

Isotopic characteristics of deep colored groundwater in downstream region of the Yoro River

Takeshi Hayashi[1]; Akinobu Miyakoshi[2]; Yasuo Sakura[3]

[1] GSJ, AIST; [2] GSJ,AIST; [3] Dept. Earth Sci., Chiba Univ.

To understand groundwater environment in coastal area is important to estimate transport processes of groundwater and dissolved matters from inland to sea. Generally, there is a saltwater-freshwater interface in coastal area. Fresh groundwater discharges along the interface to the sea. However, some previous studies reported that fresh groundwater was observed beneath the Tokyo bay, which is located in southern part of the Kanto plain. We have been studying about water chemistry, stable isotopes and subsurface temperature in the Tokyo bay area to understand groundwater environment. In this presentation, we report some isotopic characteristics of colored groundwater in lower area of the Yoro River, which flows to the Tokyo bay.

Groundwater samples were collected from observation wells that were distributed in lower area of the Yoro River basin. Colored groundwater was collected from deep part (deeper than 500m) of the Tokyo bay area. Delta-18O, delta-D and major dissolved ions were analyzed. As a result, groundwater samples had Electric Conductivity of 128 to 1,277uS/cm, and water quality types were Ca-HCO₃ type and Na-HCO₃ type. Also, samples were distributed along the meteoric water line in Delta-diagram. From these results, origin of samples was considered meteoric water. However, isotopic ratio of colored groundwater was lower than other clear groundwater samples, river water (Konno, 1997) and meteoric water in the Boso Peninsula (Yasuhara, 2002). Therefore, origin of colored groundwater is different from shallow clear groundwater.