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Analysis of Groundwater for Potability from Tiruchirappalli City Using Backpropagation ANN Model and GIS

PDF (Size: 1068KB) PP. 136-142 DOI: 10.4236/jep.2010.12018

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ABSTRACT

Monitoring groundwater quality by cost-effective techniques is important as the aquifers are vulnerable to contamination due to point sources and non point sources. This paper presents Artificial neural Network (ANN) Models that might be used to predict water parameters from a few known parameters. The sample data from 112 hand pumps and hand operated tube well water samples used for drinking purposes by the local population was used. The ANN model features a back propagation algorithm and neuron members were determined for optimization of the model architecture by trial and error method. The model simulations show that the optimum network of 4-50-50-6 has mean error of -0.023% on complete data was utilized. This demonstrated that the developed model has high accuracy for predicting. Thus it has been established that the two hidden layers neural network has more efficiency than asymptotic regression in the present. This model can be used for analysis and prediction of subsurface water quality prediction.

KEYWORDS

Groundwater Quality, ANN, Ec, TDS, Sulphates, pH, Tiruchirappalli

Cite this paper

N. Kumar, S. Mathew and G. Swaminathan, "Analysis of Groundwater for Potability from Tiruchirappalli City Using Backpropagation ANN Model and GIS," *Journal of Environmental Protection*, Vol. 1 No. 2, 2010, pp. 136-142. doi: 10.4236/jep.2010.12018.

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