NUMERICAL SIMULATION OF POLLUTION WITH ANION SO$_4^{2-}$ FOR THE AQUIFER INSIDE A METALLURGICAL WASTE HALL

Elena–Doinita Cârlig$^1$, Esmeralda Chiorescu$^2$, Matei Macoveanu$^3$

$^1$ Environmental Protection Agency, Neamt County
$^2$ “Ion Ionescu de la Brad” University of Agricultural Sciences and Veterinary Medicine Iasi, Department of Pedology
$^3$ “Gheorghe Asachi” Technical University of Iasi, Faculty of Chemical Engineering and Environmental Protection, Department of Environmental Engineering and Management, 71 Mangeron Blvd., 700050, Iasi, Romania

Abstract

The current paper describes the concept and the mathematical models axed upon flow transport and transport of pollutants in the aquifer inside a metallurgical waste hall. Then, using a complex of basic data related to a representative case study – several information being achieved by systematic measurements, for long period, throughout ten drillings – and the pack of FEFLOW 5.1 programmes, the dispersion of an uppermost pollutant (the anion SO$_4^{2-}$) has been numerically simulated, for the entire observing period. Therefore, it was emphasized the pollutant flow rate led through by the phreatic aquifer exploited by the subsurface exhausters water.

Key words: case study, chemical pollution, mathematical model, numerical simulation, waste hall

* Author to whom all correspondence should be addressed: e-mail: edcarlig@yahoo.co.uk; Phone: 0040-744869860