

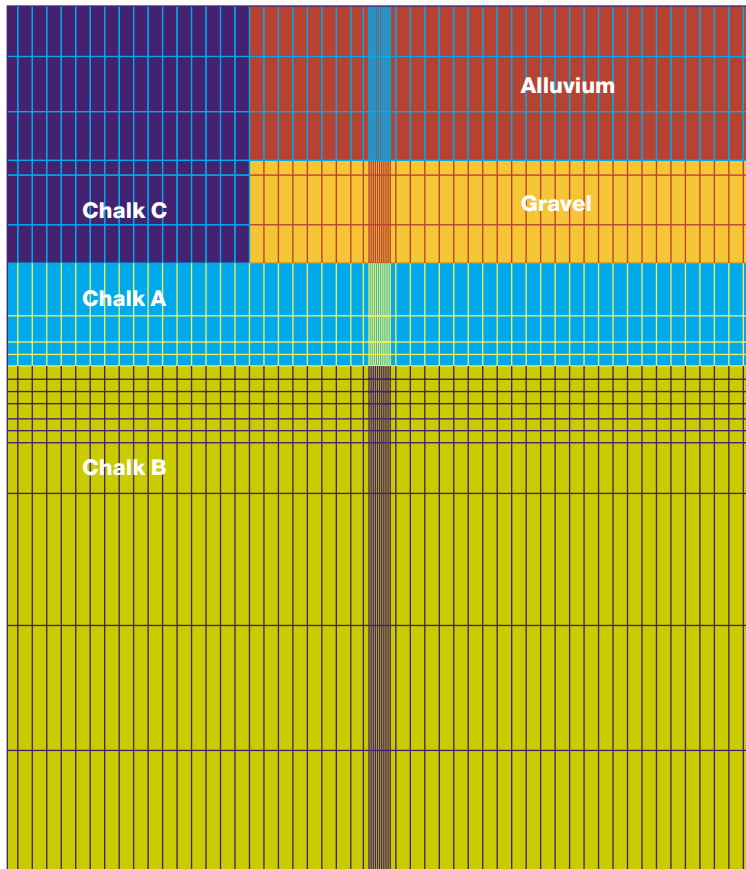
WJ produces computer models to support the design and operation of groundwater control systems.

WJ construct and operate models with a level of sophistication appropriate to the complexity of the project and the quality and quantity of the information available to calibrate the model. The range is from basic spread sheet based superposition models to three dimensional time dependent contaminant transport models. Industry standard modelling environments such as SEEP and MODFLOW are used.

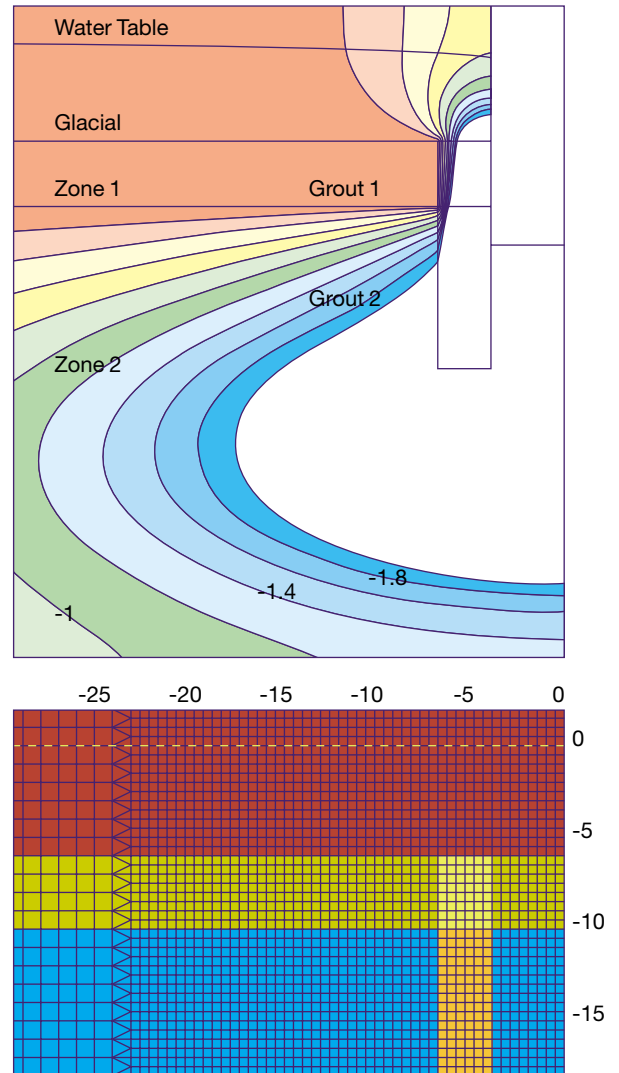
Application

A model is set up using any information that is available about the ground conditions from a site investigation, and is then calibrated using information about the groundwater. Any pumping test data are used to confirm the validity of the model. The model is refined further as more information is gathered during the installation and mobilisation of the groundwater control system. In this way the model provides a framework for the organisation of all of the data available about the project, and uses it to predict the behaviour of the groundwater control system both within the project site and in the region surrounding the site.

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Finite element and finite differences model grids and output



A model can be used to predict groundwater flows and drawdown patterns. It can also be used to address environmental impact issues related to settlement and the movement of groundwater contaminants.

A model can incorporate both abstraction and recharge wells, and physical barriers such as sheet pile cut-offs or diaphragm walls.

Types of models

- Two and three dimensional
- Steady state and transient
- Simple Excel spreadsheet based
- MODFLOW finite difference
- SEEP/W finite element

Model configurations

- From regional to local scales
- Environmental impact models
- Physical features such as tunnels, cofferdams, diaphragm walls included
- Ground heterogeneity incorporated
- Boundary conditions include rivers, wells, drains, and recharge systems