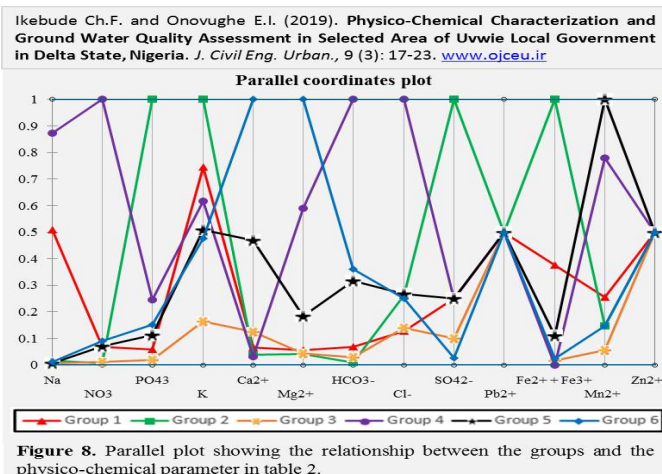


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Research Paper

Physico-Chemical Characterization and Ground Water Quality Assessment in Selected Area of Uvwie Local Government in Delta State, Nigeria.

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Abstract

The status of the ground water in Uvwie local Government Area and its surrounding environment was evaluated in this study. The aim of the research was to evaluate the physico-chemical composition and quality profile of the ground water. A total of twenty samples were collected from boreholes and hand dug wells and analysed. Iron chromatography and titrimetric method were employed for the analysis. The results shows that almost all the physico-chemical parameter such as PH (5.11 -8.46), temperature (24.5oC - 26.8oC) EC (12.87µs/cm -34µs/cm) TDS (6.44mg/l-440mg/l) fall within the limit recommended by WHO and Nigeria Industrial Standard. Chemical parameters has the following results: Cl-(8mg/l - 250mg/l), Na+ (2.13mg/l - 957mg/l) K+ (0.192mg/l - 15.86mg/l) Ca²⁺ (0.173mg/l - 88.34mg/l), Mn (0.02mg/l-0.43mg/l), Fe²⁺(0.01mg/l - 1.65mg/l). The concentration of Pb²⁺ was 0.009mg/l in all locations. All major ions revealed that concentration is within limits of both standards. The study concludes that the water is save for drinking and domestic purposes. However, bacteriological and radiological test should be researched.

Keywords: Ground water, Boreholes, Dug wells, Iron chromatography, Titrimetric method, WHO, NIS

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