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ICEEM/03 – ENVIRONMENTAL POLLUTION PREVENTION

FOAMING CAUSES AND CONTROL IN ACTIVATED SLUDGE WASTEWATER TREATMENT PLANTS

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Abstract

Foaming problems are wide-spread, being reported by many wastewater treatment plants around the world, and consist in: reducing effluent quality caused by sludge loss, recirculation difficulties, diminution of oxygen transfer inhibiting nitrification, difficulty in maintaining the appropriate sludge concentration in the aeration vessel.
In order to demonstrate foaming causes, a complete characterization of wastewater samples taken from the treatment plant of the Coke-Chemical Factory in Galati was made. The sampling points were chosen in the most important parts of the wastewater treatment plant: ammonia striping input/output, output from 2nd step of biological wastewater treatment. In order to select the appropriate means for foaming elimination/diminution, six antifoaming agents acquired from Degusa-Hüls (Stockhausen) and IFIN – Bucharest were tested. The most efficient antifoaming agents were found to be those from Stockhausen, considering the efficiency decreasing: BA, WA, ZU. The treatment with antifoaming agents leads to the total elimination of foam, while the duration of antifoaming effect depends on the type of antifoaming agent. The applied antifoaming dose was 20 ppm.

Keywords: foaming, activated sludge, antifoaming agents, filamentous microorganisms

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