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A review of the Sedimentology and Hydro-geochemistry of the Middle Benue Trough, Nigeria

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Sedimentology of part of the middle Benue Trough was reviewed with the aim of updating the orientation and records of some significant structures like folds, faults and uplifts that were not reported in previous literature. This part of the trough contains both marine and continental fluvial and deltaic, transgressive and regressive deposits. For effective usage and management of groundwater in the studied area, the geochemical evaluation of different underground water sources ranging from saline springs, boreholes, hand-dug wells, streams/rivers were undertaken which revealed that Copper, Sodium, Potassium, Iron and Magnesium had concentrations within World Health Organization (WHO) drinking water permissible limits. However, Lead, Arsenic, Selenium, Zinc and Manganese had concentration above the WHO standard and the Nigerian Standard Industrial (NIS) limits suggesting that the water sources are potentially risky for human consumption. It is recommended that waters from this area should be treated first before drinking and further work should be carried out so that a model can be developed to delineate the water sources in relation to the aquifer type and the sedimentary structures that relates to their origin.