Hydrogeological response to injection fluids

Benavides Höglund, Nikolas; Åkesson, Sofia; Sparrenbom, Charlotte J.; Björn, Julia; Power, Christopher

2019

Document Version:
Early version, also known as pre-print

Hydrogeological response to injection fluids

Nikolas Benavides Höglund[1], Sofia Åkesson[1], Charlotte Sparrenbom[1], Julia Björn[1], Christopher Power[2]

[1]Dept. of Geology, Lund University, Sweden.
[2]Civil and Environmental Engineering, Western University, Canada.

When performing *in situ* remediation, different fluids are injected into the ground. The injections can affect the properties of the ground, such as opening up new fractures and reactivating old ones. The fluids also differ in viscosity and density and could possibly clog some of the pores or fractures, thus affecting the groundwater flow. We have measured hydraulic conductivity and compared our results to background measurements. Thereafter we have built a model in FEFLOW of a PCE contaminated site in Alingsås to help us interpret the flow processes during injection. This model can in the future help us understand the movements of the contaminants during injection for *in situ* remediation. The work is part of the MIRACHL (characterization and Monitoring of *In-situ* RemediAtion of CHLorinated hydrocarbon contamination using an interdisciplinary approach) research project where we work to understand the processes in the ground of *in situ* remediation.