 155 i–rCa/rMg"; inspection of this ionic ratio shows that the groundwater of the Pleistocene aquifer in the Tenth of enriched Ramadan City can be divided into two major types (Fig. 5) Those in Ca with ionic ratio more than unity (wells Nos. 1, 1, 14 14 and 15). This can be attributed to the lithological nature of the aquifer and may indicate lower groundwater velocity (Al–Gamal, et al. 1998). The other type has rCa/rMg ionic ratio below unity (the dominant type) and may indicate higher groundwater velocity. ii–r Na'/rCl; for the groundwater in the Pleistocene aquifer within the area of study, this ratio is totally above unity. The increase of sodium percentage in the groundwater is derived by the leaching processes of meteoric water to the adsorbed sodium to the clay of the aquifer. iii–rSO,/rCl; this ratio for all the studied groundwater samples is found to be less than unity due to the dominance of chloride ion. vi–rCl–rNa/rCl'; in the groundwater of the Pleistocene aquifer, the values of this ratio are found to be negative for all samples indicating an active ion exchange process. v. rK/rCl'; in the studied groundwater samples, the value of this ratio ranges from 0.002 to 0.015, i.e the concentration of K ions in the groundwater of the Pleistocene aquifer is low. This can be attributed to the meteoric water recharge from Ismailia Canal. 5. In drinking well No.1, the TDS and the concentration of major ions does not exceed the maximum permissible limits of WHO (1984) for drinking water. However, the groundwater in other productive wells should be treated before using for drinking where the TDS and the concentration of sodium, chloride and sulphate ions exceeds the maximum permissible limits for drinking water.

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