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Isotopic attitude of groundwater chemistry

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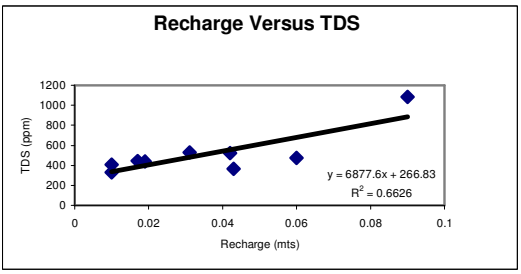
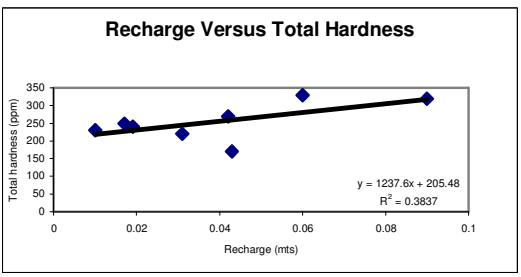
Natural recharge estimated by injected tritium tracer technique at ten sites in a basaltic terrain, is compared with the estimated chemical parameters of groundwater samples of open wells near the recharge sites. Appreciable quantitative relation existing between natural recharge and the ground water chemistry, namely the parameters such as total hardness(TH), total dissolved solids(TDS), Carbonate(CO3), Sodium(Na), Calcium(Ca), and Magnesium(Mg) are demonstrated. Possible concept responsible for such a relation is discussed. Significance of this relation for ground water exploration and management is illustrated. Total hardness and Total dissolved solids are the primary chemical components, that decide the potability of groundwater quality. Hence figures illustrating the quantitative relation between natural recharge and total hardness(TH) and total dissolved solids(TDS) are shown below. The relation existing with natural recharge and other chemical parameters are dealt in detail.

Key words: Natural recharge, groundwater chemistry, tritium displacement, recharge quality relationship





Correlation of natural recharge with total dissolved solids and total hardness