soil, delta system, estuary system and fluvial system sequentially from the top. The delta system to fluvial system are deposited by transgressive-regressive cycle with climate change. The delta system is composed of floodplain to river channel fill sediments, delta front sediments and prodelta sediments. The river channel fill sediments are consisted of medium sands and make unconfined aquifer. The delta front to prodelta sediments are consisted of very fine sand to clay that deposited bottom of the sea, and prodelta sediments are bay sediments. The pore water was extracted from the drilling core which dug at Misato area in Nakagawa Lowland, and measured the water quality and stable water isotope.

The results are; 1) the profiles for vertical are similar shape both ion and isotope that have one peak and gradual increase or decrease, 2) The depth of peaks are different, the isotope peak is -8.6m and that value is $\delta D = -47.6$, the Cl ion peak is -15m and that value is 674 mg/L. These data shows the pore water does not retain marine water when the sediment made, and the movement of water may diffuse little by little.