Using macros and advanced functions in Microsoft Excel™ to work effectively and accurately with large data sets: an example using sulfide ore characterization

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Managing and processing large data sets manually is often time intensive and susceptible to human error. Fortunately, Microsoft Excel™ contains a robust programming environment and provides a powerful graphical user interface for processing, storing, and reporting data automatically. A study was conducted on a polished thin section of massive sulfide ore from the Caribou project in New Brunswick to compare semi-automated reflected light microscope-based image analysis techniques with mineral liberation analysis using scanning electron microscopy and energy-dispersive x-ray spectroscopy. A large quantity of image data was generated during image analysis, and subsequent processing by Weka segmentation within ImageJ. The resulting petrographic data was processed automatically using a series of macros created in Microsoft Excel™ to determine modal mineralogy, grain size distributions, and mineral associations. Key features in Microsoft Excel™ including autofill, sorting, logical functions, look-up tables, and Visual Basic™ were used to accurately and effectively process data generated from image analysis. These features are easily accessible and can be employed to effectively process large data sets for any study. This talk will review how these key features were used to process data generated from optical image analysis and how they can be used in future studies.

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