

# PIG: Geochemical Model Data Visualisation

*Productive Interactive Graphics (PIG) is a data visualisation package for plotting, reformatting and recalculating the results from HCh models.*

*PIG has recently been used in industry interactive workshops (1-on-1) with live "what if" modelling, results viewed as meaningful plots and instant feedback.*

*Version 1.0 of this package (April 2004) is available to members and sponsors of the pmd\*<sup>CRC</sup>.*

Details and the downloadable software can be found under the F1/2 pages of the TWiki at:

<https://pmd-twiki.rrc.csiro.au/twiki/bin/view/Pmdcrc/PigVersion1>

PIG is designed to improve the access to, and interpretation of HCh modelling results. This process also enables the modelling results to be delivered to industry partners in a format that find useful (i.e. mineral modes rather than moles).

More importantly PIG has enabled the use of HCh modelling capabilities in one-on-one modelling workshops with industry by speeding up the visualisation of the results of models and creating aesthetic plots quickly. Research use also benefits with the improved time to produce plots and explore all aspects of the geochemical modelling results.

## The Development Team

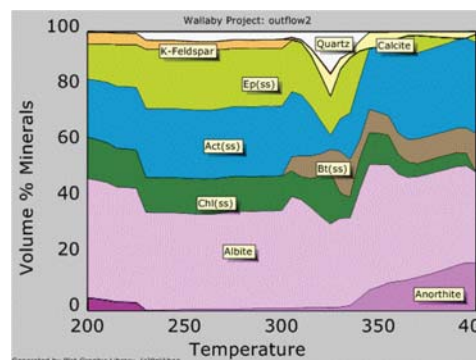
The PIG concept was initiated and scoped by James Cleverley (JCU) and the main software development work was undertaken by Andy Dent (CSIRO Perth) and Rob Woodcock (CSIRO Perth). Projects F1/2 and M2 funded the development work. The project began in summer 2003 with software engineering starting

on the TWiki in April 2004 for general testing by all HCh users. Extra fixes and functionality based on comments received have been added.

## What's New in PIG1.0?

PIG offers the user more than just "plotting the data". The software includes a full recalculation function that enables the results to be recast as different units, or plotting complex functions (i.e. Na/Na+K). There is also a user defined function that allows for custom equations to be used in plotting. Key features of PIG 1.0 include:

- + Plot data as lines, stacked and normal area fills, stacked and normal bar plots (1 bar per step)
- + Use standardised or random colour pallets
- + Click labelling of graphs
- + Full unit recalculations from the basic HCh units, including volumes and masses
- + Log10, Ln, linear and delta (change in) graphs
- + Plot selections or full data, minerals, aqueous, and element concentrations
- + User defined and customised data plotting
- + Easily plot 1D sections from 2D data grids
- + Export graphs to wide range of image formats or "save to clipboard" for use in presentations
- + Fully control graph formats (labels, fonts etc).



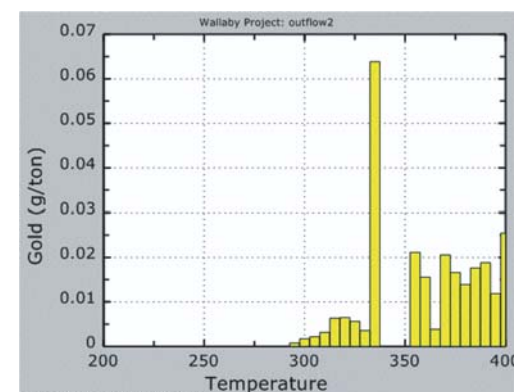
Example of a normalised stacked modal mineral plot from PIG showing point and click labels for minerals

## Industry Impact of PIG

PIG allows quick and easy presentation of modelling results in easy to understand format and with the highest impact data units. The software is already proving its worth in the speed of data delivery and the ability to run live 1-to-1 "what if scenarios" with the key exploration geologists. The recent application of PIG during a live 1-to-1 workshop with AngloGold Ashanti in Brazil (G11 project) were highly successful and allowed real time progress to be made where this was not possible previously.

## Future Developments

Building on the successful development and implementation of PIG version 1, plans are already in process for version 2. New features will be dedicated to the visualisation of data in 2D and include new "click-box" style formats that allow users to view the spatial distribution of minerals or mineral assemblages from 2D grid results. This development is part of the pmd commitment to developing better methods to present and deliver data and results to the industry sponsors.



Generated by Plot Graphic Library, ©Pheikhan  
Predicted gold distribution and grade. Generation of these plots is almost instantaneous and the can be compared with other plots from the same model



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