

Surface and Drinking Water Quality Monitoring of Thomas Reservoir, Kano State, Nigeria

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Abstract : Drinking water is supplied to Danbatta, Makoda and some parts of Minjibir local government areas of Kano State from the surface water of Thomas Reservoir. The present land use in the catchment area of the reservoir indicates high agricultural activities, fishing, as well as domestic and small scale industrial activities. To study and monitor the quality of surface and drinking water of the area, water samples were collected from the reservoir, treated water at the treatment plant and potable water at the consumer end in three seasons November - February (cold season), March - June (dry season) and July - September (rainy season). The samples were analyzed for physical and chemical parameters, pH, temperature, total dissolved solids (TDS), conductivity, turbidity, total hardness, suspended solids, total solids, colour, dissolved oxygen (DO), biological oxygen demand (BOD), chloride ion ($\text{Cl}^{\sup>-</sup>}$) nitrite ($\text{NO}_{2}^{\sup>-</sup>}$), nitrate ($\text{NO}_{3}^{\sup>-</sup>}$), chemical oxygen demand (COD) and phosphate ($\text{PO}_{4}^{\sup>3-</sup>}$). The higher values obtained in some parameters with respect to the acceptable standard set by World Health Organization (WHO) and Nigerian Industrial Standards (NIS) indicate the pollution of both the surface and drinking water. These pollutants were observed to have a negative impact on water quality in terms of eutrophication, largely due to anthropogenic activities in the watershed.

Keywords : surface water, drinking water, water quality, pollution, Thomas reservoir, Kano

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