

PRB Design version 1.0
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DESCRIPTION:

PRB Design is a spreadsheet optimisation model for designing fully penetrating permeable reactive barrier systems. It is an output from the following PhD thesis:

Painter, B.D.M. (2005), "Optimisation of Permeable Reactive Barrier Systems for the Remediation of Contaminated Groundwater", Ph.D. thesis, Lincoln University, Canterbury, New Zealand, 282p.

The laboratory experiments undertaken to develop the reactive material inputs are described in Chapter 3. PRB design enhancements utilised in this design are described in Chapter 4. The functional relationships between design variables and PRB performance measures are described in Chapter 5. These relationships resulted in the fixed inputs (coloured yellow) in the spreadsheet. These inputs should not be changed without further computer modelling experiments. All equations describing the PRB design are presented in Chapter 6. These equations are coloured grey in the spreadsheet.

The design optimisation is run by choosing "solver" from the "tools" menu and then clicking on the "solve" button. The solver will adjust the design variables (in green) to find the minimum cost PRB from the chosen initial design variable values. The cost of this design is shown in blue.

SYSTEM REQUIREMENTS:

1. Just about any PC
2. Microsoft Excel with the standard solver add-in.

The solver add-in must be installed before the spreadsheet is opened. To install, choose "Add-Ins" from the "Tools" menu, check the "Solver Add-In" box then click "OK".

INSTALLATION:

Just open the file to use. A popup box will inform you that the spreadsheet contains macros. These are the equations required to run the model and do not contain viruses. Click "Enable Macros" to continue.

REGISTRATION:

No registration is required for PRB Design.

DISTRIBUTION:

The unregistered software may be freely distributed provided no fundamental model specifications are modified. No person or company may charge a fee for the distribution of PRB Design without written permission from the copyright holder.

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