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ELUCIDATING HYDROCHEMICAL PROPERTIES OF SURFACE AND GROUND WATER FOR DRINKING AND AGRICULTURAL PURPOSES IN PARTS OF LUDHIANA DISTRICT, PUNJAB, INDIA

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ABSTRACT

Ludhiana is the first metropolitan city, popularly known as "Manchester of India." located on National Highway-I, has emerged as the most vibrant and important business center of Punjab. Agriculture is the primary occupation of the inhabitants of the Ludhiana district followed by industrial activities.The vital component for agriculture viz.water (ground and surface) are getting degraded in the Ludhiana district thereby making the present drinking and agricultural system unsustainable and non-profitable.The groundwater and surface water samples were analyzed to assess various chemical and physical water quality parameters such as (pH, EC, TDS) and major elements such as (Ca^{2+}, Mg^{2+}, Na^{+}, K^{+}, SO_4^{2-},Cl^{-},NO_3^{-},HCO_3^{2-},$PO_4^{3-}$and F^{-}) were evaluated to assess its suitability for drinking purposes. Kelly's Index (KI), Permeability Index (PI) and Magnesium Ratio (MR)/ Magnesium Hazard (MH), Chloro Alkaline Indices I (CAI-I and II) were considered and calculated to check the groundwater suitability for agricultural purposes.

KEYWORDS: Groundwater, KI, PI, MR/MH ,CAI-I and II

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