

Suitability Assessment of Deep Wells Water for Drinking and Domestic Uses in Al-Bewanees Region, South of Libya

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Abstract:

This work was conducted to assess chemical composition of deep wells water, in Al-Bewanees region, south of Libya, to clarify its suitability for drinking and domestic uses. Obtained results indicate that all studied samples have been neutral to very slightly acid pH, within the optimum range for drinking water. Most samples had high salt content. Sodium was the dominant cation in the entire samples, and its concentrations in most samples were above than the upper critical limit suggested by WHO and Libyan guidelines for drinking water. Potassium was found in high concentrations, presenting second cation, followed by calcium then magnesium, which was the lowest. Sulphate was the dominant anion in all samples, except one which showed chloride dominancy. Trace ions and phosphate were found in low concentrations. Ammonium and nitrate were undetectable. Only one sample showed high hardness, while the rest were soft. Langlier index values suggest that some samples have potential for corrosion. Apart from samples No.5 and 12 which can be used after correction of calcium and magnesium concentrations, the rest were unsuitable for drinking and household uses.