Efficiency of removal of biogenic substances from water in the process of biofiltration

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ABSTRACT

The studies of changes in the level of biological stability of water throughout the process of biofiltration were conducted in real conditions for surface and infiltration water. In both cases, the most effective removal of organic substances was ascertained for the biodegradable fraction, whereby the majority of water samples after this process were characterized by the concentration of biodegradable dissolved organic carbon lower than the concentration limit in terms of the growth of micro-organisms. In the majority of water samples from both filtrates, successful removal of phosphate ions also ensured limiting the threat of micro-organism regrowth in distribution systems. Unfortunately, the concentration of inorganic nitrogen was not lower than the concentration limit in terms of biological stability in any of the filtrate samples. The most important factor affecting the efficiency of the removal of nutrient substrates from water was their content in the water prior to undergoing filtration.

Keywords: Biodegradation; Mineralization; Biological stability; Nutrient substrates; Biofilm

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