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Studies on application of geographical information system (GIS) for evaluation of ground water quality in coimbatore district, Tamilnadu, India

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Abstract

Groundwater is water located beneath the ground surface in soil pore spaces and in the fractures of rock formations. Groundwater pollution, sometimes referred to as Groundwater Contamination, is not as easily classified as surface water pollution. The specific contaminants leading to pollution in water include a wide spectrum of chemicals, pathogens, and physical or sensory changes such as elevated temperature and discoloration.

A Geographic Information System is a system designed to capture, store, manipulate, analyze, manage, and present all types of geographically referenced data. The acronym GIS is sometimes used to mean Geographical Information Science or Geospatial Information Studies; these latter terms refer to the academic discipline or career of working with geographic information systems. The study has been carried out to apply GIS for assessing the ground water quality in terms of its physico –chemical parameters of 45 samples collected in and around Coimbatore District, Tamilnadu, India. The study has been carried out for four years (2007, 2008, 2009 and 2010).

From this study it was observed that pH, Hardness, Calcium, Magnesium, Sulphate, Nitrogen and Fluoride of more than 75% sampling sites were within permissible limit. The remaining parameters were in very low percentage within the permissible limit. This clearly indicates that the Total dissolved solids, Magnesium and Chloride where the maximum contaminants of the ground water. Hence it is suggested that the ground water of affected places need to be treated before the consumption. By using a geographic information tool the quality of ground water is easily revealed the current status of ground water in Coimbatore District.

Biography

K.Shanthi is working as Associate Professor in Environmental Science, PSG College of Arts and Science, Coimbatore, India. She is having 26 years of teaching experience and 20 years of research experience. She has published more than 20 papers in reputed journals and serving as reviewer member of reputed journals. Her area of specialization is Environmental Microbiology and Biotechnology, Water pollution and soil pollution, Bioremediation and Phytoremediation, Solid waste management, Environmental Biology, Remote sensing and GIS. She has guided 20 M.Phil scholars and one Ph.D. Now she is guiding three Ph.D scholars. She has attended two workshop in Germany and organized two seminars and international workshops.