

# Water Quality Assessment of River Hindon and Its Impact on Public Health

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**Abstract**—The river Hindon is an important lifeline to predominantly agricultural dependent and rural population of Western Uttar Pradesh. The main objective of this paper is to assess the pollution status of river Hindon by analyzing its physicochemical attributes and accessing impact of different microbial and chemical pollutants on human health. Water samples were collected from three different sites along upstream, midstream and downstream of Hindon River and were analyzed for pH, turbidity, total dissolved solids (TDS), total alkalinity (TA), total hardness (TH) and calcium hardness (Ca-H), electrical conductivity (EC), biochemical oxygen demand (BOD), chemical oxygen (COD) demand, dissolved oxygen (DO), sulphate (as  $SO_4^{2-}$ ), nitrate ( $NO_3^-$ ) and chloride (Cl) levels. Water pollution indicating parameters were found to be manifold higher than the prescribed limit given by the National Pollution Control Agency, i.e. CPCB. The paper further discusses impact of the tested parameter along high levels of heavy metals Cadmium, Chromium, Lead and pesticides present in River Hindon on human health. When consumed as drinking water or for irrigation purposes this polluted water often results in serious ailments like cancer, stomach diseases, neurological disorders and skin diseases The microbial genera isolated from Hindon river were Shigella, Escherichia and Salmonella resulting in increase in number of dysentery, typhoid and jaundice cases reported.