



Hydrochemical characterisation of groundwater in Massakory Area, Chad.

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ABSTRACT

Objective: The objective of this work is to characterize the physicochemical quality of Massakory groundwater for domestic use.

Methodology and results: The study involved 14 boreholes, a rainfall sample and a well for drinking and irrigation purposes located in the study area. The results obtained show that the electrical conductivity (EC) values in our borehole water range from 1171 to 2590 $\mu\text{S}/\text{cm}$ and 2650.0 $\mu\text{S}/\text{cm}$ in the well water; the pH values of our water are basic (between 8.1 and 8.9). These pH values comply with international standards for drinking water. The water in the study area has two chemical facies: the calcic and magnesian bicarbonate facies (F1, F3, F5, F7, F8, F9, F10, F11, F12, F13, F14, rain, and wells), and the calcic and magnesian sulphate chloride facies (F2, F4, F10). As far as cations are concerned, the water is calcic, whereas as far as anions are concerned, the water tends to evolve from the bicarbonate pole to the sulphate pole.

Conclusion and Application of results: This result showed that the physicochemical parameters of Massakory groundwater exceed WHO standards. With electrical conductivity significantly higher than the WHO standard, this result confirms that Massakory water is of poor quality and therefore poses a health risk to the population.

Key words : Assessment, physico-chemical quality, groundwater, Massakory and Chad.