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AQUIFER VULNERABILITY ASSESSMENT: IMPROVEMENT OF THE NEW PARAMETRIC MODEL W.A.T.E.R.

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ABSTRACT

An improvement is proposed for the W.A.T.E.R. model, a parametric model for the assessment of aquifer vulnerability to pollution developed within the National Group for Hydrogeological Hazard Prevention of the National Research Council of Italy. The original methodology has been modified to evaluate separately the intrinsic vulnerability of every permeable layer, which provides a more reliable representation for a complex aquifer. Insertion of data into a Geographical Information System has made possible a finer calibration of the weight of the different parameters, through several simulations and critical analysis of the results. In particular, the number and distribution density of wells is the most important parameter in the evaluation of aquifer vulnerability. The modeling time has been drastically reduced, and more precise answers are given to the public institutions managing groundwater resources and, broadly speaking, the environment.

Reference: Spandre, R., B. Marcolongo, M. Ceragioli, M. Giovannetti and A. Spinicci; **Aquifer Vulnerability Assessment: Improvement of the New Parametric Model W.A.T.E.R.**, *Journal of Environmental Hydrology*, Vol. 9, Paper 11, May 2001.

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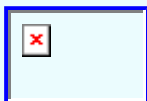
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