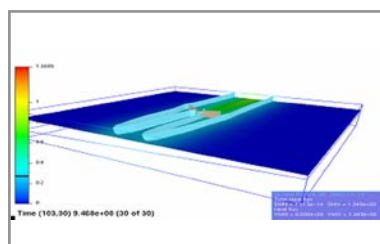


Permeable Reactive Barrier Model



3D PRB Animation
Model shows the proposed design fails to capture the bulk of contaminated groundwater flow

Developing a Permeable Reactive Barrier

The Challenge

The removal of pollutants from groundwater with a permeable reactive barrier (PRB) is an increasingly used remediation technology for both chemical and radioactive contaminants. Site trial and technology demonstrators, used to optimise the performance of PRB's, can be time consuming and expensive. In addition, their predictions can be inaccurate in what is a complex combination of chemical reactions.

Nexia Solutions was challenged to come up with an alternative approach..

The Solution

Nexia Solutions developed an array of PRB models that take into account the complex hydrogeochemical effects. The models can be used to provide accurate information regarding the performance of PRB's - including the uptake of contaminants and other factors that could help to improve the efficiency and lifespan of PRB's.

The Benefits

PRB models are a cost effective means of assessing the technology and of optimising the design of site systems prior to constructing the device. Significant savings can be made when compared to site trials. A recent application of the model identified major deficiencies in a potential PRB design where it would have failed to capture most contaminants. In this instance, Nexia Solutions' model prevented spending £2 million on a non-working PRB.

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