

Wlodyka-Bergier, A., Bergier, T. Seasonal Variations in Volatile Organic Halogen Water Chlorination By-Product Content in Krakow City Water Distribution System. *Ochrona Srodowiska* 2013, Vol. 35, No. 4, pp. 23–27.

Abstract: Content of the following compounds in water has been examined: trihalomethanes (trichloromethane, bromodichloromethane, dibromochloromethane, tribromomethane), haloacetonitriles (bromochloroacetonitrile, dibromoacetonitrile, dichloroacetonitrile, trichloroacetonitrile), haloketones (1,1-dichloro-2-propanone, 1,1,1-trichloro-2-propanone), chloropicrin and chloral hydrate. In the period of 2011–2012 samples from terminal ends of the two water distribution systems in Krakow: ‘Raba’ and ‘Bielany’ were collected and analyzed. These systems differ in raw water quality, treatment train arrangement as well as distribution network size. Chlorination to disinfect the water is applied in both plants. The result analysis allowed assessment of seasonal variations (spring, summer, autumn, winter) in individual volatile chlorination by-product group content for each of the considered water distribution systems. Research conducted demonstrated significant influence of season-related water temperature fluctuations, therefore of the amount and type of precursors present in chlorinated water, on volatile halogen disinfection by-product content formed in the water distribution system.

Keywords: Water distribution system, chlorination by-products, trihalomethanes, haloacetonitriles, haloketones, chloropicrin, chloral hydrate.