

# Groundwater Mathematical Modeling

The Flow and Transportation Mathematical Model is elaborated based on the compilation of all existing research and monitoring data.

The modeling follows the following premises:

- Groundwater flow modelling with codes like MODFLOW, particle transit modelling with codes like MODPATH and transport modelling with codes like BAT3D and RT3D in the aquifer.
- Calibration of the flow model in steady state or transient regimes, based on the modeling objectives and the available boundary conditions.
- Development and calibration of the transport model for the chemical substance of interest.

Based on the calibrated flow and transport model, future scenarios are simulated with various assumptions, such as different configurations of a possible remediation system.

In this way, the mathematical model constitutes an important technical support tool in liability management, especially by providing subsidies for decision making on the need/applicability of remediation techniques, as well as in the estimation of deadlines for goal achievement.