



## **Combination of Hydrogeophysical Methods and Transport Modeling to Assess Special Subsurface Contaminants at a Hungarian Test Site**

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A detailed case-study example from a contaminated test site in South-East Hungary is given by the authors. The presentation introduces the applied hydrogeophysical methods and gives details about the transport modeling in order to detect and assess the investigated special subsurface contamination plume in space and time. The case-study example shows clearly how different methods can help each other during the interpretation process. The significant results and the derived conclusions were achieved in the framework of a research project dealing with special subsurface contaminants.

Pesticides, chlorinated organic compounds and hydrocarbons are among the most serious soil and groundwater contaminants because of their mobility and persistence in the subsurface, their widespread use, and their health effects. Developing and combining reliable and accurate geophysical methods and transport models is greatly needed to assess the risk posed by the contamination plumes of these compounds to the subsurface.

A research consortium with three partners (Eötvös Loránd Geophysical Institute, BGT Hungary Ltd. and the University of Miskolc) was formed to elaborate and to improve different hydrogeophysical methods in order to detect and characterize the above-mentioned special subsurface contaminants. The three-year-long project was supported by Hungarian Ministry of Economics. Four different contaminated sites

were chosen in Hungary as study-areas to improve and calibrate special geophysical methods to provide remediation experts and hydrogeologists with necessary information for reliable transport modeling. A strong collaboration between the geophysicists and hydrogeologists evolved new protocols and techniques to carry out successful site assessment and remediation schemes of contaminated lands with hydrocarbon and chlorinated organic compound pollutions.

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