

A Novel Approach for the Analysis of Ground Water Quality by Using Classification Rules and Water Quality Index

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Abstract : Water is a key resource in all economic activities ranging from agriculture to industry. Only a tiny fraction of the planet's abundant water is available to us as fresh water. Assessment of water quality has always been paramount in the field of environmental quality management. It is the foundation for health, hygiene, progress and prosperity. With ever increasing pressure of human population, there is severe stress on water resources. Therefore efficient water management is essential to civil society for betterment of quality of life. The present study emphasizes on the groundwater quality, sources of ground water contamination, variation of groundwater quality and its spatial distribution. The bases for groundwater quality assessment are groundwater bodies and representative monitoring network enabling determination of chemical status of groundwater body. For this study, water samples were collected from various areas of the entire corporation area of Guntur. Water is required for all living organisms of which 1.7% is available as ground water. Water has no calories or any nutrients, but essential for various metabolic activities in our body. Chemical and physical parameters can be tested for identifying the portability of ground water. Electrical conductivity, pH, alkalinity, Total Alkalinity, TDS, Calcium, Magnesium, Sodium, Potassium, Chloride, and Sulphate of the ground water from Guntur district. Different areas of the District were analyzed. Our aim is to check, if the ground water from the above areas are potable or not. As multivariate are present, Data mining technique using JRIP rules was employed for classifying the ground water.

Keywords : groundwater, water quality standards, potability, data mining, JRIP, PCA, classification

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