Bak, L., Gorski, J., Gorska, K., Szelag, B. Suspended Solids and Heavy Metals Content of Selected Rainwater Waves in an Urban Catchment Area: A Case Study. *Ochrona Srodowiska* 2012, Vol. 34, No. 2, pp. 49–52.

Abstract: Analyses were carried out to determine the concentrations of six heavy metals chosen (Ni, Cu, Cr, Zn, Pb, Cd), total suspended solids and chlorides in five waves (three of rain runoff and two of melting runoff) discharged from a highly urbanized catchment area (Kielce, district Wojewodztwo Swietokrzyskie). The study involved a rain collector (Si9) receiving rainwater and melting runoff from some part of the city, which covered an area of 62 ha and was located on the left-hand side of the Silnica River drainage basin. Within this basin, six types of surface runoff were separated: roofs (14.3%), sidewalks (8.4%), roadways (17.7%), parks (11.2%), green belts (47.2%) and school grounds (1.3%). The floods observed from May 2009 to June 2010 were characterized by great diversity. Flow values for the culmination of these waves ranged from 45 to 380 dm^3/s, and the duration of flooding varied between 100 min and 500 min. The results of the study show that the highest average concentrations of lead and zinc fell within the range of 0.304–0.992 gPb/m^3 and 0.158–0.473 gZn/m^3, respectively. The average content of the other metal ions was much lower and did not exceed 0.195 g/m^3. The content of total suspended solids and that of chlorides in the melting runoff were several times as high as in the rain runoff. In the rainwater discharged from the investigated highly urbanized catchment area a strong correlation was observed between the following pairs of metal ions: Cu–Cr, Cu–Zn, Cd–Pb and Cd–Zn. No statistically significant correlative relation was found to occur between total sus-pended solids and the ions of the metals examined.

Keywords: Urbanized catchment area, rainwater, sus-pended solids, heavy metals.