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ANALYSIS OF THE EFFECTIVENESS OF WASTEWATER TREATMENT IN ACTIVATED SLUDGE TECHNOLOGY WITH BIOMASS RECIRCULATION

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Abstract

In the operation of a wastewater treatment plant, the key challenge for the operator is to obtain parameters of the treated wastewater required by relevant legal acts. Meeting these requirements is possible through the use of an appropriate technology and real-time automation of control and monitoring processes. The paper examines the results of laboratory tests of selected wastewater parameters in terms of the content of organic substances and nutrients in order to determine the efficiency of wastewater treatment in a biological bioreactor using the sludge recirculation process. The performed analysis demonstrated that all levels involving the reduction of pollutants, concentrations and load are in compliance with the applicable legal requirements. Ensuring a continuous monitoring of the quality of treated wastewater and the optimization of this process is crucial for the aquatic environment and human health.

Keywords: Biological reactor; Pollution reduction efficiency; Sludge recirculation, Wastewater treatment.