



HYDROCHEMICAL ANALYSIS OF POTENTIALLY POLLUTED SURFACE WATER AND GROUNDWATER SAMPLES BY THE FORMER MINING ACTIVITIES FROM THE MOLDOVA NOUA AREA

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Abstract

The abandoned copper mine in the New Moldova region continues to produce the mining pollution, which can contaminate the surface and groundwater. This study evaluates the hydrochemical parameters of surface and groundwater in the area of New Moldova, possibly affected by the previous mining activities. Heavy metals content was measured in the laboratory, while the physico-chemical parameters were measured on site during 2023-2024. With a few exceptions, most heavy metal concentrations and physico-chemical characteristics were within the normal limits according to the Romanian legislation. The concentration of Cd fell into the surface water class III, along with that of Fe for some surface water samples, with one groundwater sample exceeding the permissible limit. A number of surface water samples entered the class II according to Cu, Fe, Mn and Pb concentrations. The metal with the highest values recorded in the analyzed samples was Fe, followed by Mn and Zn.

Keywords: mining pollution, heavy metals, physico-chemical parameters