Title of Article: An Approach to Reaeration Coefficient Modeling In Local Surface Water Quality Monitoring

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Abstract: Abstract Reaeration coefficient (k2) for River Atuwara, Ogun State, Nigeria was calculated from dissolved oxygen and biochemical oxygen demand data collected over period of 3 months covering the two prevailing climatic seasons in the country. Both the Akaike and Bayesian information criteria were used in the selection and analysis of ten models to identify the most suitable reaeration coefficient (k2) model for Atuwara River. Models that passed the confidence limit were subjected to model evaluation using measures of agreement between observed and predicted data such as percent bias, Nash–Sutcliffe efficiency, and root mean square observation standard deviation ratio. The used approach yield better results than empirical models developed for local conditions while it is also useful in conserving scarce resources.

Keywords: Reaeration coefficient . Akaike information criteria . Bayesian information criteria . Modeling . Model evaluation