

## Statistical analysis of pollution parameters in activated sludge process

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### ABSTRACT

In order to minimize the energy consumption in activated sludge treatment process, chosen in our study, an analysis of the pollution parameters of removal yields involved in the process was affected. Indeed, statistical analysis of the decisive parameters in appreciation of the biological process performance includes, among other things, the removal efficiency related to physicochemical parameters in upstream and downstream of the pilot plant such as: suspended solids (SS), organic matter (COD, BOD), nutrients ( $\text{NH}_4^+\text{-N}$ ,  $\text{NO}_3^-\text{-N}$ ,  $\text{NO}_2^-\text{-N}$ , and TKN) and phosphorus ( $\text{PO}_4^{3-}\text{-P}$ ), as well as energy consumption. A comparison of target removal yields, corresponding to elimination required by the standard, and those observed show an excessive removal of organic matter and  $\text{NH}_4^+$ . The repercussion on energy consumption was studied.

*Keywords:* Activated sludge; Wastewater; Optimization; Energy consumption

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