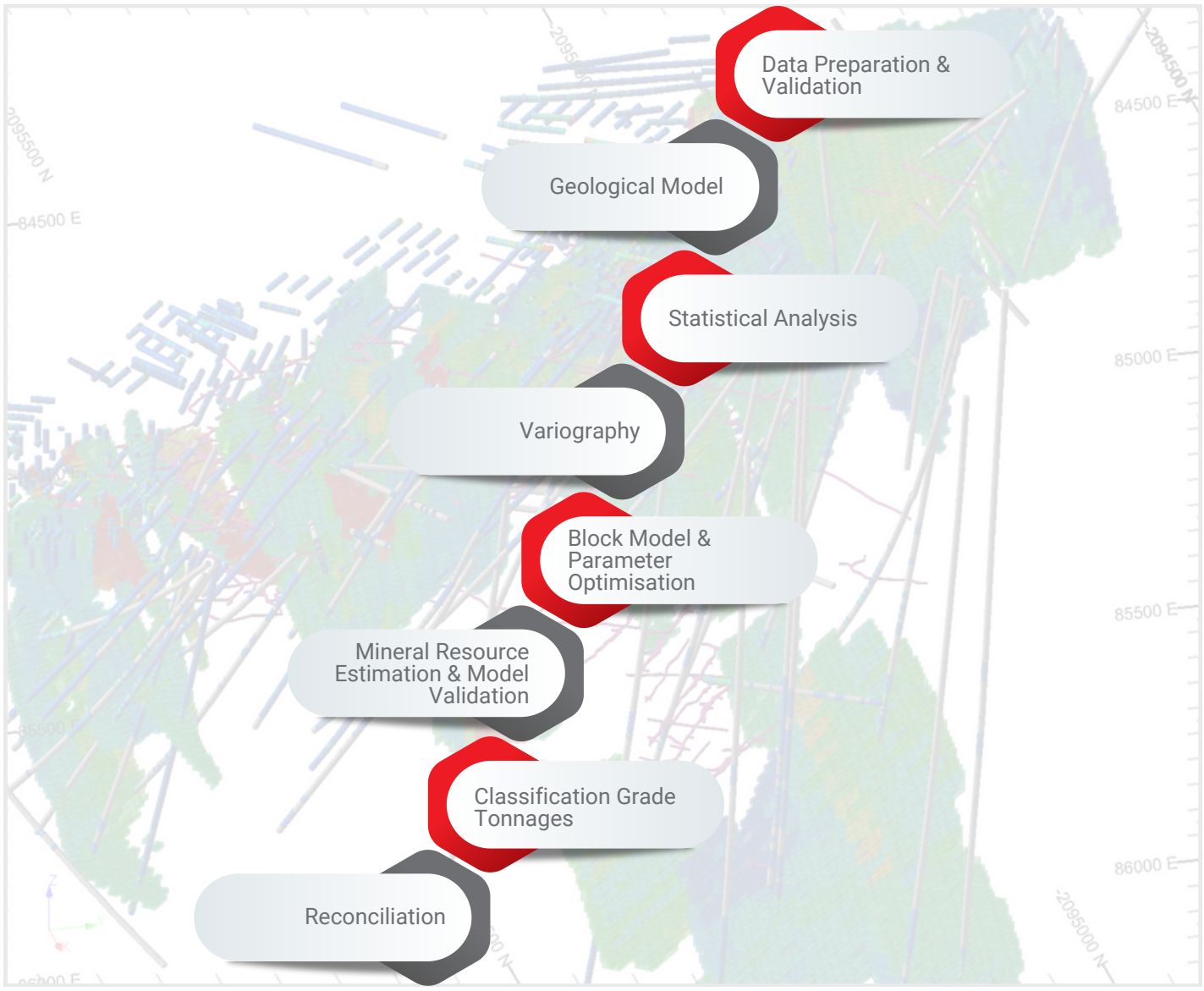
Capability Statement

Mineral Resource Estimation

Mineral Resource estimation assesses the quality and quantity of a mineralised orebody of economic interest. The grade and tonnage of the orebody are modelled in 3D space and analysed in terms of grade and tonnage, and in terms of how these characteristics occur and are distributed through the deposit. Mineral Resource estimation forms the foundations of the mining value chain towards mining strategy development and design.



Data Preparation and Validation

Mineral Resource estimation is based on detailed and reliable exploration, sampling and testing information. The information is gathered through appropriate techniques from locations spaced closely enough to confirm both geological and grade continuity. Data preparation aims to identify all available data and present it in a consolidated way. Validation aims to identify any problems associated with the data. Checks are conducted on raw and desurveyed data, with issues reported for correction. Common validation issues include duplicates, overlapping intervals, elevation errors, and survey inaccuracies. Data extraction for Mineral Resource estimation requires a cut-off date to ensure accuracy.

Geological Modelling & Domaining

Geological interpretation is crucial for accurate Mineral Resource estimation, producing a 3D representation of 2D information. It guides the selection of estimation domains and methods. Typically, this involves identifying dominant mineralisation controls and creating digital wireframes to define them, including structural, weathering, lithological control, and grade boundaries. Verified wireframes are used to code the drillhole data, whereafter compositing takes place to obtain an even representation of sample grades and to eliminate any bias.

Statistical Analysis

Statistical analysis of the data is done to understand how the different elements relate to each other. Basic statistics focus on central tendency and spread measures. Central tendency metrics include mean, median, and mode, while spread measures encompass range, inter-quartile range, variance, standard deviation, and coefficient of variation. Skewness of population distributions impacts analysis, with positively skewed data requiring careful handling. Graphical tools like histograms and probability plots aid in understanding data distribution and population characteristics, facilitating statistical analysis and estimation methods.

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Variography

Variography, or spatial relationship analysis, analyses data relationships in 3D space. Variogram analysis quantifies spatial variability by measuring how data values change with distance or direction. The variograms provide insights into spatial correlation structures, which are crucial for interpolation and creating estimation domains.

Block Model Generation

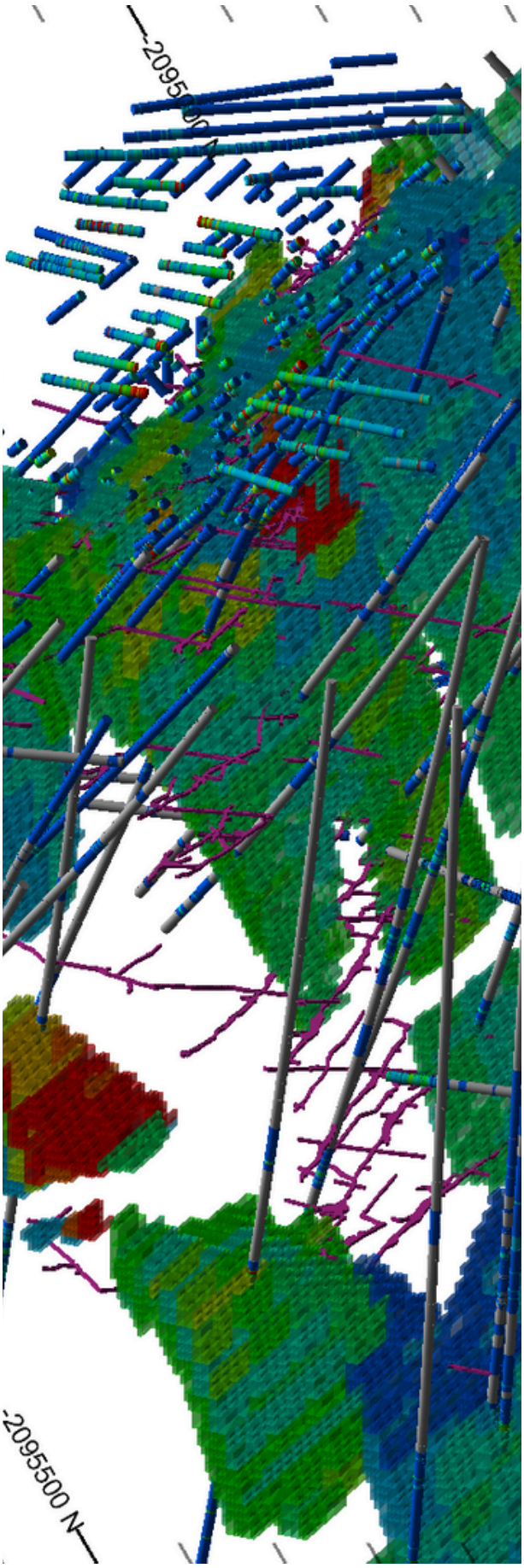
Utilising geological data and geostatistics, a 3D block model representing the shape of the mineralised body is created. This is constructed as a set of specifically sized blocks that form the basis of mineral distribution analysis. Selecting an appropriate block size is a critical step in ensuring accurate Mineral Resource estimation while minimising dilution and grade estimation errors. The optimal block size for estimation is based on a Kriging Neighbourhood Analysis (KNA) and is tied to the spacing of drillholes within the target area.

Optimising Parameters

Minimising estimation errors necessitates the utilisation of optimal block sizes and estimation parameters. Although practical wisdom and adherence to sensible guidelines can be beneficial, leveraging statistical tools is essential for quantifying the effectiveness of the estimation process. Among these, statistical measures are conditional bias statistics, which provide valuable insights into the accuracy and reliability of Mineral Resource estimates. By employing these statistics, a better understand is generated to mitigate potential biases in estimation procedures, thereby enhancing the overall robustness of Mineral Resource assessments.

Mineral Resource Estimation & Model Validation

VBKOM utilises sophisticated estimation software to conduct both linear and non-linear estimations, enabling the orebody quantification and generation of robust Mineral Resource estimates. Ensuring the accuracy of grade estimates is paramount throughout the Mineral Resource estimation process. Validation of the final model is crucial to align estimated grades with input data. Standard validation checks include visually assessing local trends, verifying global mean, confirming population distribution, validating global trends, and assessing changes in support at a global level. These checks help identify and rectify any discrepancies or errors in the estimation process, enhancing the reliability of the final grade estimates.



Classification & Grade Tonnages

Classification into different Mineral Resource categories and the tabulation of grades and tonnages is the final step in declaring current Mineral Resources. Mineral Resource estimates are classified based on geological knowledge and confidence levels. The Mineral Reporting Codes, such as SAMREC and JORC, provide criteria for each classification level, including considerations such as data quality, geological control, and estimation methods. Mineral Resources tabulations include consideration of cut-off grades, geological uncertainty and exclusions. Grade-tonnage curves are used to assess the sensitivities of grade distribution, that is the tonnage at an optimal mining grade or a suitable cut-off.

Reconciliation

Reconciliation of current Mineral Resource estimates is done against historic declarations and against depleted mining tonnages where applicable. The aim is to determine why changes have occurred so as to optimise associated processes, such as high-grade mining targeting, poor exploration strategy, and change in geological environment. Reconciliation is a critical process to ensure alignment between predicted and actual outcomes in Mineral Resource estimation and production, to correctly manage and report the available Mineral Resource. Reconciliation also provides insight into the amount of Measured and Indicated Mineral Resources that have been mined out, guiding where infill drilling and future exploration need to occur to increase mineable Mineral Resource.

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Our Value Proposition

The VBKOM Mineral Resources Consulting Services focus on generating high quality auditable Mineral Resource estimates and grade control modelling tailored to meet your project or operational requirements.

We pride ourselves in all aspects of Mineral Resource estimation, from database validation, statistics and geostatistics, geological modelling and domaining, Mineral Resource block model generation and validation, Mineral Resource estimation and classification, and independent Competent Person's Reports. We also offer comprehensive support for operational Mineral Resource teams.

Our competence base spans across all commodities and covers all Mineral Resource estimation aspects of the Project Value Chain throughout the lifecycle of any project. This includes data validation through to high quality Competent Persons (and Qualified Persons) Reports aligned with recognised securities exchange requirements and Mineral Reporting Codes, including the SAMREC Code, JORC Code, NI 43-101 and S-K 1300.

Visit VBKOM website and social media for more information:

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