

Hotlos, H. Variations in Water Loss Observed in Some Water Distribution Systems Over the Period of 1990–2008. *Ochrona Srodowiska* 2010, Vol. 32, No. 4, pp. 21–25.

Abstract: Water distribution systems of ten municipalities in Poland were chosen for the analysis of water loss parameters in the time span of 1990 to 2008. Consideration was focused on the following factors: water loss and water consumption for covering the technological needs of water intake and water treatment plant; water loss in the water-pipe network, and total water loss in the water-pipe network, which includes water loss in the network and water consumption for serving the needs of the water-supply and sewerage system. Emphasis was placed on leakage-related water losses, as well as on those observed during failures in the pipelines or plumbings. In this paper special attention is also given to the impact of the load factor, an issue that has seldom been taken into account in the analysis of change in the volume of leachates since 1990 (the year when Poland moved toward a free market economy). Over the period being analyzed, the volume of water loss in the pipelines (expressed in terms of unit loss) decreased by 26(55) to 78% as a natural consequence of the decrease of unit flow rate in the pipelines (by 50 to 70%) and the decrease in total water withdrawal (by 36 to 68%). This pattern was observed in all of the investigated water distribution systems, which does not mean, however, that the underlying causes of water loss in any of them have been rooted out so far. The analysis of the trends of change in water loss (%) has produced the following findings: reduction in water loss was observed only in four of the water distribution systems; one system displayed a decrease in water loss, and in four systems water loss was subject to slight variations.

Keywords: Water distribution system, water losses, water-pipe network, water consumption, load factor.