



## Indicators of the deteriorate water quality status of reservoir, Sagar city, MP, India by multivariate analysis

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**Abstract** This study was carried out in the Rajghat reservoir has been used as a drinking water resources from last decades. The aim was to investigate the temporal and spatial variability of water quality. Data investigation was processed using multivariate analysis. Samples were taken in 05 stations spreading out over the water body during three seasons were analyzed for their physicochemical characteristics in order to explore the contamination of reservoir water samples, using Correlation analysis, multiregression analysis and modeling. On comparing the results against BIS water quality standards, it is found that some of the water samples are polluted. A systematic calculation of correlation coefficient between water quality parameters has been done with the objective of minimizing the complexity and dimensionality of large set of data. An attempt has been made to find the seasonal quality of water in reservoir, in order to adopt a statistical model for examine water quality. The results of this study are believed to be valuable to help water resources managers understand complex nature of water quality issues and determine the priorities to improve water quality.

*Keywords:* correlation analysis, multiregression analysis

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