



“Gheorghe Asachi” Technical University of Iasi, Romania



EVALUATION OF HEAVY METAL POLLUTION INTO A COMPLEX INDUSTRIAL AREA FROM ROMANIA

**Mihaela Iordache^{1,2}, Ioan Viorel Branzoi², Luisa Roxana Popescu^{1,2},
Ioan Iordache^{3*}**

¹*The National Research and Development Institute for Industrial Ecology – INCD-ECOIND
Bucharest-Subsidiary Ramnicu Valcea, 1 Uzinei Street, Ramnicu Valcea 240050, Romania*

²*Polytechnica University of Bucharest, Faculty of Applied Chemistry and Materials Science,
1-7 Polizu Street, 011061 Bucharest, Romania*

³*National Research & Development Institute for Cryogenics and Isotopic Technologies –ICIT,
4Uzinei Street, 240050 Rm. Valcea, Romania*

Abstract

The work studies the degree of heavy metal pollution in water, sediment and soil in the industrial platform area from Ramnicu Valcea, Romania. The water and sediment samples were collected from three locations of the Olt River, in two distinct periods, February and June 2010. Concentrations of nickel, copper and cadmium were analyzed. The soil samples were collected from eight points and the same elements were analyzed, in the above mentioned interval of time.

The results of water and sediment analyzes were compared with legally prescriptions from the norms regarding surface water quality classification in order to determine the ecological status of water bodies. The soil samples were compared with reference values for the trace of the chemical elements in the soil. In the upstream section of the platform, heavy metals concentrations in sediments exceed limits imposed by national regulations. In downstream sections concentration of nickel, copper and cadmium are generally within the imposed limits. Concentrations of heavy metals in water were lower than National and European legislation limits. The degree of the heavy metals pollution changes, depend on wastewaters industrial flow of the chemical platform. In case of soil samples, the nickel, copper and cadmium concentrations don't exceed the limits values of the environmental legislation.

Key words: accumulation, heavy metals, the Olt River, wastewater

Received: October, 2011; Revised final: January, 2013; Accepted: February, 2013
