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GIS Based Identification and Assessment of Groundwater Quality Potential Zones in Puri City, India

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ABSTRACT

Puri city is situated on the east coast of India and groundwater is the only source available to meet the potable water supply of the city. The objective of the study was to assess the impact of anthropogenic activities on groundwater quality and to identify the groundwater potential zones for drinking water production using GIS. Major sources of groundwater contamination in the city were open discharges of domestic sewage, inadequate sewerage system, open defecation, septic tanks, soak pits, contaminated water pools and unorganized solid waste dumping. Groundwater samples were collected and analyzed during post and pre monsoon to evaluate the drinking water quality as per Indian standards. The groundwater zones were prepared based on weighted index overlay analysis by assigning the weights based on the drinking water standards under different classes of individual water quality parameters. Finally, the potential zones were identified and assessed as suitable, moderately suitable and unsuitable for domestic purpose. Based on groundwater quality and geospatial analysis, measures were suggested to protect groundwater resources.

KEYWORDS

Groundwater, Contamination, Anthropogenic Activity, Abstraction, GIS

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