

# **Analysis of Stable Isotope Contents of Surface and Underground Water in Two Main Geological Formations in the Northern Region of Ghana**

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## **Abstract**

Stable isotope ( $^{18}\text{O}$  and  $^2\text{H}$ ) contents of groundwater and some surface waters from the Northern Region of Ghana were studied. Transmissivity values are obtained using the screen length and hydraulic conductivity. These values were low corresponding to low groundwater recharge. The results of stable isotope content showed that groundwater is recharged from local precipitation but suffers evaporation during transit from the atmosphere to the water table. Infiltration to groundwater table is very slow resulting in low recharge. Furthermore, the isotope enrichment increases from the northeast to southwest (Voltaian to Basement Complexes) in the direction of the harmattan winds.