

## Study on behavior of pore water solutes in clayey layer in sedimentary plain using $^{37}\text{Cl}/^{35}\text{Cl}$

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In a process of groundwater flow in sedimentary basin, pore water solutes in low permeable clayey layers can move into the adjacent aquifers by diffusion process when the concentration of solutes in the layer is higher than that in groundwater in the aquifer. Thus, low permeable layers can behave as reservoirs of solutes and are possible to affect the chemical property of groundwater in the adjacent aquifers. However, there are few hydrological studies about the behavior of pore water solutes in low permeable layers in sedimentary plain in Japan. The aim of this study is to understand the behavior of pore water solutes in clayey layer in sedimentary plain to evaluate the function of clayey layer as reservoir of solutes.

In this study, pore water was abstracted by centrifuge (pF 3) from the boring core that was obtained by Geological Survey of Japan from the central part of the Kanto plain (Shobu town, Saitama Prefecture). In this site, clayey layer is situated in depths from GL-163 to -169m. Concentration of chloride ion and stable chlorine isotopic ratio ( $^{37}\text{Cl}/^{35}\text{Cl}$ ) of pore water in the clayey layer were measured. Concentration of chloride ion and  $^{37}\text{Cl}/^{35}\text{Cl}$  in this layer are 87 to 122 mg/l and -0.61 to -0.24 permil, respectively.  $^{37}\text{Cl}/^{35}\text{Cl}$  increases with depth. These results suggest that the diffusion process is occurred in this layer.