



PERFORMANCES OF BIOCHEMICAL TREATMENT STAGE FROM MUNICIPAL WASTEWATER TREATMENT PLANT

Elisabeta Chirila^{1*}, Camelia Drăghici², Adriana Puhacel¹

¹Ovidius University of Constanta, Chemistry Department, 124 Mamaia Blvd., 900527-Constanta, Romania

²Transilvania University of Brasov, Chemistry Department, 50 Iuliu Maniu Str., 500019-Brasov, Romania

Abstract

The paper presents new studies about the removal efficiency of the biochemical treatment process of the Municipal Wastewater Treatment Plant from Constanta city, during 2008. Influent and effluent samples of biochemical treatment stage were collected and ammonium concentration, chemical oxygen demand (CODCr) and biochemical oxygen demand in five days (BOD₅) were measured, aiming to study the evolution of the removal efficiency, during 2008. Additional analyses have been performed in order to explain the achieved performances for nitrates, nitrates and dissolved oxygen.

The following monthly mean removal efficiencies have been performed in the biochemical treatment stage: 56-96% for ammonium, 62-70% for CODCr and 68-74% for BOD₅. During the studied period, ammonium, nitrites and nitrates mean concentrations in the effluent did not exceed the imposed limits, but sometimes daily higher values have been noticed, due to the higher variation of the influent content of the wastewater treatment plant, from one day to another.

In conclusion, in order to increase the plant performances concerning the biochemical treatment stage, the improvement of the analytical control, as well as a better harmonization of the operating parameters is required.

Key words: biochemical treatment, BOD₅, CODCr, removal efficiency, wastewater

* Author to whom all correspondence should be addressed: e-mail: echirila@univ-ovidius.ro; Phone: 0040-722726032