IMDEX ioGAS™

New Features v8.0

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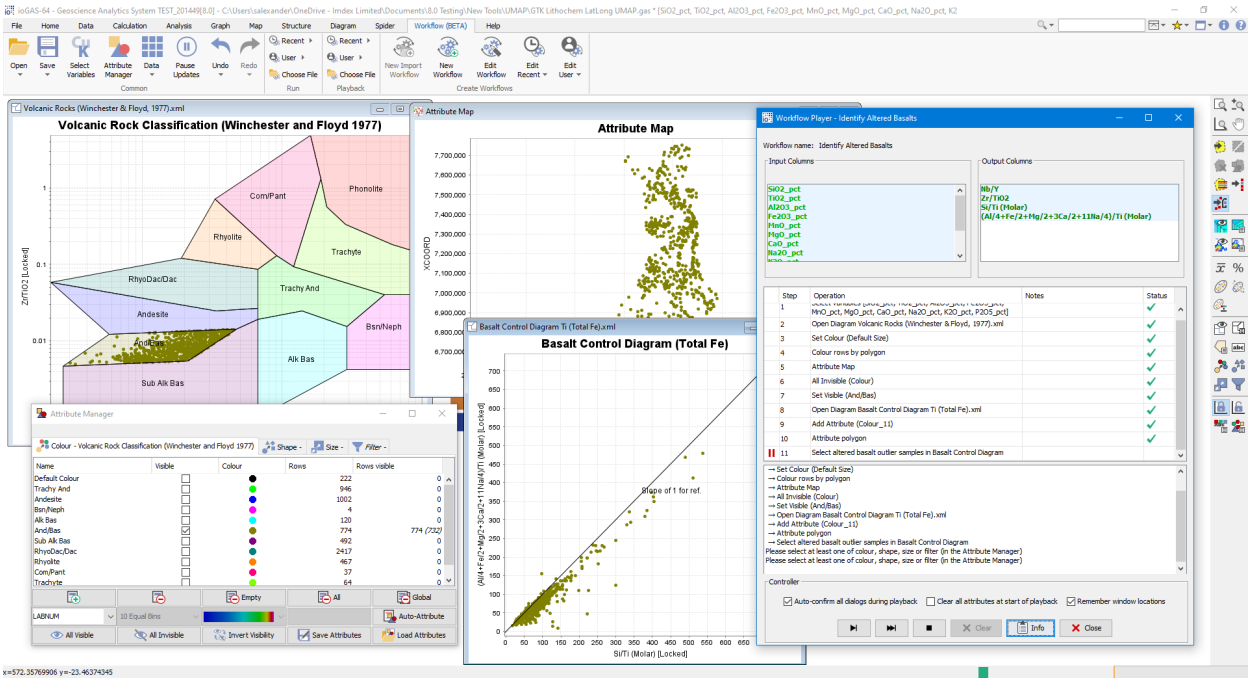
What's New in ioGAS 8.0

The following is a summary of the new features and improvements in this version of ioGAS.

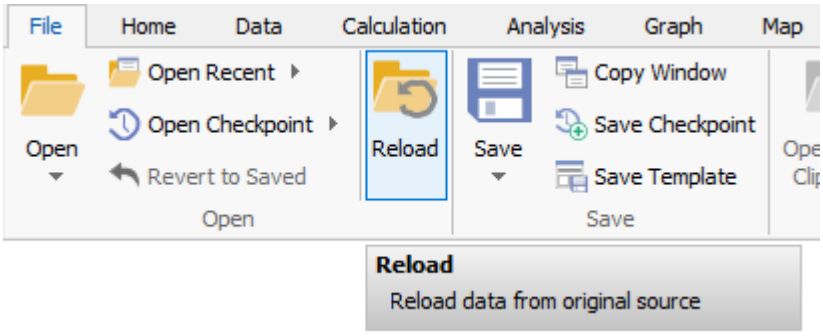
Workflow Recorder (BETA)

New workflow ribbon containing tools to record a series of ioGAS operations that can be played back on demand. Actions such as importing data, setting column properties, data validation, variable selection, point attribution, opening of plot windows and analysis tool generation are automatically recorded and linked together into a single workflow that can be saved and run on multiple datasets. Manual actions requiring user input such as selecting data populations or outlier samples in a plot window can also be included as operational steps.

- Start/stop recording
- Replace/re-record actions
- Insert manual actions, e.g. select outliers in plot window
- Embed user created calculations, diagrams, spider plots
- Add workflow notes and metadata
- Automatic variable conversion
- Edit workflows
- Drillhole selection options
- Merge workflows
- Automatic or step-through playback
- Specify start/end points for playback
- Automatic dialog confirmation on playback
- Export data options
- Share workflows with other users
- Access workflows from shared drives within ioGAS menus
- Data validation rules



Data Reload

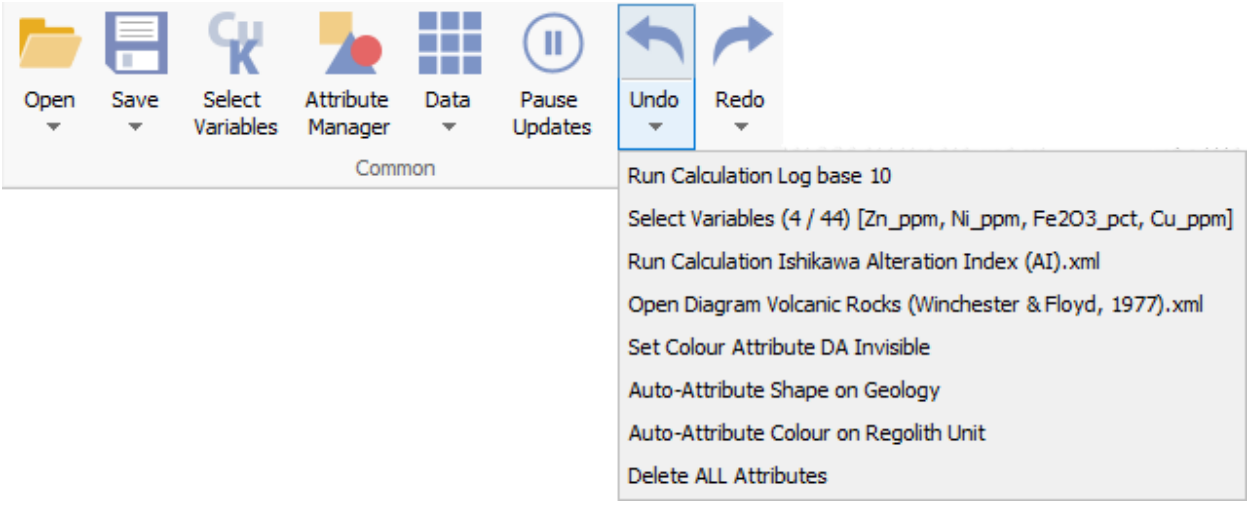


New option on the File ribbon to refresh data in a .gas file with an updated version of the original source file. The reloaded data may contain additional assay results received during a drilling program, corrected or new data entered directly into an Excel or CSV spreadsheet or an updated database view.

Where practical, ioGAS preserves the currently open plot window configuration, any colour/shape/size attribution and the original Column Properties settings to make the data reloading process as seamless as possible.

Undo/Redo

Added to Common band on selected ribbons.



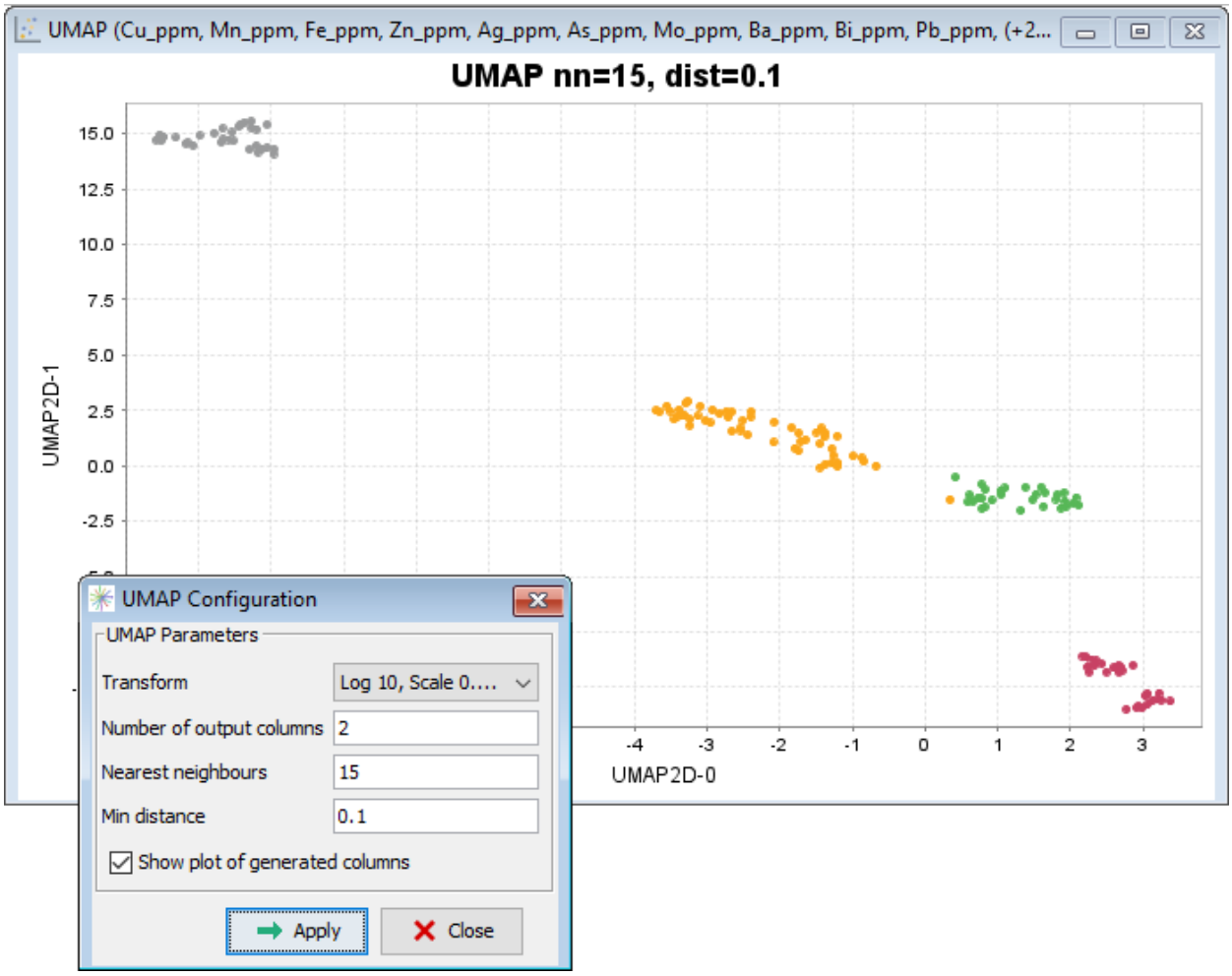
Undo the last action and restore ioGAS to the previous state. Click on the **Undo** button (Ctrl-Z keyboard shortcut) to undo actions one at a time or select an action in the Undo drop-down menu list. All actions including the selected undo entry and any actions performed after are undone.

Redo the last action and restore ioGAS to the previous state. Click on the **Redo** button (Ctrl-Y keyboard shortcut) to redo actions one at a time or select an action in the Redo drop-down menu list. All actions including the selected redo entry and any actions performed after are redone.

UMAP

Uniform Manifold Approximation and Projection (UMAP) is an unsupervised, non-linear machine learning dimension reduction technique used for the analysis and visualisation of high-dimensional data in low-dimension 2D or 3D space. Similar to t-SNE, UMAP generates clusters of data points containing similar values based on multiple features and is also useful for identifying outliers.

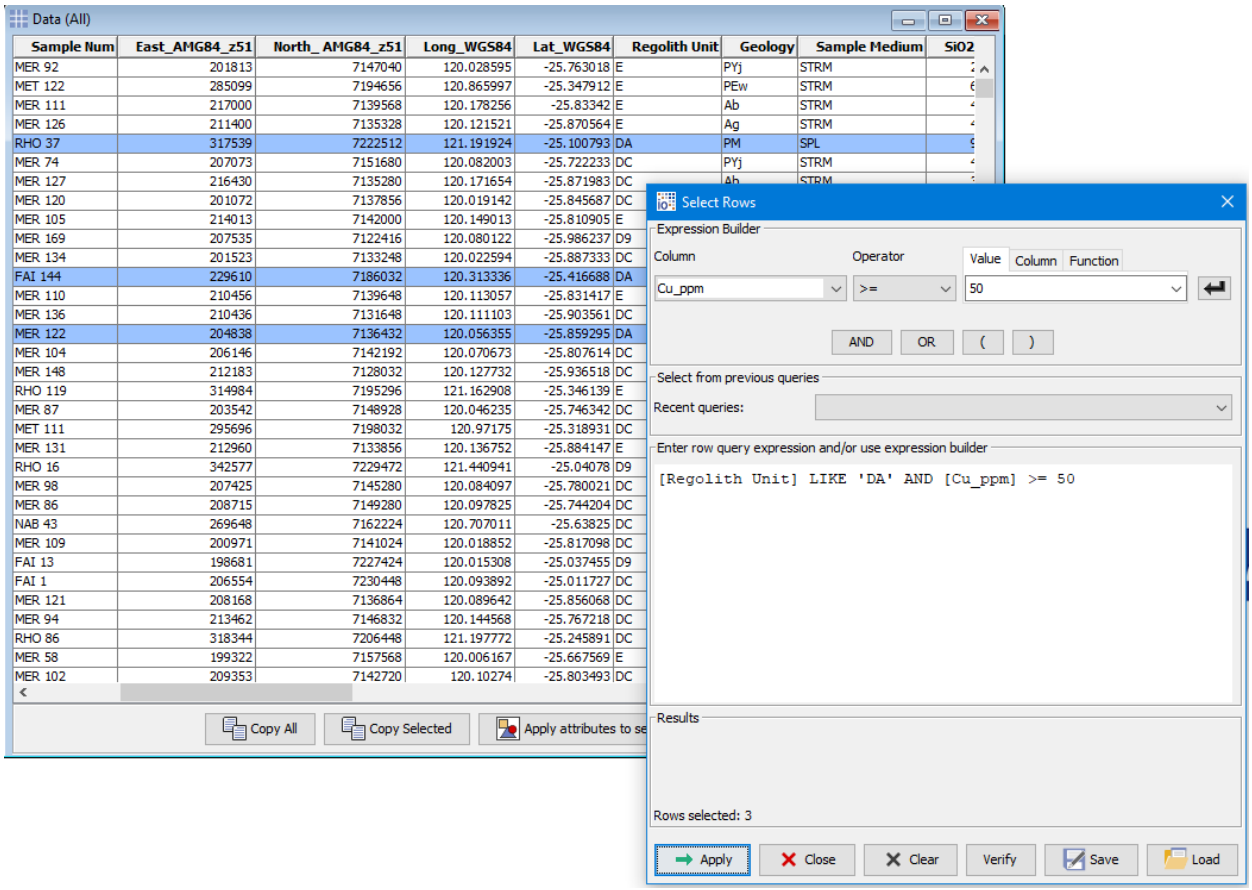
When compared with t-SNE UMAP is relatively faster, even when working with larger datasets. UMAP is also perceived to balance the preservation of local and global data structures in low dimensions more accurately and produce more defined separation between cluster groups.



Select Rows Using Query

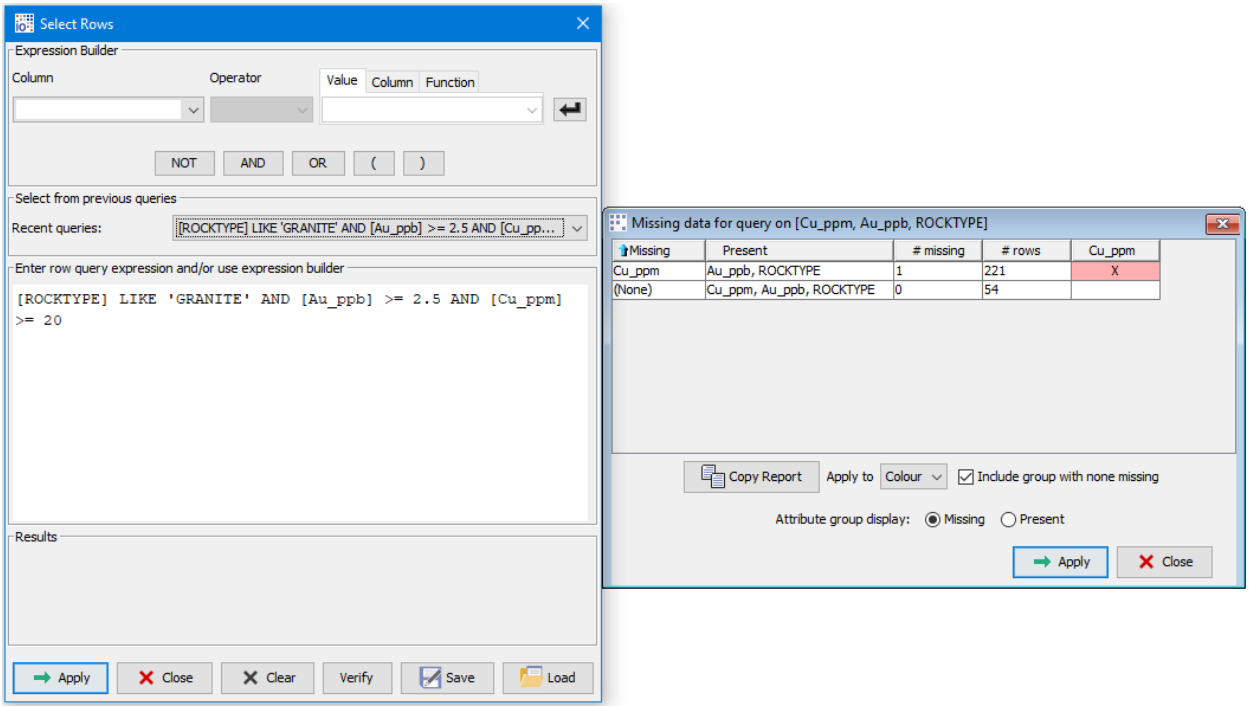
Available from the data view toolbar and selected plot toolbars, the  select rows tool is used to highlight a subset of data rows based on their values in one or more columns according to a query expression. A query expression uses similar syntax to an SQL SELECT * FROM <Dataset> WHERE clause and outlines the data column/s to filter and the criteria required to extract the rows that match those conditions.

More complex query expressions are created by combining two or more expressions and may include arithmetic functions, calculations using row or column values, comparisons between data columns and the use parentheses to determine the order of operations. Query expressions can be saved and reloaded.



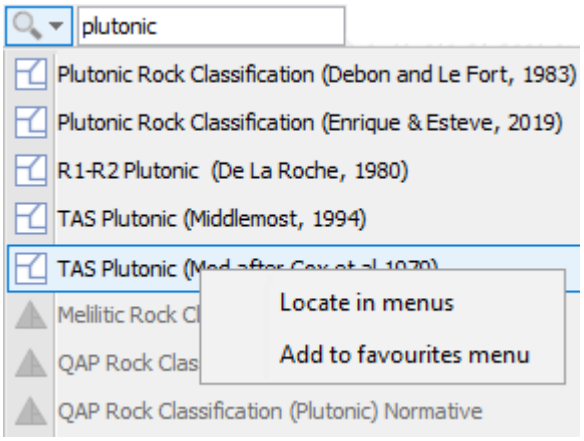
Missing Data for Query

When running a query, data rows are selected if they test true for the criteria specified in the query expression. Any rows that are not selected may be due to testing false or because they do not contain a valid entry for each of the variables used in the query. In the latter case, samples or entire areas could be overlooked for further follow-up work due to inconclusive results. For rows without valid entries for query expression variables, ioGAS automatically performs a missings analysis, displaying each unique missing variable combination and the number of samples affected. These samples can then be attributed and analysed in more depth.



Tool Search

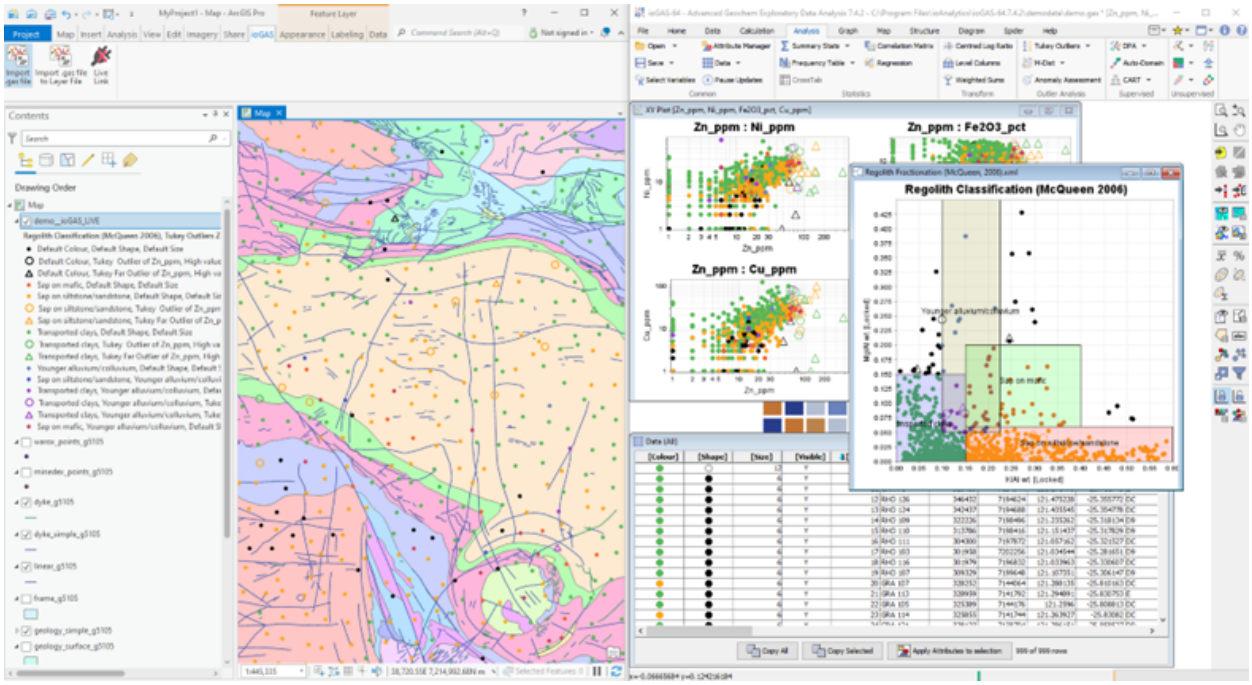
Use the Tool Search on the Quick Access Toolbar to search the ribbon and drop-down menus for an ioGAS tool or provided resource such as a classification diagram, calculation, spider normalisation or template. Right-mouse click on an entry in the search results list to locate the item in the user interface.



ArcGIS Pro Live Link

The ioGAS for ArcGIS Pro (AGP) Link creates a special 'live' layer in AGP 3.0 that synchronises with the dataset currently loaded in ioGAS. The data for the live layer may be opened directly into ioGAS and then viewed as a live layer in AGP or a copy of an existing point layer in AGP can be selected as the live layer and be opened up into ioGAS for analysis. Only one dataset can be in use by the live link at any time.

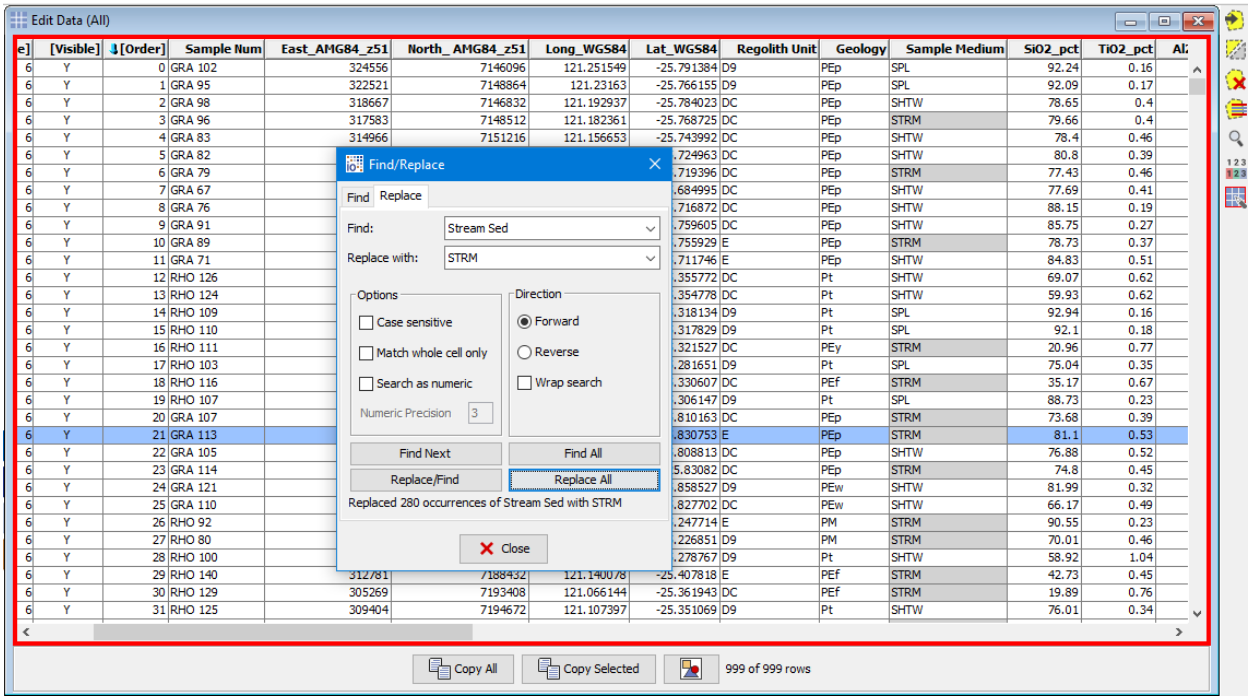
Once the live layer is activated, all attribute changes in ioGAS (including visibility and set filter groups) are displayed in the live link layer in AGP in the same way as they appear in ioGAS. Data can also be selected for attribution in ioGAS using the standard selection tools in AGP, or any of the standard ioGAS tools that modify symbols (e.g. polygon select, classification diagrams, attribute manager, etc).



Other Improvements

Data view

- improved find/replace tool



- colour/shape/size and text/numeric cell tooltips

Rendering settings

- simple render mode to increase rendering speed in larger datasets

General settings

- re-designed Settings dialog on File ribbon
- set number of decimal or scientific notation display figures
- set lower and upper scientific notation display thresholds
- comma thousand separator
- custom csv or txt file import and export character encoding

Select variables

- provided battery element group Li, Ni, Co, Mn, Al, Sn, Ta Mg, V, C
- sort available and selected variables alphabetically

Plot settings

- reverse axis values in XY and other selected plots

Gridding

- generate multiple grid windows

Attribute Manager

- invert visibility
- delete attribute groups containing 0 entries
- highlight points for selected attribute group/s
- highlight points for selected colour/shape/size/filter combination
- sort attribute groups by colour
- text attribute names containing numbers sorted numerically

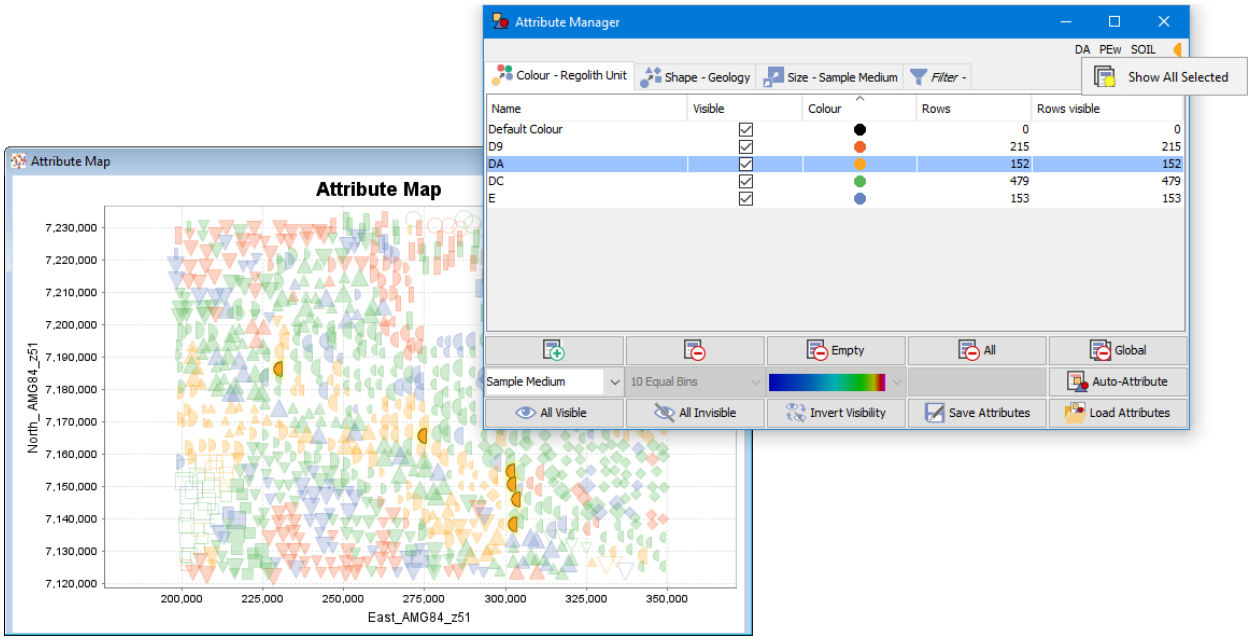


Diagram editing

- delete shape tool
- shape, size and filter rows by polygon tools

Merge columns

- concatenate column values into single text string

Analysis tools

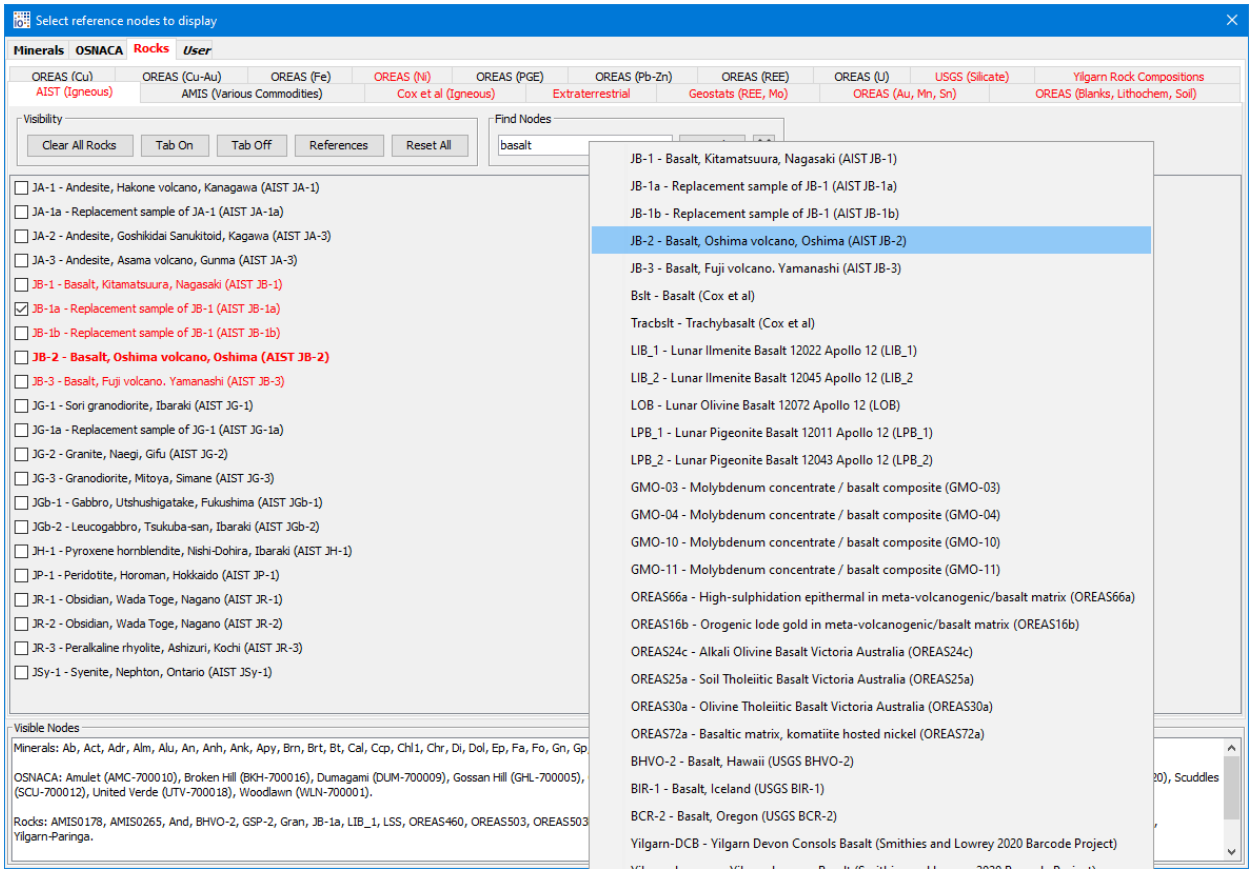
- select misclassified samples from CART confusion matrix
- lock biplot vectors when changing attribute visibility
- select samples from cross-tabulation query

Column properties

- refresh open plots when modifying special columns or column names

Mineral and rock nodes

- find node search tool
- add oxide minerals Arsenolite, Claudetite
- add sulphide minerals Cobaltpentlandite, Glaucodot, Linnaeite, Safflorite, Skutterudite
- add phosphate minerals Lithiophilite, Amblygonite, Lithiophosphate, Erythrite
- add sheet silicate minerals Petalite, Lepidolite, Hectorite, Bityite, Cookeite, Zinnwaldite
- add other silicate minerals Eucryptite, Jaradrite, Elbaite
- add pyroxene mineral Spodumene
- add amphibole mineral Holmquistite



Import

- support for SQLite database .sqlite and .geodatabase file extensions

Missing data

- attribute data according to variables missing or present
- include group with no variables missing