

Domanska, M. Lomotowski, J. Effect of Water-pipe Deposits on the Kinetics of Chlorine and Chlorine Dioxide Decay in Tap Water. *Ochrona Srodowiska* 2011, Vol. 33, No. 3, pp. 43–46.

Abstract: Undesired events that occur in water distribution systems (sudden pressure drop, change in flow direction, pipe failure) may activate the deposits in the pipelines. This triggers a rise in turbidity, color intensity and iron content of the tap water. The paper here presents the results of laboratory investigations into the influence of the pipe deposit (collected from the internal walls of a pipeline in service) on the rate of chlorine and chlorine dioxide decay in tap water. The study has demonstrated that chlorine decay proceeds at a slower rate when the particles of the deposit are present in the water than when they are absent. The presence of these particles does not significantly affect the rate of chlorine dioxide decay. The results of the investigations suggest that the particles of the deposit penetrating the tap water during failure events do not increase its demand for either of the two disinfectants.

Keywords: Water disinfection, water-pipe deposit, chlorine, chlorine dioxide, rate constant of disinfectant decay.