

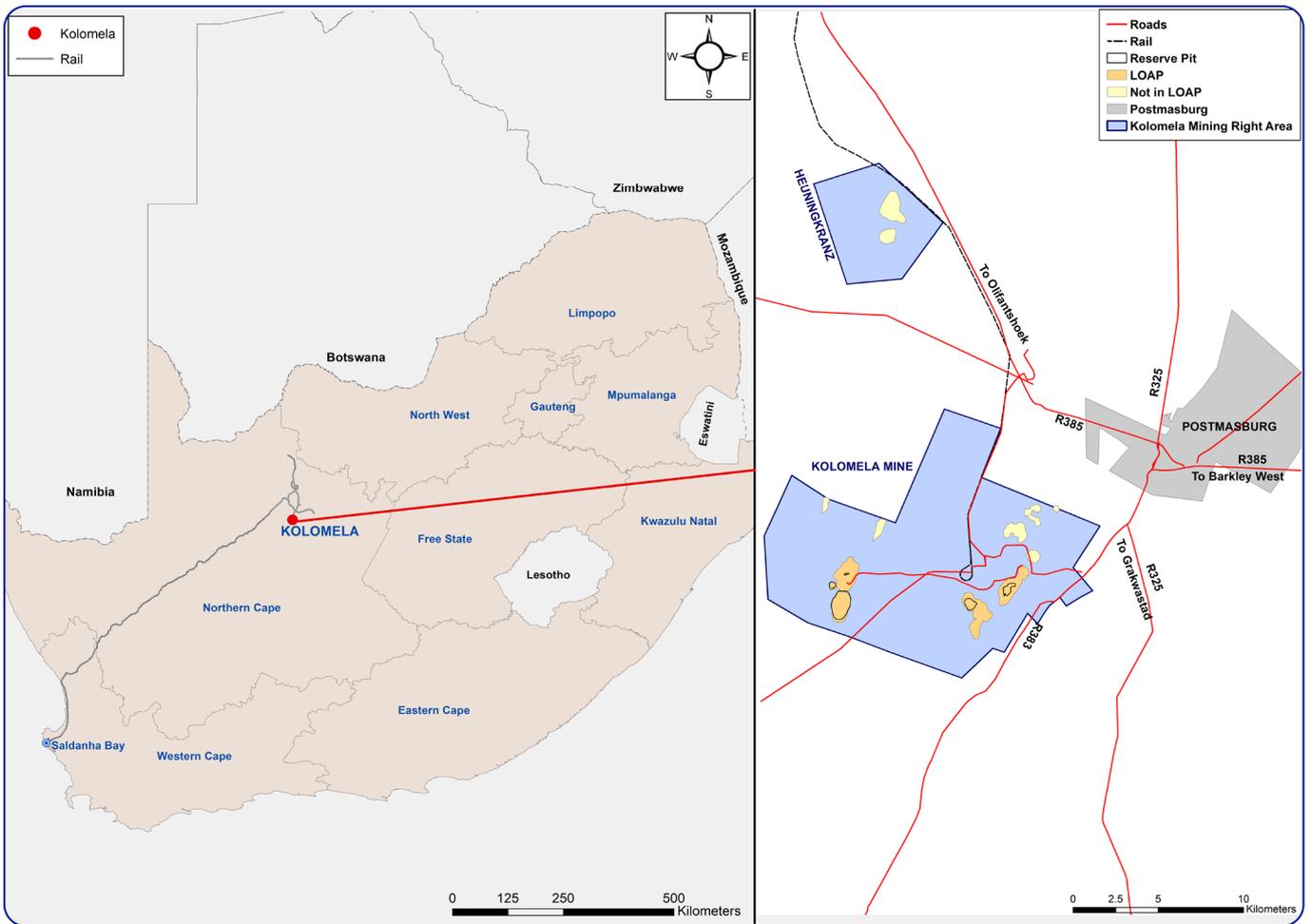
Heuningkranz deposit

SAMREC Code Table 1 Mineral Resource summary (31 December 2025)

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Competent Person for Kolomela mine
(including Heuningkranz deposit)
2025 Mineral Resources
Reviewed by: J Britz
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Mineral Resources

Prelude

The Heuningkranz deposit is located in the Northern Cape province of the Republic of South Africa, 17 km northwest of Postmasburg. It forms part of Kumba Iron Ore’s Kolomela mining right, positioned on a geographically separate section approximately 11 km north-northwest of the main mining right area where current operational infrastructure is established.



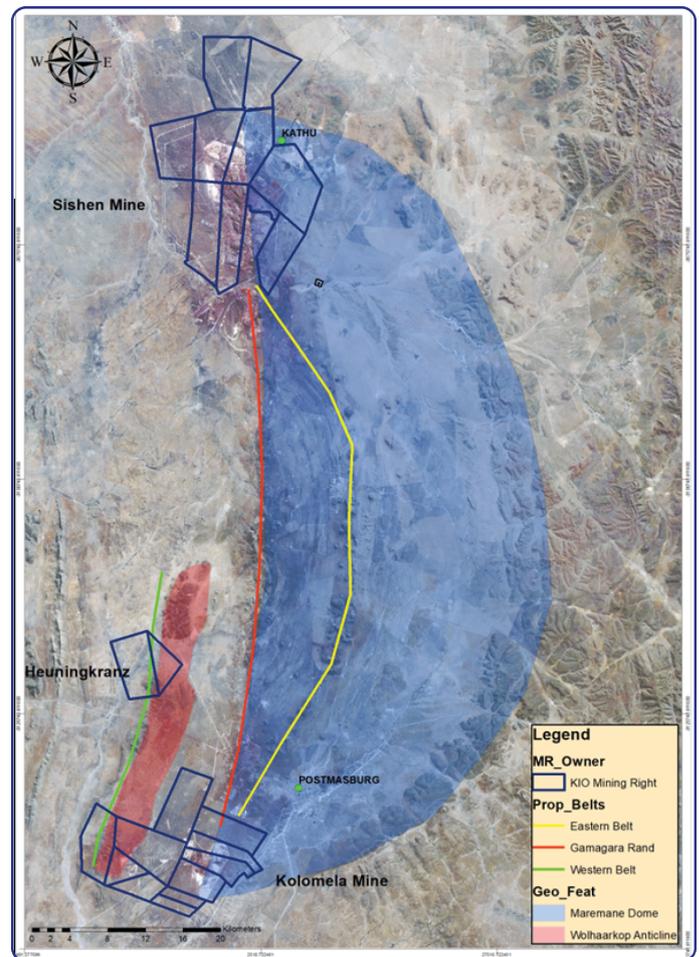
Prelude cont.

Discovered in 2008 through regional exploration using advanced airborne gravity and magnetic geophysical surveys, the Heuningkranz mineralisation marked a breakthrough as the first high-grade iron ore discovery beyond the established operations in the Sishen–Postmasburg region of South Africa’s Northern Cape province. Prior to this discovery, high-grade iron ore was considered restricted to the Maremane anticline and the eastern limb of the Wolhaarkop anticline, which host Kumba Iron Ore’s flagship Sishen and Kolomela.

The Heuningkranz discovery marked the first significant find in the region beyond the Sishen and Kolomela sub-regions (located at the northern and southern extents of the Maremane anticline) since Kolomela’s mineralisation was identified in 1954. This discovery has substantially advanced regional geological knowledge, particularly regarding ore-forming processes, not only within the Wolhaarkop anticline but also across existing mineralised zones currently under exploitation. Following Heuningkranz, Kumba and other operators have confirmed multiple new high-grade deposits associated with the Western limb of the Wolhaarkop anticline, known as the “Western Belt.” Enhanced understanding of regional geology and ore genesis has enabled Kumba to refine its exploration strategy, resulting in the identification of several additional deposits within the Kolomela sub-region.

Throughout both initial and advanced exploration phases, Kumba’s Geoscience team has collaborated extensively with leading South African and international academics and industry specialists to deepen our understanding of the mineralisation. These partnerships have delivered a comprehensive insight into the structural evolution and ore-forming processes that underpin the development of the Heuningkranz deposit and other high-grade iron ore bodies within the Western Belt.

Evidence indicates, based on visual inspection, chemical analyses, mineralogical studies and novel haematite dating techniques, that the Heuningkranz mineralisation was formed during two to three discrete time periods and events. The primary ore-forming process was the supergene enrichment of the exposed Banded Iron Formation (BIF) from approximately 2.2 to 1.8 billion years ago, aligning with the known mineralisation associated with the Maremane Dome. This is further supported by pisolites (up to 3 cm in diameter) found within conglomeratic haematite overlying the massive and laminated haematite ore. Secondary mineralisation in the overlying Gamagara sediments strongly supports at least one, or possibly two, later ore-forming processes. Haematite dating and mineralogical studies, completed at South African and international universities, strongly suggest that hydrothermal alteration associated with the Kheiss and Namaqua-Natal orogenies mineralised the Gamagara sediments to iron contents exceeding 60% Fe. It also introduced additional iron mineralisation in the BIF, especially along major low angle thrust structures. Due to the nature and chemistry of the proposed hydrothermal fluids, silica was removed and replaced by haematite, however minerals containing aluminium and potassium, present in the sediments, was not removed which accounts for elevated aluminium and potassium in the “ferruginised shales” typically overlying the high-grade haematite.



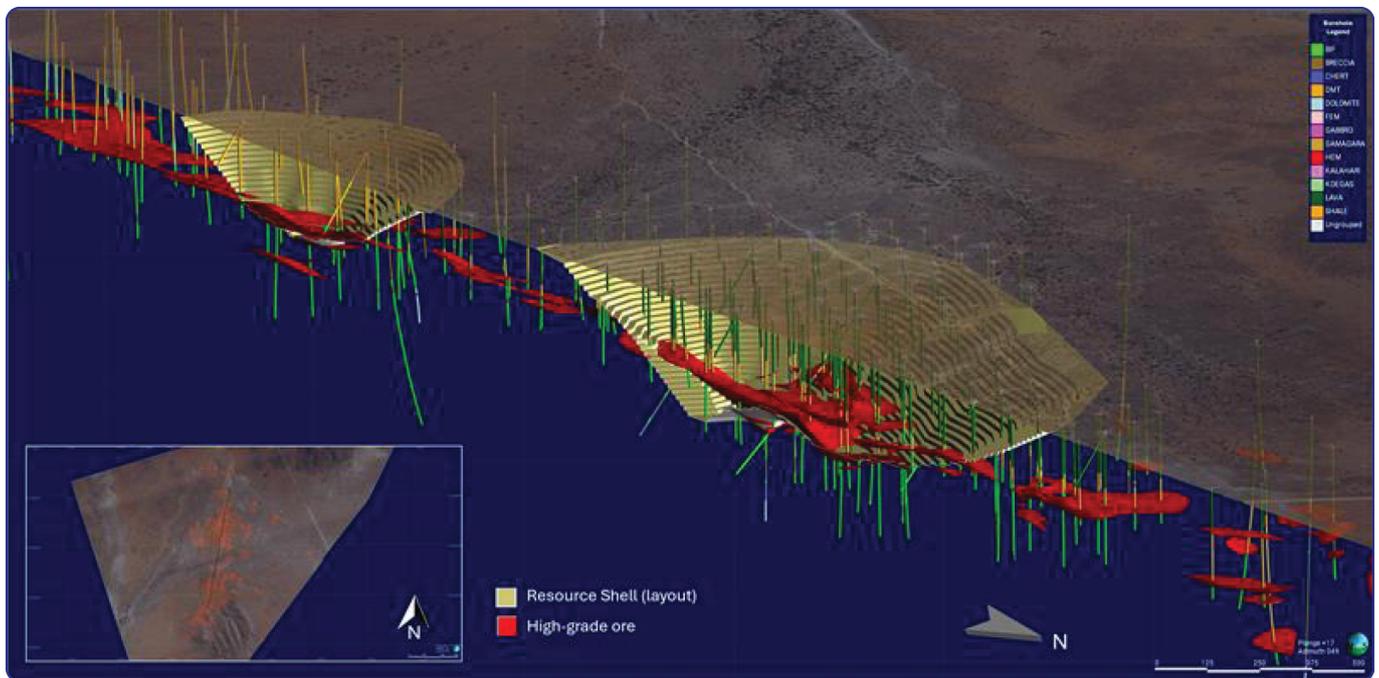
Prelude cont.

Structurally, the Heuningkranz mineralisation is relatively complex with a number of compressional and extensional events impacting on the geometry of the mineralisation. There are strong indications of low angle thrusting, associated with the Kheiss and Namaqua-Natal orogenies, especially evident where the stratigraphy is duplicated several times. These thrusts propagated through the entire stratigraphy, and high-grade mineralisation is often duplicated up to three and more times, thickening the mineralisation in some areas of the deposit. High-grade haematite has been found below the first dolomite intersections, which is atypical of the region. The last major structural deformation is related to extensional conditions, which formed north-south trending horst and graben structures. High-grade mineralisation was typically preserved from regional erosion within graben structures as is the case at Kolomela.

The presence of steeply dipping haematite zones characterised by high-angle slickensides (i.e. high-alpha angles), breccia and pervasive specularite mineralisation in fractures, suggests fluid movement associated with these faults. In contrast, the laterally continuous, thin haematite zones may be associated with low angle, transgressive thrusts that follow bedding contacts. The continuous haematite zones and associated thrusts appear to be constrained by, or are found near, the BIF-Gamagara erosional unconformity.

The NNE-SSW faults and low-angle thrusts were intermittently reactivated, forming an integral part of the hydrodynamic system under which haematite mineralisation occurred, irrespective of whether it was early supergene and/or a later hypogene processes (Morris, 1998). The latter is particularly evident, given that large volumes of haematite are hosted in Gamagara sediment (mostly shale), suggesting widespread hypogene or hydrothermal mineralisation during the Kheiss Orogeny.

The hypogene/hydrothermal processes may have been repeated during the Namaqua Orogeny, however structural relationships indicate little offset of the Blackridge Thrust and associated structures in the Heuningkranz area. The limited fault reactivation and restricted fluid movement are unlikely to have been a significant contributor to mineralisation.



Three-dimensional view of the Heuningkranz high-grade orebody and resource shells

Prelude cont.

The Mineral Resource estimates (stated in the table below) only comprise the high-grade iron ore portion (depicted in red in the image on the previous page - generated from the geological model) of the Heuningkranz mineralisation constrained by the following:

- A 61% Fe cut-off grade, aligning the Mineral Resource estimate with direct shipping ore (DSO) potential as facilitated by the existing crushing and screening plant at Kolomela, as well as
- A revenue factor 1 resource shell derived by a pit optimisation exercise considering Kumba's latest view of the long-term macro-economic parameters. Reasonable prospects for eventual economic extraction (RPEEE) as per this constraint therefore equates to the last tonne of high-grade ore within the revenue factor 1 resource shell to be mined at break-even, where price equals cost.

| Mineral Resource category | Ore type | % owned by KIO | Cut-off | 2025 | | 2024 | |
|--|-----------|----------------|---------|--------------|--------------|--------------|--------------|
| | | | | Tonnage (Mt) | Average % Fe | Tonnage (Mt) | Average % Fe |
| Inside resource shell (<i>in situ</i>) | | | | | | | |
| Measured (outside LoAP) | Haematite | 75.4 | 61% Fe | 0.0 | 0.0 | 0.0 | 0.0 |
| Indicated (outside LoAP) | | | | 62.1 | 65.1 | 0.0 | 0.0 |
| Total Measured and Indicated (outside LoAP) | | | | 62.1 | 65.0 | 0.0 | 0.0 |
| Inferred (outside LoAP) | | | | 8.7 | 65.1 | 0.0 | 0.0 |
| Inferred extrapolated (outside LoAP) | | | | 4.6 | 64.8 | 0.0 | 0.0 |
| Total Inferred | | | | 13.3 | 65.0 | 0.0 | 0.0 |
| Grand Total | | | | 75.4 | 65.1 | 0.0 | 0.0 |

For the sake of material and transparent reporting purposes, an in-house Mineral Resource Statement for the Heuningkranz deposit has been referenced as **Appendix A** in this SAMREC Table 1 report to provide more detail.

SAMREC Table 1

Table 1 is applicable to all declarations in terms of the guidelines of the South African Code for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves, 2016 Edition (SAMREC Code)

Table 1 is a high-level checklist of reporting and assessment criteria to be used as a reference by those preparing reports on Exploration Results, Mineral Resources and Mineral Reserves.

In the context of complying with the principles of the Code, comment on the relevant sections of Table 1 must be provided on an 'if not, why not' basis within the Competent Person's Report and must be provided where required according to the specific requirements of Clauses 6, 31 and 34. This is to ensure that it is clear to the reader whether items have been considered and deemed to be of low consequence or have yet to be addressed or resolved.

Transparency, competency and materiality are overriding principles that determine what information should be publicly reported. The Competent Person (CP) must provide sufficient comment on all matters that might materially affect a reader's understanding or interpretation of the results or estimates being reported.

The order and grouping of criteria in Table 1 reflect the normal systematic approach to exploration and evaluation. The table should be approached from left to right. In other words, criteria in the first column, Exploration Results, should be considered to apply also when reporting Mineral Resources and Mineral Reserves. Similarly, additional criteria in the Mineral Resources column apply also to Mineral Reserves reporting.

Identify the units of measure, currency and relevant exchange rates

| Heuningkranz | | Exploration Results | Mineral Resources | Mineral Reserves |
|-----------------------------------|----------------------|---------------------|--|------------------|
| Section 1: Project Outline | | | | |
| 1.1 | Property Description | (i) | <p>Brief description of the scope of project (i.e. whether in preliminary sampling, advanced exploration, scoping, pre-feasibility, or feasibility phase, Life-of-Mine plan for an ongoing mining operation or closure).</p> <p>Scoping phase. <i>The 75.4 Mt (62.1 Mt Indicated and 13.3 Mt Inferred) with an associated 65.1% Fe average in situ grade (@ 61.0% Fe cut-off) Mineral Resource estimate for the Heuningkranz deposit, is derived from a three-dimensional geological model and associated spatial in situ grade geological block model, informed by 690 exploration boreholes. The model also informed subsequent pit optimisation processes to derive a revenue factor 1 resource shell to spatially define reasonable prospects for eventual economic extraction, following exactly the same approach as defining the rest of the Kolomela Mineral Resources in 2025, with the exception of site-specific costing (longer hauling distances, etc.). All of the latter informed a Resource Development Plan (RDP), a valuated high-level schedule precursor to the life-of-asset plan that confirmed RPEEE. The current scope considers the project to deliver only high-grade run-of-mine via conventional open-pit mining through the existing DSO crushing and screening plant at Kolomela. Should the Heuningkranz project advance to a pre-feasibility study, alternative developments will be considered to identify an optimal value-driven business solution for Kumba Iron Ore.</i></p> | |
| | | (ii) | <p>Describe (noting any conditions that may affect possible prospecting/mining activities) topography, elevation, drainage, fauna and flora, the means and ease of access to the property, the proximity of the property to a population centre, and the nature of transport, the climate, known associated climatic risks and the length of the operating season and to the extent relevant to the mineral project, the sufficiency of surface rights for mining operations including the availability and sources of power, water, mining personnel, potential tailings storage areas, potential waste disposal areas, heap leach pad areas, and potential processing plant sites.</p> <p>Referenced in sections 6.1 and 6.2 of Appendix A. A challenge in terms of the physiography of the Heuningkranz project is the fact that it is geographically separated from the remainder of the Kolomela mining right and that run-of-mine will have to be hauled via public roads or by alternative means like, e.g. an overland conveyor, which will require significant capital investment (including purchasing of relevant farm portions).</p> | |
| | | (iii) | <p>Specify the details of the personal inspection on the property by each CP or, if applicable, the reason why a personal inspection has not been completed.</p> <p>The Mineral Resource CP has not personally inspected the property in 2025. The CP is, however, familiar with the property, and was part of the Kumba Exploration Team which conducted exploration at Heuningkranz in earlier years. The only building currently on the property is an old farmhouse with associated outer buildings (refurbished into offices), with the property surface intersected by old dirt roads giving access to rehabilitated exploration boreholes. The borehole core sample remnants are stored at Kumba's Demaneng facility in the Northern Cape, which is frequently visited by the CP.</p> | |

SAMREC Table 1 cont.

| Heuningkranz | | Exploration Results | Mineral Resources | Mineral Reserves |
|---|----------|---------------------|---|------------------|
| Section 1: Project Outline cont. | | | | |
| 1.2 | Location | (i) | <p>Description of location and map (country, province, and closest town/city, coordinate systems and ranges, etc.).</p> <p>Referenced in the "Prelude" section of this document as well as section 3 of Appendix A.</p> | |
| | | (ii) | <p>Country Profile: describe information pertaining to the project host country that is pertinent to the project, including relevant applicable legislation, environmental and social context etc. Assess, at a high level, relevant technical, environmental, social, economic, political and other key risks.</p> <p>The Heuningkranz deposit is located within the Republic of South Africa (RSA).</p> <p>In the RSA, the legislation that governs prospecting and mining is the Mineral and Petroleum Resources Development Act No 28 of 2002 (MPRDA). The MPRDA became effective on 1 May 2004. The MPRDA was amended by the Minerals and Energy Laws Amendment Act, 2005 and the Mineral and Petroleum Resources Development Amendment Act No 49 of 2008 (2008 Act). Most of the provisions of the 2008 Act became effective on 7 June 2013. The amendments relating to environmental issues relevant to prospecting and mining, introduced by the 2008 Act, came into operation in December 2014.</p> <p>Environmental and social responsibilities of the mining right holder are spelled out and regulated by the MPRDA and involve environmental management plan and social and labour plan applications, which, once granted or approved by the Department of Mineral and Petroleum Resources (DMPR), must be complied with and renewed in accordance with legislation. Kumba Iron Ore effectively manages this as a minimum requirement, with our full approach to environmental and social responsibilities outlined in the Kumba Sustainability Report (https://www.angloamericankumba.com/investors/annual-reporting/reports-archive/2025), which will be available from 10 April 2026).</p> <p>South Africa faces a mix of domestic and external risks:</p> <p>Political stability: Ongoing internal divisions within both the ANC and the Democratic Alliance present challenges to the overall stability of the Government of National Unity and its ability to fully implement the reforms required to support economic growth in South Africa. Corruption and broader governance weaknesses remain persistent concerns. Continued service delivery failures at local government level pose political risks for the ANC and other parties, particularly as these challenges are more pronounced in metropolitan municipalities. These dynamics will need to be closely monitored as the country approaches the 2026 municipal elections.</p> <p>Economic risk: Deterioration across national infrastructure (including rail transport, electricity supply, road networks, ports, and municipal systems) continues to constrain economic performance. While there is positive momentum on rail reform policy as part of broader interventions, there have also been meaningful successes in energy reform, with improved generation performance and increased private sector renewable capacity beginning to ease pressure on the grid. The success of these reforms will require continued focus to ensure full and effective execution of the broader reform programme.</p> <p>Social risk: Inequality and poverty remain high. The triple challenge of poverty, inequality, and unemployment continues to pose a stability risk to the country. Crime also poses a significant challenge to the country's growth and reform prospects, and requires further attention to ensure that the benefits of reform are experienced across all levels of South African society.</p> <p>Security risk: Domestic protests and labour action remain ongoing. Regional stability is a growing concern; while the region is relatively stable politically, uncontrolled migration poses a threat to domestic stability, prompting government to actively review and revise inward migration policies to mitigate its impact.</p> <p>In this challenging environment, Kumba strives to remain a good corporate citizen to counter the domestic country risks while complying with legislation enacted by the South African Government. See Kumba's Sustainability Report (https://www.angloamericankumba.com/investors/annual-reporting/reports-archive/2025), which will be available from 10 April 2026</p> | |

SAMREC Table 1 cont.

| Heuningkranz | | Exploration Results | Mineral Resources | Mineral Reserves |
|---|---------------------|---------------------|---|--|
| Section 1: Project Outline cont. | | | | |
| 1.2 | Location cont. | (iii) | Provide a general topocadastral map | Provide a detailed topocadastral map. Confirm that applicable aerial surveys have been checked with ground controls and surveys, particularly in areas of rugged terrain, dense vegetation or high altitude. |
| | | | The Heuningkranz geological model, used to inform the pit optimisation exercise from which a revenue factor 1 resource shell was derived to spatially define RPEEE, used borehole collar coordinate information to define the geological model topography. Subsequently, a ground-truthed LIDAR (Light Detection and Ranging) survey was conducted that will be used to inform future geological model updates. Referenced in section 8.6.1 of Appendix A. | |
| 1.3 | Adjacent Properties | (i) | Discuss details of relevant adjacent properties. If adjacent or nearby properties have an important bearing on the report, then their location and common mineralised structures should be included on the maps. Reference all information used from other sources. Adjacent properties are involved in farming activities. Mining of the Heuningkranz deposit may result in dewatering and air pollution impacts on these properties. Kumba, however, has a structured process (based on its proved track record in the Northern Cape province) to either purchase properties affected by its mining activities or fairly compensating landowners who do not want to relinquish their properties. Other mining activities in close proximity, but not immediately adjacent to the Heuningkranz mining right properties, are referenced in section 6.1.5 of Appendix A. | |
| 1.4 | History | (i) | State historical background to the project and adjacent areas concerned, including known results of previous exploration and mining activities (type, amount, quantity and development work), previous ownership and changes thereto. Referenced in section 6.2.1 of Appendix A. | |
| | | (ii) | Present details of previous successes or failures with reasons why the project may now be considered potentially economic. The project was evaluated in 2018 but did not meet the requirements of RPEEE based on Kumba's long-term iron ore price forecast at the time. Since then, Kumba's long-term iron ore price forecast has increased materially, rendering the project to have reasonable prospects for eventual economic extraction as defined by a resource shell (revenue factor 1) developed during pit optimisation conducted in 2025, considering open-pit mining and beneficiation using the existing DSO plant at Kolomela. | |
| | | (iii) | Discuss known or existing historical Mineral Resource estimates and performance statistics on actual production for past and current operations. This is a first-time declaration of Mineral Resources for the Heuningkranz deposit. | |
| | | (iv) | Discuss known or existing historical Mineral Reserve estimates and performance statistics on actual production for past and current operations. Not applicable, only Mineral Resources have been declared for the Heuningkranz deposit. | |

SAMREC Table 1 cont.

| Heuningkranz | | Exploration Results | Mineral Resources | Mineral Reserves |
|---|------------------------------|--|-------------------|------------------|
| Section 1: Project Outline cont. | | | | |
| 1.5 | Legal Aspects and Permitting | <p>Confirm the legal tenure to the satisfaction of the CP, including a description of the following:</p> <p>(i) Discuss the nature of the issuer's rights (e.g. prospecting and/or mining) and the right to use the surface of the properties to which these rights relate. Disclose the date of expiry and other relevant details.</p> <p>Heuningkranz Mineral Resources declared in this document are consolidated within the Kolomela mining right. The original Kolomela mining right was granted on 18 September 2008 by the then South African Department of Mineral Resources and Energy (DMRE). The mining right was notarially executed and registered (MPT 50/2009) at the Mining Titles Office of the DMRE by Sishen Iron Ore Company Proprietary Limited (SIOC) in 2009. The Department has recently been renamed as the Department of Mineral and Petroleum Resources. The original Kolomela mining right was later amended to include the Heuningkranz properties. The amendment was granted and registered in 2019.</p> <p>The mining right allows SIOC to extract, process and sell iron ore from the properties within the Kolomela mining right until 2038.</p> <p>The surface rights are held by SIOC.</p> <p>(ii) Present the principal terms and conditions of all existing agreements, and details of those still to be obtained (such as, but not limited to, concessions, partnerships, joint ventures, access rights, leases, historical and cultural sites, wilderness or national park and environmental settings, royalties, consents, permission, permits or authorisations).</p> <p>Referenced in section 5 of Appendix A and section 5.5(ii) of this report.</p> <p>(iii) Present the security of the tenure held at the time of reporting or that is reasonably expected to be granted in the future along with any known impediments to obtaining the right to operate in the area. State details of applications that have been made.</p> <p>Referenced in section 5 of Appendix A.</p> <p>(iv) Provide a statement of any legal proceedings (e.g. land claims) that may have an influence on the rights to prospect or mine for minerals, or an appropriate negative statement.</p> <p>There are currently no land claims over any of the Kolomela properties, including the Heuningkranz farms.</p> <p>The DMPR has, however, granted one overlapping prospecting right and accepted (but not yet granted) a second overlapping prospecting right for the Heuningkranz properties. Both overlapping prospecting rights are for iron ore and manganese. The Kumba legal team has appealed the decisions. An outcome is still pending. Both pose significant risk due to the competing rights for iron ore and potential disruption to operations if manganese prospecting is sanctioned.</p> <p>(v) Provide a statement relating to governmental/statutory requirements and permits as may be required, have been applied for, approved or can be reasonably be expected to be obtained.</p> <p>Referenced in section 5.1.1 of Appendix A.</p> | | |
| 1.6 | Royalties | <p>(i) Describe the royalties that are payable in respect of each property.</p> <p>Royalties payable under the Kolomela mining right, of which the Heuningkranz properties are part of. Royalties amounted to R916 million for 2025 (2.81% of free-on-rail revenue).</p> | | |
| 1.7 | Liabilities | <p>(i) Describe any liabilities, including rehabilitation guarantees that are pertinent to the project. Provide a description of the rehabilitation liability, including, but not limited to, legislative requirements, assumptions and limitations.</p> <p>SIOC met the original Heuningkranz Prospecting Work Programme rehabilitation requirements as was evaluated by the DMPR when SIOC applied for the conversion of the Heuningkranz prospecting right to be converted and incorporated in the Kolomela mining right. Further detail regarding liabilities are referenced in sections 5.1 and 5.1.1 of Appendix A.</p> <p>In summary, the immediate closure costs for Kolomela amounts to a R1,873 million liability for 2025 – provided for via the KIO rehabilitation trust fund (R233 million) and through bank guarantees (R1,777 million) with R136 million surplus. This closure liability calculation is governed by both the MPRDA and the National Environmental Management Act No 107 of 1998 (NEMA). Even though the NEMA financial provision regulations have not yet come into effect, Kumba is currently aligned with the proposed approach in terms of the calculation of the financial provision. Internally, guidance is taken from the Anglo American Mine Closure Standard and associated Mine Closure Toolbox, with the Kumba Finance Department having assisted the Kumba Corporate Affairs Department with closure provision calculations.</p> | | |

SAMREC Table 1 cont.

| Heuningkranz | | Exploration Results | Mineral Resources | Mineral Reserves |
|---|---|---------------------|--|------------------|
| Section 2: Geological Setting, Deposit, Mineralisation | | | | |
| 2.1 | Geological Setting, Deposit, Mineralisation | (i) | Describe the regional geology. Referenced in sections 7.1 and 7.2 of Appendix A. | |
| | | (ii) | Describe the project geology including deposit type, geological setting and style of mineralisation. Referenced in section 7.3 of Appendix A. | |
| | | (iii) | Discuss the geological model or concepts being applied in the investigation and on the basis of which the exploration programme is planned. Describe the inferences made from this model. Referenced in sections 9 and 10 of Appendix A. | |
| | | (iv) | Discuss data density, distribution and reliability and whether the quality and quantity of information are sufficient to support statements, made or inferred, concerning the Exploration Target or Mineralisation. Referenced in section 8 of Appendix A, to be read in conjunction with section 11 of Appendix A. | |
| | | (v) | <p>Discuss the significant minerals present in the deposit, their frequency, size and other characteristics. Includes minor and gangue minerals where these will have an effect on the processing steps. Indicate the variability of each important mineral within the deposit.</p> <p>The prominent mineral of the declared high-grade Mineral Resources is haematite, of which the associated prominent element is %Fe. The critical contaminant grades associated with Fe are: %SiO₂, %Al₂O₃, %K₂O, %P, %Mn and %S, occurring mainly in the form of quartz, muscovite and kaolinite mineralisation. The <i>in situ</i> grades above a 61% Fe cut-off are referenced per textural ore type in Table 63 in section 12.7 of Appendix A.</p> <p>Currently, the Mineral Resources are considered to be mined and sold as direct shipping iron ore, which means that the relatively high Al₂O₃ and K₂O contaminant grades will be realised in the product, with the fines fraction expected to show marginal improvement in product grade vs lump ore compared to the head grades. Geometallurgical beneficiation densimetric test work results are referenced in section 8.5.2 of Appendix A.</p> | |
| | | (vi) | Describe the significant mineralised zones encountered on the property, including a summary of the surrounding rock types, relevant geological controls, and the length, width, depth, and continuity of the mineralisation, together with a description of the type, character, and distribution of the mineralisation Referenced in sections 7.2.1 and 7.2.2 of Appendix A. | |
| | | (vii) | Confirm that reliable geological models and/or maps and cross-sections that support interpretations exist. Referenced in section 9.2 of Appendix A, with cross-sections referenced in section 7.3.2 of Appendix A. | |

SAMREC Table 1 cont.

| Heuningkranz | | Exploration Results | Mineral Resources | Mineral Reserves |
|--|-------------|---------------------|--|------------------|
| Section 3: Exploration and Drilling, Sampling Techniques and Data | | | | |
| 3.1 | Exploration | (i) | Describe the data acquisition or exploration techniques and the nature, level of detail, and confidence in the geological data used (i.e. geological observations, remote sensing results, stratigraphy, lithology, structure, alteration, mineralisation, hydrology, geophysical, geochemical, petrography, mineralogy, geochronology, bulk density, potential deleterious or contaminating substances, geotechnical and rock characteristics, moisture content, bulk samples, etc.). Confirm that data sets include all relevant metadata, such as unique sample number, sample mass, collection date, spatial location, etc. The exploration conducted on the Heuningkranz deposit is referenced in section 8 of Appendix A. The 2025 Heuningkranz Mineral Resource estimate is predominantly informed by borehole data. A total of 690 validated boreholes informed the geological model. These comprised 367 fully cored boreholes drilled from surface, 201 hybrid boreholes piloted with percussion drilling to above the high-grade ore and then cored, and 122 full percussion exploration boreholes. In total, 56,808 borehole samples were assayed. Not all of these samples informed the high-grade Mineral Resource estimates as most samples were taken in hanging wall and footwall lithologies to evaluate the medium- and low-grade ore potential of the Heuningkranz deposit, with ferruginised portions in the Heuningkranz deposit's high-grade ore host lithologies being vast. The high-grade Mineral Resource estimates were informed by 5,114 assayed samples, which were composited into 3,060 two-metre samples. | |
| | | (ii) | Identify and comment on the primary data elements (observation and measurements) used for the project and describe the management and verification of these data or the database. This should describe the following relevant processes: acquisition (capture or transfer), validation, integration, control, storage, retrieval and backup processes. It is assumed that data is stored digitally but hand-printed tables with well-organised data and information may also constitute a database. The primary data elements used for the project were the geological logging as per visual observation of the borehole chip samples and the borehole core retrieved during drilling by tertiary qualified geoscientists, and the associated grade (critical grades are %Fe, %SiO₂, %Al₂O₃, K₂O, P, Mn and S) and pulp density data generated during laboratory assaying and test work conducted by the SANAS accredited Anglo American Iron Ore Chemistry Laboratory in Johannesburg, South Africa. Data acquisition is referenced in sections 8.2 and 8.3 of Attachment A. Data capturing and transfer and integration are referenced in section 8.2.5, section 8.2.8.1, section 8.4.1, section 9.2.1 and section 9.3.1 of Appendix A. Validations are referenced in Addendum A of Appendix A (QA/QC) as well as section 8.4.2 (additional mostly relational borehole data validations) of Appendix A. Storage, retrieval and back-up are referenced in section 8.4.1 of Appendix A. | |
| | | (iii) | Acknowledge and appraise data from other parties and reference all data and information used from other sources. No data from other parties were considered in the 2025 Heuningkranz Mineral Resource estimate. | |
| | | (iv) | Clearly distinguish between data and information from the property under discussion and that derived from surrounding properties. No data from surrounding properties informed the 2025 Heuningkranz Mineral Resource estimate. | |
| | | (v) | Describe the survey methods, techniques and expected accuracies of data. Specify the grid system used. Referenced in section 3.1, section 8.2.1.1 and section 8.2.1.2 of Appendix A. | |
| | | (vi) | Discuss whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the estimation procedure(s) and classifications applied. Indexed geometry and grade continuity parameters that were spatially estimated were considered in a scorecard approach to derive a baseline geological confidence classification for the 2025 Heuningkranz Mineral Resource estimates as referenced in section 11 of Appendix A. | |
| | | (vii) | Present representative models and/or maps, cross-sections, or other two- or three-dimensional illustrations of the results, showing location of samples, accurate drill-hole collar positions, downhole surveys, exploration pits, underground workings, relevant geological data, etc. Referenced in section 7.3.1, section 7.3.2, section 8.2.1.1, section 8.2.1.2, section 9.2, section 9.3 and section 10 of Appendix A. | |
| | | (viii) | Report the relationships between mineralisation widths and intercept lengths are particularly important, the geometry of the mineralisation with respect to the drill-hole angle. If it is not known and only the downhole lengths are reported, confirm it with a clear statement to this effect (e.g. downhole length, true width not known). The high-grade ore bodies from which the Mineral Resource estimates were derived are defined by a three-dimensional geological model which correctly positions the ore body dimensions in space in relation to the borehole intersections. | |

SAMREC Table 1 cont.

| Heuningkranz | | Exploration Results | Mineral Resources | Mineral Reserves |
|--|---------------------|---------------------|--|------------------|
| Section 3: Exploration and Drilling, Sampling Techniques and Data cont. | | | | |
| 3.2 | Drilling Techniques | (i) | Present the type of drilling undertaken (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc). Referenced in section 8.2.2 of Appendix A. | |
| | | (ii) | Describe whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, technical studies, mining studies and metallurgical studies. All exploration boreholes were geologically logged from top to bottom regardless of whether core or chip samples were retrieved. Eight geotechnical boreholes that have dedicated geotechnical logging were drilled for the Heuningkranz deposit - geological logging is referenced in section 8.2.3 of Appendix A . Seven large diameter geohydrological boreholes were drilled and equipped to perform pump tests for future geohydrological modelling. The geometallurgical drilling conducted pertains mostly to the ferruginised (medium- and low-grade) mineralisation rather than the high-grade mineralisation from which the Mineral Resources were declared. The limited number of geometallurgical borehole samples that intersected the high-grade ore bodies were geometallurgically logged and sampled for densimetric test work. The level of detail captured by the various logging campaigns does support the declaration of a Mineral Resource for the Heuningkranz deposit. | |
| | | (iii) | Describe whether logging is qualitative or quantitative in nature, and indicate whether core photography (or costean, channel, etc.) was undertaken. Current geological logging as captured in the borehole database for Heuningkranz is qualitative in nature but for the high-grade ore logs, from which the Mineral Resource estimates were derived, all the qualitative logs were validated against the sample assays associated with those logs to verify the correctness of the logs. All cored borehole material was photographed, and is currently in the process of being scanned via an array of hyperspectral scanning equipment. | |
| | | (iv) | Present the total length and percentage of the relevant intersections logged. The total length of the 690 fully (100%) logged exploration boreholes informing the geological or tectono-stratigraphic solids model is 176,445.86 m. | |
| | | (v) | Results of any downhole surveys of the drill hole to be discussed. Referenced in section 8.2.1.2 of Appendix A. | |

SAMREC Table 1 cont.

| Heuningkranz | | Exploration Results | Mineral Resources | Mineral Reserves |
|--|--|---------------------|--|------------------|
| Section 3: Exploration and Drilling, Sampling Techniques and Data cont. | | | | |
| 3.3 | Sample method, collection, capture and storage | (i) | <p>Describe the nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as downhole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</p> <p>Primary sampling of cored boreholes were conducted by cutting the borehole core retrieved from the borehole identified to undergo analyses in half (half portion retained as per the Kumba protocol for future reference) - referenced in section 8.2.4.2 of Appendix A. These samples were validated in terms of their positioning, material recovery, sub-sample representivity and assay accuracy and precision - referenced in Addendum A of Appendix A. Primary sampling of percussion boreholes were not conducted as per the relevant Kumba protocol and can be classified as grab samples per 1 m drilling interval. The subsequent validation of these samples in terms of sample positioning, material recovery, sub-sample representivity and assay accuracy and precision were monitored in the same manner as for cored borehole samples.</p> | |
| | | (ii) | <p>Describe the sampling processes, including sub-sampling stages to maximise representivity of samples. This should include whether sample sizes are appropriate to the grain size of the material being sampled. Indicate whether sample compositing has been applied.</p> <p>The primary sampling process is referenced in section 8.2.4.1 and section 8.2.4.2 of Appendix A.</p> <p>The sub-sampling processes are described in section 8.2.7 of Appendix A.</p> <p>Sample representivity is measured in terms of a nomogram as referenced in section 8.2.7.2 of Appendix A and considered in the geological confidence classification in terms of a spatially estimated Sample Representivity Index as referenced in section 11.2.1 of Appendix A.</p> | |
| | | (iii) | <p>Appropriately describe each data set (e.g. geology, grade, density, quality, diamond breakage, geo-metallurgical characteristics etc.), sample type, sample-size selection and collection methods.</p> <p>The <u>geology data set</u> informing the geological (tectono-stratigraphic) model was retrieved from the qualitative geological logging tables in the borehole database that have been validated against the associated assay information where samples for assaying were taken. The logging was conducted on all material retrieved (various core sizes and chip samples, the latter taken on 1 m intervals) from boreholes, i.e. there are no gaps in geological logging data set. Geological logging were done by describing primary lithology and secondary lithology and the texture according to a specified logging standard - referenced in section 8.2.3 of Appendix A. Internal waste zones thicker than 400 mm were described as separate lithological units. If thinner than 400 mm, they were included in the ore zone and noted as a comment in the description or the secondary lithology tab.</p> <p>The <u>grade data set</u> informing the grade estimation of each of the high-grade ore domains was retrieved from the assay tables in the borehole database, which were validated against the Kumba QA/QC pass/fail criteria. Sample collection methods and sizes are explained in section 3.3(i) of this table and sub-sampling sizes and methods referenced in section 8.2.7.1 of Appendix A. The grades assayed were a standard suite comprising %Fe, %SiO₂, %Al₂O₃, K₂O, P, Mn, BaO, CaO, MgO, Na₂O, TiO₂, V₂O₅ and PbO, all by Wavelength Dispersive X-ray Fluorescence Spectrometer (WD-XRF) on a fused bead generated from a pulp sub-sample at 75 µm top size, which in turn was derived from a coarse sub-sample at a 3 mm top size, which was derived from a primary sample that was dried to a constant mass by heating from room temperature to 105°C. Sulphur content was measured on the -75 µm fraction by combustion and infrared techniques using LECO or ELTRA instrumentation. Loss on ignition was determined by igniting a pulp sub-sample to 1,000°C.</p> <p>The <u>density data set</u> has been derived from the gas pycnometer measurement of a pulp sub-sample of each primary sample submitted for preparation and assaying and was also retrieved from the assay tables in the borehole database.</p> <p>The <u>geometallurgical attribute data set</u> has been retrieved from the geometallurgical tables in the borehole database. Densimetric, geotechnical and refinement geometallurgical test results were obtained for the Heuningkranz deposit - referenced in section 8.5 of Appendix A.</p> | |

SAMREC Table 1 cont.

| Heuningkranz | | Exploration Results | Mineral Resources | Mineral Reserves |
|--|--|---------------------|--|------------------|
| Section 3: Exploration and Drilling, Sampling Techniques and Data cont. | | | | |
| 3.3 | Sample method, collection, capture and storage cont. | (iv) | <p>Report the geometry of the mineralisation with respect to the drill-hole angle. State whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. State if the intersection angle is not known and only the downhole lengths are reported.</p> <p>Although the mineralisation at Heuningkranz is broadly strata bound, on a small or local scale, the strata are structurally deformed by folding and faulting. Most of the boreholes are vertical or subvertical, and very few of the boreholes had a perpendicular intersection with the mineralisation. There will be a sampling bias if one assumes mineralisation is predominantly parallel to bedding planes. The inclined boreholes have partially addressed the issue; however, they are relatively few, as there are operational drill limitations to the inclination angle which will limit the angle of intersection.</p> | |
| | | (v) | <p>Describe retention policy and storage of physical samples (e.g. core, sample reject, etc.)</p> <p>Half-core remnants from all cored borehole intersections have been retained, together with a coarse and pulp duplicate sub-sample for all the samples that were taken from the original core for sample preparation and assaying. For percussion boreholes, no samples were retained except for coarse and pulp duplicate sub-samples that were generated for those percussion chip samples that were taken from the original chip samples retrieved from the boreholes and submitted for sample preparation and assaying.</p> | |
| | | (vi) | <p>Describe the methods used to record and assess core and chip sample recoveries and the results assessed; outline the measures taken to maximise sample recovery and ensure the representative nature of the samples ;and state whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</p> <p>Referenced in section 4.4 of Addendum A of Appendix A.</p> | |
| | | (vii) | <p>If a drill-core sample is taken, state whether it was split or sawn and whether quarter, half or full core was submitted for analysis. If a non-core sample, state whether the sample was riffled, tube sampled, rotary split, etc. and whether it was sampled wet or dry.</p> <p>Primary core samples were taken after the core was sawn in half and therefore consisted of half core samples (field duplicates consisted of quarter core) - referenced in section 8.2.4.2 of Appendix A. Percussion samples basically comprised of grab samples scooped from the percussion chip sample mount that was emptied onto the ground after being collected after each 1 m drilling interval from a pie-shaped pan under the drill rig collar shroud - referenced in section 8.2.4.1 of Appendix A.</p> | |

SAMREC Table 1 cont.

| Heuningkranz | | Exploration Results | Mineral Resources | Mineral Reserves |
|--|---------------------------------|---------------------|--|------------------|
| Section 3: Exploration and Drilling, Sampling Techniques and Data cont. | | | | |
| 3.4 | Sample Preparation and Analysis | (i) | <p>Identify the laboratory(s) and state the accreditation status and Registration Number of the laboratory or provide a statement that the laboratories are not accredited.</p> <p>All the exploration borehole sample preparation and assaying was conducted by the Anglo American Iron Ore Chemistry Laboratory ((Company registration number: 1921/0067130/06) at address: 8 Schonland Street, Theta, Johannesburg, 2025. The Chemistry Laboratory is accredited in accordance with the recognised International Standard ISO/IEC 17025:2005 by the South African National Accreditation System (SANAS) under the Facility Accreditation Number T0051 (valid until 30 April 2026).</p> <p>The geometallurgical sample preparation and densimetric test work were conducted by the Anglo American Metallurgical Laboratory in Johannesburg (RSA), which is not accredited.</p> <p>The geotechnical test work was conducted by Rocklab, a division of Soillab (part of the SMEC Group), based in Pretoria (RSA). Although Soillab is a SANAS-accredited facility for various soil and gravel tests, the Rocklab division is not accredited.</p> <p>Geometallurgical refinement testing was conducted by the Anglo American Value-in-Use Testing Facility in Pretoria (RSA). The laboratory is not an accredited facility.</p> | |
| | | (ii) | <p>Identify the analytical method. Discuss the nature, quality and appropriateness of the assaying and laboratory processes and procedures used and whether the technique is considered partial or total.</p> <p>The analytical methods applied as a routine on the pulp sub-samples prepared from the primary (half-core) Heuningkranz exploration borehole samples were:</p> <ul style="list-style-type: none"> • Loss on ignition (LOI) determination by Thermogravimetric Analyser • %Fe, %SiO₂, %Al₂O₃, K₂O, P, Mn, BaO, CaO, MgO, Na₂O, TiO₂, V₂O₅ and PbO by fusion (in an electric fluxer from 650°C to 1,150°C) of fixed mass of pulp sub-sample with chemicals in fixed ratio according to a fixed "recipe", with fused bead measured on a calibrated WD-XRF. • Sulphur was determined on the -75 µm fraction by combustion and infrared measurements using LECO or ELTRA instrumentation • Relative Density determination using Gas Pycnometer Analyser <p>The suite of elements analysed and reported from the routine chemical analyses also includes Na₂O, V₂O₅ and PbO in addition to what the Laboratory has been accredited for. This is not whole rock chemistry, in other words the technique is considered partial, but whole rock analyses is not a standard in the iron ore mining industry because the cost outweighs the benefit.</p> | |
| | | (iii) | <p>Describe the process and method used for sample preparation, sub-sampling and size reduction, and likelihood of inadequate or non-representative samples (i.e. improper size reduction, contamination, screen sizes, granulometry, mass balance, etc.)</p> <p>The sample preparation process followed to convert the primary half-core sample to a pulp sub-sample that is fused for XRF assaying is referenced in detail in section 8.2.5 in Appendix A. The primary sample is crushed to a top size of 3 mm and rotary split to obtain a coarse sub-sample, which in turn is pulverised to a top size of 75 µm and rotary split to obtain a pulp sub-sample, which is then fused into a bead for XRF assaying.</p> | |

SAMREC Table 1 cont.

| Heuningkranz | | Exploration Results | Mineral Resources | Mineral Reserves |
|--|------------------------------------|---------------------|---|------------------|
| Section 3: Exploration and Drilling, Sampling Techniques and Data cont. | | | | |
| 3.5 | Sampling Governance | (i) | <p>Discuss the governance of the sampling campaign and process, to ensure quality and representivity of samples and data, such as sample recovery, high grading, selective losses or contamination, core/hole diameter, internal and external QA/QC, and any other factors that may have resulted in or identified sample bias.</p> <p>The QA/QC programme to monitor the complete sampling value chain is referenced in Addendum A of Appendix A. In addition, sample representivity is also considered as a key parameter in the scorecard geological confidence classification process as referenced in section 11.2.1 of Appendix A.</p> | |
| | | (ii) | <p>Describe the measures taken to ensure sample security and the chain of custody.</p> <p>Chain of custody is referenced in section 5 of Addendum A of Appendix A.</p> | |
| | | (iii) | <p>Describe the validation procedures used to ensure the integrity of the data, e.g. transcription, input or other errors, between its initial collection and its future use for modelling (e.g. geology, grade, density, etc.).</p> <p>Borehole data validation is conducted in three stages i.e. 1) after export from the borehole database at a certain cut-off date by means of validation objects in the acQuire borehole database (referenced in section 8.4.2 of Appendix A); 2) before and during solids modelling, which basically involves a visual validation of boreholes (referenced in section 9.2.1 of Appendix A); and 3) a high-level raw borehole sample data evaluation (referenced in section 9.3.1 of Appendix A) and subsequent detailed exploratory data analyses validation phase of borehole sample data to identify outliers, etc. before grade estimation is conducted (referenced in section 9.3.3 of Appendix A).</p> | |
| | | (iv) | <p>Describe the audit process and frequency (including dates of these audits) and disclose any material risks identified.</p> <p>Kumba has an audit procedure where exploration and ore control borehole sampling and laboratory sample preparation and assaying are independently audited for each site at least once every three years. No Heuningkranz-specific sampling audits were conducted other than the spot checks conducted by the 2025 external audit.</p> | |
| 3.6 | Quality Control/ Quality Assurance | (i) | <p>Demonstrate that adequate field sampling process verification techniques (QA/QC) have been applied, e.g. the level of duplicates, blanks, reference material standards, process audits, analysis, etc. If indirect methods of measurement were used (e.g. geophysical methods), these should be described, with attention given to the confidence of interpretation.</p> <p>Referenced in Addendum A of Appendix A. As a high-level summary: Kumba has discontinued the practice of field duplicates (quarter core samples), as the quartering of core renders samples non-representative. Kumba has also been unable to define a true (not affecting the assaying of the following critical grades Fe, SiO₂, Al₂O₃, K₂O, P, Mn and S in any way) blank for iron ore QC purposes and has asked industry experts to provide a true inert blank example for Kumba that can be used cost effectively but could not yet identify a complete inert solution. Certified reference material standards were inserted at a 5% frequency (1 in 20). In addition, 5% external pulp duplicate check sample are used as a QC performance measure where the primary laboratory is measured against an umpire laboratory (the Bureau Veritas (BV) Laboratory in Perth, Australia - Nata Accredited for Iron Ores and a member of the ISO MN-002-02 Chemical Analysis Committee and AQIS registered). Kumba also performs QC checks on sample recoveries and sample preparation (the latter checked by coarse and pulp top-size verifications, coarse and pulp sample split mass verifications and coarse and pulp sub-sample assay verifications) - referenced in Addendum A of Appendix A.</p> | |

SAMREC Table 1 cont.

| Heuningkranz | | Exploration Results | Mineral Resources | Mineral Reserves |
|--|-----------------------------------|---------------------|--|------------------|
| Section 3: Exploration and Drilling, Sampling Techniques and Data cont. | | | | |
| 3.7 | Bulk Density | (i) | Describe the method of bulk density determination with reference to the frequency of measurements, the size, nature and representativeness of the samples. No bulk density determinations were conducted for Heuningkranz. | |
| | | (ii) | If target tonnage ranges are reported, state the preliminary estimates or basis of assumptions made for bulk density. Not applicable as Mineral Resources have been declared. | |
| | | (iii) | Discuss the representivity of bulk density samples of the material for which a grade range is reported. No bulk density sample test work was conducted. | |
| | | (iv) | Discuss the adequacy of the methods of bulk density determination for bulk material with special reference to accounting for void spaces (vugs, porosity, etc.), moisture and differences between rock and alteration zones within the deposit. No bulk density test work was conducted. Routine pulp sub-sample density test work was conducted by means of gas pycnometry. It is acknowledged that this method provides a solid density result, which overestimates bulk density. Large diameter geometallurgical core borehole sample Archimedes bulk density test work conducted at the Kapstevl South deposit at Kolomela indicates that: <ul style="list-style-type: none"> • Pulp density overestimates <i>in situ</i> bulk density for Conglomeratic ore by ~4% • Pulp density overestimates <i>in situ</i> bulk density for Brecciated ore by ~10% • Pulp density overestimates <i>in situ</i> bulk density for Laminated ore by ~8% • Pulp density overestimates <i>in situ</i> bulk density for Massive ore by ~4% by comparing the mean of the bulk density dataset results by the mean of the pulp density dataset results retrieved from the large diameter cored borehole samples This is indicative of a possible ~5 Mt overestimation of the Heuningkranz Mineral Resources, to be validated with future site-specific borehole sample Archimedes test work. | |
| 3.8 | Bulk-sampling and/or trial-mining | (i) | Indicate the location of individual samples (including map). No bulk samples have been taken. | |
| | | (ii) | Describe the size of samples, spacing/density of samples recovered and whether sample sizes and distribution are appropriate to the grain size of the material being sampled. No bulk samples have been taken. | |
| | | (iii) | Describe the method of mining and treatment. No bulk samples have been taken. | |
| | | (iv) | Indicate the degree to which the samples are representative of the various types and styles of mineralisation and the mineral deposit as a whole. No bulk samples have been taken. | |

SAMREC Table 1 cont.

| Heuningkranz | | Exploration Results | Mineral Resources | Mineral Reserves |
|---|-------------------------------------|---------------------|---|------------------|
| Section 4: Estimation and Reporting of Exploration Results and Mineral Resources | | | | |
| 4.1 | Geological model and interpretation | (i) | <p>Describe the geological model, construction technique and assumptions that form the basis for the Exploration Results or Mineral Resource estimate. Discuss the sufficiency of data density to assure continuity of mineralisation and geology and provide an adequate basis for the estimation and classification procedures applied.</p> <p>An implicit model was compiled to define the Heuningkranz tectono-stratigraphy in three-dimensional space. The solids model construction and assumptions are referenced in section 9.2.2 of Appendix A.</p> <p>The grade estimation and block modelling are respectively referenced in section 9.3.4.1, section 9.3.4.2, section 9.3.4.3 and section 9.3.4.4 of Appendix A as well as section 10.1 of Appendix A.</p> <p>The sufficiency of data density to assure continuity of mineralisation and geology and provide an adequate basis for the estimation and classification procedures applied was evaluated as a key parameter using a scorecard approach to geological confidence classification as well as part of the CP override (downgrading of the scorecard confidence classification) as referenced in section 11 of Appendix A.</p> | |
| | | (ii) | <p>Describe the nature, detail and reliability of geological information with which lithological, structural, mineralogical, alteration or other geological, geotechnical and geometallurgical characteristics were recorded.</p> <p>Lithological data were obtained from the geological logging of borehole core and are represented by a total of 176 km borehole length intersecting the deposit.</p> <p>Structural interpretations were informed by geological borehole logs as well as a combined gravity and magnetic ground survey on a 50 m x 50 m station spacing of the Heuningkranz mining right portion. Furthermore, a regional electromagnetic airborne survey was also conducted. All of the latter informed the inference of primary lineaments. Not all these lineaments were later modelled as faults within the geological solids model, as most have no associated displacement when checked against borehole data. Three structural studies have been completed on the Heuningkranz deposit.</p> <ul style="list-style-type: none"> The first study by Dr Ian Basson at Tect Geological Consulting utilised regional geophysical data and early borehole information to compile a baseline structural model, which was used in the construction of the 2012, 3D-resource model. An update of the model with additional borehole data was undertaken by Tect Geological Consulting in 2013. The third study in 2016 by Tect Geological Consulting produced the latest, official structural interpretation. It included the geophysical data collected during the Spectrum airborne electromagnetic survey. This was combined with an updated genetic model for mineralisation. The product of this study (a sub-surface, structural framework of the ore deposit) was built into the current Heuningkranz geological solids model. <p>Limited mineralogical work was performed on the high-grade ore except mineralogical liberation analysis on the various densimetric size fractions conducted during densimetric test work.</p> <p>Alteration does not play a significant role in the Mineral Resource estimate and no alteration has been modelled in the solids model.</p> <p>Geotechnical borehole data was generated for the project but is not yet sufficient to inform a rock-mass model.</p> <p>Geometallurgical densimetric, geotechnical and refinement test work has been conducted to a level to derive average geotechnical and refinement characterisation values for ore, as well as roof and floor lithologies. Beneficiation algorithms were derived from the densimetric test work (although these are not applicable as the high-grade ore will be mined as DSO) - referenced in section 8.5 of Appendix A.</p> | |

SAMREC Table 1 cont.

| Heuningkranz | | Exploration Results | Mineral Resources | Mineral Reserves |
|---|---|---------------------|---|------------------|
| Section 4: Estimation and Reporting of Exploration Results and Mineral Resources cont. | | | | |
| 4.1 | Geological model and interpretation cont. | (iii) | Describe any obvious geological, mining, metallurgical, environmental, social, infrastructural, legal and economic factors that could have a significant effect on the prospects of any possible exploration target or deposit. Not applicable as Mineral Resources have been declared for the Heuningkranz deposit. | |
| | | (iv) | Discuss all known geological data that could materially influence the estimated quantity and quality of the Mineral Resource. The use of pulp density laboratory test result to inform <i>in situ</i> densities can result in an overestimation (currently foreseen to be in the order of 5 Mt) of the Mineral Resource tonnage estimates. | |
| | | (v) | Discuss whether consideration was given to alternative interpretations or models and their possible effect (or potential risk), if any, on the Mineral Resource estimate. Although the 2023 geological solids model informing the resource model is an update of the 2018 baseline solids model, Kumba is of the opinion that this model can be further refined to incorporate lessons learnt subsequent to 2023 in terms of modelling workflows to resemble lenticular shaped ore interpretations. Because of this, the CP has downgraded all Measured Mineral Resources to Indicated, i.e. no Measured Mineral Resources are stated for Heuningkranz at this stage. | |
| | | (vi) | Discuss geological discounts (e.g. magnitude, per reef, domain, etc.), applied in the model, whether applied to mineralised and/or unmineralised material (e.g. potholes, faults, dykes, etc.). No discounts have been applied and Mineral Resources have been declared in its <i>in situ</i> state. | |

SAMREC Table 1 cont.

| Heuningkranz | | Exploration Results | Mineral Resources | Mineral Reserves |
|---|-------------------------------------|---------------------|--|------------------|
| Section 4: Estimation and Reporting of Exploration Results and Mineral Resources cont. | | | | |
| 4.2 | Estimation and modelling techniques | (i) | Describe in detail the estimation techniques and assumptions used to determine the grade and tonnage ranges. Not applicable as Mineral Resources have been declared for the Heuningkranz deposit. | |
| | | (ii) | Discuss the nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values (cutting or capping), compositing (including by length and/or density), domaining, sample spacing, estimation unit size (block size), selective mining units, interpolation parameters and maximum distance of extrapolation from data points. The appropriateness of the estimation techniques were evaluated by an independent external due diligence audit by Cube Consulting (Australia). The only significant finding was related to the geological confidence classification, which was addressed by downgrading the scorecard geological confidence output using a quantitative spatial benchmarking process considering borehole sample spacing before the 2025 Mineral Resource estimate was derived. Exploratory data analyses revealed that: <ul style="list-style-type: none"> • three samples had a length > 3 m - the assays of these samples were set to nil • extreme BaO, Mn and S grade values were identified and capped to mitigate the risk of overestimating them within the geological block model - the number of samples omitted from the estimation due to capping is referenced in Table 41 of Appendix A • 53 density results plotting below a 10% error limit (using Fe-RD correlation plot) were removed from dataset informing the estimation • five high-grade ore samples with total oxide values above 102% were ignored for estimation All cells in the geological block model that were populated during a second Kriging run, or that were populated with default grades, were classified as Inferred extrapolated. | |
| | | (iii) | Describe assumptions and justification of correlations made between variables. Multivariate statistical analysis showed good correlation between Fe and SiO ₂ (strong negative correlation) and Fe and RD (strong positive correlation). The strong Fe-RD correlation was used to replace the 53 laboratory density results removed during the exploratory data outlier identification process. | |

SAMREC Table 1 cont.

| Heuningkranz | | Exploration Results | Mineral Resources | Mineral Reserves |
|---|---|---------------------|---|------------------|
| Section 4: Estimation and Reporting of Exploration Results and Mineral Resources cont. | | | | |
| 4.2 | Estimation and modelling techniques cont. | (iv) | <p>Provide details of any relevant specialised computer program (software) used, with the version number, together with the estimation parameters used.</p> <p><i>Isatis Neo (version 2025.1) software was used to conduct the spatial grade and density estimation. The block model was generated in Datamine - Studio RM (64 bit) Version 1.12.12.0 software. The estimation parameters contained in each cell in the final block model are:</i></p> <ul style="list-style-type: none"> • zcode (cell position reference) • est_fe • est_sio2 • est_al2o3 • est_s • est_p • est_k2o • est_mn • est_ba • class (material class to be used in future ore control processes) • rescat (geological confidence class) • zone (lithological domain) | |
| | | (v) | <p>State the processes of checking and validation, the comparison of model information to sample data and use of reconciliation data, and whether the Mineral Resource estimate takes account of such information.</p> <p>The Mineral Resource estimation validation is referenced in Figure 45 of Appendix A and the specific grade estimation validation is referenced in section 9.3.4.5 of Appendix A.</p> | |
| | | (vi) | <p>Describe the assumptions made regarding the estimation of any co-products, by-products or deleterious elements.</p> <p>The estimation of deleterious elements SiO₂, Al₂O₃, K₂O, P, Mn and S are compulsory for all Kumba Mineral Resource estimates. These estimates are based on the variographic modelling of the borehole sample assays intersecting the various high-grade ore domains, and were spatially estimated through Ordinary Kriging using the search parameters derived by Quantitative Kriging Neighbourhood analysis of Fe data (to retain the total oxide balance as best as possible).</p> | |

SAMREC Table 1 cont.

| Heuningkranz | | Exploration Results | Mineral Resources | Mineral Reserves |
|---|---|---------------------|--|------------------|
| Section 4: Estimation and Reporting of Exploration Results and Mineral Resources cont. | | | | |
| 4.3 | Reasonable prospects for eventual economic extraction | (i) | <p>Disclose and discuss the geological parameters. These would include (but not be limited to) volume/tonnage, grade and value / quality estimates, cut-off grades, strip ratios, upper- and lower-screen sizes.</p> <p>Volume/tonnage: The <i>in situ</i> Mineral Resources (tonnages and associated grades) are referenced in Table 62 (per confidence class) and Table 63 (per high-grade ore lithology) in section 12.8 of Appendix A.</p> <p>Cut-off grades: The Mineral Resource estimate has been determined at a 61.0% Fe cut-off grade, i.e. to spatially isolate only the <i>in situ</i> high-grade ore portion of the Heuningkranz mineral endowment, to be considered for mining and delivering of run-of-mine to the existing Kolomela DSO crushing and screening plant.</p> <p>Strip ratios: The Mineral Resource estimate is constrained within a pit design derived from a revenue factor 1 resource shell, which in turn has been derived during a pit optimisation exercise based on a 10 m (X) x 10 m (Y) x 5 m (Z) mining block model derived from the 2025 5 m (X) x 5 m (Y) x 5 m (Z) geological block model. The price and cost assumptions are referenced in section 12.4 of Appendix A - please note that Kumba does not disclose the exact price and cost figures applied. No strip ratio has been declared as no Ore Reserves have been declared for the Heuningkranz deposit.</p> <p>Upper and Lower screen sizes. The planned lump to fines ore ratio assumed for the Heuningkranz deposit was 55 to 45%, with lump ore assumed to have a top size of 31.5 mm and a bottom size of 6.3 mm and fines ore assumed to have a top size of 6.3 mm and a bottom size of 0.15 mm.</p> | |
| | | (ii) | <p>Disclose and discuss the engineering parameters. These would include mining method, dilution, processing, geotechnical, geohydrology and metallurgical parameters.</p> <p>Mining method: Open pit mining method with 10 m (X) x 10 m (Y) x 5 m (Z) selective mining unit assumed for pit optimisation purposes to derive a resource shell - please consider that no Ore Reserves have been declared for the Heuningkranz deposit. The mining cost input for the pit optimisation assumed owner mining except for buffer and pre-split drill and blast. It furthermore assumed waste to be mined in 10 m flitches using Liebherr 996s (600 t shovels) and Komatsu 830E for hauling, and ore to be mined in 5 m flitches using Komatsu PC3000s (250 t Backhoes) and Komatsu 785 for hauling, as well as support fleet modelling as per the Kolomela existing support fleet.</p> <p>Dilution: Dilution and mining loss were considered during the up-blocking of the resource model [5 m (X) x 5 m (Y) x 5 m (Z)] to the mining model [10 m (X) x 10 m (Y) x 5 m (Z)], the latter used for pit optimisation purposes to derive a resource shell, but these modifying factors are not disclosed as no Ore Reserves have been declared for the Heuningkranz deposit.</p> <p>Processing: It has been assumed that all the Heuningkranz run-of-mine will be delivered to the existing Kolomela DSO crushing and screening plant. The same beneficiation algorithms used to derive the 2025 Kolomela Saleable Product have been applied to derive the Heuningkranz lump and fine Saleable Product to enable pit optimisation to determine a resource shell. The beneficiation algorithm detail is not disclosed as no Saleable Product has been declared for the Heuningkranz deposit. The Saleable Product has been assumed to be loaded onto the rail via the existing Kolomela loadout facility. It has furthermore been assumed that tailings and slimes will be accommodated by existing tailings and slimes facilities, assuming a 99.8% yield.</p> <p>Geotechnical: For the pit optimisation exercise to derive the resource shell, site-specific geotechnical slope parameter inputs were used based on geotechnical drilling conducted at Heuningkranz. The information is however not disclosed at this stage as no Ore Reserves has been declared for the Heuningkranz deposit.</p> <p>Geohydrology: Based on an initial review of the hydrogeological model of the Heuningkranz deposit, capital expenditure of US\$30 million has been assumed to establish dewatering infrastructure.</p> <p>Metallurgical: Apart from empirically derived lump and fine beneficiation algorithms (yield and product grades) to convert planned run-of-mine to planned Saleable Product through the DSO plant, no other assumptions were applied to derive Saleable Product for pit optimisation purposes to derive a resource shell.</p> | |
| | | (iii) | <p>Disclose and discuss the infrastructure parameters including, but not limited to, power, water, site-access.</p> <p>Although financial provision has been made in the resource development plan's mine planning schedules for further exploration and studies, access roads and civils, workshop, administration, security and dewatering, the full details will only be available once the pre-feasibility project study phase has been concluded.</p> | |

SAMREC Table 1 cont.

| Heuningkranz | | Exploration Results | Mineral Resources | Mineral Reserves | | |
|---|---|---------------------|--|------------------|--|--|
| Section 4: Estimation and Reporting of Exploration Results and Mineral Resources cont. | | | | | | |
| 4.3 | Reasonable prospects for eventual economic extraction cont. | (iv) | Disclose and discuss the legal, governmental, permitting and other statutory parameters. No "modifications" applied in terms of legal, governmental, permitting and other statutory parameters, as all assumed to be in place (see section 1.5 of SAMREC Table 1 report) to declare Mineral Resources as stated. | | | |
| | | (v) | Disclose and discuss the environmental and social (or community) parameters. No "modifications" applied in terms of social and community parameters, as all assumed to be in place through the latest Kolomela environmental as well as social and labour plans as per the existing mining right to declare Mineral Resources as stated. | | | |
| | | (vi) | Disclose and discuss the marketing parameters. The following marketing Saleable Product grade specifications have been assumed for the Heuningkranz deposit: <ul style="list-style-type: none"> • Standard Lump grade specifications: Fe - 64.2%; SiO₂ - 5.8%; Al₂O₃ - 1.20%; K₂O - 0.17%; P - 0.060%; Mn - 0.080% and S - 0.030%. In terms of size distribution, 4% oversize (>31.5 mm) and 7% undersize (<6.3 mm) are allowed. • Standard Fines grade specifications: Fe - 63.5%; SiO₂ - 6.0%; Al₂O₃ - 1.80%; K₂O - 0.24%; P - 0.075%; Mn - 0.080% and S - 0.025%. In terms of size distribution, 22% oversize (>6.3 mm) and 4% undersize (<0.15 mm) are allowed. Based on the above, prices and, where applicable, penalties have been assigned to Saleable Product tonnages to derive the resource shell during pit optimisation. | | | |
| | | (vii) | Disclose and discuss the economic assumptions and parameters. These factors will include, but are not limited to, commodity prices and potential capital and operating costs. Commodity pricing and operating costs are referenced in section 12.4 of Appendix A. Please note that Kumba prefers not to disclose specific price and cost assumptions, but rather state the manner in which they were derived. In terms of capital, the following high-level assumptions were made and used as input to derive the 1.0 revenue factor resource shell: <ul style="list-style-type: none"> • Further exploration and studies (US\$25 million) • Access roads and civils (US\$50 million) • Workshop (US\$100 million) • Administration and security (US\$25 million) • Dewatering (US\$30 million) It has been assumed that the existing Kolomela mining equipment fleet is utilised at Heuningkranz. | | | |
| | | (viii) | Discuss any material risks The material risks are referenced in section 13 of Appendix A. | | | |
| | | (ix) | Discuss the parameters used to support the concept of "eventual" Referenced in section 12.4 of Appendix A. | | | |
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SAMREC Table 1 cont.

| | | | |
|---------------------|----------------------------|--------------------------|-------------------------|
| Heuningkranz | Exploration Results | Mineral Resources | Mineral Reserves |
|---------------------|----------------------------|--------------------------|-------------------------|

Section 4: Estimation and Reporting of Exploration Results and Mineral Resources cont.

| | | | |
|-----|-------------------------|-----|---|
| 4.4 | Classification Criteria | (i) | <p>Describe criteria and methods used as the basis for the classification of the Mineral Resources into varying confidence categories.</p> <p>The Heuningkranz geological confidence classification is referenced in section 11 of Appendix A.</p> |
|-----|-------------------------|-----|---|

| | | | |
|-----|-----------|-----|--|
| 4.5 | Reporting | (i) | <p>Discuss the reported low- and high-grades and widths together with their spatial locations to avoid misleading the reporting of Exploration Results, Mineral Resources or Mineral Reserves.</p> <p>The 75.4 Mt @ average 65.1% Fe Mineral Resources declared for the Heuningkranz deposit only includes high-grade ore at a cut-off grade of 61.0% Fe. No Exploration Results, medium- and low-grade Mineral Resources or Mineral Reserves have been declared for the Heuningkranz deposit. The high-grade Mineral Resources as declared are depicted in the figure below:</p> <p>These images are more clearly referenced in section 7.3.1 and section 7.3.2 of Appendix A.</p> |
|-----|-----------|-----|--|

SAMREC Table 1 cont.

| Heuningkranz | | Exploration Results | Mineral Resources | Mineral Reserves |
|---|-----------------|---------------------|--|------------------|
| Section 4: Estimation and Reporting of Exploration Results and Mineral Resources cont. | | | | |
| 4.5 | Reporting cont. | (ii) | Discuss whether the reported grades are regional averages or if they are selected individual samples taken from the property under discussion. The Mineral Resource grades reported are average estimated grades, which have been derived through Ordinary Kriging of the composited borehole sample grades intersecting the modelled high-grade ore domains. Where sample data was sparse, it has been derived by Simple Kriging. | |
| | | (iii) | State assumptions regarding mining methods, infrastructure, metallurgy, environmental and social parameters. State and discuss where no mining-related assumptions have been made. Not applicable as Mineral Resources have been declared for the Heuningkranz deposit. | |
| | | (iv) | State the specific quantities and grades or qualities, which are being reported in ranges and/or widths, and explain the basis of the reporting. Not applicable as Mineral Resources have been declared for the Heuningkranz deposit. | |

SAMREC Table 1 cont.

| Heuningkranz | | Exploration Results | Mineral Resources | Mineral Reserves |
|---|--|--|--|------------------|
| Section 4: Estimation and Reporting of Exploration Results and Mineral Resources cont. | | | | |
| 4.5 | Reporting cont. | (v) | Present the detail, e.g. open pit, underground, residue stockpile, remnants, tailings, and existing pillars or other sources in the Mineral Resource statement. | |
| | | | All of the Mineral Resources declared (see table in "Prelude" section of this report) comprise <i>in situ</i> high-grade Mineral Resources occurring within a revenue factor 1 resource shell. No other sources (underground, residue stockpile, remnants, tailings or pillars) of Mineral Resources exist for the Heuningkranz deposit. | |
| | | (vi) | Present a reconciliation with any previous Mineral Resource estimates. Where appropriate, report and comment on any historical trends (e.g. global bias). | |
| | | | No previous Mineral Resources have been declared for the Heuningkranz deposit. | |
| | | (vii) | Present the defined reference point for the tonnages and grades reported as Mineral Resources. State the reference point if the point is where the run-of-mine material is delivered to the processing plant. It is important that, in all situations where the reference point is different, such as for a saleable product, a clarifying statement is included to ensure that the reader is fully informed as to what is being reported. | |
| | | Mineral Resources are reported <i>in situ</i> on a dry basis and represent that portion of the mineralisation: <ul style="list-style-type: none"> that has been spatially defined by a 3D geological model primarily informed by boreholes with assayed samples intersecting the ore portions declared as Mineral Resources for which the confidence in the tonnage and grade estimates has been spatially classified (Measured, Indicated, Inferred and Inferred extrapolated) in the same 3D model in terms of geological and grade continuity that is constrained to occur within a spatially defined revenue factor 1 resource shell (derived during pit optimisation) to demonstrate RPEEE that is reported above a specified cut-off that considers the beneficiation potential of the ore | | |
| (viii) | If the CP is relying on a report, opinion, or statement of another expert who is not a CP, disclose the date, title, and author of the report, opinion, or statement, the qualifications of the other expert and why it is reasonable for the CP to rely on the other expert, any significant risks and any steps the CP took to verify the information provided. | | | |
| | The CP relied on a report compiled by another expert. The report title is "HEUNINGKRAZ DEPOSIT - Mineral Resource Statement" and was compiled on 31 December 2025 by Mr MD Carney [Qualification - BSc Hons Geology, University of Natal, 1984; Professional membership: a) South African Council for Natural Scientific Professions (SACNASP) – Registered Natural Scientist (Reg no: 400096/99) and b) a member of the Geological Society of South Africa (Membership no: 55402); relevant experience - 20 years]. Mr Carney was consulted by Kumba Iron Ore to compile the Heuningkranz Mineral Resource Statement on behalf of Mr V Combrink, the CP for the Kolomela Mineral Resources, including the Heuningkranz Mineral Resources, because of his previous work experience at Kolomela as an Exploration Geologist and Technical Services Manager. | | | |
| | The CP is a full-time employee of Kumba Iron Ore. Mr Combrink has worked on the Kolomela site for the past 10 years as a Resource Geologist. During this period, he worked specifically on the Heuningkranz deposit in 2016. He was responsible for core logging and sampling on site and the compilation of the QA/QC report. | | | |
| | Mr Combrink reviewed the borehole data extraction for the 2025 geological model update by means of independently verifying data using a <i>PowerBI</i> dashboard. He was furthermore involved in the peer reviews of all the solids models and geological block models, as well as the geological confidence classification informing the 2025 Mineral Resource estimation. Mr Combrink conducted the reporting himself using <i>DataMine™</i> software and verifying the latter with RMSPTM python scripts. As the CP, he arranged and attended a session to identify and rank the risks associated with the 2025 Heuningkranz Mineral Resources. | | | |
| (ix) | State the basis of equivalent metal formulae, if applied. | | | |
| | Not applied. | | | |

SAMREC Table 1 cont.

| Heuningkranz | | Exploration Results | Mineral Resources | Mineral Reserves |
|-------------------------------------|---------------|---------------------|---|---|
| Section 5: Technical Studies | | | | |
| 5.1 | Introduction | (i) | Technical Studies are not applicable to Exploration Results | State the level of study – whether scoping, prefeasibility, feasibility or ongoing Life-of-Mine |
| | | (ii) | | State the level of study – whether prefeasibility, feasibility or ongoing Life-of-Mine. The Code requires that a study at least to pre-feasibility level has been undertaken to convert Mineral Resource to Mineral Reserve. Such studies will have been carried out and will include a mine plan or production schedule that is technically achievable and economically viable, and that all Modifying Factors have been considered. Provide a summary table of the Modifying Factors used to convert the Mineral Resource to Mineral Reserve for pre-feasibility, feasibility or ongoing Life-of-Mine studies. |
| | | | | Scoping study (In-house referred to as resource development plan) |
| | | | | Not applicable as Ore Reserves have not been declared for the Heuningkranz deposit. |
| 5.2 | Mining design | (i) | Technical Studies are not applicable to Exploration Results | State assumptions regarding mining methods and parameters when estimating Mineral Resources or explain where no mining assumptions have been made. |
| | | (ii) | | State and justify all modifying factors and assumptions made regarding mining methods, minimum mining dimensions (or pit shell) and internal and, if applicable, external mining dilution and mining losses used for the techno-economic study and signed off, such as mining method, mine design criteria, infrastructure, capacities, production schedule, mining efficiencies, grade control, geotechnical and hydrological considerations, closure plans, and personnel requirements. |
| | | (iii) | | State what mineral resource models have been used in the study. |
| | | | | No mining assumptions have been made other than that explained in section 4.3(ii) of the SAMREC Table 1 report. |
| | | | | Not applicable as Ore Reserves have not been declared for the Heuningkranz deposit. |
| | | | | Not applicable as Ore Reserves have not been declared for the Heuningkranz deposit. |

SAMREC Table 1 cont.

| Heuningkranz | | Exploration Results | Mineral Resources | Mineral Reserves |
|---|-----------------------------|---------------------|---|---|
| Section 5: Technical Studies cont. | | | | |
| 5.2 | Mining design cont. | (iv) | Technical Studies are not applicable to Exploration Results | <p>Explain the basis of (the adopted) cut-off grade(s) or quality parameters applied. Include metal equivalents if relevant</p> <p>Not applicable as Ore Reserves have not been declared for the Heuningkranz deposit.</p> |
| | | (v) | | <p>Description and justification of mining method(s) to be used.</p> <p>Not applicable as Ore Reserves have not been declared for the Heuningkranz deposit.</p> |
| | | (vi) | | <p>For open-pit mines, include a discussion of pit slopes, slope stability, and strip ratio.</p> <p>Not applicable as Ore Reserves have not been declared for the Heuningkranz deposit.</p> |
| | | (vii) | | <p>For underground mines, discussion of mining method, geotechnical considerations, mine design characteristics, and ventilation/cooling requirements.</p> <p>Not applicable as Ore Reserves have not been declared for the Heuningkranz deposit.</p> |
| | | (viii) | | <p>Discussion of mining rate, equipment selected, grade control methods, geotechnical and hydrogeological considerations, health and safety of the workforce, staffing requirements, dilution, and recovery.</p> <p>Not applicable as Ore Reserves have not been declared for the Heuningkranz deposit.</p> |
| | | (ix) | | <p>State the optimisation methods used in planning, list of constraints (practicality, plant, access, exposed Mineral Reserves, stripped Mineral Reserves, bottlenecks, draw control).</p> <p>Not applicable as Ore Reserves have not been declared for the Heuningkranz deposit.</p> |
| 5.3 | Metallurgical and test work | (i) | Technical Studies are not applicable to Exploration Results | <p>Discuss the source of the sample and the techniques to obtain the sample, laboratory and metallurgical testing techniques.</p> <p>Not applicable as Ore Reserves have not been declared for the Heuningkranz deposit.</p> |
| | | (ii) | | <p>Explain the basis for assumptions or predictions regarding metallurgical amenability and any preliminary mineralogical test work already carried out.</p> <p>Not applicable as Ore Reserves have not been declared for the Heuningkranz deposit.</p> |

SAMREC Table 1 cont.

| Heuningkranz | | Exploration Results | Mineral Resources | Mineral Reserves | |
|---|-----------------------------------|---|---|---|--|
| Section 5: Technical Studies cont. | | | | | |
| 5.3 | Metallurgical and Test work cont. | Technical Studies are not applicable to Exploration Results | <p>Discuss the possible processing methods and any processing factors that could have a material effect on the likelihood of eventual economic extraction. Discuss the appropriateness of the processing methods to the style of mineralisation.</p> <p>During the pit optimisation process, the mining block model <i>in situ</i> high-grade ore, as defined at a 10 m (X) x 10 m (Y) x 5 m (Z) selective mining unit resolution, has been converted to Saleable Product, applying the same empirically calculated yield and product grade beneficiation algorithms, which have demonstrated performance at the Kolomela DSO crushing and screening plant, and have been applied to derive the Kolomela Saleable Product estimate for 2025. This provided lump and fine Saleable Product estimates for the Heuningkranz deposit to which pricing and costing could be assigned to derive a revenue factor 1 resource shell to spatially constrain the high-grade mineralisation in terms of reasonable prospects for eventual economic extraction.</p> <p>The Kolomela DSO processing plant treats high-grade run-of-mine ore derived from open-pit mining. The plant is designed for a sustainable production rate of approximately 11.4 Mtpa, treating run-of-mine ore with typical head grades $\geq 61\%$ Fe, and producing lump and fines products through crushing and screening only, without beneficiation.</p> <p>The run-of-mine is fed to a gyratory primary crusher, followed by scalping screens that separate fines while directing oversize material to secondary and tertiary cone crushers operating in closed circuit. Crushed material is conveyed via a buffer stockpile to product screening, where final lump and fines products are generated, stockpiled separately, reclaimed, and transferred to the load-out station for rail dispatch. The process flow diagram (PFD) also incorporates integrated dust extraction, dust suppression, wash-water, and slurry transfer systems across all major crushing, screening, and conveying areas. The plant control philosophy is based on a PLC/SCADA system with distributed motor control centres, automated equipment sequencing, permissive, and interlocks to ensure safe and stable operation, with feed rates, crusher choke conditions, and product quality controlled using weightometers, level instruments, particle size analysers, and metallurgical sampling, while operator interaction remains primarily supervisory.</p> | <p>Describe the processing method(s) to be used, equipment, plant capacity, efficiencies, and personnel requirements.</p> | |
| | | | (iii) | <p>Discuss the nature, amount and representativeness of metallurgical test work undertaken and the recovery factors used. A detailed flow sheet/diagram and a mass balance should exist, especially for multi-product operations from which the saleable materials are priced for different chemical and physical characteristics.</p> <p>Not applicable as Ore Reserves have not been declared for the Heuningkranz deposit.</p> | <p>Discuss the nature, amount and representativeness of metallurgical test work undertaken and the recovery factors used. A detailed flow sheet/diagram and a mass balance should exist, especially for multi-product operations from which the saleable materials are priced for different chemical and physical characteristics.</p> |
| | | | (iv) | <p>State what assumptions or allowances have been made for deleterious elements and the existence of any bulk-sample or pilot-scale test work and the degree to which such samples are representative of the ore body as a whole.</p> <p>Not applicable as Ore Reserves have not been declared for the Heuningkranz deposit.</p> | <p>State what assumptions or allowances have been made for deleterious elements and the existence of any bulk-sample or pilot-scale test work and the degree to which such samples are representative of the ore body as a whole.</p> |
| | | | (v) | <p>State whether the metallurgical process is well-tested technology or novel in nature.</p> <p>Not applicable as Ore Reserves have not been declared for the Heuningkranz deposit.</p> | <p>State whether the metallurgical process is well-tested technology or novel in nature.</p> |
| | | (vi) | <p>Not applicable as Ore Reserves have not been declared for the Heuningkranz deposit.</p> | | |

SAMREC Table 1 cont.

| Heuningkranz | | Exploration Results | Mineral Resources | Mineral Reserves | |
|---|----------------|---------------------|---|---|---|
| Section 5: Technical Studies cont. | | | | | |
| 5.4 | Infrastructure | (i) | Technical Studies are not applicable to Exploration Results | <p>Comment regarding the current state of infrastructure or the ease with which the infrastructure can be provided</p> <p>The current state of infrastructure foreseen to eventually extract the Heuningkranz Mineral Resources are as follows:</p> <ul style="list-style-type: none"> It is foreseen that the DSO plant at Kolomela currently in operation, will be used to treat the Heuningkranz high-grade run-of-mine ore to deliver standard lump and fines Saleable Product. Existing tailings and discard facilities are considered to have sufficient capacity to store the DSO waste material assuming a 99.8% yield. It is foreseen that mining at Heuningkranz will be from two (2) open pits, the Heuningkranz North and Heuningkranz South pits. Overburden and waste rock originating from the Heuningkranz North and South pits will be placed on surface to create waste rock dumps on the Heuningkranz portion of the Kolomela mining right. High-grade ore will be hauled to Kolomela for processing at the existing Kolomela DSO plant. It is foreseen that a new haul road will be established between the Heuningkranz mining areas and the Kolomela DSO plant, which will require land purchases between the Heuningkranz mining right portion and the rest of the Kolomela mining right portion. Access to Heuningkranz will be via the R385 road linking Postmasburg and Olifantshoek. It is foreseen that the R385 will be upgraded to accommodate additional traffic volumes. Supporting infrastructure to be developed at Heuningkranz includes administration buildings, workshops, stores, fuel storage areas, an explosives magazine, sewage treatment works, pollution control dams, stormwater management infrastructure, dewatering infrastructure, pipelines, evaporation dams, mine haul and internal roads. It is foreseen that no new housing will be necessary, as the same personnel currently operating Kolomela will take over the operation of Heuningkranz. Connection to the regional power scheme will be required along with associated electrical infrastructure | |
| | | | | (ii) | <p>Report in sufficient detail to demonstrate that the necessary facilities have been allowed for (which may include, but not be limited to, processing plant, tailings dam, leaching facilities, waste dumps, road, rail or port facilities, water and power supply, offices, housing, security, resource sterilisation testing, etc.). Provide detailed maps showing locations of facilities.</p> <p>Not applicable as Ore Reserves have not been declared for the Heuningkranz deposit.</p> |
| | | | | (iii) | <p>Statement showing that all necessary logistics have been considered.</p> <p>Not applicable as Ore Reserves have not been declared for the Heuningkranz deposit.</p> |

SAMREC Table 1 cont.

| Heuningkranz | | Exploration Results | Mineral Resources | Mineral Reserves |
|---|--------------------------|---------------------|---|---|
| Section 5: Technical Studies cont. | | | | |
| 5.5 | Environmental and Social | (i) | Technical Studies are not applicable to Exploration Results | <p>Confirm that the company holding the tenement has addressed the host country environmental legal compliance requirements and any mandatory and/or voluntary standards or guidelines to which it subscribes.</p> <p>The Heuningkranz deposit is located on the properties: Farm 364 (Heuningkranz) and Farm 432 (Langverwacht), Portion 1, located approximately 17 km northwest of Postmasburg, in the Tsantsabane Local Municipal area, and 11 km north-northwest of the main infrastructure area at Kolomela. A section 102 amendment application, as per the MPRDA of the RSA, to extend the Kolomela mining right through the inclusion of the properties listed above, was granted and registered in 2019.</p> <p>This amendment required the approval of:</p> <ul style="list-style-type: none"> • an updated Environmental Management Programme (Regulation 31 of Part 2 of Chapter 5 of the Environmental Impact Assessment Regulation GNR. 982 (as amended by GNR. 326 of 7 April 2017) under the NEMA). • planned development of infrastructure as per an Environmental Impact Assessment - Regulations GNR. 982-985 as amended GNR. 324-327 of 7 April 2014 for Activities 9, 12 and 24 of Listing Notice 1, Activities 4, 6, 12, 15 and 27 of Listing Notice 2, and Activities 8 and 14 of Listing Notice 3 • the planned development of mine residue deposits as per Regulation GNR. 921 as amended by GN. 633 of 24 July 2015 published under National Environmental Management: Waste Act (NEM: WA) for Activity 11 of Category B for the development of mine residue deposits |
| | | (ii) | Technical Studies are not applicable to Exploration Results | <p>Identify the necessary permits that will be required and their status and, where not yet obtained, confirm that there is a reasonable basis to believe that all permits required for the project will be obtained</p> <p>Permits to be renewed in future, should Kumba Iron Ore want to convert some of the Mineral Resources as declared to Ore Reserves in a manner not conforming to what was presented in the mining work programme and associated environmental plan are as follows:</p> <ul style="list-style-type: none"> • A waste management licence for the authorisation of waste management activities under Regulation GNR. 921 as amended by GNR. 633 of 24 July 2015 under NEM: WA • Various atmospheric emissions licences as per the Air Quality Act for bulk storage of petroleum products and for dust fallout • Vegetation clearing permitting as required by the Biodiversity Act (Act No 10 of 2004) and the Northern Cape Nature Conservation Act (Act No 9 of 2009) . • A water use licence as per the National Water Act (Act No 36 of 1998) for licensing of following: use of water for domestic purposes; storage of clean water in dams; disturbance of watercourses and wetland pans; mineral waste management facilities including waste rock dumps and dirty water storage dams (RWDs) and stormwater management ponds; and dewatering of mine pits to allow for safe mining conditions • Various heritage sites have been identified at the Heuningkranz section of the Kolomela mining right and these will need to be avoided where practicable. Should any site need to be altered or destroyed, a permit will need to be obtained in terms of the National Heritage Resources Act No 25 of 1999 |

SAMREC Table 1 cont.

| Heuningkranz | | Exploration Results | Mineral Resources | Mineral Reserves | |
|---|--------------------------------|---------------------|---|---|--|
| Section 5: Technical Studies cont. | | | | | |
| 5.5 | Environmental and Social cont. | (iii) | Technical Studies are not applicable to Exploration Results | <p>Identify and discuss any sensitive areas that may affect the project as well as any other environmental factors including interested and affected party and/or studies that could have a material effect on the likelihood of eventual economic extraction. Discuss possible means of mitigation.</p> <ul style="list-style-type: none"> Impacts on groundwater levels are expected to occur as a result of pit dewatering (groundwater depression cone) and artificial aquifer recharge (groundwater mounding) Impacts on air quality Noise impact The Heuningkranz area is predominantly flat having a slope of less than 3%, with some rocky outcrops consisting of Mispah soils which would have the greatest risk of erosion. Erosion is thus considered to be a medium risk in the area. Hutton and Brandvlei soils will have a moderate risk of compaction due to the loamy sandy texture, while soils with a shallow bedrock, such as Glenrosa/Mispah, are anticipated to be less prone to compaction due to the resistance offered by the bedrock. Given the limited availability of soils for rehabilitation, soils are to be protected to ensure that the land can be restored to at least livestock-grazing capability. Of the five habitat units identified at Heuningkranz, the wetlands are considered to have the highest sensitivity. The wetland habitats are important freshwater systems and during periods of high rainfall are a source of water. These habitats provide habitat for faunal and floral species dependent on such systems with a dry environment. Although the ephemeral drainage features do not hold water to sustain wetland species, they are of ecological importance in terms of the augmentation of flow and soil moisture in areas downstream of the study area and are therefore regarded as having moderately high sensitivity. A number of species of conservation concern are also associated with the drainage areas. The rocky ridges are relatively intact and support a large number of protected species (specifically <i>Boscia albitrunca</i>). The protection of wetlands and ephemeral drainage, and to a lesser extent rocky ridges, is thus considered to be important in terms of protecting terrestrial biodiversity. | |
| | | | | (iv) | <p>Identify any legislated social management programmes that may be required and discuss the content and status of these.</p> <p>Should some of the Heuningkranz Mineral Resources as declared be converted to Ore Reserves, it will result in the extension of the life of Kolomela. Thus, although the project will not result in additional economic impacts, economic benefits of the mine will be sustained over the additional period, thus the economic benefits of Kolomela will be experienced over a longer period.</p> |
| | | | | (v) | <p>Outline and quantify the material socio-economic and cultural impacts that need to be mitigated, and their mitigation measures, and where appropriate the associated costs.</p> <p>Socio-economic development will have to be committed to as per the required social and labour plan legislation of the MPRDA.</p> |

SAMREC Table 1 cont.

| Heuningkranz | | Exploration Results | Mineral Resources | Mineral Reserves |
|---|--------------------------------------|---------------------|---|--|
| Section 5: Technical Studies cont. | | | | |
| 5.6 | Market Studies and Economic criteria | (i) | Technical Studies are not applicable to Exploration Results | Describe the valuable and potentially valuable product(s) including suitability of products, co-products and by products to market. Not applicable as Ore Reserves have not been declared for the Heuningkranz deposit. |
| | | (ii) | | Describe product to be sold, customer specifications, testing, and acceptance requirements. Discuss whether there exists a ready market for the product and whether contracts for the sale of the product are in place or expected to be readily obtained. Present price and volume forecasts and the basis for the forecast. Not applicable as Ore Reserves have not been declared for the Heuningkranz deposit. |
| | | (iii) | | State and describe all economic criteria that have been used for the study such as capital and operating costs, exchange rates, revenue/price curves, royalties, cut-off grades and reserve pay limits. Not applicable as Ore Reserves have not been declared for the Heuningkranz deposit. |
| | | (iv) | | Summary description, source and confidence of method used to estimate the commodity price/value profiles used for cut-off grade calculation, economic analysis and project valuation, including applicable taxes, inflation indices, discount rates and exchange rates. Not applicable as Ore Reserves have not been declared for the Heuningkranz deposit. |

SAMREC Table 1 cont.

| Heuningkranz | | Exploration Results | Mineral Resources | Mineral Reserves |
|---|--|---------------------|---|---|
| Section 5: Technical Studies cont. | | | | |
| 5.6 | Market Studies and Economic criteria cont. | (v) | Technical Studies are not applicable to Exploration Results | <p>Present the details of the point of reference for the tonnages and grades reported as Mineral Reserves (e.g. material delivered to the processing facility or Saleable Product(s)). It is important that, in any situation where the reference point is different, a clarifying statement is included to ensure that the reader is fully informed as to what is being reported.</p> <p>Not applicable as Ore Reserves have not been declared for the Heuningkranz deposit.</p> |
| | | (vi) | | <p>Justify assumptions made concerning production cost including transportation, treatment, penalties, exchange rates, marketing and other costs. Provide details of allowances that are made for the content of deleterious elements and the cost of penalties.</p> <p>Not applicable as Ore Reserves have not been declared for the Heuningkranz deposit.</p> |
| | | (vii) | | <p>Provide details of allowances made for royalties payable, both to government and private.</p> <p>Not applicable as Ore Reserves have not been declared for the Heuningkranz deposit.</p> |
| | | (viii) | | <p>State type, extent and condition of plant and equipment that is significant to the existing operation(s).</p> <p>Not applicable as Ore Reserves have not been declared for the Heuningkranz deposit.</p> |
| | | (ix) | | <p>Provide details of all environmental, social and labour costs considered.</p> <p>Not applicable as Ore Reserves have not been declared for the Heuningkranz deposit.</p> |

SAMREC Table 1 cont.

| Heuningkranz | | Exploration Results | Mineral Resources | Mineral Reserves |
|---|-------------------|---------------------|---|--|
| Section 5: Technical Studies cont. | | | | |
| 5.7 | Risk Analysis | (i) | Technical Studies are not applicable to Exploration Results | <p>Report an assessment of technical, environmental, social, economic, political and other key risks to the project. Describe actions that will be taken to mitigate and/or manage the identified risks.</p> <p>Referenced in section 13 of Appendix A.</p> |
| 5.8 | Economic Analysis | (i) | Technical Studies are not applicable to Exploration Results | <p>At the relevant level (scoping study, pre-feasibility, feasibility or ongoing Life-of Mine), provide an economic analysis for the project is provided.</p> <p>The economic analysis is incorporated into the pit optimisation process, from which the revenue factor 1 resource shell was derived.</p> |
| | | (ii) | | <p>Cash flow forecast on an annual basis using Mineral Reserves or an annual production schedule for the life of the project.</p> <p>Only applicable to that portion of the Mineral Resources that will be converted to Ore Reserves as foreseen to be demonstrated on the conclusion of a future pre-feasibility study and Kumba and Anglo Executive Management, and subsequent Kumba Board approval to proceed with the project.</p> |
| | | (iii) | | <p>A discussion of net present value (NPV), internal rate of return (IRR) and payback period of capital.</p> <p>Only applicable to that portion of the Mineral Resources that will be converted to Ore Reserves as foreseen to be demonstrated on the conclusion of a future pre-feasibility study and Kumba and Anglo Executive Management, and subsequent Kumba Board approval to proceed with the project.</p> |
| | | (iv) | | <p>Sensitivity or other analysis using variants in commodity price, grade, capital and operating costs, or other significant parameters, as appropriate, and discuss the impact of the results.</p> <p>Only applicable to that portion of the Mineral Resources that will be converted to Ore Reserves as foreseen to be demonstrated on the conclusion of a future pre-feasibility study and Kumba and Anglo Executive Management, and subsequent Kumba Board approval to proceed with the project.</p> |

SAMREC Table 1 cont.

| Heuningkranz | | Exploration Results | Mineral Resources | Mineral Reserves |
|--|-------------------------------------|---------------------|---|---|
| Section 6: Estimation and Reporting of Mineral Reserves | | | | |
| 6.1 | Estimation and modelling techniques | (i) | Describe the Mineral Resource estimate used as a basis for the conversion to a Mineral Reserve. Not applicable as Ore Reserves have not been declared for the Heuningkranz deposit. | |
| | | (ii) | Report the Mineral Reserve Statement with sufficient detail indicating if the mining is open pit or underground, plus the source and type of mineralisation, domain or ore body, surface dumps, stockpiles and all other sources. Not applicable as Ore Reserves have not been declared for the Heuningkranz deposit. | |
| | | (iii) | | Provide a reconciliation reporting historical reliability of the performance parameters, assumptions and modifying factors, including a comparison with the previous Reserve quantity and qualities, if available. Where appropriate, report and comment on any historical trends (e.g. global bias). Not applicable as Ore Reserves have not been declared for the Heuningkranz deposit. |
| 6.2 | Classification Criteria | (i) | | Describe and justify criteria and methods used as the basis for the classification of the Mineral Reserves into varying confidence categories, based on the Mineral Resource category, and including consideration of the confidence in all the modifying factors. Not applicable as Ore Reserves have not been declared for the Heuningkranz deposit. |

SAMREC Table 1 cont.

| Heuningkranz | | Exploration Results | Mineral Resources | Mineral Reserves |
|--|-----------|---------------------|-------------------|---|
| Section 6: Estimation and Reporting of Mineral Reserves cont. | | | | |
| 6.3 | Reporting | (i) | | Discuss the proportion of Probable Mineral Reserves, which have been derived from Measured Mineral Resources (if any), including the reason(s) therefore. Not applicable as Ore Reserves have not been declared for the Heuningkranz deposit. |
| | | (ii) | | Present details of, for example open pit, underground, residue stockpile, remnants, tailings, and existing pillars or other sources in respect of the Mineral Reserve statement. Not applicable as Ore Reserves have not been declared for the Heuningkranz deposit. |
| | | (iii) | | Present the details of the defined reference point for the Mineral Reserves. State where the reference point is the point where the run-of-mine material is delivered to the processing plant. It is important that, in all situations where the reference point is different, such as for a Saleable Product, a clarifying statement is included to ensure that the reader is fully informed as to what is being reported. State clearly whether the tonnages and grades reported for Mineral Reserves are in respect of material delivered to the plant or after recovery. Not applicable as Ore Reserves have not been declared for the Heuningkranz deposit. |
| | | (iv) | | Present a reconciliation with the previous Mineral Reserve estimates. Where appropriate, report and comment on any historical trends (e.g. global bias). Not applicable as Ore Reserves have not been declared for the Heuningkranz deposit. |
| | | (v) | | Only Measured and Indicated Mineral Resources can be considered for inclusion in the Mineral Reserve. Not applicable as Ore Reserves have not been declared for the Heuningkranz deposit. |
| | | (vi) | | State whether the Mineral Resources are inclusive or exclusive of Mineral Reserves. Not applicable as Ore Reserves have not been declared for the Heuningkranz deposit. |

SAMREC Table 1 cont.

| Heuningkranz | | Exploration Results | Mineral Resources | Mineral Reserves |
|--|--------------------|---------------------|---|------------------|
| Section 7: Audits and Reviews | | | | |
| 7.1 | Audits and Reviews | (i) | <p>State type of review/audit (e.g. independent, external), area (e.g. laboratory, drilling, data, environmental compliance etc), date and name of the reviewer(s) together with their recognised professional qualifications.</p> <p>An external, due diligence audit of the Kolomelara Resource estimation and reporting process was conducted by <i>Cube Consulting Proprietary Limited</i> (Perth, Western Australia) from July to September 2025 (including a one-week site visit). This scope of the audit included a detailed review of the complete estimation process applied to determine the 2025 Mineral Resource estimates at Heuningkranz. The scope of work included a review of borehole data (sampling, logging and QA/QC), solids modelling, exploratory data analysis, variographic analysis, grade estimation, geological confidence classification and geological block modelling. The auditor, who also signed the due diligence audit report is Mr Mike Job (Director and Principal Geology and Geostatistics at Cube Consulting). He has 39 years of experience and is a fellow of the Australasian Institute of Mining and Metallurgy (membership number 201987).</p> | |
| | | (ii) | <p>Disclose the conclusions of relevant audits or reviews. Note where significant deficiencies and remedial actions are required.</p> <p>The audit report (<i>Kolomela_RR_Audit_251024.pdf</i>) recorded no fatal flaws.</p> <p>One Priority 1 finding (significant risk that requires mitigation within a year) was noted. The risk was identified on a specific portion of the Kapstevell South Pit on Kolomela, but has relevance to the Heuningkranz deposit in terms of the geological confidence classification, which proved inadequate in the Kapstevell South area. Cube Consulting proposed a revision of the Kumba scorecard confidence classification approach. Kumba addressed the risk in this 2025 Heuningkranz Mineral Resource estimate, by downgrading the scorecard-derived geological confidence classification by applying a method termed the Equivalent Grid System (EGS) analysis. It confirmed a paucity of borehole data in certain areas which were of Indicated status. This confirmation, together with an unease with the geology solids model (where the ore domains were overly continuous and not sufficiently lensoid/fractured), led the CP to downgrade all Measured Mineral Resources to Indicated Mineral Resources. It is the opinion of the CP that the Cube Consulting finding has thus been sufficiently mitigated.</p> <p>Cube Consulting also identified one Priority 2 finding (i.e. a moderate risk that objectives may not be achieved, even with mitigation as per normal management processes) pertaining to the Kolomela and Heuningkranz estimation processes. There is a discrepancy in the cut-off date between the database validation report (31 March 2023) and that recommended by the KIO guidelines (30 April of the specific year). Cube recommends a formal data hand-over to be incorporated into the database validation report, including a list of files (with file size, records, etc.) extracted from the database. This recommendation will be implemented from 2026 onwards.</p> | |
| Section 8: Other Relevant Information | | | | |
| 8.1 | | (i) | <p>Discuss all other relevant and material information not discussed elsewhere.</p> <p>No additional information other than what may be stated in Appendix A available.</p> | |

SAMREC Table 1 cont.

Heuningkranz **Exploration Results** **Mineral Resources** **Mineral Reserves**

Section 9: Qualification of Competent Person(s) and other key technical staff. Date and Signature Page

State the full name, registration number and name of the professional body or Recognised Professional Organisation, for all the CPs. State the relevant experience of the CPs) and other key technical staff who prepared and are responsible for the Public Report.

Competent Person:

| Competency Field | Name | Job Title | Employed by | Professional Organisation | Membership Number | Years' relevant experience |
|-------------------|------------|---|-----------------------------------|--|-------------------|----------------------------|
| Mineral Resources | V Combrink | Specialist Modelling Resource Geologist | Sishen Iron Ore Company (Pty) Ltd | (SACNASP) Professional Natural Scientist | 40053/08 | 22 |

Technical Specialists:

| ACTIVITY | NAME | JOB TITLE | NAME OF EMPLOYER | YEARS OF EXPERIENCE | AFFILIATION | TYPE OF MEMBERSHIP |
|--|--|---|-----------------------------------|---------------------|---------------------------|------------------------|
| MINERAL RESOURCES | | | | | | |
| SECURITY OF TENURE | Thuso Mathulwe | Specialist Mineral Rights and Permitting | Sishen Iron Ore Company (Pty) Ltd | 9 | None | None |
| PERMITS AND ENVIRONMENTAL AUTHORISATIONS | Izak Gous | Section Manager Environmental | Sishen Iron Ore Company (Pty) Ltd | 9 | SACNASP | Member |
| BOREHOLE DATABASE MANAGEMENT | OLande | Borehole Database Coordinator | Sishen Iron Ore Company (Pty) Ltd | 16 | None | None |
| BOREHOLE DATA QA/QC VALIDATION | OLande | Borehole Database Coordinator | Sishen Iron Ore Company (Pty) Ltd | 16 | None | None |
| GEOTECHNICAL DATA | AR Malovhele | Section Manager Geotechnical | Sishen Iron Ore Company (Pty) Ltd | 14 | SACNASP, SANRE | Member |
| GEOLOGICAL INTERPRETATIONS | JV Combrink, H Boucher, H Fourie (L Tafur) | Specialist Modelling Resource Geologist/ Specialist Modelling Resource Geologist/ (TECT consulting) | Sishen Iron Ore Company (Pty) Ltd | 32, 10 | SACNASP/ SACNASP | Member/ Member |
| SOLIDS MODELLING | JV Combrink, H Boucher, H Fourie (L Tafur) | Specialist Modelling Resource Geologist/ Specialist Modelling Resource Geologist/TECT consulting (Specialist Modelling Resource Geologist) | Sishen Iron Ore Company (Pty) Ltd | 32, 10 | SACNASP/ SACNASP | Member/ Member |
| DATA ANALYSES (STATISTICAL EVALUATION) | K Cooper, E Machaka, L Molefe | Specialist Resource Estimation Geologist/ Specialist Resource Estimation Geologist/ Specialist Resource Estimation Geologist/ Resource Estimation Geologist | Sishen Iron Ore Company (Pty) Ltd | 17, 20, 11 | SACNASP/ SACNASP/ SACNASP | Member/ Member/ Member |
| SPATIAL DATA ANALYSES (GEOSTATS) | K Cooper, E Machaka, L Molefe | Specialist Resource Estimation Geologist/ Specialist Resource Estimation Geologist/ Resource Estimation Geologist | Sishen Iron Ore Company (Pty) Ltd | 17, 20, 11 | SACNASP/ SACNASP/ SACNASP | Member/ Member/ Member |
| GEOLOGICAL BLOCK MODELLING | K Cooper, E Machaka, L Molefe | Specialist Resource Estimation Geologist/ Specialist Resource Estimation Geologist/ Resource Estimation Geologist | Sishen Iron Ore Company (Pty) Ltd | 17, 20, 11 | SACNASP/ SACNASP/ SACNASP | Member/ Member/ Member |
| GEOLOGICAL CONFIDENCE CLASSIFICATION | K Cooper, E Machaka, L Molefe | Specialist Resource Estimation Geologist/ Specialist Resource Estimation Geologist/ Resource Estimation Geologist | Sishen Iron Ore Company (Pty) Ltd | 17, 20, 11 | SACNASP/ SACNASP/ SACNASP | Member/ Member/ Member |
| RESOURCE ESTIMATION | K Cooper, E Machaka, L Molefe | Specialist Resource Estimation Geologist/ Specialist Resource Estimation Geologist/ Resource Estimation Geologist | Sishen Iron Ore Company (Pty) Ltd | 17, 20, 11 | SACNASP/ SACNASP/ SACNASP | Member/ Member/ Member |
| RESOURCE TABULATION | JV Combrink | Specialist Modelling Resource Geologist | Sishen Iron Ore Company (Pty) Ltd | 32 | SACNASP | Member |

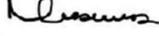
(i)

9.1

State the CPs relationship to the issuer of the report.

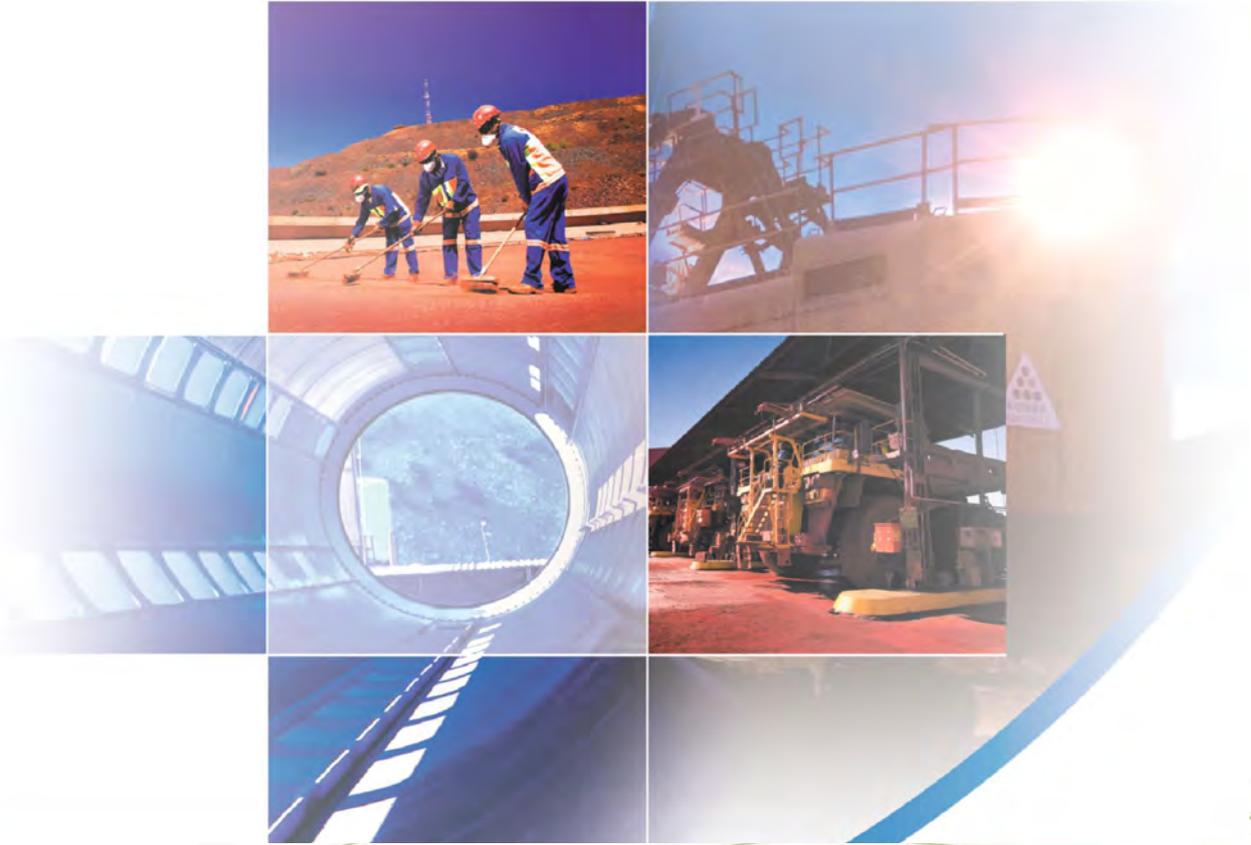
(ii) The CP is employed by Sishen Iron Ore Company Proprietary Limited, which is 75.4% owned by Kumba Iron Ore Limited.

SAMREC Table 1 cont.

| | Exploration Results | Mineral Resources | Mineral Reserves |
|--|---------------------|--|------------------|
| Section 9: Qualification of Competent Person(s) and other key technical staff. Date and Signature Page cont. | | | |
| 9.1 | (iii) | <p>Provide the Certificate of the Competent Person (Appendix 2), including the date of sign-off and the effective date, in the Public Report.</p> <div style="border: 2px solid green; padding: 10px;">  <p style="text-align: center;">herewith certifies that Jan Venter Combrink Registration Number: 400053/08 is a registered scientist</p> <p style="text-align: center;">in terms of section 20(3) of the Natural Scientific Professions Act, 2003 (Act 27 of 2003) in the following field(s) of practice (Schedule 1 of the Act) Geological Science (Professional Natural Scientist)</p> <p>Effective 21 May 2008 Expires 31 March 2026</p> <div style="display: flex; justify-content: space-around; align-items: center;">  </div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="text-align: center;">  <hr style="width: 100px; margin: 0 auto;"/> Chairperson </div> <div style="text-align: center;">  <hr style="width: 100px; margin: 0 auto;"/> Chief Executive Officer </div> </div> <div style="text-align: right; margin-top: 10px;">  <small>To verify this certificate scan this code</small> </div> </div> | |

APPENDIX A

Heuningkranz 2025 Mineral Resource Statement



HEUNINGKRANZ DEPOSIT

Mineral Resource Statement

(31 December 2025)

COMPILED BY: **MD Carney**
Pr.Sci.Nat. Consultant Geologist

SIGNED OFF BY: **V Combrink**
Competent Person for Kolomela Mine's 2025 Mineral Resources

REVIEWED BY: **J Britz**
Lead Competent Person for Kumba Iron Ore's 2025 Mineral Resources

DATE COMPILED: 31 December 2025

PREAMBLE

This statement details the first-time reporting of the Mineral Resource estimates of the Heuningkranz deposit in the Kolomela mining right area, as at 31 December 2025.

Reporting is conducted in a format that, to the best of the knowledge of the appointed Competent Person for the Heuningkranz Mineral Resources, satisfies the reporting requirements and guidelines of the SAMREC Code (THE SOUTH AFRICAN CODE FOR THE REPORTING OF EXPLORATION RESULTS, MINERAL RESOURCES AND MINERAL RESERVES – 2016 Edition). It furthermore describes the methods of geological data gathering and validation, as well as the Mineral Resource estimation and classification methods and other ancillary information, which inform the Mineral Resource figures.

No Ore Reserves have been reported for the Heuningkranz deposit as at 31 December 2025, therefore the exclusive Mineral Resources stated is equal to an inclusive Mineral Resources statement.

The original version of this Statement contains information regarding mineralisation in addition to Mineral Resources, as per Kumba’s in-house reporting format. The relevant paragraph, table and figure titles referring to additional mineralisation have been changed to “For in-house reporting purposes” as the numbering in this document are to be retained for future auditing purposes, and the associate text and tables and figures have been removed

Kumba prefers not to disclose economic assumptions hence methodology has been discussed without disclosure of the assumptions.

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List of Addendums

- ADDENDUM A:** QA/QC Report
ADDENDUM B: 2025 Competent Person Appointment Letter
ADDENDUM C: Copies of Surface Right Title Deeds

1 EXECUTIVE SUMMARY

1.1 PURPOSE

It is the objective of this Statement to report the Mineral Resources of the Heuningkranz deposit, as available on 31 December 2025. All ancillary and supporting information, as required by the latest version of the SAMREC Code to reflect materiality, competency and transparency, are included.

The Mineral Resource estimates have been derived from the latest approved (end February 2025) geological models. This Statement was compiled on 31 December 2025. The Heuningkranz deposit occurs within the Kolomela Mine mining right. The Mineral Resources quoted in this document are included the 2025 Kolomela Mine Mineral Resource Statement.

1.2 THE STATEMENT

1.2.1 National Reporting Standard

The SOUTH AFRICAN CODE FOR THE REPORTING OF EXPLORATION RESULTS, MINERAL RESOURCES AND MINERAL RESERVES (the SAMREC Code) sets out minimum standards, recommendations and guidelines for public reporting of Exploration Results, Mineral Resources and Mineral Reserves in South Africa. It has been drawn up by the Working Group of the SSC Committee under the joint auspices of the Southern African Institute of Mining and Metallurgy (SAIMM) and the Geological Society of South Africa (GSSA).

The SAMREC Code (2016 Edition) defines a Mineral Resource as follows:

Section 24:

A 'Mineral Resource' is a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade, continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling.

Section 25:

An Inferred Mineral Resource is that part of a Mineral Resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade or quality continuity.

An Inferred Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve.

It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.

Section 27:

An Indicated Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit.

Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing and is sufficient to assume geological and grade or quality continuity between points of observation.

Section 28:

A Measured Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of Modifying Factors to support detailed mine planning and final evaluation of the economic viability of the deposit.

Geological evidence is derived from detailed and reliable exploration, sampling and testing and is sufficient to confirm geological and grade or quality continuity between points of observation.

A Measured Mineral Resource has a higher level of confidence than that applying to either an Indicated Mineral Resource or an Inferred Mineral Resource. It may be converted to a Proved Mineral Reserve or to a Probable Mineral Reserve.

1.2.2 Reporting framework

The Mineral Resource estimates in this statement aim to meet JSE Listings Requirements (as per section 12.13 for Minerals Companies), by reporting in accordance with the requirements set by the SAMREC Code (2016 Edition). Adherence is also governed in Kumba's business processes via a Mineral Resource and Ore Reserve reporting policy, which is available at the following internet address:

<https://www.angloamericankumba.com/~media/Files/A/Anglo-American-Group/Kumba/sustainability/approach-and-policies/kumba-mineral-resource-and-ore-reserve-reporting-policy.pdf>

The policy is supported by detailed reporting requirements, guidelines and associated reporting templates, which direct the reporting requirements to a site-specific level, ensuring that Kumba meets the relevant JSE Listings Requirements.

The 2025 Heuningkranz Mineral Resource Statement is derived from a comprehensive volume of information. It is structured to address all aspects listed in Table 1 of the SAMREC Code (2016 Edition). Table 1 of the code is a high-level checklist of reporting and assessment criteria to be used as a reference by those preparing reports on Exploration Results, Mineral Resources and Mineral Reserves.

The detailed content of this statement demonstrates Kumba's commitment to material, transparent and competent reporting of its Mineral Resources.

To date, no Ore Reserves have been declared for the Heuningkranz deposit.

1.2.3 Reporting basis

The Mineral Resource estimates are stated on a 100% ownership basis, irrespective of attributable shareholding. Kumba's attributable ownership is stipulated in the Mineral Resource tables in this statement.

Mineral Resource tonnages declared in this document are expressed as million (metric) tonnes (using one decimal figure) on a dry basis i.e. derived from spatially estimated volumes of ore (ore domains) and converted to in-situ, dry metric tonnes, by multiplying the volumes with its spatially estimated, in-situ densities. Relative densities (RD) were derived from gas pycnometer test work on dried (at 105°C) borehole pulp samples.

The average in-situ grades reported with the Mineral Resource tonnages are spatially estimated via applicable estimation techniques. They are based on XRF Fusion chemical analyses for Fe, SiO₂, Al₂O₃, K₂O, P and Mn. The S content is determined by combustion analysis. The analytical work is performed on sub-samples derived from dried (at 105°C) primary borehole samples (core and percussion) and the content is declared as percentages, abbreviated as %.

The confidence in the Mineral Resource estimates is expressed in terms of categories as defined by the SAMREC Code (2016) i.e. Measured, Indicated and Inferred Mineral Resources. Measured and Indicated Mineral Resource estimates have sufficient confidence to support mine planning and can be used to determine the economic viability of a deposit. Inferred Mineral Resources have the lowest confidence and cannot be converted to Ore Reserves. Due to the uncertainty attached to Inferred Mineral Resources, it cannot be assumed that all or part of an Inferred Mineral Resource will necessarily be upgraded to an Indicated or Measured Resource after continued exploration. The Competent Person (CP) for Mineral Resources has the prerogative to downgrade Measured Mineral Resources to Indicated Mineral Resources (and to downgrade Indicated Mineral Resources to Inferred Mineral Resources), considering his/her site-specific knowledge of the deposit.

Unless otherwise stated, any references to currency in this document are expressed as South African Rand (ZAR), whereas the exchange rate is that of US\$ to ZAR.

1.2.4 Effective date

This statement reports the Heuningkranz Mineral Resources available on 31 December 2025. This is the first (or maiden) declaration of Mineral Resources for the Heuningkranz deposit.

1.2.5 Economic and grade constraints

1.2.5.1 Mineral Resources

Apart from the application of a 61% in-situ Fe cut-off grade, which supports the current direct shipping ore (DSO) processing on site, Kolomela Mine (including the Heuningkranz deposit) spatially distinguishes its 2025 in-situ Mineral Resources from other in-situ mineralisation, by applying a revenue factor (RF) 1.0 resource shell. This is derived during the annual pit optimisation process conducted on the latest site-specific, 3D mining block models. The size of the mining blocks is based on a selective mining unit (SMU) to account for dilution and mining loss. Applying a 1.0 RF resource shell means that the Mineral Resources can be mined economically at future long-term price forecasts, with the last tonne to be extracted at a breakeven point, where cost equals income. The resource shell is then subsequently applied to the geological block models. Iron ore occurring inside the resource shell (with in-situ Fe grade $\geq 61.0\%$) is defined as the Mineral Resource portion, which is considered to have reasonable prospects for eventual economic extraction (RPEEE). This process, therefore, considers site-specific mining and beneficiation practices, realistic costing and future price forecasts.

The methodology to define in-situ Mineral Resources (in essence converting spatially separated data points into large-scale, continuous, volumetric information) is however, not precise. Mineral Resources should therefore always be considered as estimates, and not precise calculations.

1.2.5.2 For in-house reporting purposes

Text removed.

1.2.6 Mineral Resource figures are not exact

The Heuningkranz Mineral Resource figures are derived from spatial, tectono-stratigraphic interpretation (three-dimensional (3D) ore and waste domaining) with subsequent grade estimation processes. The process includes technical and economic, forward-looking assumptions, which may not materialise as expected in the future.

By their nature, the Mineral Resource figures quoted in this statement are therefore inherently subject to risk/uncertainty and may be influenced by unforeseen future events that could cause actual figures to differ from estimated figures.

1.3 OWNERSHIP

Ownership of the Heuningkranz deposit, by virtue of its occurrence within the Kolomela mining right area, is detailed in **Table 1** below:

Table 1: Attributable Ownership Summary

| Mineral Asset | % owned by SIOC ¹ | | % owned by Outlet via SIOC | | % owned by Exxaro via SIOC | | % owned by Kumba via SIOC | | % Owned by AA plc via KIO ² | |
|---------------|------------------------------|-------|----------------------------|------|----------------------------|------|---------------------------|------|--|------|
| | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 |
| Kolomela Mine | 100.0 | 100.0 | 4.2 | 4.2 | 20.4 | 20.4 | 75.4 | 75.4 | 52.5 | 52.5 |

1) The holding company, Sishen Iron Ore Company (SIOC), is 75.4% owned by Kumba Iron Ore Limited (KIO), 20.4% owned by Exxaro Resources Limited and 4.2% by various other minority shareholders (as at 31 December 2025).

2) KIO is 69.7% owned by Anglo American plc (AA plc)

1.4 SECURITY OF TENURE

The Heuningkranz Mineral Resources stated in this document, are consolidated within the Kolomela mining right. The original Kolomela mining right was granted on 18 September 2008 by the then, South African Department of Mineral Resources and Energy (DMRE). The mining right was notarially executed and registered (MPT 50/2009) at the Mining Titles Office of the DMRE by Sishen Iron Ore Company Proprietary Limited in 2009. The department has recently been renamed as the Department of Mineral and Petroleum Resources (DMPR).

The original Kolomela mining right was later amended to include the Heuningkranz properties. The amendment was granted and registered in 2019.

The mining right allows SIOC to extract, process and sell iron ore from the properties within the Kolomela mining right until 2038.

1.5 KEY ASSUMPTIONS

The first geological model of the Heuningkranz deposit was built in 2016 by *Tect Geological Consulting Services*, using implicit modelling techniques in *Leapfrog* software. It was based on 443 validated boreholes.

A major update of the geological and block models, with considerable additional geological information (total of 690 validated boreholes), was completed in 2024.

The 2025 Mineral Resource estimates have been derived from a relatively minor update of the 2024 models. The update in 2025 (model ID: hk022025_v1), refined the existing Kumba geological confidence classification process by also applying an Equivalent Grid Statistic Analysis (EQG) Confidence Classification system developed by Anglo American as part of a quantitative Competent Person (CP) Override. The latter was created to assist CPs by standardising the downgrading of Measured and Indicated Mineral Resources in areas of sparse geological information.

After classification with the EQG system, the CP further downgraded all remaining Measured Mineral Resources to Indicated Mineral Resources. This was done because the 2024 solids model, from which the block model estimates were derived, did not honour the lenticular nature of the deposit to the satisfaction of the CP. In addition, the fault network (structural) interpretation was last reviewed in 2018, and the application of the EQG analysis, also identified areas of sparse information. A refinement of the high-grade ore domains is required to firm up the solids model interpretation to report Measured Mineral Resources.

Macro-economic inputs were used to define the 2025 Mineral Resources in the form of long-term iron ore price assumptions and exchange rates as provided by *Anglo American's* Strategy Department. These key inputs, together with site-based mining costs, processing and overhead costs (including additional transport costs from site to Kolomela Mine) and an estimated selling cost were used in a pit optimisation exercise. The process derived a spatial envelope (or resource shell) at a revenue factor of 1.0, to constrain that portion of the Mineral Resources with reasonable prospects for eventual economic extraction.

1.6 MINERAL RESOURCE ESTIMATION

The Heuningkranz Mineral Resource estimation process is summarised in **Table 2** below:

Table 2: Mineral Resource Estimation Approach

| Process step | Explanation | Software |
|----------------------------|---|------------------------|
| Data assembly and quality | <p>The data generated by exploration, primarily drilling, aims to be representative of the volume of material being sampled. Samples are generated through quasi-regular sampling (drilling) grids and are validated by means of a stringent quality control programme, which monitors sample location, primary sampling, sample preparation and sample assaying for representivity. Because some of the historically drilled samples used for estimation do not have QA/QC metadata, Kumba introduced a sample representivity indexing method, which is considered during spatial geological confidence classification.</p> <p>Validated exploration data is used to compile spatially referenced, 3D tectono-stratigraphic models based on the geologists' understanding and interpretation of the regional and local geology and ore genesis.</p> | acquire™ |
| Solids modelling | <p>The solids model geometrically domains the high-grade iron ore types in relation to the waste lithologies within primary structural domains. Each deposit for which Mineral Resources are declared is represented by a full 3D tectono-stratigraphical solids model.</p> <p>Because of the pervasive nature of the iron ore mineralisation in the Northern Cape province of South Africa, medium- and low-grade ferruginisation are of such a nature that it can only be distinguished from "sterile" waste by applying soft boundaries or Fe cut-off grades in the geological block models, i.e. medium and low-grade ore and waste can occur in the same solids model domain.</p> <p>Each domain's boundary surface in effect provides an efficient volume description of the tectono-stratigraphic unit.</p> | Seequent Leapfrog Geo™ |
| Exploratory data analysis | <p>The in-situ grade and density data of validated borehole samples intersecting the various solids model domains, are composited to achieve constant sample support and are statistically analysed (univariate and multivariate analyses) per domain. No sub-domaining was conducted.</p> | JMP™ and Isatis™ |
| Geological block modelling | <p>The optimal parent block size is determined using Quantitative Kriging Neighbourhood Analysis. The Quantitative Kriging Neighbourhood Analysis is used to determine the best search envelope (number of samples and ranges) by optimising the kriging variance and slope-of-regression, while minimising negative weights in the kriging matrix.</p> <p>Iron ore is a typical multivariate grade commodity and Kolomela/Heuningkranz spatially estimates the composited in-situ sample density and the in-situ sample grades i.e. Fe, SiO₂, Al₂O₃, K₂O, P, Mn and S (as a minimum) of the high-grade ore domains and associated hanging and footwall domains (typically Shale, Banded Iron Formation and Conglomerate). Conventional variograms were derived for all variables. These calculations are done using unfolded data. The variograms are interpreted to consider spatial anisotropy. Sterile waste lithologies at Heuningkranz have excellent sample coverage and their grades are also estimated.</p> <p>The high-grade ore estimated block grades are informed during three rounds of interpolation. In the first round, block grades are estimated using Ordinary Kriging to populate all blocks within the optimal Kriging neighbourhood. This represents the best possible estimates. Blocks not estimated in the first pass are then kriged using an enlarged (x2) neighbourhood. These estimates thus use samples beyond the range of the variogram and are extrapolated and of a lower confidence. Any blocks still not informed after the second kriging run receive the global mean grade and a low confidence rating. This process is repeated for each variable. All blocks in the geological block model populated by the second estimation Kriging run, or by default grades, are classified as Inferred (extrapolated).</p> <p>The estimated block grades of the hangingwall and footwall material are informed during three rounds of interpolation. In the first round, block grades are estimated using Ordinary Kriging to populate all blocks within the optimal Kriging neighbourhood. This represents the best possible estimates. Blocks not estimated in the first pass are then Simple Kriged where sample data are available. These estimates thus use samples beyond the range of the variogram and are extrapolated and of a lower confidence. Any blocks still not informed after the second</p> | Isatis™ |

2025 MINERAL RESOURCE STATEMENT – HEUNINGKRA NZ DEPOSIT

| | | |
|---------------------------|--|---------------------|
| | <p>estimation run, receive the global mean grade and a low confidence rating. This process is repeated for each variable.</p> <p>The grade of sterile waste lithologies is estimated by Simple Kriging. If blocks are not filled after the first run, they receive a global mean grade.</p> | |
| Confidence classification | <p>The blocks populated in the first Kriging run are classified using a scorecard approach based on the <i>KIO Geological Confidence Classification Guideline (Version 4)</i>, whereby certain key site-specific parameters as identified by the CP, are indexed and used to measure geometry and grade continuity. The individual grade indices and geometry indices are then weighted as per the CP's understanding of its impact. The weights are applied to derive a combined grade index as well as a combined geometry index, which in turn is weighted as per the CP's understanding of the deposit, to derive a final single geological confidence index. The final confidence index is then classed against index boundaries as derived by the CP to distinguish between Measured, Indicated and Inferred Mineral Resources.</p> <p>In 2025, the CP decided to benchmark the above scorecard derived classification system, against an equivalent grid statistic calculation developed by Anglo American, which basically considers sample density. This was used to downgrade Measured to Indicated and Indicated to Inferred in certain areas. The CP, however, retains the authority to override areas of indexed classification and downgrade it with local knowledge of geological complexity.</p> | Isatis Neo™ |
| Resource reporting | <p>Exclusive Mineral Resources are determined as that portion of the mineralisation in the 3D geological block model, which has in-situ grades above a specified cut-off (61% Fe for Heuningkranz) within a 1.0 RF resource shell. The resource shell is derived through pit optimisation and has RPEEE. No Ore Reserves have yet been declared for Heuningkranz, as such the Exclusive Mineral Resources reported to the public, currently equates to the Inclusive Mineral Resources.</p> | Datamine (Studio 2) |

The approach taken for Mineral Resource Estimation and Reporting at Heuningkranz is almost identical to that of Kolomela Mine.

1.7 ASSURANCE

An external, due diligence audit of the Kolomela 2024 Mineral Resource estimation and reporting process, (including a one-week site visit) was conducted by Cube Consulting Pty Ltd during July 2025. The scope of this audit included the estimation process applied to determine the 2025 Mineral Resource estimates at Heuningkranz.

- No **Fatal Flaws** could be found. Fatal flaws are defined as high risks where objectives may not be achieved, requiring immediate mitigation.
- Cube Consulting identified one **Priority 1** risk (i.e. a significant risk that objectives may not be achieved, mitigation required as soon as possible) on a specific portion of the Kapstevél South Pit on Kolomela Mine. This risk potentially has relevance at the Heuningkranz deposit. The geological confidence rating derived from Kumba's scorecard approach proved inadequate in the Kapstevél South area and a revision of the confidence classification system (specifically the weightings of the Confidence Index Factor) was proposed.

Kumba addressed this risk in the 2025 Heuningkranz Mineral Resource estimate by conducting a downgrading of geological confidence after applying the Anglo American developed Equivalent Grid Analysis System as part of the CP override to the scorecard method.

This finding has been mitigated for Heuningkranz.

- Cube Consulting also identified one **Priority 2** risk (i.e. a moderate risk that objectives may not be achieved, mitigation as per normal management processes) pertaining to the Kolomela and Heuningkranz estimation processes. There is a discrepancy in the cut-off date between the database validation report (31 March 2023) and that recommended by the KIO guidelines (30th April of that specific year). Cube recommends a formal data handover be incorporated into the database validation report, including a list of files (with file size, records, etc.) extracted from the database.

As standard practice, KIO internal peer reviews are conducted on updated geology models. The geology solids model (constructed by *Tect Geological Consulting*) was peer reviewed by KIO Exploration and Resource Geology personnel on 17 August 2023. Corrections to the model were made before final delivery to Kumba. The estimation process to populate the grade block model was also subject to regular reviews by KIO Resource Geology personnel from February 2024 to June 2024. All findings were addressed before the next step of the process was initiated.

1.8 FOR IN-HOUSE REPORTING PURPOSES

Text removed.

Table 3: For in-house reporting purposes

Table removed.

Figure removed

Figure 1: For in-house reporting purposes

1.9 MINERAL RESOURCE STATEMENT

1.9.1 Exclusive Mineral Resources

Kumba Iron Ore reports Mineral Resources on an exclusive basis, i.e. Mineral Resources are reported as additional to Ore Reserves, as per the *Anglo American* Group standard.

The 2025 exclusive Mineral Resources for Heuningkranz are reported in **Table 4**.

Table 4: 2025 Heuningkranz exclusive Mineral Resources

| Resource Category | Ore Type | % Attr. to KIO | 2025 | | 2024 | |
|--|-----------|----------------|-----------------------|---------------------|-----------------------|---------------------|
| | | | Fe Cut-off Grade: 61% | | Fe Cut-off Grade: 61% | |
| | | | Total Tonnes (Mt) | Average Grade (%Fe) | Total Tonnes (Mt) | Average Grade (%Fe) |
| Inside Resource Shell (in-situ) | | | | | | |
| Measured (outside LoAP) | Haematite | 75.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| Indicated (outside LoAP) | | | 62.1 | 65.1 | 0.0 | 0.0 |
| Total Measured & Indicated | | | 62.1 | 65.1 | 0.0 | 0.0 |
| Inferred (outside LoAP) | | | 8.7 | 65.1 | 0.0 | 0.0 |
| Inferred extrapolated (outside LoAP) | | | 4.6 | 64.8 | 0.0 | 0.0 |
| Total Inferred | | | 13.3 | 65.0 | 0.0 | 0.0 |
| Grand Total | | | 75.4 | 65.1 | 0.0 | 0.0 |

Table 5: 2025 Heuningkranz exclusive Mineral Resources per high-grade ore type

| Economic cut-off | Site Name | Lithology | 2025 | | 2024 | |
|-----------------------|--------------|-------------------|--|-------------|--|-------------|
| | | | In situ High-grade Ore cut-off: Fe ≥ 61% | | In situ High-grade Ore cut-off: Fe ≥ 61% | |
| | | | Total Tonnes (Mt) | Average %Fe | Total Tonnes (Mt) | Average %Fe |
| Inside Resource Shell | Heuningkranz | Laminated Ore | 47.6 | 65.4 | 0.0 | 0.0 |
| | | Massive Ore | 21.0 | 64.6 | 0.0 | 0.0 |
| | | Brecciated Ore | 3.5 | 65.0 | 0.0 | 0.0 |
| | | Conglomeratic Ore | 3.3 | 64.1 | 0.0 | 0.0 |
| | | TOTAL | 75.4 | 65.1 | 0.0 | 0.0 |

1.9.2 Year-on-year exclusive Mineral Resource movements

This is the first-time reporting of the Heuningkranz Mineral Resources, so no year-on-year reconciliation or movement is reported. Within the Kolomela Mineral Resource Statement, the year-on-year Heuningkranz Mineral Resource increase is reported under the “Economic Assumptions” as it is a material increase in Kumba’s long-term iron ore price forecast (compared to 2018 when it was last evaluated) that rendered the Heuningkranz Mineral Resources as having reasonable prospects for eventual economic extraction.

1.10 PRIMARY MINERAL RESOURCE RISKS

The following primary Mineral Resource risks are as captured by internal risk reviews. They have been ranked as having a high, or significant, pre-mitigation risk rating in 2025:

Risk 1: Two iron and manganese prospecting rights over the Heuningkranz properties have been awarded by the DMPR to 3rd parties. Retention of the right to mine iron can legally be defended, but the right to prospect for manganese has the potential to disrupt future KIO activity on the site.

Mitigation: Kumba’s legal representative has submitted an objection with the DMPR. The outcome is still pending.

Risk 2: The deposit has relatively high in-situ Al₂O₃ and K₂O contents. The blending capabilities of the software used to determine RPEEE is limited. There will be periods when the DSO products do not attain current quality specifications and will incur sales penalties.

Mitigation: Marketing has confirmed that the ore (without beneficiation) is currently saleable on the Spot market, but at discounted rates. Detailed blend scheduling is under way to quantify the impact of the high Al and K contaminants and investigate potential blending solutions. An approach to Marketing will be made to optimise sales revenue.

1.11 FOR IN-HOUSE REPORTING PURPOSES

1.11.1 For in-house reporting purposes

Text removed.

Table 6: For in-house reporting purposes

Table removed.

Table 7: For in-house reporting purposes

Table removed.

1.12 STATEMENT OF COMPETENCE (INCLUDING VALIDATION) AND CONSENT

As per the “Statement of Competence and Consent for Mineral Resources” (Section 15 of this Statement), the Kolomela Competent Person for Mineral Resources as appointed in 2025 (**Table 8**) can without any qualifications state that:

- The Mineral Resource figures presented in this statement are considered a true reflection of the Mineral Resource estimates as of 31 December 2025 for the

Heuningkranz deposit, and that reporting has been carried out in accordance with the principles and guidelines of the SAMREC Code (2016), to the best of the knowledge of the Competent Person.

- The Competent Person has not been unduly influenced by Kumba Iron Ore or any person commissioning the Heuningkranz Mineral Resource Statement and is of the opinion that all assumptions are documented; and adequate disclosure is made of all material aspects that the informed reader may require, to make a reasonable and balanced judgement of the Mineral Resource figures.
- The Competent Person has sufficient experience relevant to the style and type of mineral deposit under consideration and to the activity which is being undertaken to qualify as a Competent Person as defined in the SAMREC Code.
- The Competent Person consents to the inclusion of the Heuningkranz Mineral Resource figures in the *Kumba Ore Reserve (and Saleable Product) and Mineral Resource Report* and R&R Section in the *Kumba Iron Ore Integrated Report*, as well as in the *Anglo American Ore Reserves and Mineral Resources (R&R) Report 2025* and R&R Summary section of the *Anglo American Integrated Annual Report 2025*, in the form and context in which it appears in these reports.

Table 8: Heuningkranz 2025 Mineral Resource Competent Person

| Competency Field | Name | Job Title | Employed by | Professional Organisation | Membership Number | Years relevant experience |
|-------------------|------------|---|-----------------------------------|---|-------------------|---------------------------|
| Mineral Resources | V Combrink | Specialist Modelling Resource Geologist | Sishen Iron Ore Company (Pty) Ltd | (SACNASP) Professional Natural Scientist | 400053/08 | 22 |

1.12.1 Involvement of Competent Person (CP)

The Competent Person is a full-time employee of Kumba Iron Ore. Mr Combrink has worked on the Kolomela Mine site for the past ten years as a resource geologist. During this period, he worked specifically on the Heuningkranz deposit in 2016. He was responsible for core logging and sampling on site and the compilation of the QA/QC report.

Mr Combrink reviewed the borehole data extraction for the 2025 geological model update by means of independently verifying data using a *PowerBI* dashboard. He was furthermore involved in the peer reviews of all the solids models and geological block models, as well as the geological confidence classification informing the 2025 Mineral Resource estimation. Mr Combrink conducted the reporting himself using *DataMine™* software and verifying the latter with *RMSP™* python scripts. As CP, he arranged and attended a session to identify and rank the risks associated with the 2025 Heuningkranz Mineral Resources.

Mr Combrink is currently the Competent Person for the reporting of Mineral Resources at Kolomela Mine.

1.12.2 Disclaimers and Reliance on Other Experts or Third-party Information

Although the CP has not directly conducted the Mineral Resource estimation for the Heuningkranz deposit, the CP has oversight of the complete geological value chain and relied on Technical Specialists (**Table 71**) to contribute to the 2025 Mineral Resource estimate.

1.13 PROJECT OUTLINE

For the past 25 years, ongoing exploration in the Northern Cape Province of the RSA, by Kumba Iron Ore, has generated numerous iron ore targets. Extensive use has been made of regional geophysical surveys, surface investigations and computer modelling of relevant geological information for target generation.

This area is well known for iron and manganese-bearing lithologies that extend from Kathu to Postmasburg on a north-south trending mega-structure termed the Maremane Anticline. Sishen Iron Ore Company Pty (Ltd), a wholly owned subsidiary of Kumba Iron Ore Pty (Ltd) currently owns and operates two iron ore mines in the region. Sishen Mine is located on the northern extremity of the Maremane anticline, while Kolomela Mine is situated at the southern boundary of the anticline. The Heuningkranz deposit is situated 22 km directly north-northwest of Kolomela Mine. If the public road network is used, they are 32 km apart.

Kumba Iron Ore discovered iron ore mineralisation on the farm Heuningkranz 364 in 2008. Since then, geophysical surveys followed by exploration drilling, as per a structured prospecting work programme, has confirmed the presence of extensive iron mineralisation on the properties. Work on the Heuningkranz deposit has focussed primarily on core drilling, sampling and assaying to define the geometry and grade continuity of the iron ore.

Large diameter geometallurgical drilling, sampling and test work has also been conducted to determine the densimetric (beneficiation), decrepitation and reducibility characteristics of the ore.

Dedicated geotechnical core drilling was undertaken to understand rock strengths and stability and to model appropriate pit slopes.

Three-dimensional geological solids and grade estimation block modelling of validated exploration data informs the Mineral Resource and Mineral Inventory estimates in this report. The data is derived from 690 boreholes (of which 367 are fully cored, 201 hybrid percussion-core holes and 122 are percussion-only holes), from which 56,808 samples were obtained and assayed at the AA plc Technical Solutions (SANAS accredited) Chemistry Laboratory.

A Resource Development Plan has evaluated the mining potential of the Heuningkranz Mineral Resources. Kumba has established infrastructure and a current DSO business configuration in the Postmasburg area. Investigations have focussed on the extraction of high-grade Heuningkranz ore, suitable for a blended DSO product. Conceptually, this ore is to be mined by conventional open pit mining processes, transported to Kolomela Mine, blended with Kolomela ROM, processed and loaded onto the existing rail system. The combined product is then planned to be railed to the Saldanha port on the west coast of South Africa, where, after co-stacking with Sishen ore, it is to be sold and shipped to Kumba Clients across the globe. The foreseen project outline is summarised in **Table 9** below.

Table 9: Heuningkranz Project Outline

| Key Details | |
|-------------------------------|--|
| % Ownership (AA plc) | 53.2 |
| % Ownership (KIO) | 76.3 |
| Commodity | Iron Ore |
| Country | Republic of South Africa |
| Mineral Right Status | Part of Kolomela Mining Right |
| Exploration type | On-mine |
| Exploration phase | Pre-Feasibility |
| Foreseen mining method | Open-pit Conventional Drilling & Blasting and Truck & Shovel |
| Foreseen beneficiation method | Direct Shipping Ore |
| Foreseen product types | High-grade lump (64.0% Fe) and High-grade fines (63.5%Fe) |
| Foreseen market | Iron ore export spot market |

2 OBJECTIVE

The objective of this statement is to declare Mineral Resource estimates for the Heuningkranz deposit as at 31 December 2025, and document assumptions and provide adequate disclosure in a transparent, competent and material manner, in support of the Mineral Resource estimates.

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Table 10: For in-house reporting purposes

Table removed.

3 LOCATION

The Heuningkranz deposit comprises two adjacent properties; Farm 364 (Heuningkranz) and portion 1 of Farm 432 (Langverwacht), located 17 km north-west of the town of Postmasburg.

Kolomela Mine is situated 12 km south-west of the town of Postmasburg. Both fall within the Tsantsabane Local Municipality and within the boundaries of the ZF Mgcawu District of the Northern Cape Province in the Republic of South Africa (**Figure 2** overleaf).

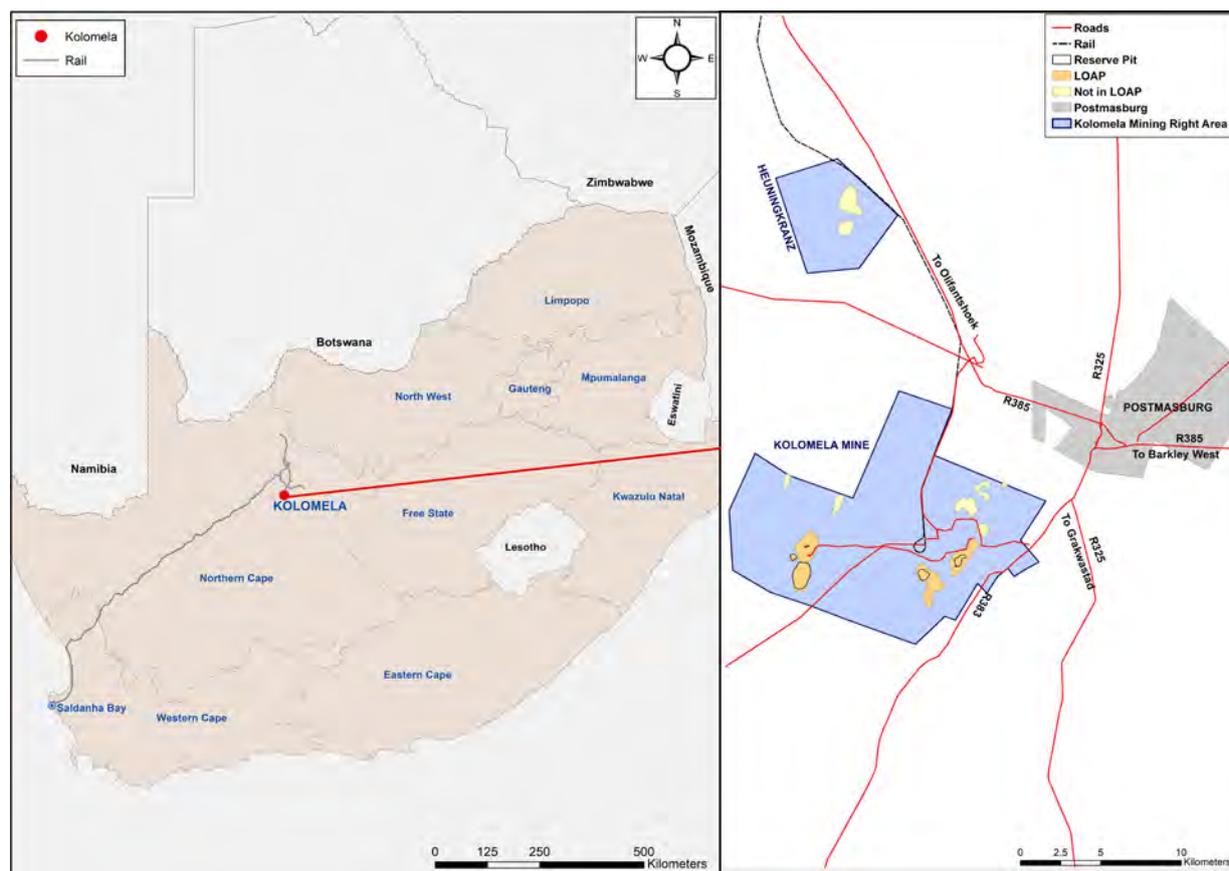


Figure 2: Location of Heuningkrantz deposit and Kolomela Mine

Kumba owns and operates the mining, plant processing and rail loading infrastructure on the Kolomela Mine site. For map reference purposes the Heuningkrantz deposit location can be plotted using the following WGS84 latitude/longitude geographical co-ordinates: 28.21427 S, 22.87748 E.

3.1 CO-ORDINATE SYSTEM

The co-ordinate system applied at the Heuningkrantz deposit to spatially define the Mineral Resources and Mineral Inventory, is the World Geodetic System, 1984 (WGS84). South Africa's official datum for the WGS84 is the Hartebeeshoek 94 datum. Prior to 2000, Kumba used the Cape datum.

At the start of exploration drilling on Heuningkrantz, an external survey company was contracted to measure the borehole collar positions for the project. Collar surveys were conducted by FT Prinsloo Mining and Engineering Surveyors, and was carried out by a qualified surveyor, W.C. Erasmus. The existing Kolomela GNSS base station and GNSS transformation file were used to survey the borehole collar positions. All readings were recorded in the Kolomela Hartebeeshoek 94/LO23 co-ordinate system, consisting of the Transverse Mercator South Orientated Projection and the Hartebeeshoek 94 datum.

After the 2016 geological modelling (which informed the 2018 Mineral Inventory Statement for Heuningkranz), the Principal Surveyor of Kumba Iron Ore audited the positioning of selected borehole collars. The audit identified various survey errors. To rectify the errors, Kumba Corporate Office established a survey baseline, survey network and aerial photogrammetry ground control points within the Heuningkranz prospecting right area. The survey baseline, survey network and aerial photogrammetry ground control points were all approved by Kumba’s Principal Surveyor.

All the borehole collars on the Heuningkranz prospecting right were then re-surveyed by Kumba surveyors using the new survey network. The start and end positions of the survey baseline which forms the origin of the survey network are provided below in **Table 11**:

Table 11: WGS84 Survey base line co-ordinates on Heuningkranz properties

| Base line: Start and end | Y | X | Z (MASL) |
|---------------------------------|------------|----------------|-----------------|
| M146 | 6 268.971m | 3 119 039.580m | 1 264.967m |
| M147 | 6 885.486m | 3 117 645.452m | 1269.156m |

4 OWNERSHIP

The diagram below (**Figure 3**) provides a breakdown of company ownership, with Sishen Iron Ore Company (Pty) LTD (SIOC) owning Kolomela mine (incl. Heuningkranz) 100%; Kumba Iron Ore Ltd (KIO), through its 75.4% shareholding in SIOC, owning 75.4% of Kolomela (incl. Heuningkranz), and Anglo American, through its 69.7% shareholding in KIO, owning 52.5% of Kolomela (incl. Heuningkranz).

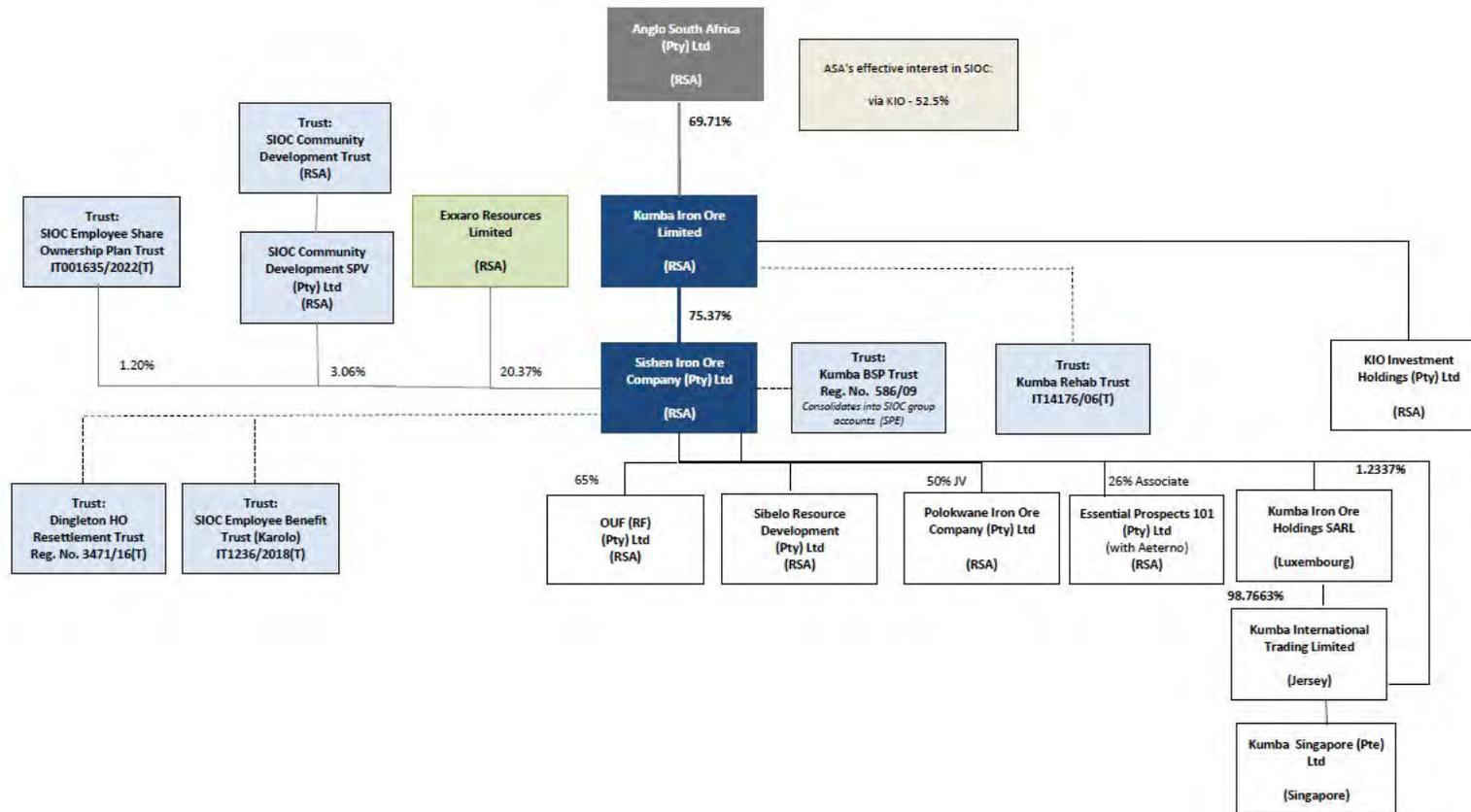


Figure 3: Company Ownership Structure

The Heuningkranz Competent Person for Mineral Resources has verified the details of the Kolomela mining right status. The CP confirmed the information provided in this chapter with Kumba’s Principal for Mineral Rights and Permitting and with Kumba’s Principal for Integrated Reporting – the latter specifically for Closure Cost and Royalties.

All Mineral Resources quoted in this Statement are held under notari ally executed and registered mining rights granted to Sishen Iron Ore Company (SIOC), in terms of the Mineral and Petroleum Resources Development Act (MPRDA), by the Department of Mineral and Petroleum Resources (DMPR) of the South African government.

5.1 MINING RIGHT

All the Heuningkranz Mineral Resources stated in this document, are consolidated within the Kolomela mining right. The original Kolomela mining right was granted on 18 September 2008 by the then South African Department of Mineral Resources and Energy (DMRE). The mining right was notari ally executed and registered (MPT 50/2009) at the Mining Titles Office of the DMRE by Sishen Iron Ore Company Proprietary Limited in 2009. The department has since been renamed as the Department of Mineral and Petroleum Resources (DMPR).

After the discovery of extensive mineralisation on Heuningkranz, the original Kolomela mining right was amended, to include Farm 364 (Heuningkranz) and portion 1 of Farm 432 (Langverwacht), i.e. the Heuningkranz deposit (**Figure 4**). The amendment was granted and registered at the Mining Titles Office in Pretoria on 2 October 2019.

Sishen Iron Ore Company (Pty) Ltd has the right (a 100%, undivided share) to extract, process and sell iron ore from the properties within the Kolomela mining right until 2038. The 2025 Kolomela Life of Asset Plan (LoAP) extends until 2041, and the Resource Development Plan indicates that mining of the Heuningkranz deposit has the potential to extend the life beyond 2041.

According to Section 25 of the Mineral and Petroleum Resources Development Act, No. 28 of 2002 (MPRDA), the holder of a mining right has (subject to Section 24), the exclusive right to apply for, and be granted, a renewal of the mining right in respect of the mineral and mining area in question. Applications to extend the Kolomela mining right will be submitted at the appropriate time and there is reasonable expectation that such extensions will not be withheld.

The Heuningkranz Mineral Resources are thus reported beyond the current tenure period.

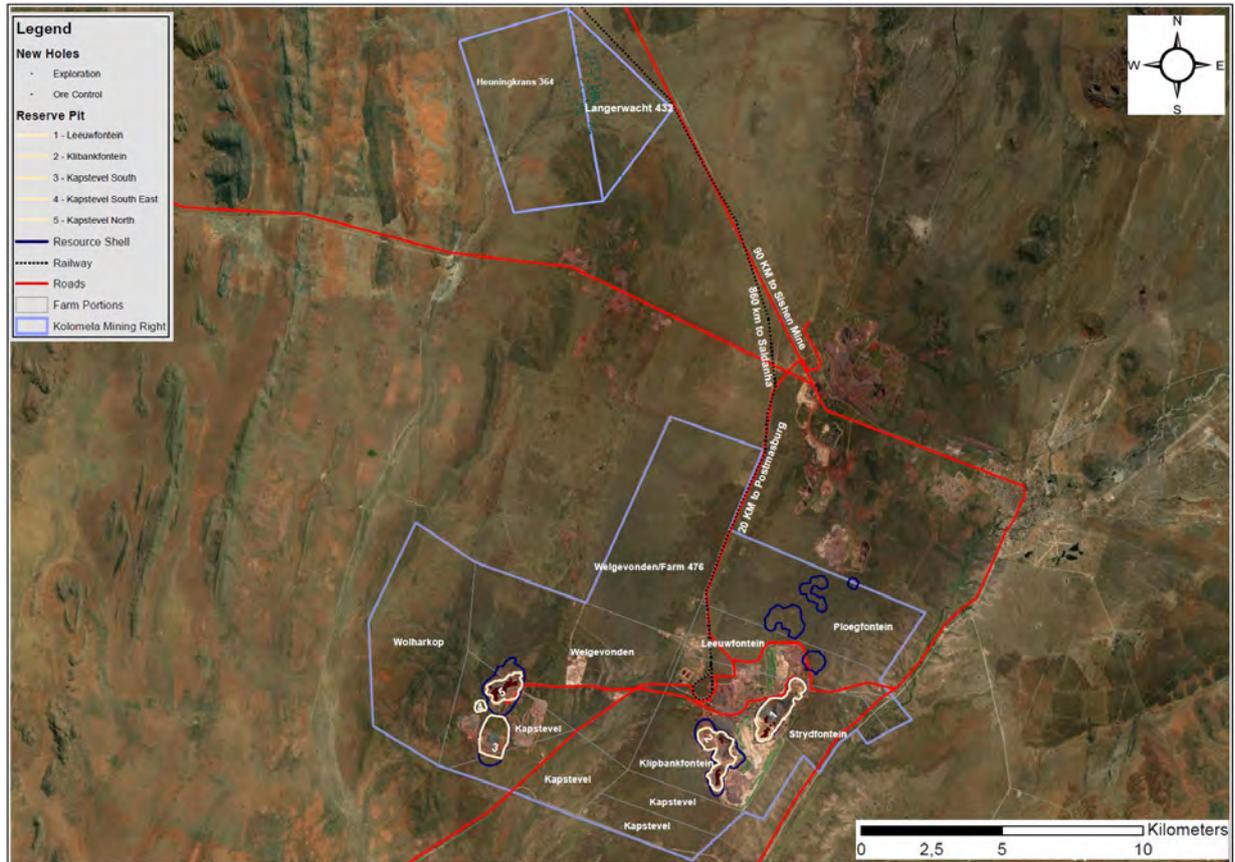


Figure 4: Kolomela Mining Right Area (incl. Heuningkranz portion)

The status of the mining right as at 31 December 2025 and associated authorisations, as required by the MPRDA, are summarised overleaf in **Table 12**.

Table 12: Kolomela mining right status (incl Heuningkranz deposit)

| Mining Right | Comments |
|--|--|
| Mining Right Holder | Sishen Iron Ore Company (Pty) Ltd |
| Mining Right Properties: | Remaining Extent of the Farm Ploegfontein 487; Remaining Extent of the Farm Leeuwfontein 488; the Farm Strydfontein 614; Remaining Extent of the Farm Klipbankfontein 489; Remaining Extent, Remaining Extent of Portions 1, Portion 2 and 3, Portion 3 (a Portion of Portion 1) of the Farm Kapstevl 541; the Farm Welgevonden 476; the Farm Wolhaarkop 485, the Farm Welgevonden 486, Portion 1 of the farm Langverwacht 432 and farm Heuningkranz 364 |
| Mining Right Status: (Granted / Executed / Registered) | Registered |
| Mining Right Grant Date: | 18 September 2008 |
| Mining Right Expiry Date: | 17 September 2038 |
| Mining Right Reference Number: | DMRP Reference Number: NC30/5/1/1/2/069MR (Annexure C to the Right has been substituted by SG 179/2015 and SG 639/2018) Mineral and Petroleum Titles Registration Office: MPT 50/2009 |
| Mining Right Amendments | Registered 31 July 2019 - to suspend clause 8 of the mining right (conditions of disposal of Minerals and/or Products derived from mining) Registered 31 July 2019 - to amend clause 1 of the mining right by substituting the diagram/ marked as annexure C to the mining right with the approved SG Mining Right Diagram N179/2015 and amending clause 1 of the mining right by amending the extent as it appears under measurement from 16 941.92 ha to 16 954.1466 ha Registered 2 October 2019 - to amend the Kolomela mining right and the mining work programme to include Farm 364 (Heuningkranz) and portion 1 of Farm 432 (Langverwacht) |
| Exceptional Factors: | None |
| Mining Work Programme | Mining Work Programme (MWP) amendment application, to align with the 2022 Life-of-Asset Plan, was submitted to DMPR electronically (via SAMRAD) on 13 October 2022 and physically on 18 October 2022. Approved by DMPR on 16 September 2024 (planned for notarial execution in December 2025). The approved MWP is pending endorsement against the mining right. |
| Social and Labour Plan | The updated Social and Labour Plan (SLP4 2025 to 2029) for Kolomela Mine has been approved by the DMPR on 30 January 2025. Kolomela Mine is tracking well against SLP implementation. |
| | Local Economic Development Programme (LEDP): R227.6m to be spent from 2020 to 2024. |
| | Provision for closure: R5,226 million liability (R4,740 million furnished through bank guarantees and R974 million through rehabilitation trust – surplus of R488 million). The closure liability increased by 10% since 2024 |
| | Royalties – R798 million for 2025 (40% lower than 2024) |

Claims and disputes

Over the past number of years, the DMPR has awarded prospecting rights to many third-party entities over; SIOC mining right properties, SIOC owned land adjacent to the operations (where SIOC owns surface rights), and over properties for which prospecting rights have already been awarded to SIOC. Most of these overlapping applications have been for minerals other than iron ore. Nonetheless, they pose a disruption risk to the safe and productive functioning of the KIO activities on the sites.

Upon receiving notice of such applications, various legal actions are taken to mitigate the risk:

- Mandamus applications to compel the DMPR to decide on pending appeals.
- Bilateral engagement with the DMPR Regional Office and the DMPR Chief Director, has led to the resolution of several competing right applications, either through formal withdrawal or rejection.
- The Regional Mining Development and Environmental Committee (RMDEC) meetings being convened for adjudication of matters.
- Submissions to Minerals Council South Africa.
- Ongoing monitoring and management of applications by filing objections and appeals.

To date, the legal actions have prevented operational disruptions, and the post-mitigation risk rating is usually rated as medium.

There are currently no land claims over any of the Kolomela properties, including the Heuningkranz deposit farm portions.

The DMPR has however, granted one overlapping prospecting right and accepted (but not yet granted) a second, overlapping prospecting right for the Heuningkranz properties. Both overlapping prospecting rights are for iron ore and manganese. The Kumba legal team has appealed the decisions. An outcome is still pending. Both pose significant risk due to the competing rights for iron ore and potential disruption to operations if manganese prospecting is sanctioned.

5.1.1 Environmental Authorisations and Sustainability

Sishen Iron Ore Company Pty Ltd holds a valid water abstraction license (10/D73A/ACGI/16708) to conduct prospecting drilling on Heuningkranz.

An Environmental Impact Assessment (EIA) and an Environmental Management Programme (EMP) were required to convert (and include) the Heuningkranz prospecting right into the Kolomela Mining Right. The EIA and an EMP were compiled in 2018 on a concept mine plan and preliminary plant and infrastructure designs. The applications by SIOC were accepted by the DMRE in 2019 and the Heuningkranz prospecting right was subsequently converted and included in the Kolomela Mining right.

Since then, additional drilling of the orebody has generated new information which will require a re-evaluation of the pit and waste dump designs and other infrastructure plans/designs, of which only high-level assumptions were made in the Resource Development Plan. Both environmental studies will have to be repeated, based on final engineering designs. Several of the current Kolomela authorisations and licenses will have to be amended and approved, before mining and processing on Heuningkranz can commence, including the current water abstraction license.

Approved environmental authorisations for Kolomela Mine, which are mandatory for current mining activities, are summarised in **Table 13** overleaf:

Table 13: List of approved Kolomela Environmental Authorisations

| Kolomela Mine (Granted Authorisations/Licenses/Permits and subsequent amendments) | |
|---|--|
| <i>Mineral & Petroleum Resources Development Act EMPR Amendments</i> | 2011 - EMP amendment approved as part of NC 30/5/3/2/1/069EM |
| | 2017 - Integrated Environmental Authorization received |
| | 2017 - EMP amendment to incorporate Heuningkranz into Kolomela mining right |
| <i>National Environmental Management Act Environmental Authorisations</i> | 2007 - Export Pipeline |
| | 2007 - Railway Line & Access road |
| | 2007 - Beeshoek Pipeline |
| | 2008 - 132kV Powerline |
| | 2008 - Hazardous Waste Bunker |
| | 2008 - Radiomast |
| | 2009 - Witsand Road |
| | 2009 - Bulk Refueling facility |
| | 2009 - Perimeter Fence & Firebreak |
| | 2010 - Tailing Impoundment Facility |
| | 2010 - Locomotive Refuelling Facility |
| | 2010 - Permanent Sewage Treatment Plant |
| | 2011 - Explosives magazine |
| | 2013 - Bulk Refueling Facility Expansion |
| | 2014 - Aquifer recharge |
| | 2015 - Kapstev el waste rock dump expansion |
| | 2019 - Vegetation clearance permit for Kapstev el South mining development (issued in 2020) |
| | 2019 - Vegetation clearance permit for Leeuwfontein Waster Removal Dump and DMS Plant Discard Development (issued in 2020) |
| | 2019 - Vegetation clearance permit for Leeuwfontein Phase 8 Pit Development (issued in 2020) |
| | 2022 - Integrated Environmental Authorisation |
| | 2025 - Flora permit - Support Infrastructure (stockpiles and Maintenance areas) |
| | 2025 - Flora permit - Leeuwfontein / Ploegfontein / Kapstev el At pit, dump and infrastructure development |
| | 2025 - Flora permit - Kapstev el South development - pits and dumps |
| | 2025 - Fauna permit - General fauna removal |
| | 2024 - Flora permit - Welgevonden exploration |
| | 2025 - Fauna permit - Stockpile areas |
| | 2025 - Flora permit - Kapstev el South development - South and East |
| <i>National Environmental Management: Waste Act Waste Management Licenses</i> | 2010 - Hazardous waste storage facility |
| | 2011 - General waste site |
| | 2024 - Bioremediation Facility (Second Issue for Facility - Renewal) |
| <i>National Water Act: Water use licenses</i> | 2023 - Intergrated water use license |
| <i>National Environment Management: Air Quality Act Atmospheric Emmission License</i> | 2024 - Atmospheric emmission license |
| <i>National Forest Act</i> | 2025 - Department of Forest, Fisheries and the Environment - Support infrastructure |
| | 2024 - Department of Forest, Fisheries and the Environment - Leeuwfontein/Ploegfontein footprint |
| | 2024 - Department of Forest, Fisheries and the Environment - Kapstev el North |
| | 2025 - Department of Forest, Fisheries and the Environment - Kapstev el South |
| | 2025 - Department of Forest, Fisheries and the Environment - Kapstev el waste dumps |
| | 2025 - Department of Forest, Fisheries and the Environment - Infrastructure areas |

Kolomela Mine has no outstanding authorisation applications awaiting approval to execute its 2025 LoAP (which does not include Heuningkranz as no Ore Reserves have been declared for Heuningkranz to date).

In 2024, Kumba provided comprehensive feedback through its annual Sustainability report in adherence to the Global Reporting Initiatives (GRI) reporting standards (core compliance) and Mining Sector Supplement. Additionally, a Climate Change report was developed based on the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD).

The reporting is also aligned with the AA1000 Stakeholder Engagement Standard, the sustainable development principles and reporting framework of the International Council on Mining and Metals (ICMM), and the principles of the United Nations Global Performance Compact.

Kumba makes use of a combined assurance model to provide the Company with assurance obtained from management and from internal and external assurance providers. Nexia SAB&T (Nexia) has provided independent assurance of selected sustainability key performance indicators. Nexia’s assurance statement is provided in the stand-alone Kumba Sustainability report which is available on the company website:

<https://www.angloamericankumba.com/investors/annual-reporting>

In terms of governance and ethical leadership, Kumba has set out the following structures, led by the Kumba Board, to hold Kumba management accountable to the ambitions set for 2030:

- Social, Ethics and Transformation Committee (Setco)
- Safety, Health and Sustainable Development (SHSD) Committee (which assumed relevant responsibilities from the Setco and commenced with its remit in February 2023)

Kumba, in collaboration with its parent company Anglo American, is evaluating the reporting requirements of the newly introduced South African guideline for the reporting of ESG parameters (SAMESG Guideline). It must be noted that the SAMESG Guideline has not yet been incorporated into the JSE Listings Requirements as stipulated for minerals companies.

Kumba’s Executive Committee (Exco) is accountable for day-to-day sustainability management and performance, as well as all aspects of overall strategy.

The Company takes a collaborative approach to ensuring sustainability across the various functions and to delivering on sustainability performance objectives. Anglo’s purpose is “re-imagining mining to improve people’s lives”, using innovative thinking, enabling technologies and collaborative partnerships to shape an industry that is safer, more sustainable, and better harmonised with the needs of our host communities and society.

To deliver on the parent company purpose, Kumba has a Sustainable Mine Plan (SMP), which is built around three global sustainability pillars designed to support the United Nation’s Sustainable Development Goals (UNSDGs). For detailed information on Kumba’s progress against the SMP targets one is referred to the Sustainability and Climate Change reports on the angloamericankumba.com website.

To maintain a healthy environment, Kumba has set the following ambitions to achieve by 2030:

- A 30% reduction in operational greenhouse gas (GHG) emissions compared to a 2016 baseline.

- Kumba’s operational assets are water-positive due to the dewatering activities that ensure dry and safe mining conditions, and low water-use on site. Kumba aims to improve water-use efficiency indicators, to further reduce the total water used at operations, and augment freshwater diverted to host communities and third parties within the catchment areas where the company operates.
- A net-positive impact on biodiversity by 2030, against a 2018 baseline.

To maintain a positive impact on our communities, Kumba has set the following ambitions to achieve by 2030 under the pillar of “Thriving Communities”:

- Contribute to achieving good health and wellbeing within our host communities by supporting programmes and projects that contribute to positive health outcomes.
- Assisted support to schools within our host communities to perform within the top 20% of state schools nationwide.
- Support shared prosperity in our host communities by facilitating five off-site jobs for every on-site job.

The Kumba “Trusted Corporate Leader” pillar covers three key areas: Accountability, Ethical Value Chains and Policy Advocacy. The stretched goals Kumba has set within these areas are designed to be challenging and the company has set a target to achieve the goals by 2030.

To realise these ambitions, Kumba has developed site plans with detailed pathways for each operation. A notable planned action for Kolomela mine is a 10 MW renewable energy solution (wheeled solar or wind), through Envusa Energy.

Kumba will be conducting a regional water balance assessment, aimed at evaluating the water security risks of our host communities, to ensure that we tailor initiatives to address these. This will inform Kumba’s regional water strategy, ensuring sustainable long-term provision of water to our host communities.

An underlying objective of our refreshed strategy is to ensure that Kumba is a responsible producer of steelmaking raw materials, and an active participant in the world's green steel decarbonisation pathway. In delivering on this objective, Kumba is restructuring operations towards carbon neutrality, working to decarbonise the value chain, and carefully considering the broader socio-economic impacts associated with this global energy transition.

Informed by a thorough assessment of the priority energy and carbon-reduction options at Sishen and Kolomela, and by modelling different climate scenarios through to 2040, Kumba has developed pathway options to deliver on the target of a 30% reduction in absolute GHG emissions (scope 1 and 2) by 2030, (versus a 2016 baseline), and an ambition to achieve a 50% reduction in scope 3 emissions by 2040 compared to a 2020 baseline.

Kumba is currently reviewing operational site-specific targets to align with our latest mine plans and diesel and electricity usage forecasts. Kumba tracks each operational site on its monthly energy consumption and CO₂ GHG emissions against these targets. The defined carbon emission targets are linked to management share awards over a three-year period.

To deliver on the reduction targets, Kumba is focusing on various opportunities to:

- reduce the carbon and energy intensity of the mining operations by implementing efficiency measures
- investigate scope 1 savings on fossil fuel usage through fuel switching and electrification where feasible
- replace scope 2 fossil-based electricity with renewable electricity
- remove remaining carbon emissions through offset projects

To increase renewable energy useage, Kumba is partnering with Anglo American to harness South Africa’s great potential in terms of solar and wind energy.

Recognising the pace and scale of developments in local and global policy frameworks, climate-related technologies and changing macro-economic pressures, Kumba’s pathway has been designed to be dynamic, and will evolve to address these developments.

5.1.2 Surface Rights

Sishen Iron Ore Company (Pty) Ltd is the owner of the title deeds to the surface rights of the Heuningkranz properties. Details are provided in **Table 14** and copies of the title deeds are referenced in **Addendum C**.

Table 14: Surface rights of the Heuningkranz properties

| Registered Farm Name | Extent (ha) |
|-------------------------------------|-------------|
| - Farm 364 (Heuningkranz) Remainder | 2,383.0861 |
| - Farm 432 (Langverwacht) Portion 1 | 1,043.2560 |

The title deeds to all the surface rights within the Kolomela mining rights areas are also owned by SIOC.

6 PROPERTY DESCRIPTION

6.1 INFRASTRUCTURE

6.1.1 Roads

Road access to the Heuningkranz mining right area is via the R385 tar road from Postmasburg toward Beeshoek Mine, and then further west, via a gravel road, which services farms and small mines in the vicinity. The distance from Postmasburg to the mining right area is 30 km of which 11 km is tarred. The distance from Heuningkranz to Kolomela Mine is 32 km, of which 13 km is tarred.

6.1.2 Electricity and water supply

Prior to prospecting by Kumba, the farmhouse and sheds on the property, fulfilled the needs of the owner and his livestock business. Upon purchase of the surface rights, Kumba converted the farmhouse to offices for the exploration team. Kumba installed an integrated solar generation facility for the project and built sheds for core logging, sampling and storage. Water is pumped from boreholes on the farm and additional water can be obtained from a water collection point on the Kolomela dewatering pipeline.

A 132-kV Eskom overhead line from the Postmasburg substation currently traverses the Heuningkranz mining right area.

6.1.3 Airport

The closest airport is Tommy's airfield at Beeshoek Mine. The airfield is 19 km by gravel road (plus 3 km tar road) from the Heuningkranz deposit. It is 14 km by tar road from Kolomela Mine. Kumba has an agreement with Assmang (the owner) to fly personnel to and from OR Tambo International Airport in Gauteng.

A Kumba owned airfield (Sishen airport) is located outside the town of Kathu, which is 109 km by tar road from Kolomela Mine.

There are also national airports at Kimberley and Upington, which are respectively 200 km and 250 km from Postmasburg.

6.1.4 Railway

Product from Kolomela Mine is transported via a 36 km rail link that joins the main Sishen-Saldanha export line outside the town of Olifantshoek. The ore is then transported some 800 km to Saldanha harbour for export. The Kolomela-Olifantshoek rail link traverses the eastern boundary of the Heuningkranz deposit on the farm Langverwacht 432 Ptn 1 (**Figure 4**). Iron ore can also be transported on the internal general freight line from Beeshoek mine, to destinations within South Africa.

6.1.5 Nearby Mining Activities

There is considerable mining activity within a 20 km radius of the Heuningkranz deposit (Figure 5) below:

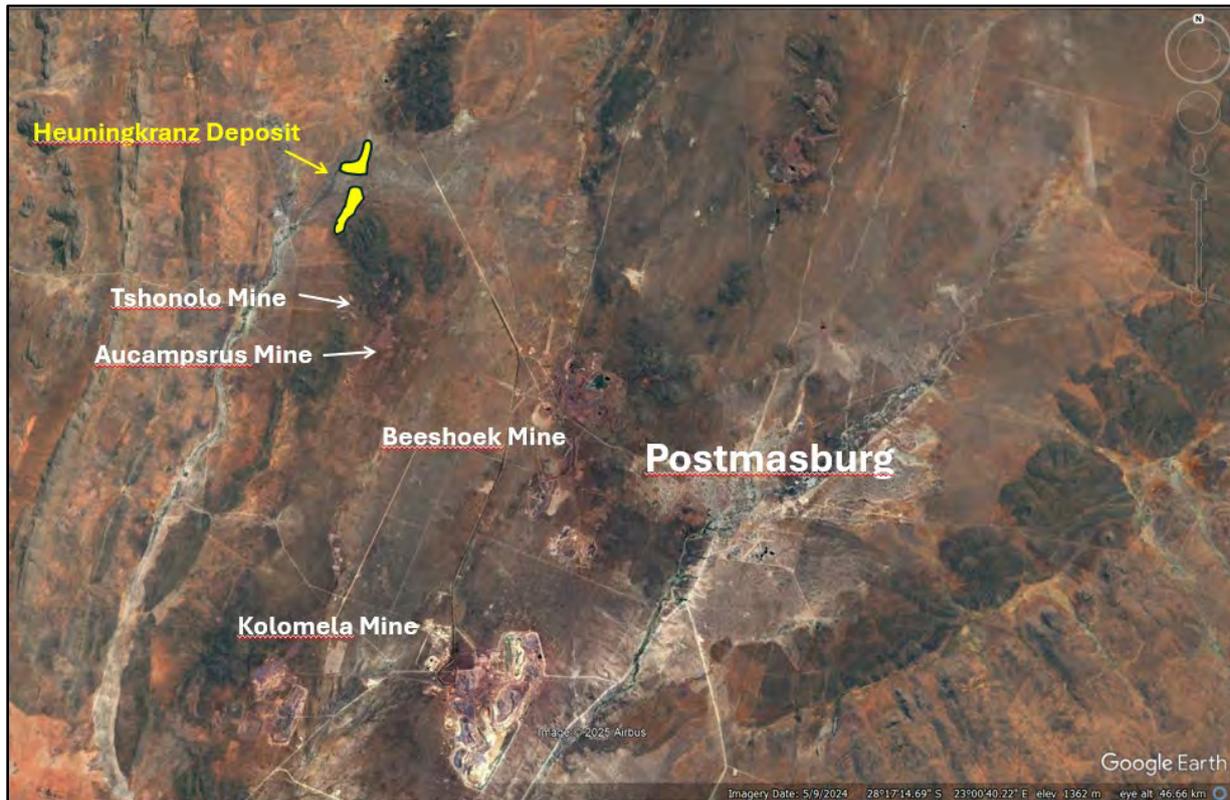


Figure 5: Nearby mining activity

The largest mine, with the best developed infrastructure, is Kolomela Mine owned by Kumba Iron Ore. It is situated some 11 km south-southeast of Heuningkranz on the following adjoining farms, Ploegfontein 487, Leeuwfontein 488, Strydfontein 614, Klipbankfontein 489, Kapstevél 541, Wolhaarkop 485, Welgevonden 476 and Welgevonden 486.

The next largest operation is Beeshoek Mine located on the properties Beesthoek 448 and Olynfontein 475. It is an old iron ore mine, owned by Assmang and is currently in a downsizing or closure phase.

Closest to the Heuningkranz orebodies (4 km south) are two small, junior-owned, shallow pit, iron and manganese operations. They have minimal capital investment, production is invariably erratic, and product is transported by road:

| | |
|-----------------|---|
| Aucampsrus Mine | Located on Aucampsrus 447 and Turner 431 Rem Extent. Operated by Ringside Trading 520 Pty Ltd (now possibly owned by Nuberry Enterprises Pty Ltd) |
| Tshonolo Mine | Sited on Turner 431Ptn 1. Operated by MR Tshenolo Iron Ore Investments |

In recent years, there has been exploration activity on all properties adjacent to the Heuningkranz deposit.

6.2 Physiography

The Heuningkranz deposit is situated within the southern part of the extensive plains of the Kalahari Basin thornveld. It falls within the savannah biome that includes the arid, base-rich savannah sub-type (Huntley, 1984) with highly variable annual rainfall.

The Heuningkranz climate can be summarised as semi-arid. Temperatures typically range between 11 °C (51 °F) and 25 °C (77 °F) through the year but in extreme cases can drop to -8 °C (18 °F) or can rise to as high as 42 °C (108 °F). The average annual precipitation amounts to about 350 mm (13.9 inches) and is focussed in the summer months and very often occurs as heavy thunderstorms. Precipitation and evaporation are important, as it determines storm water management requirements on the site. There is no ambient rainfall data available from the Heuningkranz weather station. Postmasburg is located within a low rainfall area with a mean annual rainfall of approximately 285 mm. Rainfall is highly unpredictable with most rainfall occurring between November and April. The rainfall usually falls as a result of thunderstorms when tropical thunderstorm activity extends southwards over the Kalahari. Mean annual evaporation (2,450 mm) is higher than annual rainfall (332 mm), which results in a major net moisture deficit of over 2,000 mm throughout the year.

Wind fields recorded from Heuningkranz weather station are dominated by winds from the northwest. The strongest winds (>7 m/s) are also from these directions. Calm conditions occurred for less than 1% of the time, with the average wind speed being 5.2 m/s. During the day the wind direction is predominantly from the northwest. At night, winds tend to blow from the north and north northeast. Wind direction and speed are important as it contributes to the dispersion of pollutants originating from activities at the site.

The land surface is thinly grassed with profuse, low, thorn scrub. Sparsely distributed, indigenous tree species include camel thorn, wild olive and Sheperd's trees.

6.2.1 History

From as far back as 1804, early travellers exploring the interior of Southern Africa have recorded the presence of specularite excavations (specular form of haematite) in the Northern Cape (Cairncross and Dixon, 1995). The most well-known diggings are those occurring in the Postmasburg area. Archaeologists have dated these early diggings at 2000 BC.

Burchell (1822) noted that specular haematite was mined by natives for cosmetic purposes from Blinkklipkop near Postmasburg. Stow (1874) and Rogers (1906, 1907), in first describing the general stratigraphy and geology of the area, mentioned the occurrence of haematite-rich breccia and conglomerate, apparently without realising their potential as possible iron ores.

It was probably only after the discovery of manganese in the area during 1922 (Hall, 1926), that the potential of high-grade iron ore in the region was recognised. Iron ore outcrops were first described by Wagner (1928) who estimated that at least 28 Mt of plus 60% Fe haematite ore was present in the Sishen-Postmasburg area.

The full potential of the Sishen deposit was only realised in 1945 when Iscor (a government parastatal) took out options on the farm Sishen and after drilling through the overburden, proved at least 200 Mt of ore with an iron content of up to 68% (Van Wyk and Beukes 1982). Mining activities and the commissioning of a dry screening plant commenced in 1953.

During the early 1950's, Iscor funded regional exploration in the area between Sishen and Postmasburg and on the banks of the Orange River, approximately 130 km south of Postmasburg. During this regional exploration campaign, the Welgevonden (now Kolomela) orebodies, as well as the Bovenzeekoebaart and Nougá deposits near Prieska, were discovered.

Although exploration on the Welgevonden deposits started in 1953, numerous geophysical, mapping and exploration drilling campaigns in later years, finally resulted in the start of construction of Kolomela mine in 2007. First ore production was realised by the end of 2011.

A regional Northern Cape iron ore project, the Sibelo Project, was initiated in 2002 as a joint venture between Kumba Resources Limited (spin-off from Iscor) and BHP Billiton. An aero-gravity and magnetic survey was flown between the Orange River in the south, and the manganese fields to the north of Sishen Mine.

Initial investigations concentrated on the identification and ranking of geophysical anomalies. Target areas were identified by a thorough study of the gravity and magnetic data, together with the available regional geology data.

Several properties covering some of the prominent gravity anomalies were taken under option via old order prospecting rights. These properties were systematically investigated and either retained for later drilling or discarded. The evaluation process continued according to the strategic intent of both Kumba Resources and BHP, who sought a world class deposit in the Northern Cape, using cutting edge exploration technology. In later years, new-order prospecting right applications were submitted on the remainder of the identified anomalies. This was done according to the Sibelo Board approved project schedule.

The first Heuningkranz prospecting right was granted on 14 August 2007 for an initial period of five years. An application to renew the Prospecting Right for an additional three years was eventually granted - effective from 16 September 2016 and expired on 15 September 2019. Before the expiry date, an application was submitted to convert the prospecting right to a mining right. It was accepted by the DMRE in 2019, and the properties were subsequently included in the Kolomela Mining Right, after being purchased from the previous landowner, Mr. Maritz, who actively farmed on the properties.

Prospecting started late in 2007, and the first reconnaissance drilling (percussion) took place in 2008. Drilling was limited to a depth of 250 m but in places, also stopped by strong groundwater. Iron mineralisation was discovered in the fourth hole at a depth of just more than 200 m. The drill programme was thereafter adjusted to focus on shallower (up-dip) targets. The shallowest, high-grade mineralisation of the main orebody was later intersected at a depth of 86 m. By the end of 2008, sixteen percussion drill holes had been drilled on prominent gravity anomalies and up-dip sections.

Once the presence of iron mineralisation was confirmed by the reconnaissance drilling of the anomalies (identified during the Falcon survey), several additional geophysical surveys were undertaken (in parallel) with numerous drilling campaigns:

- In 2010, a high-resolution ground gravity and magnetic survey was carried out to refine the aerial anomalies for core drilling. The survey was done on a 50 m x 50 m station spacing over most of the area, with a 100 m x 50 m spacing in two smaller peripheral areas. Results were analysed, plotted and sub-surface models created to better define targets for core drilling.
- In 2015, an airborne electromagnetic survey (measuring conductivity, resistivity and magnetics) was conducted by Anglo American, over widespread areas of the Northern Cape (including Heuningkranz). The survey helped identify sub-surface structures such as fault blocks and grabens which constrain and preserve the iron ore.

- In 2018 a micro-spaced (20 m x 20 m) high-resolution ground gravity survey was conducted over the eastern half of the Heuningkranz properties. The sub-surface modelling attempted to identify shallow ore targets, define sub-surface structures (such as channels, faults, sinkholes, cavities and fractures) and was used to identify sterile areas for future infrastructure and waste dump positions.

Throughout this period, percussion and core drilling continued unabated to delineate and sample the ore bodies. In 2013, large diameter core drilling was introduced to recover sufficient sample mass for geometallurgical testing. Inclined core drilling was established in 2015 to confirm fault and thrust structures and in 2017, dedicated geotechnical core drilling was undertaken. Large diameter percussion drilling was added in 2018, to drill holes for ground water pump tests. A summary of the drilling history is provided in **Table 15**.

Table 15: Drilling campaigns at the Heuningkranz project

| | | | | | | | | | | | | | | | |
|---------------------------|-------|-----------|-----------|--------|-----------|----------|-----------|----------|---------|----------|-----------|----------|-----------|----------|----------|
| Exploration | 2 008 | 2009&2010 | 2011&2012 | 2 013 | 2014 | 2015 | 2016 | 2017 | 2 018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
| No of holes | 16 | 32 | 141 | 114 | 152 | 130 | 55 | 99 | 65 | 17 | 3 | 0 | 21 | 14 | 0 |
| Cumulative | 16 | 48 | 189 | 303 | 455 | 585 | 640 | 739 | 804 | 821 | 824 | 824 | 845 | 859 | 859 |
| No of Meters | 3 084 | 5 906 | 32690 | 29 830 | 35795 | 32663 | 14975,11 | 20894,76 | 14 840 | 6399,12 | 884,08 | 0 | 3182,67 | 2282,94 | 0 |
| Cumulative | 3 084 | 8 990 | 41680 | 71 510 | 107305 | 139968 | 154943,11 | 175837,9 | 190 678 | 197077,3 | 197961,33 | 197961,3 | 201144 | 203426,9 | 203426,9 |
| Geomet | 2 008 | 2009&2010 | 2011&2012 | 2 013 | 2014 | 2015 | 2016 | 2017 | 2 018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
| No of holes | | | | 2 | 10 | 0 | 3 | 19 | 15 | 0 | 0 | 0 | 19 | 0 | 0 |
| Cumulative | | | | 2 | 12 | 12 | 15 | 34 | 49 | 49 | 49 | 49 | 68 | 68 | 68 |
| No of Meters | | | | 440 | 2115,05 | 0 | 645,4 | 3770,52 | 3 710 | 0 | 0 | 0 | 3178,38 | 0 | 0 |
| Cumulative | | | | 440 | 2555,09 | 2555,09 | 3200,49 | 6971,01 | 10 681 | 10681,31 | 10681,31 | 10681,31 | 13859,69 | 13859,69 | 13859,69 |
| Geotech | 2 008 | 2009&2010 | 2011&2012 | 2 013 | 2014 | 2015 | 2016 | 2017 | 2 018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
| No of holes | | | | | | | | 3 | 5 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cumulative | | | | | | | | 3 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| No of Meters | | | | | | | | 666,64 | 2 316 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cumulative | | | | | | | | 666,64 | 2 983 | 2982,88 | 2982,88 | 2982,88 | 2982,88 | 2982,88 | 2982,88 |
| Hydro-geology | 2 008 | 2009&2010 | 2011&2012 | 2 013 | 2014 | 2015 | 2016 | 2017 | 2 018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
| No of holes | | | | | | | | | 6 | | 1 | 0 | 0 | 0 | 0 |
| Cumulative | | | | | | | | | 6 | 6 | 7 | 7 | 7 | 7 | 7 |
| No of Meters | | | | | | | | | 1 947 | 0 | 93 | 0 | 0 | 0 | 0 |
| Cumulative | | | | | | | | | 1 947 | 1946,6 | 2039,6 | 2039,6 | 2039,6 | 2039,6 | 2039,6 |
| Inclined Exploration | 2 008 | 2009&2010 | 2011&2012 | 2 013 | 2014 | 2015 | 2016 | 2017 | 2 018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
| No of holes | | | | | | 1 | 7 | 9 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Cumulative | | | | | | 1 | 8 | 17 | 17 | 19 | 19 | 19 | 19 | 19 | 19 |
| No of Meters | | | | | | 527,41 | 3075,19 | 3595,83 | 0 | 674,86 | 0 | 0 | 0 | 0 | 0 |
| Cumulative | | | | | | 527,41 | 3602,6 | 7198,43 | 7 198 | 7873,29 | 7873,29 | 7873,29 | 7873,29 | 7873,29 | 7873,29 |
| Total Geoscience Drilling | 2 008 | 2009&2010 | 2011&2012 | 2 013 | 2014 | 2015 | 2016 | 2017 | 2 018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
| No of holes | 16 | 32 | 141 | 116 | 162 | 131 | 65 | 130 | 91 | 19 | 4 | 0 | 40 | 14 | 0 |
| Cumulative | 16 | 48 | 189 | 305 | 467 | 598 | 663 | 793 | 884 | 903 | 907 | 907 | 947 | 961 | 961 |
| No of Meters | 3 084 | 5 906 | 32690 | 30 270 | 37910,05 | 33190,41 | 18695,7 | 28927,75 | 22 813 | 7073,98 | 977,08 | 0 | 6361,05 | 2282,94 | 0 |
| Cumulative | 3 084 | 8 990 | 41680 | 71 950 | 109860,09 | 143050,5 | 161746,2 | 190674 | 213 487 | 220561,3 | 221538,41 | 221538,4 | 227899,46 | 230182,4 | 230182,4 |

Footnote: **Table 15** includes duplicate drill holes (A, B and C holes) which had to be re-drilled for various reasons, e.g. sidewall collapse, twin drilling, etc.

To date, 859 vertical exploration boreholes, 19 inclined core holes, 68 large diameter core geometallurgical boreholes, 8 geotechnical core boreholes and 7 geo-hydrological percussion holes have been drilled (only 690 of these boreholes passed validation for geological modelling purposes).

Geological modelling and grade estimation has confirmed the presence of high-grade iron mineralisation. Despite intensive exploration efforts to discover shallow ore, the bulk of the ore is found at depths ranging between 100 m and 260 m below surface. The cost of stripping waste to expose ore at this depth, has until recently, been a major economic barrier to the feasibility of the project.

A significant portion of the orebody has high Fe grades (> 65% average is ideal for a DSO product) but the Al₂O₃ and K₂O content is also high. To command a premium price, the Heuningkranz ores will require blending and/or beneficiation to lower the associated contaminant levels. If that is not possible, the ore can be sold on the current Spot Market, but it will incur penalties.

The application of the latest Anglo American long-term, iron ore price forecast and three-year Kolomela Budget Plan average mining, process and selling costs during the 2025 pit optimisation process, as well as high-level blending scenarios with both Kolomela and Sishen ores, has, for the first time, defined the RPEEE portion of the Heuningkranz endowment with some of it having the potential to be mined, processed and sold as a DSO product in future as per Kumba's 2025 Resource Development Plan indications.

7 GEOLOGICAL SETTING

7.1 REGIONAL GEOLOGY

Kolomela Mine and the Heuningkranz deposit are located on the southern end of the “iron ore belt” in the Northern Cape province of South Africa (**Figure 7**) below:

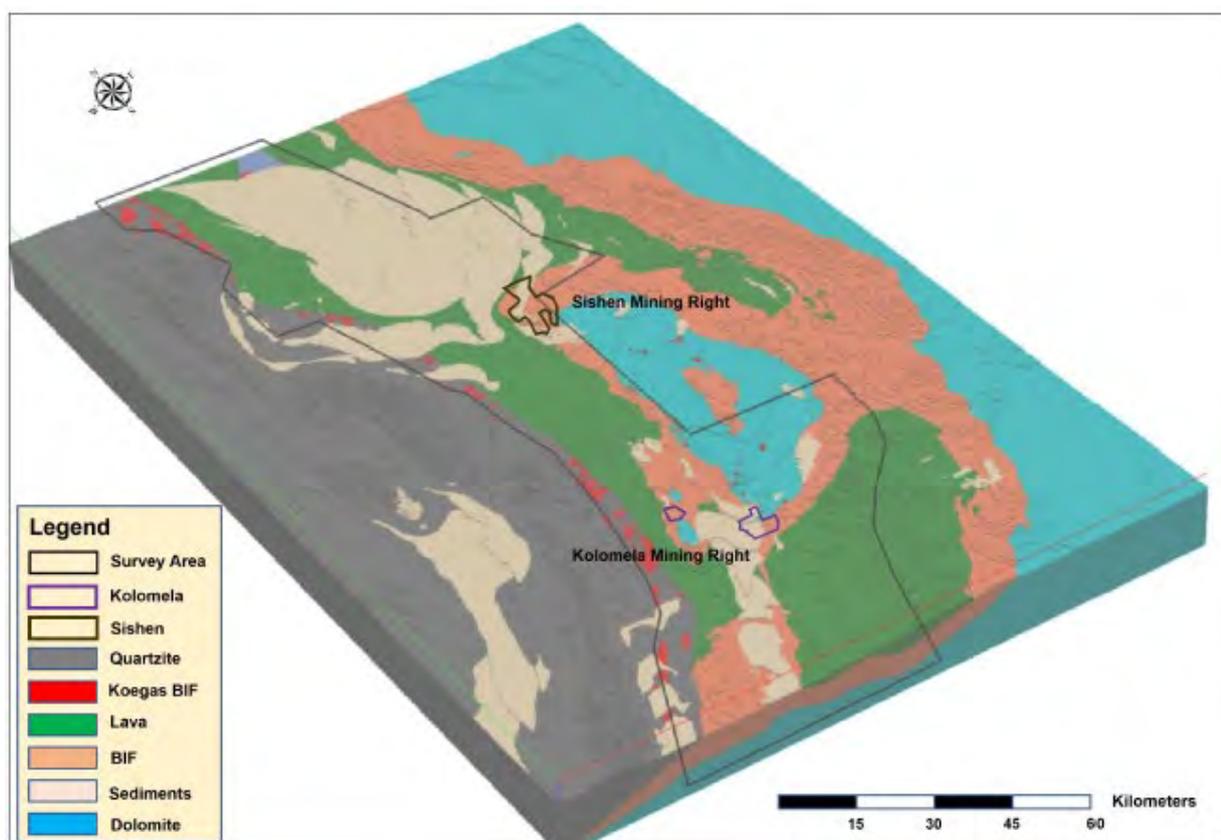


Figure 7: Location of Kolomela Mine and Heuningkranz in the “iron ore belt”.

The Transvaal Supergroup (Eriksson et al, 1993; 1995), or Griqualand West Supergroup, as it is referred to where it occurs in the Northern Cape, is host to all iron ore occurrences in the region. The Supergroup was deposited in fault-controlled basins on a basement of Archaean granite gneisses and greenstones and/or lavas of the Ventersdorp Supergroup (Beukes, 1983). In the Kathu-Postmasburg region, the oldest rocks of the approximately 8 km thick Griqualand West Supergroup (Beukes, 1980) are the ~1.6 km thick carbonate platform sediments (dolomites with minor limestone, chert and shale) of the Campbell Rand Subgroup belonging to the Ghaap group (Beukes, 1983; Altermann and Wotherspoon, 1995; Beukes, 1986).

Conformably overlying the carbonates is a banded iron formation (BIF) unit, the Asbestos Hills Subgroup (*Beukes, 1980*), which is considered to be a Superior-type BIF, that can be up to 500 m thick. Locally, the upper units in the BIF (Kuruman and Griquatown Iron Formations) have been enriched to high-grade ore, i.e. Fe > 60%. The ores found within these units comprise the bulk of the high-grade iron ores in the region.

The Kuruman Iron Formation is conformably overlain by the Griquatown Iron Formation. The two iron formations differ in that the Griquatown Iron Formation, comprising mainly allochemical sediments, was deposited in a shallow-water, storm-dominated epeiric sea (*Beukes, 1984*), whereas the Kuruman Iron Formation, comprising orthochemical iron formations, was developed deeper in the basin (*Beukes, 1980*). Across the Maremane Anticline, the Griquatown Iron Formation has been almost entirely removed by erosion. An erosional unconformity separates the BIFs from overlying clastic sediments of the Gamagara Subgroup.

During uplift and erosion, solution and karstification of the upper dolomitic units of the Ghaap group occurred and a 10 to 20 m thick, residual solution breccia, referred to as the “Manganese Marker”, “Wolhaarkop Breccia” (*van Wyk, 1980; van Schalkwyk and Beukes, 1986*) or Wolhaarkop Formation, developed between the basal dolomites and overlying BIF. Locally, deep sinkholes developed in the dolomites, into which the overlying iron formation collapsed (*Beukes, 1983*).

A thick sequence of younger clastic sediments (shales, quartzites and conglomerates) of the Gamagara Subgroup, unconformably overlie the banded iron formations of the Asbestos Hills Subgroup. Some of the basal conglomerates are comprised almost entirely of haematite and can achieve high grades. Most of the ore conglomerates are of medium and lower grades. The Gamagara Subgroup is interpreted as the base of the Paleoproterozoic (~2.10-1.83 Ga) Olifantshoek Supergroup. The latter is unconformably overlain by the Paleoproterozoic (~2.35-2.10 Ga) Postmasburg group along an interpreted thrust contact in the area (*van Schalkwyk and Beukes, 1986; Friese and Alchin, 2007*). The thrust fault has been folded during subsequent deformation.

An altered gabbroic sill in the Kolomela Mine area typically separates the iron ore from the underlying host BIF or is intrusive into the BIF (*Carney and Mienie, 2002*). It is interpreted to have intruded into the Griqualand West Supergroup in late Proterozoic times (*Friese and Alchin, 2007*).

Diamictite of the Makganyene Formation (*de Villiers and Visser, 1977*) and lava of the Ongeluk Formation (Postmasburg group) have been thrust over the Gamagara Formation sediments in the vicinity of Postmasburg, which are now preserved only within the larger synclinal basins (*Schütte, 1992*).

Makganyene diamictites comprise massive to poorly bedded diamictite, pebbly sandstone and siltstone, shale and mudstone up to 100 m thick, which are interpreted as piedmont glacial and glaciofluvial assemblages (*Beukes, 1983; Visser 1971*). A second facies within the Makganyene contains stacked cycles of graded bedded diamictite-greywacke-siderite banded lutite, which have been interpreted as glaciomarine deposits (*Beukes, 1983*).

The Ongeluk lavas (up to 600 m thick; *Schütte, 1992*) were extruded under water in a marginal basin within the continental setting of the Kaapvaal Craton and comprise essentially tholeiitic basaltic andesites. The lavas have been dated at $2,240 \pm 57$ Ma (*Walraven et al, 1982*), $2,239 \pm 90$ Ma (*Armstrong, 1987*) and $2,222 \pm 13$ Ma (*Cornell et al, 1996*).

A considerable portion of the upper parts of the stratigraphy was eroded during Dwyka glaciation and re-deposited as tillite (*Visser, 1971*) during the Cretaceous era. The entire, folded sequence was later truncated by Tertiary erosion, and a thick blanket of calcrete, dolocrete, clays and pebble layers of the Kalahari group were deposited unconformably over the older lithologies.

7.1.1 Regional Stratigraphy

As with the Sishen and Kolomela deposits, iron ore at Heuningkranz is associated with the chemical and clastic sediments of the Proterozoic Transvaal Supergroup. These sediments define the western margin of the Kaapvaal Craton in the Northern Cape province. Iron ore mineralisation is restricted to the central and eastern margins of the Maremane anticline between Kathu and Postmasburg – the so called “iron ore belt”.

The stratigraphic succession has been deformed by thrusting from the west and has undergone extensive karstification. The thrusting has produced a series of open, north-south plunging anticlines, synclines, grabens and karstification has been responsible for the development of deep sinkholes. The iron ore at Heuningkranz has been preserved from erosion within these deep geological structures on the northern flank of the Wolhaarkop anticline. These structures are therefore important exploration targets.

With only local minor variations, the Heuningkranz stratigraphy is essentially very similar to that found at Kolomela and Sishen Mines and is best illustrated in **Figure 8** overleaf:

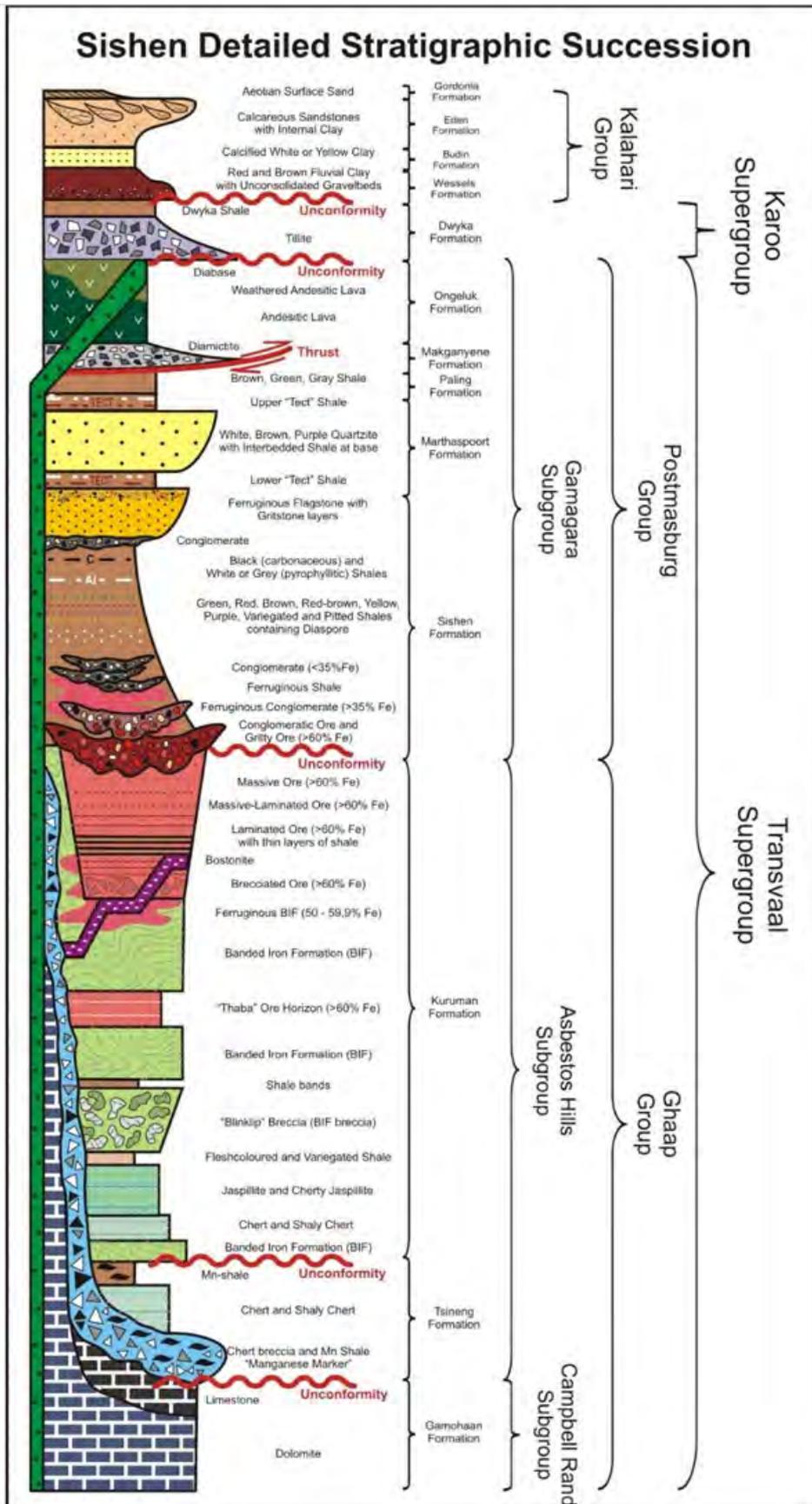


Figure 8: Simplified stratigraphic column depicting the Sishen local geology (Deacon and Venter, 2017)

7.1.2 Regional Tectonic Setting

Structurally, Kolomela Mine and the Heuningkranz deposit are situated on the southern margin of the Maremane double plunging anticline, which resulted from a protracted series of tectonic events (Stowe, 1986; Hälbich et al., 1993; Friese, 2007a, b; Friese and Alchin, 2007) that affected the western margin of the Kaapvaal Craton.

Structural studies by Stowe (1986), Altermann and Hälbich (1991) and Hälbich et al. (1993) concluded that the lower Transvaal Supergroup exhibits at least three major phases of compressional tectonism. The overall number of events may be significantly higher; Altermann and Hälbich (1991) suggested that there were possibly seven events.

The development of this part of the Kaapvaal Craton is summarised below, in chronological order and using current azimuths, from Stowe, (1986), Altermann and Hälbich (1991), Hälbich et al. (1993), Friese (2007a, b) and Friese and Alchin (2007):

- ~2.78-2.64 Ga: Ventersdorp rift basin development. NE-SW trending faults, which formed graben boundaries, developed due to basin initiation and subsidence
- ~2.64-2.60 Ga: Extrusion and deposition of the volcano sedimentary Vryburg Formation and Ventersdorp lavas
- ~2.60-2.52 Ga: Development of a carbonate platform, during widespread marine transgression; consequent conformable deposition of the Schmidtsdrif and Campbell Rand Subgroup dolomites
- ~2.52-2.46 Ga: Off-craton/oceanic rifting to the west, accompanied by hydrothermal deposition of manganiferous chert of the Wolhaarkop Formation. This was followed by deposition of the Asbestos Hill Subgroup (banded iron formations)
- ~2.46-2.35 Ga: Incipient break-up and rifting, along a set of N-S trending, W-dipping normal faults in the Kaapvaal Craton during a “second extensional stage” (Friese and Alchin, 2007). According to Dalstra and Rosière (2008), “E1” or their first extensional event occurred immediately before the “Kalahari Orogeny” (see below)
- ~2.35-2.25 Ga: The first phase of folding (F1) resulted from the E-verging “Kalahari Orogeny”. Altermann and Hälbich (1991) cite the >2.24 Ga or pre-Makganyene development of the Uitkomst cataclasis as part of this event, which they attribute to a bedding-parallel thrust. F1 folds were predominantly N-S trending; therefore, the main axis of the Maremane Anticline is effectively a 2.35-2.25 Ga F1 anticline or an F2-tightened F1 anticline.

Pre-existing, predominantly rift-related normal faults were inverted and underwent a component of strike-slip reactivation, concomitant with this eastward tectonic vergence; their adjacent, uplifted blocks were eroded. An additional feature of this event appears to be the formation of conjugate NE- and SE-trending strike-slip faults which are radially distributed around the eastern curve of the Maremane Anticline.

This orogeny also caused uplift and erosion of underlying units, including the Ghaap Group, to form the Postmasburg Unconformity, which is pivotal in regional ore development and/or preservation. The deposition of the Makganyene Formation of the Lower Postmasburg Group, which has a minimum age of 2.22 Ga, probably resulted from this event

- ~2.24-1.83 Ga: Reactivation of faults related to both the N-S trending passive margin rift and the Ventersdorp Rift, causing deposition of the fault-controlled or fault-bounded, volcano-sedimentary/volcanoclastic Upper Postmasburg Group. Ongeluk lavas signify the peak of mafic lava extrusion at c. ~2.22 Ga, via feeder dykes that exploited reactivated NNE to NE-trending faults (Friese and Alchin, 2007;). *Dalstra and Rosière (2008)* correctly inferred that dykes locally recrystallised iron ores at Kolomela Mine.

Within this interval, deposition of clastic sediments in the form of conglomerate, “grit”, quartzite and shale of the Gamagara Subgroup and overlying Olifantshoek Supergroup took place within a shallow-water rift environment (Beukes, 1983) at ~2.05-1.93 Ga. The second extensional event or “E2” of *Dalstra and Rosière (2008)* occurred during or shortly after this period, as reactivated normal faults displaced or offset the lower Olifantshoek Group, although such structures tend to pre-date the Kheis Orogeny.

Apparently overlapping in age with this extensional event is the formation of south-verging folds and thrusts, which, according to *Altermann and Hälbich (1991)*, are the oldest post-Matsap event at 2.07-1.88 Ga

- ~1.83-1.73 Ga: The Kheis Orogeny or tectono-metamorphic event, like the Kalahari Orogeny, showed eastward tectonic vergence that was accompanied by thrusting and folding (*Stowe, 1986; Beukes and Smit, 1987; Altermann and Hälbich, 1991; Hälbich et al., 1993*). The Kheis Orogeny is more precisely dated at ~1780 Ma, using a ³⁹Ar-⁴⁰Ar metamorphic age derived from the Groblershoek Schist Formation of the Olifantshoek Supergroup (*Schlegel, 1988*). Rift structures of the Postmasburg Group and Olifantshoek Supergroup depositional settings were reactivated while F2 folding and thin-skinned, regional thrusting occurred along major unconformities and lithological contacts.

In some areas, F1 folds were tightened co-axially during F2 folding. In the Sishen area, thrusting was concentrated at the shale-dominated, tectonised margins of a quartzite member within the upper Olifantshoek Group; these horizons are termed “tectonised shale” in drill core, although this sequence appears to be very poorly developed at the Heuningkranz deposit. *Friese (2007) and Friese and Alchin (2007)* have termed these and other low-angle thrusts “principal or major décollements”

- ~1.15-1.0 Ga: The NNW-directed Lomanian (Namaqua-Natal) Orogeny caused deformation along the southern margin of the Kaapvaal Craton. The effects of this were manifold: reactivation and buckling of N-S trending normal and inverted normal faults, reactivation of the 2.35-2.24 Ga NE- and SE-trending conjugate strike-slip faults, usually with upthrow to the SE and SW, respectively, the development of ENE-trending F3 folds, which may have contributed to broad F2/F3 fold interference patterns (Mortimer, 1994, 1995). This may also have contributed to the geometry of the Maremane Anticline, which is effectively a large-scale “Ramsay style” interference fold with a radial set of fractures/faults, in which conjugate relationships may still be observed. The Dimoten and Ongeluk-Witwater Synclines, wherein the Postmasburg Group is preserved, are situated towards the eastern foreland of the Maremane Anticline.

The intensity of deformation increases from east to west, and the Heuningkranz area is dominated by regional-scale synforms and antiforms - the so-called Welgevonden Basin and Wolhaarkop anticline. The area west of the Wolhaarkop antiform, (including the western limb of the antiform itself), is characterised by tight overturned fold structures that verge towards the east. The overturned limbs of the fold structures are locally disrupted, which has produced stacked thrusts with limited displacement. East of the antiform (Kolomela area), the folds are upright, tight to open structures that have variable inter-limb angles.

The fold structures west of the antiform are the product of east-west crustal contraction during the Kheis Orogeny, which produced eastward-directed thrusting. Thrust faults that were intersected in drill core in the Welgevonden north area, caused duplication of the stratigraphy. The high degree of deformation is clearly illustrated in drill core from the Welgevonden area and duplication, or elimination, of iron ore may occur.

The Wolhaarkop area is structurally more intensely deformed than the Kapsteveld and the Welgevonden areas. The folds are tight to isoclinal, over-folded with an eastwards vergence. With subsequent deformation the fold structures became disrupted, resulting in thrust structures with eastwards directed movement. The high-strain zones (thrusts) are locally characterised by a high degree of ferruginisation of extensively brecciated BIF. In some places, the ore is preserved as narrow, tightly folded lenses within the high-strain zones.

At Sishen, it has been suggested that the interference or intersection of F2 synclines and F3 synclines has resulted in deep, steep-sided, circular or ovoid depressions in which ore (and banded iron formation) is notably thicker (*Mortimer, 1994; 1995*). This must be weighed against other models which suggest that areas of very thick, deep ore occupy palaeo-sinkholes, i.e. occur within palaeokarst topography within the Campbell Rand Subgroup (Beukes et al., 2002).

A third model is that of *Dalstra and Rosière (2008)*, which advocates a close association between structures and mineralisation and/or between structures and the preservation of mineralisation. Due to the complex structural and stratigraphic evolution of the area, it is entirely possible that there is a component of all three mechanisms present, albeit substantially complicated by variable preservation.

At Heuningkranz, the association between structures and mineralisation is dominant. Ore is preserved from erosion within synclines, fault bounded blocks and in graben structures. There is also evidence of hydrothermal overprinting of a pre-existing, partially mineralised, sequence of quartzite, shale and iron formation.

Within the Heuningkranz deposit and Kolomela Mine, a complex network of faults has been mapped primarily with the aid of aerial and ground magnetics. A few have been mapped in the Kolomela open pit faces, others have been recognised in core drilling at both sites. The fault traces are depicted overleaf in **Figure 9**.

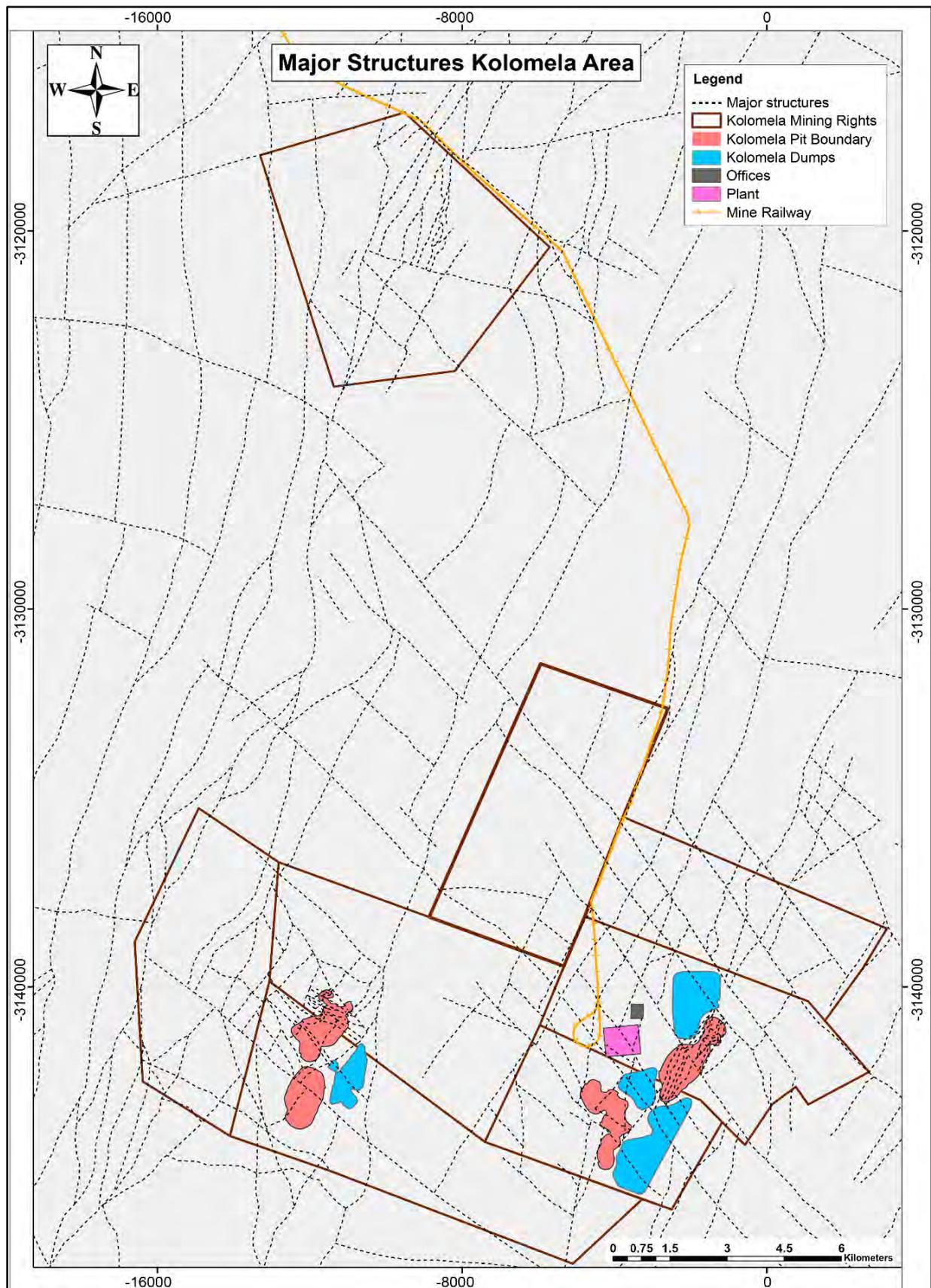


Figure 9: Inferred structure lines at Kolomela Mine and Heuningkranz

Later tectonism resulted in the breakup of Gondwana and associated Pan-African reworking. Regionally, Bushveld-age gabbroic rocks intruded into the Ghaap and Postmasburg Groups within a clearly defined NE-trending graben, essentially accommodated by the reactivation of Ventersdorp faults (*Friese and Alchin, 2007*). The gabbroic units are best preserved at Kolomela Mine.

7.2 REGIONAL ORE GENESIS

High-grade iron ore across the region is defined as any lithology containing haematite and specularite with an Fe content $\geq 60\%$. Blending and modern beneficiation technology has made it possible to also beneficiate lower-grade ores, with the result that the definition of ore has undergone major changes in recent years. Today, at some operations, an iron content of $\geq 40\%$ can be considered potential plant feed if subjected to ultra-high dense medium separation and blended with higher grades.

Haematite mineralisation is pervasive throughout the region but is especially prolific in the vicinity of the Maremane Anticline (*van Schalkwyk and Beukes, 1986; Hälbich et al., 1993; Carney and Mienie, 2002; Friese and Alchin, 2007*). Oxidisation of haematite-poor to haematite-rich iron-formation, just below the Transvaal-Olifantshoek unconformity, has been recorded over 120 km, from Rooinekke Mine (50 km south of Postmasburg) to Sishen Mine in the north.

During uplift of the Maremane anticline, the carbonates of the Campbell Rand Subgroup were exposed to weathering and dissolution. Deep, conical sinkholes developed into which overlying strata slumped and collapsed. Many of the sinkholes contain brecciated iron formation which has been ferruginised to various grades. Economic examples of this type of ore preservation are the Manganore and Sedibeng Mines located on the Eastern Belt, between Sishen and Postmasburg.

Small, discontinuous lenses and pods of specularitic haematite are commonly found across the Maremane anticline in a breccia unit that separates the dolomites of the Campbellrand Subgroup, from overlying iron formations of the Asbestos Hills Subgroup. This haematite invariably contains stringers and blebs of chert and quartz, which together with extremely limited and irregular distribution, eliminates its economic potential.

Deep weathering of the exposed iron formations of the Asbestos Hills (Kuruman and Griquatown Formations) and Koegas (Doradale, Rooinekke and Nelani Formations) oxidised the various iron minerals to form haematite. The original and early diagenetic iron carbonates, iron silicates and magnetite have all been replaced by haematite without loss of the chert/iron mineral micro-banding and meso-banding which is a prominent feature of their un-oxidised equivalents (*Holland et al, 1990*).

The banded iron formation is notably brecciated in places and haematite forms massive, low-lustre clast and fine-grained specularitic cement and vein fillings. The haematite content increases upwards through the banded iron formation until the main ore horizon is reached in the upper portion of the Asbestos Hills Subgroup.

Economic mineralisation generally occurs as individual orebodies in fault-bounded basins or as fold-controlled, concordant lenses adjacent to the erosional unconformity separating the underlying banded iron formation from the clastic Gamagara Subgroup. Examples are the Kolomela and Khumani iron ore mines, and the Beeshoek and Kolomela iron ore mines which lie at the northern and southern extremities of the Maremane anticline, respectively.

Ore-grade haematite is also found as thin lenses within the middle and upper portions of the banded iron formation. These lenses are usually found just below thick, continuous, undulating, stratabound bodies, which comprise the bulk of the high-grade iron ore.

The stratabound main ore horizon lies directly beneath the unconformity surface separating the Asbestos Hills Subgroup from the clastic Gamagara Subgroup. This ore zone constitutes the primary source of high-grade, laminated and massive ores in the Northern Cape (Carney and Mienie, 2002).

High-grade, poorly sorted, angular ore conglomerates usually lie on, or just above the pre-Gamagara erosional unconformity. More mature, lower-grade ore conglomerates, gritty ores and ferruginous shales occur stratigraphically higher up in the Gamagara sediments. These ferruginised units tend to grade upward into un-mineralised conglomerate and shale beds. There is some evidence that the angular and sub-rounded conglomerates might have originated as mass flows adjacent to fault structures.

7.2.1 High-grade (A-grade) Ore

Four distinct high-grade iron ore types have been intersected by the drilling at Heuningkranz:

7.2.1.1 Laminated ore

Laminated ore (**Figure 10**) comprises alternating micro bands of high-lustre haematite with equally thin, porous bands of lower-lustre haematite and specularite. Parallel layering in the ore shows remarkable lateral uniformity and boundaries are sharply defined. The layering is generally less than 10 mm thick. The ore is believed to have developed by supergene enrichment of primary banded iron formation of the Kuruman Formation belonging to the Asbestos Hills Subgroup and is usually preserved in synclinal and graben structures.

The contact between the laminated iron ore and the underlying banded iron formation is gradational, but is occasionally separated by an intrusive, gabbroic sill. The laminated ore grades upward into high-grade massive (or clastic-textured ore) belonging to the Griquatown Formation.



Figure 10: Laminated ore in Heuningkranz drill core

7.2.1.2 Massive ore

Massive ore (**Figure 11**) comprises massive haematite with little or no discernible lamination. When banding is present the bands are considerably thicker than those in the laminated ore – up to 200 mm and are occasionally interbedded with thin shale units. The primary lithology is believed to be banded iron formation of the Griquatown Formation, within the Asbestos Hills Subgroup.

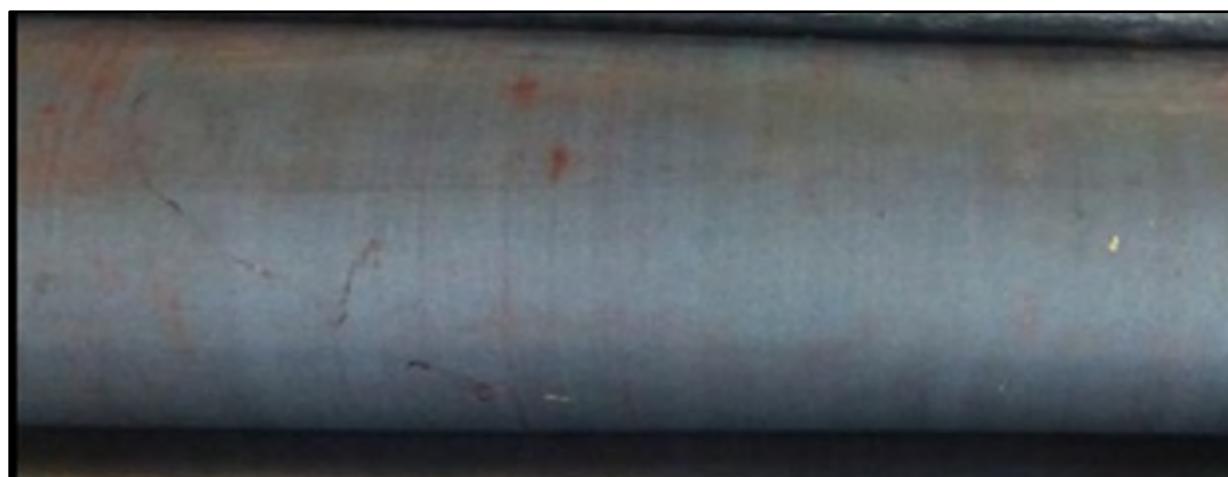


Figure 11: Massive ore in Heuningkranz drill core

7.2.1.3 Brecciated ore

Brecciated ore (**Figure 12**) is commonly found in the laminated and massive ores, but especially in areas of severe, structural deformation. It comprises angular fragments of laminated and massive ore in chaotic arrangement. Individual clasts are blocky to angular in shape. The fragments are cemented by fine-grained specularite and haematite. In places the fragments are cemented by silica. Margins to fragments are usually well defined with sharp corners and edges. Fragment size is highly variable, from small flakes of less than 0.5 mm to large blocks of 2 m in diameter. The average clasts are about 25 mm across.

The brecciated ore is the product of sudden, brittle deformation of laminated and massive ores due to local and regional tectonism. These ores are then often found in irregular contact (both hanging wall and footwall) with banded iron formation breccias.

This ore type can easily be confused with Collapse breccia ores at Kolomela. The latter formed during the collapse of laminated and massive (clastic textured) ores into solution cavities (sinkholes), within the underlying dolomite.



Figure 12: Brecciated ore in Heuningkranz drill core

7.2.1.4 Conglomeratic ore

Conglomeratic ore (**Figure 13**) is considered to represent highly ferruginised (secondary enriched) Gamagara conglomerates, which often unconformably overly massive and laminated ore. It comprises poorly sorted, angular to sub-rounded haematite pebbles and clasts in a ferruginised matrix of haematite and specularite cement. Ferruginisation tends to disappear in conglomerates higher up in the Gamagara Subgroup. The conglomeratic ore is sporadically distributed and is volumetrically a minor ore type at Heuningkranz. The conglomeratic ores belong to the same stratigraphic unit described at both Sishen and Kolomela mines.

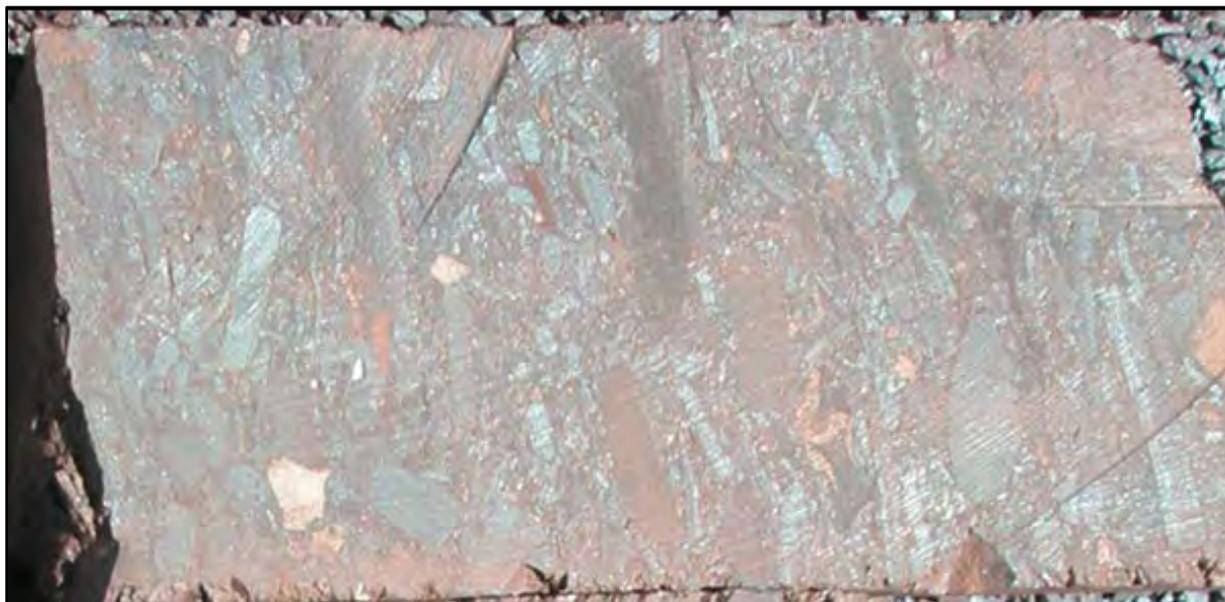


Figure 13: Conglomeratic ore in drill core

7.2.2 Adjacent waste lithologies

7.2.2.1 Gamagara Formation (roof material)

7.2.2.1.1 Conglomerates

Conglomerates represent partially ferruginised Doornfontein conglomerates of the Gamagara Subgroup. These conglomerates generally lie higher in the Gamagara package, above the basal unconformity. The conglomerates tend to be more mature. Sub-rounded to rounded haematite and subordinate iron formation clasts are cemented in a matrix of haematite, chert and clay minerals. They are often found interbedded with gritty low-grade ores and ferruginous shales. Stratigraphically, the medium and low-grade conglomerates and shales grade upward into un-mineralised conglomerate and shale beds.

Textures of the Gamagara conglomerates suggest rapid, mechanical erosion of laminated and massive ore outcrops. Van Schalkwyk and Beukes (1986) suggested that the ore conglomerates were deposited in alluvial fan systems. The conglomerates filled depressions on a highly irregular paleo-surface. It is thus likely that the erosion process, which heralded the onset of Gamagara sedimentation, was assisted by rapid uplift across the Maremane anticline.

Drainage was directed off the Maremane anticline. At Sishen the palaeodrainage was toward the north-west. Across the central parts of the anticline, the drainage was westwards and at Kolomela, toward the south-west.

Basson et. al (2018) suggests that conglomerates originated by weathering of up-thrown blocks and subsequent deposition of the scree into grabens and half grabens pre-dating the deposition of Gamagara shales.

This is supported by thick intersections of poorly sorted angular haematite and BIF clasts found directly to the north of major normal faults within graben structures. This is especially true for conglomerates found near high-grade haematite ores in Kolomela but may not account for all conglomerates found across the Maremane Anticline.

It is however evident, that rapid, large-scale weathering of the high-grade haematite and underlying banded iron formation was needed to form the conglomeratic deposits. It is possible that fluctuating groundwater and basinal dewatering, continued during and after the deposition of the Gamagara Subgroup. Migratory fluids could have haematised conglomerates and adjacent shales at specific stratigraphic horizons. The conglomerates probably offered an ideal plumbing system for the fluids to move through.

Eastwards verging compression related to the Kheis (~1.83-1.73 Ga) and the later Lomanian (Namaqua-Natal; ~1.15-1.0 Ga) Orogeny (Basson, 2014), is thought to have introduced hydrothermal fluids into the system enriching the Gamagara shales, conglomerates and flagstones above the unconformity, while some mineralisation of the BIFs occurred locally along regional thrust and fault planes and in areas of brecciation.

7.2.2.1.2 -Shale

Partially ferruginised shales (**Figure 14**) comprise haematite and specularite intergrown with quartz and clay minerals. The mineralised shales are characterised by distorted bedding and severe microfolding with lenses of un-mineralised shale. Specularite is commonly found on joint and fracture plains and in areas of brecciation.



Figure 14: Typical Ferruginised Gamagara Shale in Heuningkranz drill core.

7.2.2.2 BIF of the Asbestos Hills Subgroup (floor material)

Studies done on un-oxidised banded iron formation of the Asbestos Hills Subgroup indicate that the iron formation was originally deposited as alternating bands of silica (chert) and iron oxide (magnetite), iron carbonate (siderite) and iron silicate (ankerite) minerals. During supergene enrichment of the BIF's, these iron-bearing minerals were either oxidised to various crystal phases of haematite or removed during solution of the chert bands.

In the case of the high-grade laminated and massive haematite ores, silica bands were completely leached, causing compaction of the remaining haematite bands, while secondary haematite associated with meteoric water, filled voids caused by the leaching.

It has been proposed that a significant change in the chemistry of the meteoric water limited the solution of silica at a specific point within the BIF. This could explain the relatively sharp contact between the completely mineralised, high-grade haematite and the underlying unmineralised BIF. Iron minerals within the BIFs were however oxidised by the fluids to haematite, accounting for the current haematite/chert BIF's present below the high-grade haematite ores today. Mineralisation typically decreases with depth and with distance from the high-grade haematite, although evidence exists for one or more periods of secondary hydrothermal mineralisation associated with regional compression.

In-house studies on the mineralised and un-mineralised BIF of the Asbestos Hills subgroup (specifically the Kuruman Formation), has led Watt (2016) to propose the following classification based on textural variations (**Figure 15**) overleaf.

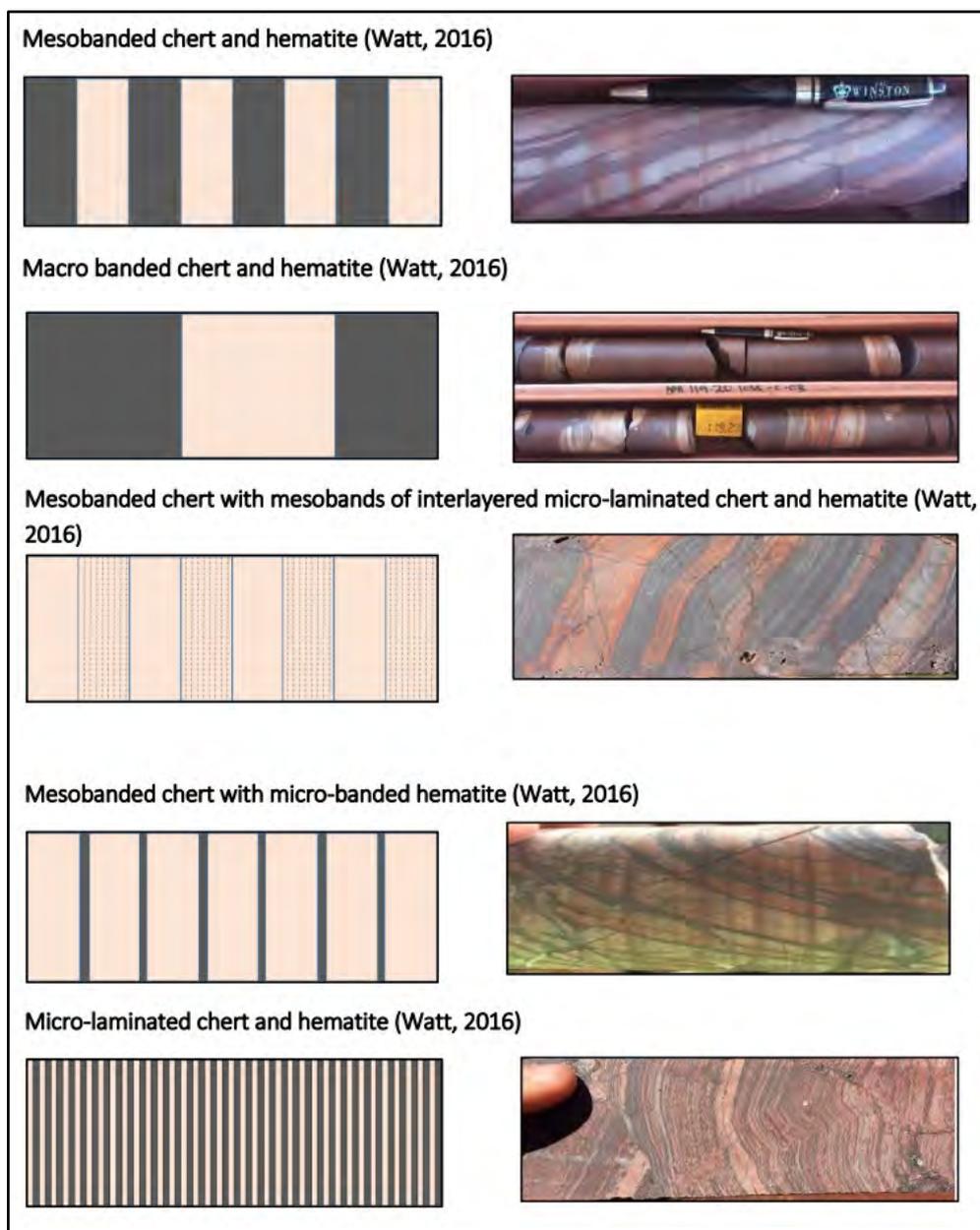


Figure 15: Banded Iron Formation textures

Studies are under way to further differentiate the BIFs based on host lithology, stratigraphic correlation and mineralisation. It is, however, clear from visual inspection, chemical analyses, mineralogical studies and novel haematite dating techniques, that the Heuningkranz mineralisation formed during two or three discrete time periods and events.

Similar to the documented mineralisation of other iron ore deposits found within the “iron ore belt”, the primary ore-forming process was that of ancient supergene enrichment of exposed banded iron formation from ~ 2.2 to 1.8 billion years ago. This is supported by well-preserved pisolites (up to 3 cm in diameter) found within conglomeratic haematite overlying the massive and laminated haematite ores.

Secondary mineralisation, in the overlying Gamagara sediments, strongly supports at least one, or possibly two, later ore forming processes. Haematite dating and mineralogical studies suggest that hydrothermal alteration associated with the Keiss and Namaqua-Natal orogenies, mineralised the Gamagara sediments to iron contents exceeding 60% Fe at specific localities. It also introduced additional Fe mineralisation in the Banded Iron Formation, especially along major low angle thrust structures. Due to the nature and chemistry of the proposed hydrothermal fluids, silica was removed and replaced by haematite, however clay minerals containing Aluminium and Potassium, which were present in the Gamagara sediments, were not removed. This accounts for the high aluminium and potassium contents in the “ferruginised shales” which typically overly the high-grade haematite.

Mineralogical studies of the high-grade ores have identified micaceous minerals, closely intergrown with haematite, as the main contributors of the elevated aluminium and potassium. Due to the closely intergrown nature of the mineralisation, these are typically very difficult to separate out without fine milling.

It is believed that the presence of the elevated aluminium and potassium in the main orebody is related to a greater proportion of host Griquatown Formation BIF, relative to BIF of the Kuruman Formation. The Griquatown formation differs significantly from the Kuruman Formation in that it displays clastic textures (wavy and distorted bedding), and it hosts thin shale partings plus several silicified volcanic ash beds. The shale and ash beds could account for the higher aluminium and potassium content, which is not typical of the BIF chemistry at both Sishen and Kolomela Mines.

7.3 LOCAL GEOLOGY

The surface of the Heuningkranz properties is covered by wind-blown sands and thin (up to 30 m thick) calcrete and limestone belonging to the 1 –1.2 Ma Kalahari Group. Isolated outcrops of andesitic lava of the Ongeluk Formation are found on the central and northern portions of Farm 463, whilst diamictite and iron formation of the Makganyene Formation, crop out as low hills, on the south-eastern portion of the farms. There are no outcrops of iron ore nor of the host Asbestos Hills banded iron formation (**Figure 16**), hence the reliance on geophysical surveys and intensive borehole drilling to delineate and sample the mineralised zones.

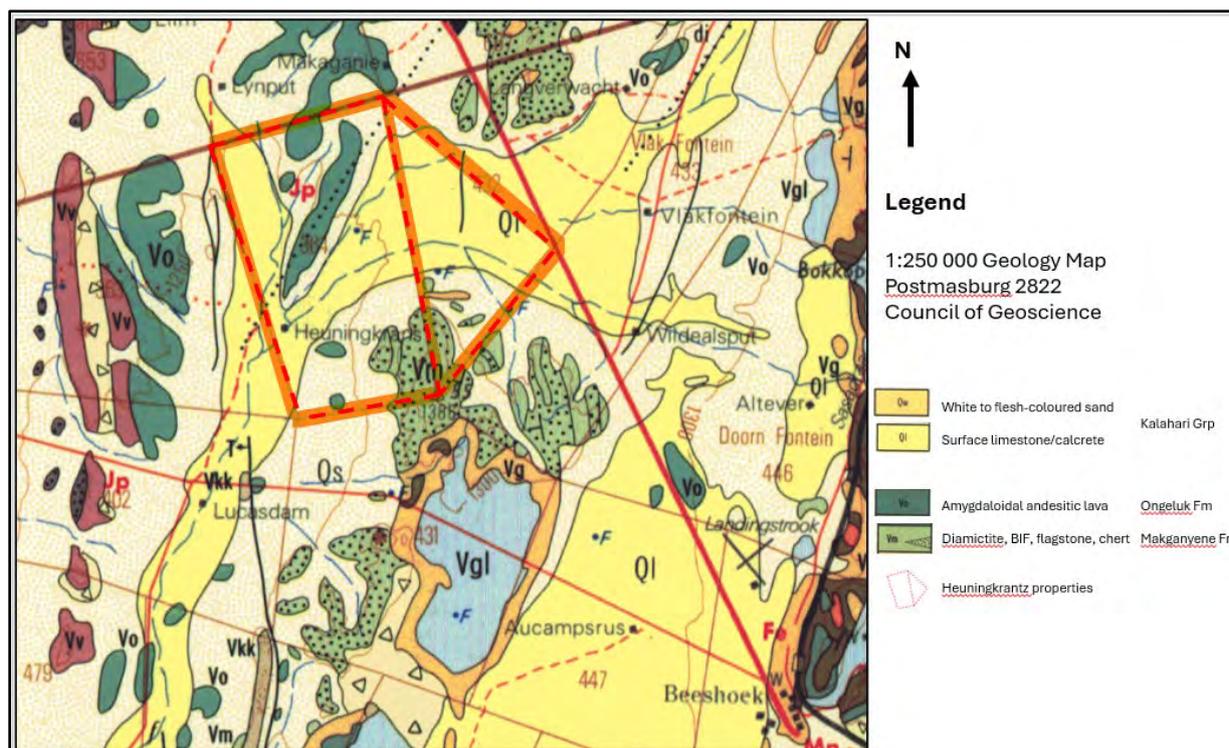


Figure 16: Local surface geology of the Heuningkrantz deposit

The waste lithologies overlying the mineralisation are typically well preserved, competent rock types with limited weathering. The lavas of the Ongeluk formation (in places exceeding 100 m thick) are conformably underlain by diamictites of the Makganyene Formation. The Makganyene Formation glacial sediments can also attain thicknesses exceeding 100 m. It is in turn conformably underlain by thin remnants of iron formation of the Koegas Formation. The Ongeluk, Makganyene and Koegas lithologies have been thrust over sediments of the Gamagara Subgroup. The latter comprises a thick package (up to 200 m) of upward fining shales, quartzites, flagstones and conglomerates, some of which, have been mineralised to ore grade.

The Gamagara sediments were deposited upon an erosional surface (unconformity) which developed in Paleoproterozoic times circa 1,800 Ma, when banded iron formation belonging to the Asbestos Hills Subgroup, was exposed to early surface weathering processes and supergene enrichment. The mineralisation within the Gamagara sediments is mainly of medium- to low-grade (flagstones, partially ferruginised shales and conglomerates) but toward the base of the unit one can find high-grade conglomerates and high-grade ferruginised debris flows. Ores within the Gamagara Subgroup are believed to be the product of later, hydrothermal origin.

Beneath the pre-Gamagara erosional unconformity, is a thick sequence (0 m to 250 m) of banded iron formation (the Asbestos Hills Subgroup) comprising the Kuruman and overlying Griquatown formations.

The banded iron formation lying directly beneath the unconformity is often ferruginised to high grades (> 60 % Fe) which comprises the main orebody on Heuningkranz. The bulk of this ore is laminated ore, conformably overlain by massive ores. Preservation of the original BIF textures suggest the host iron formation was enriched by supergene processes as fluids migrated through the system, replacing the original silica band with haematite crystals. The Kuruman Formation is believed to be the precursor of the laminated ores, whereas the Griquatown Formation was likely the precursor of the massive ores.

The footwall contact with unmineralised banded iron formation is gradational but over a relatively short distance (2-4 m). One does encounter thin, stratiform beds of high-grade ore and partly ferruginised BIF within the unmineralised BIF unit. They constitute a very small portion of the mineral resource estimate.

The iron formations of the Asbestos Hills Subgroup lie unconformably on top of a chert breccia (Wolhaarkop breccia – up to 90 m thick in places) which in turn lies unconformably on dolomite belonging to the Campbell Rand Subgroup.

The Heuningkranz deposit represents sporadic iron mineralisation hosted within the banded iron formation, which has developed along the north-south, frontal margin of the Kheis fold-and-thrust belt. This modelled tectonic unconformity, represents a lateral continuation of the regional Blackridge Thrust. The thrust zone is a product of thin-skinned tectonic processes. It is laterally extensive and shallows gently toward the east, above the BIF-hosted iron mineralisation. In some areas there is evidence of tectonisation with multiple stacking of lithologies, multiple imbrication planes and associated fluid movement. The lavas and diamictite above the thrust zone are characterised by an increase of calcite ± quartz-filled fractures/veins towards the thrust planes.

A unique structural feature of the Heuningkranz mineralisation is that bedding at the base of the Gamagara Subgroup (sediments which lie upon the pre-Gamagara erosional unconformity), has a distinct angular discord with bedding in the BIF of the Asbestos Hill Subgroup, located below the unconformity.

The nature of high-grade haematite mineralisation (HEM) at Heuningkranz is manifold; thin zones of HEM appear to be laterally continuous over several hundred meters, while smaller but thicker (up to 130 m) intersections of HEM, (typically “bar-coded”), are found bounded by high-angle NNE-SSW-trending faults. The latter has been preserved from erosion within the fault block boundaries.

7.3.1 Dimensions of orebody

The Heuningkranz high-grade mineralisation is restricted to discontinuous, lenses within two, structurally controlled deposits (**Figure 17**).

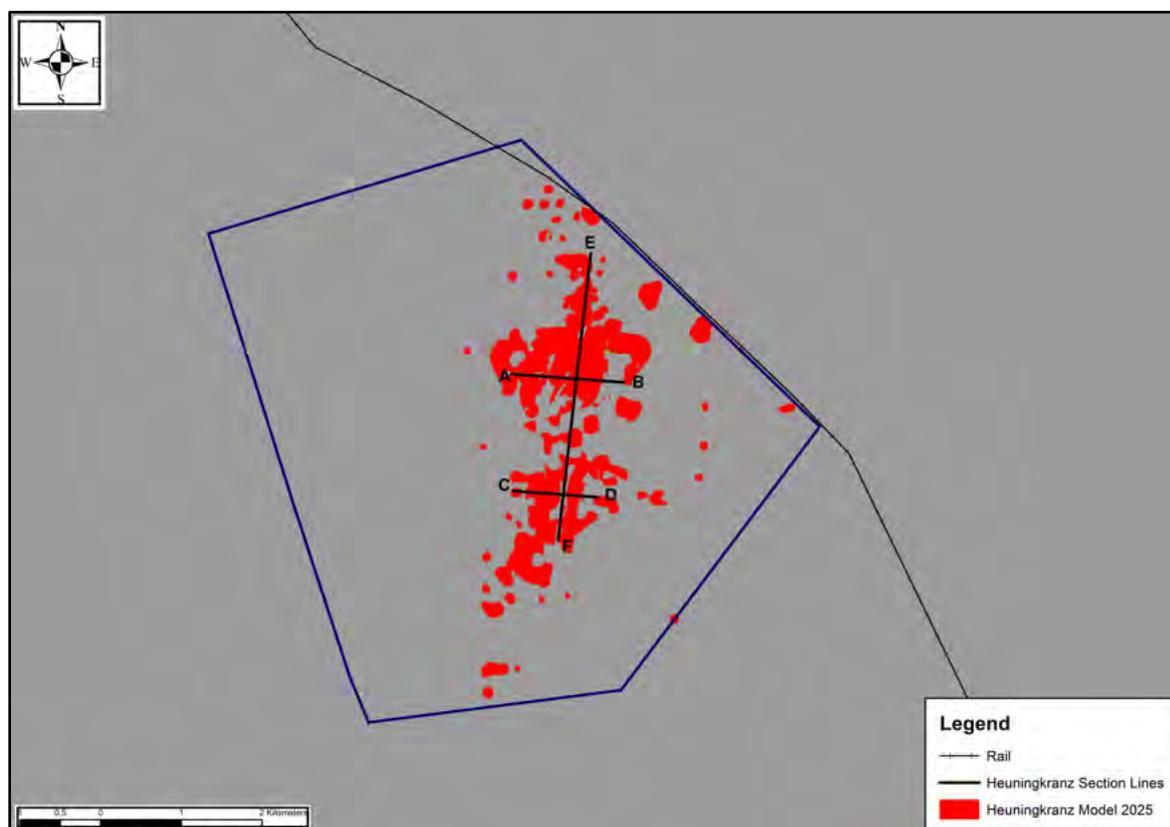


Figure 17: Plan view of Heuningkranz high-grade iron ore mineralisation

- The Northern deposit is approximately 1700 m long and 1300 m wide.
- The Southern deposit is approximately 1700 m long and 675 m wide.

The general strike of the ore and host stratigraphy is NNE – SSW. Lithologies dip toward the west and plunge in a northerly direction - as the deposit is located on the northern limb of the Wolhaarkop anticline. High-grade iron mineralisation is found at depths from 53 m in the east, to 370 m at the deepest intersections in the west.

7.3.2 Stratigraphy and structure of the orebodies

High-grade haematite mineralisation at Heuningkranz occurs as relatively thin (~20 m thick), continuous, stratiform lenses. In the centre of the Northern orebody, one finds anomalously thick haematite intervals (up to 130 m) within high-angle, fault bounded graben-like structures. The thick ore may be thickened individual lenses or tectonically stacked, haematite layers (Basson et. al. 2023).

Structurally, the Heuningkranz mineralisation is relatively complex with numerous compressional and extensional events impacting on the geology. Of particular interest is the low-angle thrusting, associated with the Kheiss and Namaqua-Natal orogeny. This is especially evident where the stratigraphy is duplicated several times. These thrusts propagated through the entire pre-Postmasburg Group stratigraphy and high-grade mineralisation is occasionally duplicated up to three and more times. Interestingly, high-grade haematite has even been found below the first dolomite intersections, which is atypical of the region. The thrusting “thickened” the mineralisation over most of the deposit.

The last major structural deformation related to extensional conditions, which formed north-south trending horst and graben structures. High-grade mineralisation was typically preserved from later regional erosion within the graben structures, as is the case at Kolomela. The thick ore zones are mostly constrained to, or bound by, fault block boundaries. Macro-structural logging using Acoustic Televiewer (ATV)/Optical Televiewer (OTV) downhole scans together with detailed geological logging of inclined drill holes, have been able to distinguish and confirm such fault structures. The presence of steeply dipping haematite zones characterised by high angle slickensides (i.e. high-alpha angles), breccia and pervasive specularite mineralisation in fractures, suggest fluid movement associated with these faults.

In contrast, the laterally continuous, thin haematite zones may be associated with low-angle, transgressive thrusts that follow bedding contacts. The continuous haematite zones and associated thrusts appear to be constrained by, or are found near, the BIF-Gamagara erosional unconformity.

It should be noted that NNE-SSW faults and low-angle thrusts were intermittently reactivated. They form an integral part of the hydrodynamic system under which haematite mineralisation occurred, irrespective of whether it was early supergene and/or a later hypogene processes (Morris, 1998). The latter is particularly evident, given that large volumes of haematite are hosted in Gamagara sediment (mostly shale), suggesting widespread hypogene or hydrothermal mineralisation during the Kheis Orogeny.

The hypogene/hydrothermal processes may have been repeated during the Namaqua Orogeny, however, structural relationships indicate little offset of the Blackridge Thrust and associated structures in the Heuningkranz area. The limited fault reactivation and restricted fluid movement is unlikely to have been a significant contributor to the mineralisation.

The subsurface geology, tectonic features and associated geological confidence classifications are illustrated in the following drillhole sections derived from the updated 2025 geology model (**Figure 18** to **Figure 23**) overleaf:

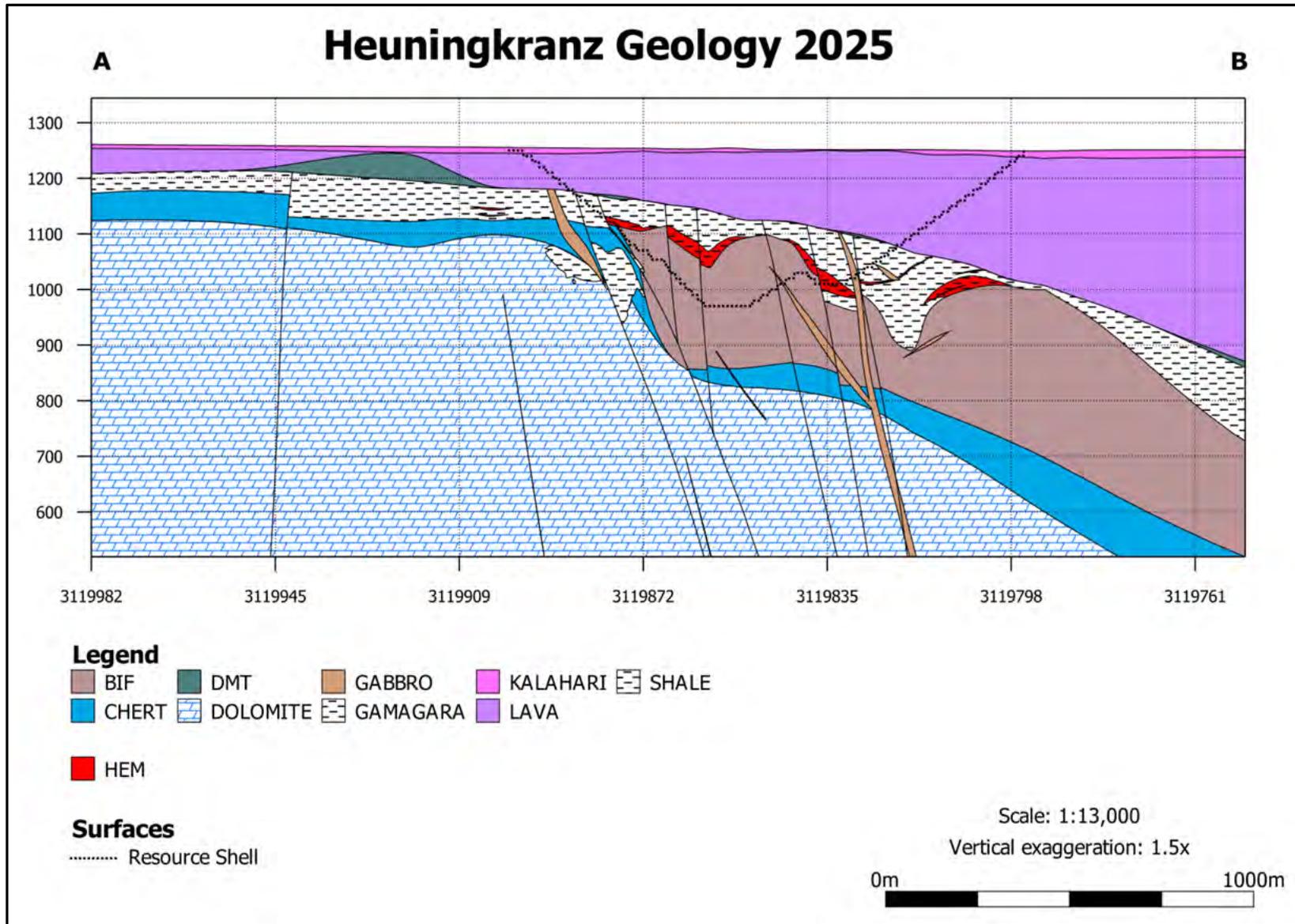


Figure 18: East - West (A - B) geological cross section across the Northern Deposit

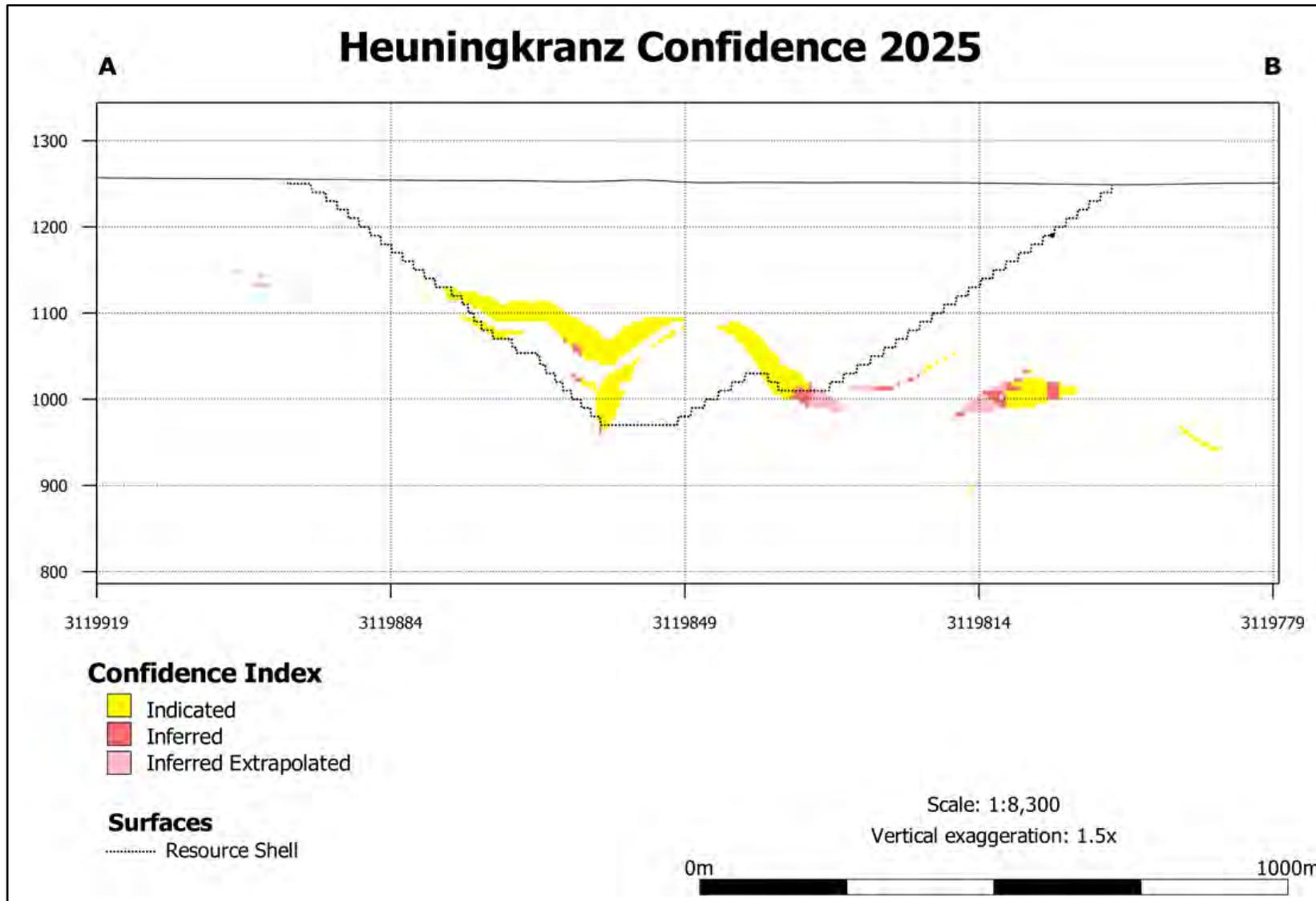


Figure 19: East - West (A - B) cross section illustrating the Geological Confidence Classification of the Northern Deposit

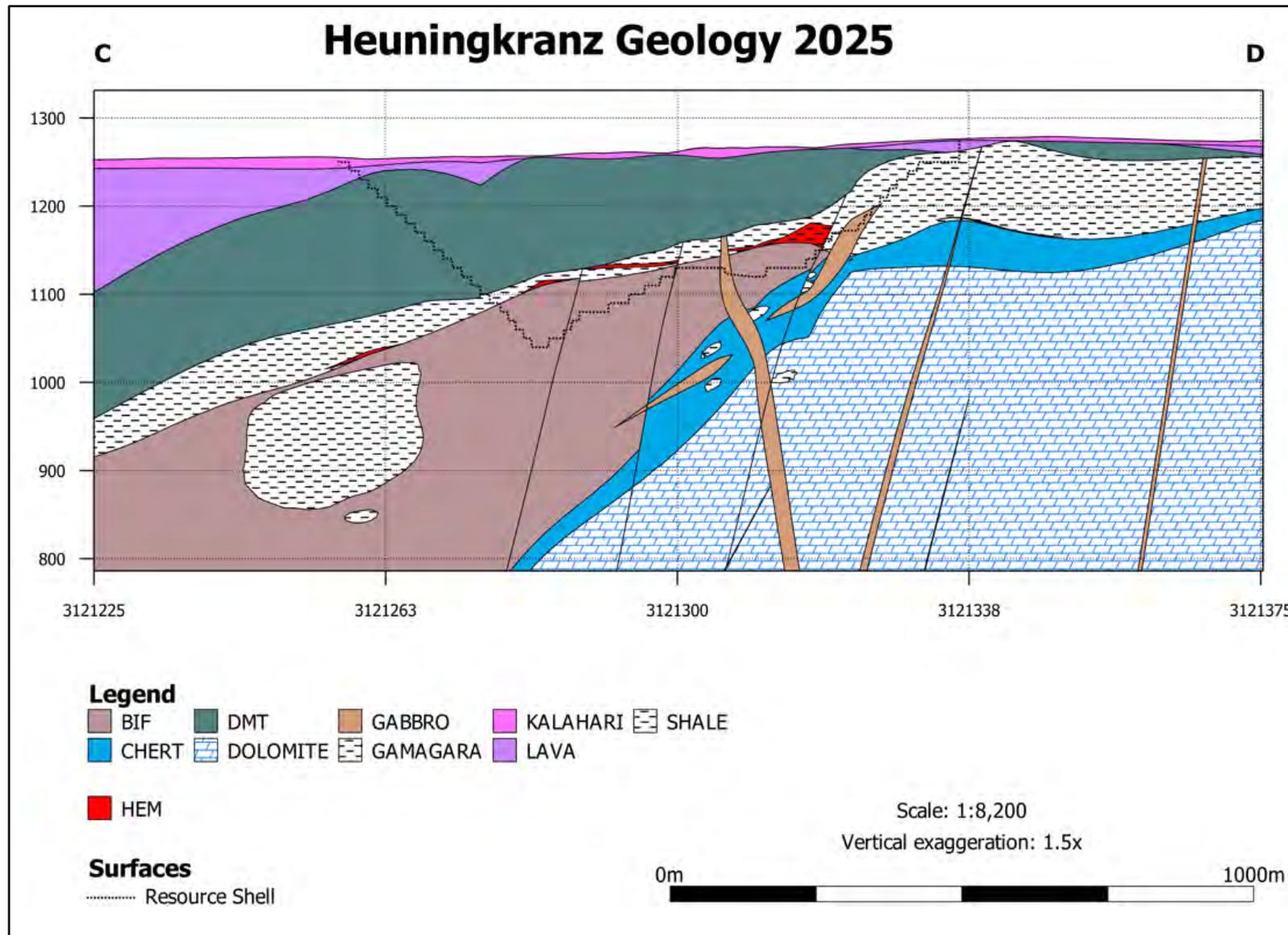


Figure 20: East - West (C - D) geological cross section of the Southern Deposit

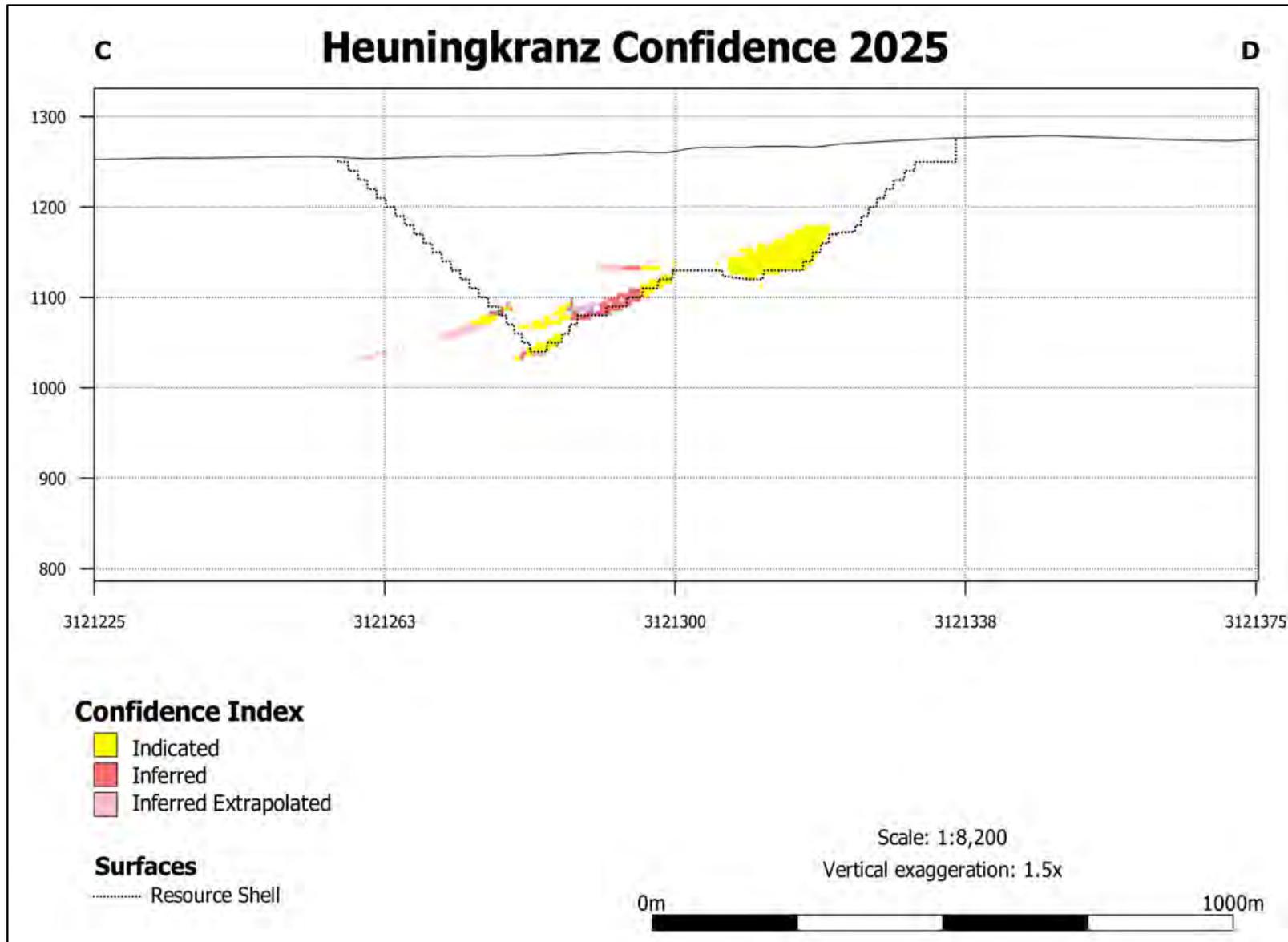


Figure 21: East - West (C - D) cross section illustrating the Geological Confidence Classification of the Southern Deposit

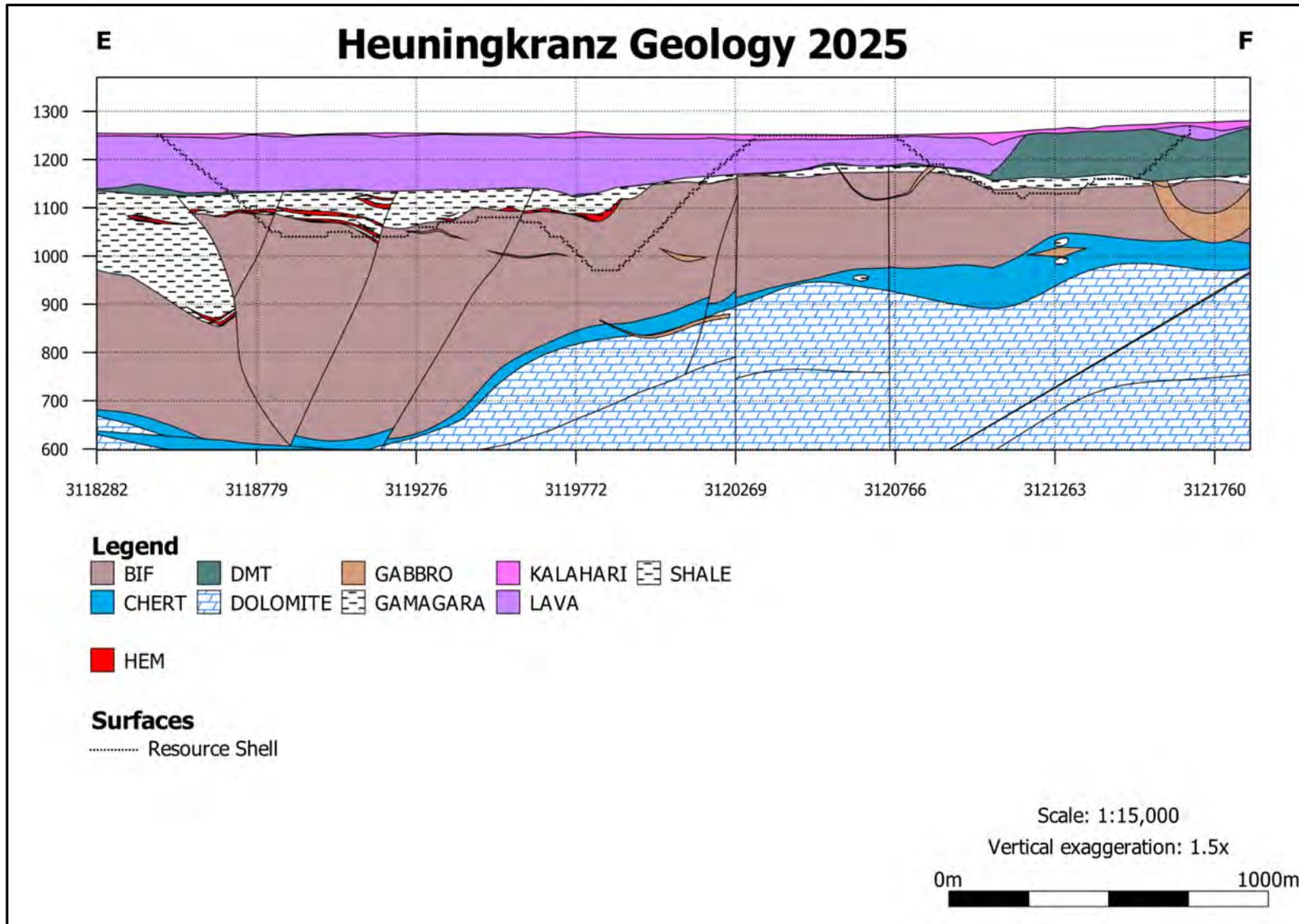


Figure 22: North-South (E - F) geological cross sections of both Deposits

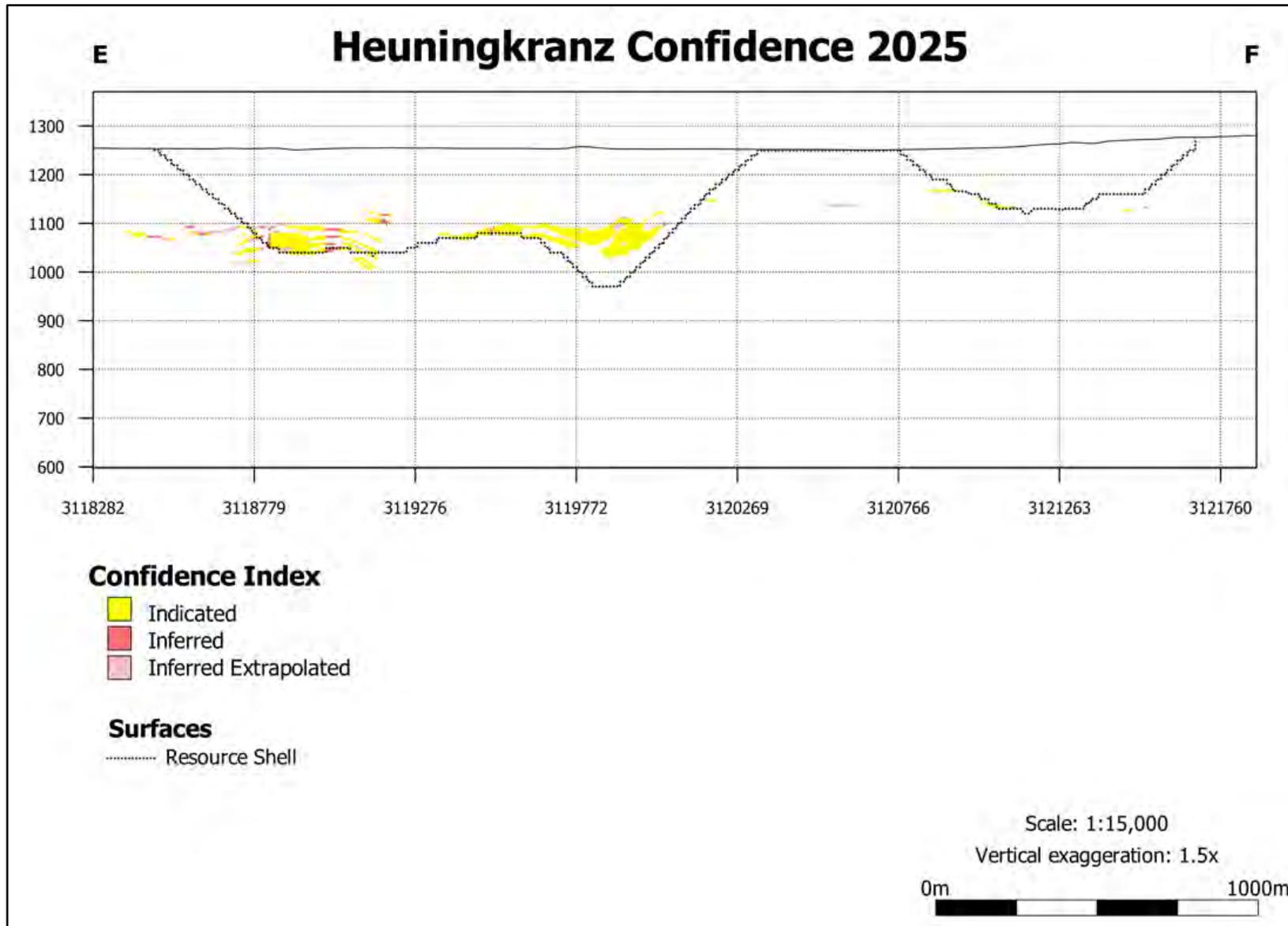


Figure 23: North – South (E - F) cross section illustrating the Geological Confidence Classification of both Deposits

7.3.3 Factors controlling geological and grade continuity

The bulk of the high-grade iron mineralisation took place as widespread supergene enrichment of primary banded iron formation of the Asbestos Hills Subgroup. Exposure to atmospheric conditions and circulating groundwaters some 2,000 – 1,800 Ma, led to the dissolution of chert bands and replacement with iron silicates and iron carbonates. The iron-bearing minerals were later leached by hydrothermal fluids and oxidised to haematite. The high-grade finely laminated ore is the product of enriched Kuruman Formation whereas the overlying high-grade massive ores (thickly bedded, wavy and contorted) represent enriched Griquatown Formation.

Intensified tectonism resulted in widespread uplift and erosion. The high-grade ores are today preserved immediately beneath an erosional unconformity (pre-Gamagara unconformity). Iron grades are typically highest, close to the unconformity and generally decrease with depth. At the base of the orebody, the high-grade ore (where Fe > 60%), grades into partially ferruginised ($40\% \leq \text{Fe} \leq 60\%$) and then un-mineralised banded iron formation (~32% Fe) over a relatively short distance. Grades are thus continuous laterally (in planes parallel to bedding) but vary considerably perpendicular to bedding.

The period of Gamagara deposition (2,000 Ma – 1,800 Ma) is characterised by rapid uplift, erosion and widespread deposition. Considerable volumes of banded iron formation (some ferruginised) were deposited as poorly sorted, angular, clast-supported paleo debris flows on the eroded surface. In places these immature conglomerates unconformably overly high-grade ore, un-mineralised banded iron formation, chert breccia or even basal dolomites.

The uplift led to the development of a karst topography between the underlying dolomites and overlying banded iron formation of the Asbestos Hills Subgroup. Solution of the dolomites led to the development of a residual chert breccia. In places, sinkholes and voids developed within the dolomites, into which banded iron formation collapsed. Later ferruginisation episodes formed the collapse breccia ores preserved within the deep sinkhole structures.

Upward fining conglomerates, flagstones, shales and quartzites were subsequently deposited as more distal, alluvial fan type deposits.

Later during Kheiss orogeny (~1,700 Ma), secondary ferruginisation took place as multiple hydrothermal or hypogene events. During this time, accretionary plate tectonics along the eastern and south-western margins of the Kaapvaal craton, flushed iron-rich fluids through the stratigraphy from west to east. The fluids migrated along suitable pathways and reacted with host rocks under specific conditions. The continued plate movement led to tilting, folding, faulting, imbricate thrusting and development of horst and graben structures within which, ore was preserved from later erosion.

It appears that the conglomerates often had the requisite porosity to act as pathways for the fluids. Many of the conglomerates (both those developed as basal debris flows and those deposited higher up in the stratigraphy) have been mineralised to ore grades. The brittle fractures in shales and banded iron formation (faults, thrust planes and open joints and bedding planes) also provided ideal conduits for the fluids. As such, the country rock (shales, banded iron formation) around such conduits has often been ferruginised.

Within the laminated, massive and conglomeratic ores, good continuity in grades is found parallel to bedding. The ore is usually terminated against tectonic structures (faults, grabens), erosional unconformities and the occasional intrusive dyke.

The grade continuity of collapse breccia ores (those found in sinkhole structures) is more variable in all directions, whereas the grades in breccia ores associated with fault and thrust planes, has less variability parallel to the plane of deformation, along which the mineralising fluids migrated.

8.1 EXPLORATION STRATEGY

Following the successful application for a prospecting right (granted in September 2007), anomalies arising from the above-mentioned regional geophysical surveys were drilled. Reconnaissance percussion drilling targeted the centre of the larger gravity anomalies. Drill chips were logged, sampled and analysed. When mineralisation was confirmed in 2008, follow-up percussion drilling was conducted on sections perpendicular to strike and later expanded to a nominal grid of 400 m x 400 m.

In the period 2008 – 2016, several drill phases were completed on targets that were deemed of potential economic value. Most of this drilling was diamond drilling, as percussion drill samples are susceptible to contamination with the presence of strong groundwater in the area.

After the initial target delineation phase (Phase 1: 400 m x 400 m grid), in-fill drilling is followed on a 200 m x 200 m grid (Phase 2), it was later reduced to a Phase 3: 100 m x 100 m grid and then on a Phase 4: 67 m x 67m diamond shaped infill pattern (**Figure 24**) illustrated overleaf. This drill grid method of evaluation (and classification) was derived from Sishen Mine, where historically it had been established that the 200 m x 200 m grid roughly equated to the ‘Inferred’ mineral resource category and the 100 m x 100m grid to the “Indicated” mineral resource category. 100 m x 100 m grids are suitable for preliminary mine planning and design and are essential for pit optimisation exercises to determine RPEEE. Drill spacings of < 100 m by 100 m can (but not always) deliver a “Measured” mineral resource category.

To accurately delineate overburden waste lithologies and obtain reliable grade and density data of the waste rocks (for mine planning purposes), diamond drilling was completed from surface into the footwall banded iron formation (or dolomites) on a 400 m x 400 m grid. These holes were sampled from surface to bottom, to obtain assays of the waste lithologies as well as densities. Where practical, these holes were drilled all the way into the basal dolomites, which greatly enhanced the understanding of the geology, structures and mineralisation processes.

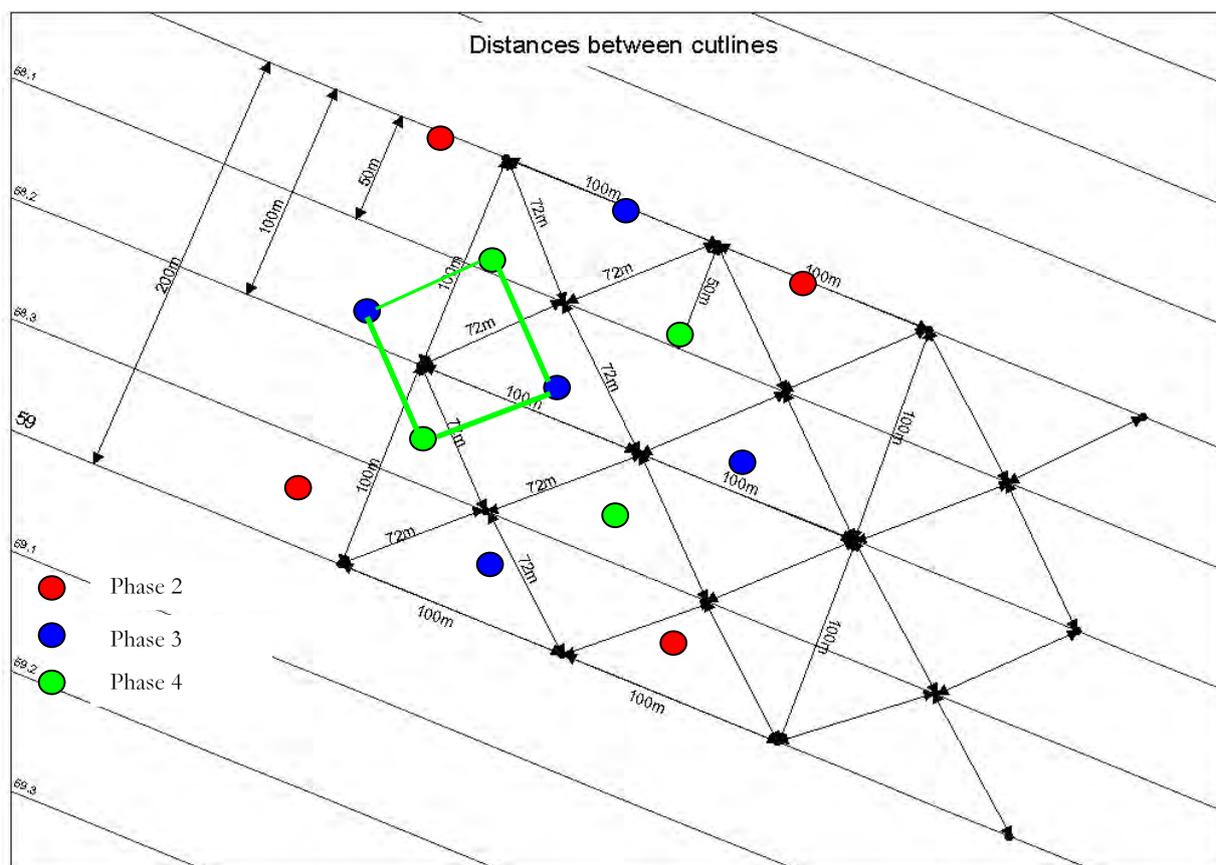


Figure 24: Typical Drilling Grid applied during Heuningkranz Exploration

The holes were sited using a differential GPS. Occasionally the positions are moved slightly to accommodate uneven ground or endangered/protected plant species. To date, all the known high-grade mineralisation has been drilled, by diamond drilling, on at least a 100 m x 100 m spacing (Phase 3 grid). Infill drilling on 67 m x 67 m (Phase 4) and in places a 50 m x 50 m grid, has been completed on the eastern, shallow portions of the mineralisation.

As the project evolved and the presence of significant volumes of high-grade haematite mineralisation were confirmed, the need for structural, geotechnical, geohydrological and geometallurgical information was identified. Dedicated data collection and drilling campaigns were initiated for these purposes. Geological logging practices were also amended to include the collection of structural data for geotechnical studies, ground water intersections were recorded (for geohydrological studies) and textural data collected for geometallurgical studies

To improve the understanding of the subsurface structures and geometry of the mineralisation, 19 inclined diamond drill holes were drilled into the Heuningkranz orebodies. These holes were drilled in an easterly direction (i.e. up-dip) at an inclination of 60 to 45 degrees from horizontal. Where possible the holes were terminated in basal dolomite. The deepest holes on the western extremities were stopped in banded iron formation.

All the inclined holes comply with the minimum QA/QC standards and were used in the geological model updates. A detailed structural model was built by structural consultants *Tect Geological Consulting* (Dr. Ian Basson) using the available drill core and geophysics (Aerial and surface gravity and magnetics as well as airborne electro-conductivity and magnetics).

Geotechnical drilling

Eight dedicated geotechnical holes were drilled and logged in 2018. The position of the geotechnical holes was based on a conceptual pit outline at that time (**Figure 25**).

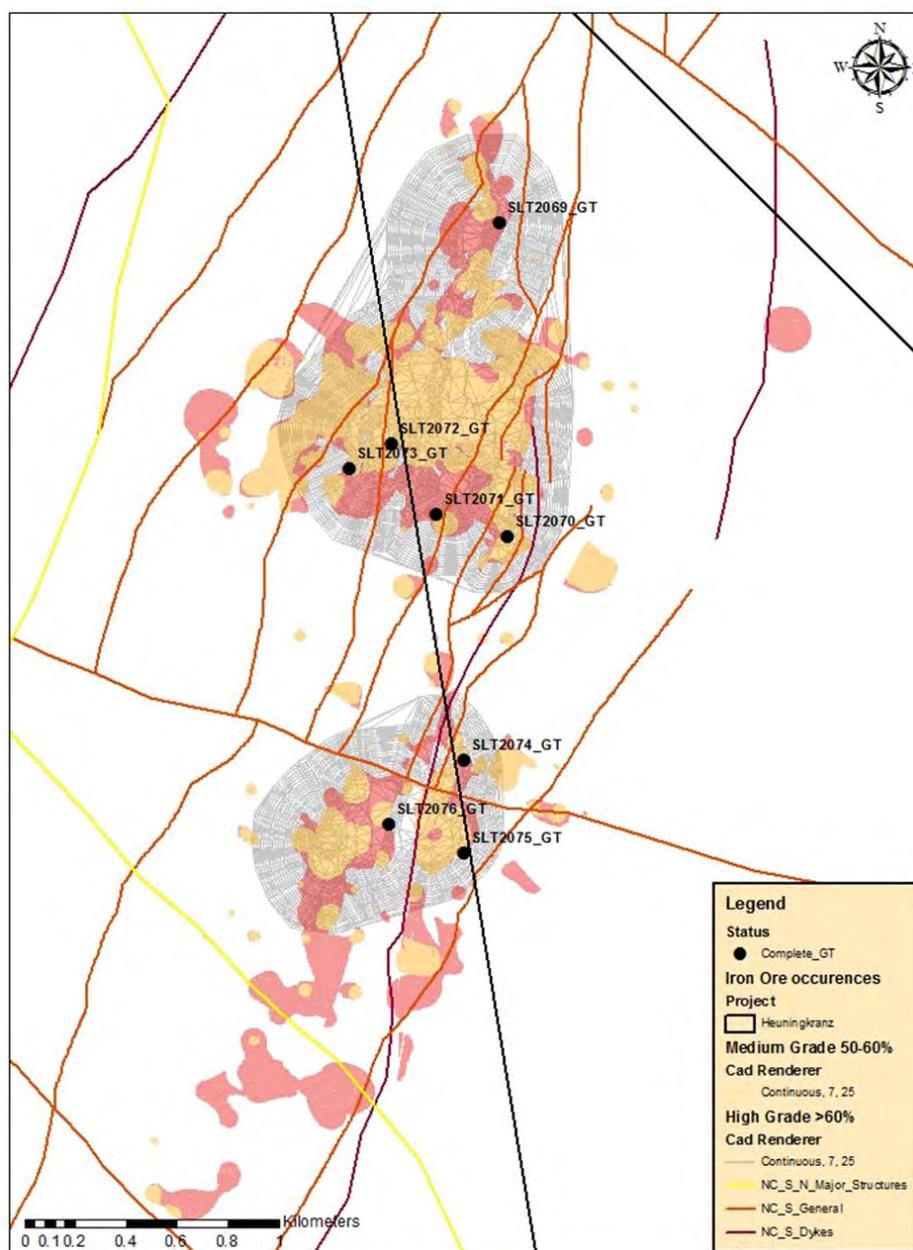


Figure 25: Position of geotechnical drill holes

The data derived from the geotechnical drilling has been used to update pit designs in 2025. Additional geotechnical drilling is planned for the near future. The holes will be sited using the updated layouts.

Geohydrology drilling

The groundwater is found within two distinct aquifers. The first is a shallow, low-yield aquifer associated with recent sediments of the Kalahari. It fluctuates significantly, based on seasonal rainfall. The second, deeper, high-yield aquifer is related to deep seated structures penetrating through the stratigraphy, all the way into the basal dolomites. The dolomites retain most of the groundwater in the region.

Seven dedicated, large diameter geohydrological drill holes were drilled over the northern and southern orebodies. Pump testing of the groundwater was carried out. The results were incorporated into the regional Kolomela groundwater model. Numerous drill holes on the Heuningkranz properties have also been selected and used for a regional groundwater monitoring programme.

Geometallurgy drilling

A total of 68 large diameter drill holes were drilled for geometallurgical test work. Of the 68, seven holes collapsed and had to be re-drilled. 42 of the geometallurgical drill holes intersected iron mineralisation. The entire ore intersection recovered by the drilling was sampled and used for geometallurgical test work, which characterises the physical properties (mineralogy, hardness, comminution, contaminant liberation, etc.) of the ore types and their beneficiation potential.

Geometallurgical investigations and plant processing simulations have confirmed that all the ore types on Heuningkranz have only limited potential for beneficiation using densimetric methods - to produce current Kolomela-sized lump and fine products. The deposit contains elevated levels of aluminium and potassium. Mineralogical studies have identified micaceous minerals, closely intergrown with the haematite, as the main contributors of the elevated aluminium and potassium. Due to the closely intergrown nature of the mineralisation, these are typically very difficult to liberate without fine milling.

Beneficiation improves when the ores are milled to a very fine fraction, but then on-site plant processing will require, large-scale crushing and milling, beneficiation and slimes handling facilities to produce pellets, briquettes or concentrates. Such facilities require significant capital expenditure and are energy and water intensive to operate.

The bulk of the Heuningkranz ores, however, have a very high iron content, with low phosphorous and sulphur levels in a typical Kolomela-sized product. This makes the Heuningkranz ore amenable to blending with other ores which have a lower iron content, elevated phosphorous and sulphur contents, but critically, low aluminium and potassium. Preliminary studies by Kumba Mining indicate that there is potential to blend Heuningkranz ores with Sishen and Kolomela products. Detailed studies are under way to confirm the feasibility of such options.

A summary of the Heuningkranz drilling is provided in **Section 6.2.1 - Table 15**.

8.1.1 Borehole Planning

Initially the geologists planned boreholes using surface geology maps, geophysical surveys and sectional interpretations. Once a 3D geology model was created, the drilling was planned in the 3D software packages before the drilling programme was executed. Depending upon the intensity of prospecting for any given area, the holes may be planned to achieve any of the following:

- Primary prospecting to determine the presence and grade of mineralisation
- Regional grid drilling to identify the limits of mineralisation.
- Extension drilling to close off mineralised limits.
- Upgrading of the current resource classification within mineralised limits, based on drill grid spacing; and
- Investigation of a complex area within the resource boundary that requires more detail to determine the local changes in grade, geometry and structures.

The models were also used to:

- Determine percussion drill depth of pilot holes – to drill from surface to just above the known mineralisation.
- Plan the depth of diamond and percussion boreholes through the ore zone and to penetrate the footwall by 10 m. The 10 m limit was later increased to 20 m and then later changed to a grade cut-off of less than 35% Fe. This was done to make a better assessment of potential medium- and low-grade ore in the footwall.
- Indicate preliminary pit limits, as there is little merit in drilling mineralisation that is clearly uneconomic.

The planned drill hole collars are sited in the field and a cement block or a steel peg with the borehole number is placed at the collar location. The actual borehole positions, however, may change according to field conditions. These ‘planned’ co-ordinates are stored in the acQuire™ drill hole database as ‘preliminary’ co-ordinates.

At the end of each drilling programme, or when sufficient boreholes have been completed, a qualified Surveyor surveyed all completed boreholes. The final co-ordinates are then also recorded in the acQuire™ database as ‘final’ co-ordinates. Regular checks are undertaken to ensure that no errors have been introduced regarding collar location and borehole numbers.

8.2 DRILLING

8.2.1 Borehole (and Sample) Positioning

8.2.1.1 Borehole Collar Co-ordinates

On completion of a borehole, the collar position was surveyed. The height of the collar is taken at ground level. All collar surveys were initially conducted by an external consultant, FT Prinsloo Mining and Engineering Surveyors and the work was carried out by a qualified surveyor, W.C. Erasmus. The existing Kolomela GNSS base station and GNSS transformation file were used to survey the borehole collar positions. All readings were recorded in the Kolomela Hartebeeshoek 94/LO23 co-ordinate system, consisting of the Transverse Mercator South Orientated Projection and the Hartebeeshoek 94 datum.

After the 2016 geological modelling (which informed the 2018 Mineral Inventory Statement for Heuningkranz), the Principal Surveyor of Kumba Iron Ore audited the positioning of the Heuningkranz borehole collars. The audit identified survey errors. To rectify the errors, Kumba Corporate Office established a survey baseline, survey network and aerial photogrammetry ground control points within the Heuningkranz prospecting right area. The survey baseline, survey network and aerial photogrammetry ground control points were all approved by Kumba’s Principal Surveyor.

All the borehole collars on the Heuningkranz prospecting right were then re-surveyed by Kumba surveyors using the new survey network.

The reader must note that in 2023 there were numerous borehole records in the Heuningkranz drillhole database with missing survey related information, such as final collar positions, deflection surveys, final depths, etc. These boreholes were excluded from the dataset used for estimation purposes.

Table 16 lists all the boreholes which were excluded from the estimation process. The holes were excluded for varied reasons, e.g. incomplete assays, conflicting geology with neighbouring holes, etc.

Table 16: Boreholes excluded from the 2025 Mineral Resource Estimation process

| Borehole ID | | | | | |
|-------------|------------|----------|----------|---------|----------|
| SHS003 | SLT070 | SLT1193 | SLT1836 | SLT255 | SLT870 |
| SLT004 | SLT079B | SLT120 | SLT194M | SLT271 | SLT880B |
| SLT006 | SLT086M | SLT124 | SLT195 | SLT289 | SLT913 |
| SLT007 | SLT088 | SLT126 | SLT196 | SLT336 | SLT1750 |
| SLT008 | SLT092M | SLT1293M | SLT197M | SLT347A | SLT2053 |
| SLT010 | SLT094 | SLT130 | SLT198 | SLT350 | SLT046 |
| SLT011 | SLT098 | SLT131 | SLT2000 | SLT353A | SLT047 |
| SLT019 | SLT100B | SLT136 | SLT205 | SLT363 | SLT060 |
| SLT025 | SLT101 | SLT1365 | SLT2050 | SLT382 | SLT068 |
| SLT026 | SLT1017 | SLT142M | SLT2054 | SLT394 | SLT133 |
| SLT027 | SLT1021 | SLT145 | SLT2054B | SLT404 | SLT142 |
| SLT028 | SLT1030 | SLT150M | SLT207M | SLT420 | SLT150 |
| SLT030A | SLT1042_D1 | SLT152M | SLT209M | SLT452 | SLT203 |
| SLT031 | SLT1046 | SLT1554M | SLT211 | SLT595 | SLT2079W |
| SLT042M | SLT105 | SLT1654 | SLT212 | SLT689 | SLT573A |
| SLT050 | SLT1057A | SLT1657 | SLT213 | SLT710 | SLT692M |
| SLT052A | SLT107M | SLT172 | SLT224 | SLT766 | |
| SLT064 | SLT1115 | SLT1804 | SLT228 | SLT777M | |
| SLT065 | SLT112A | SLT1822M | SLT232M | SLT779M | |
| SLT066 | SLT117 | SLT1834 | SLT239 | SLT846 | |

The positions of the excluded boreholes are illustrated in **Figure 26** below.

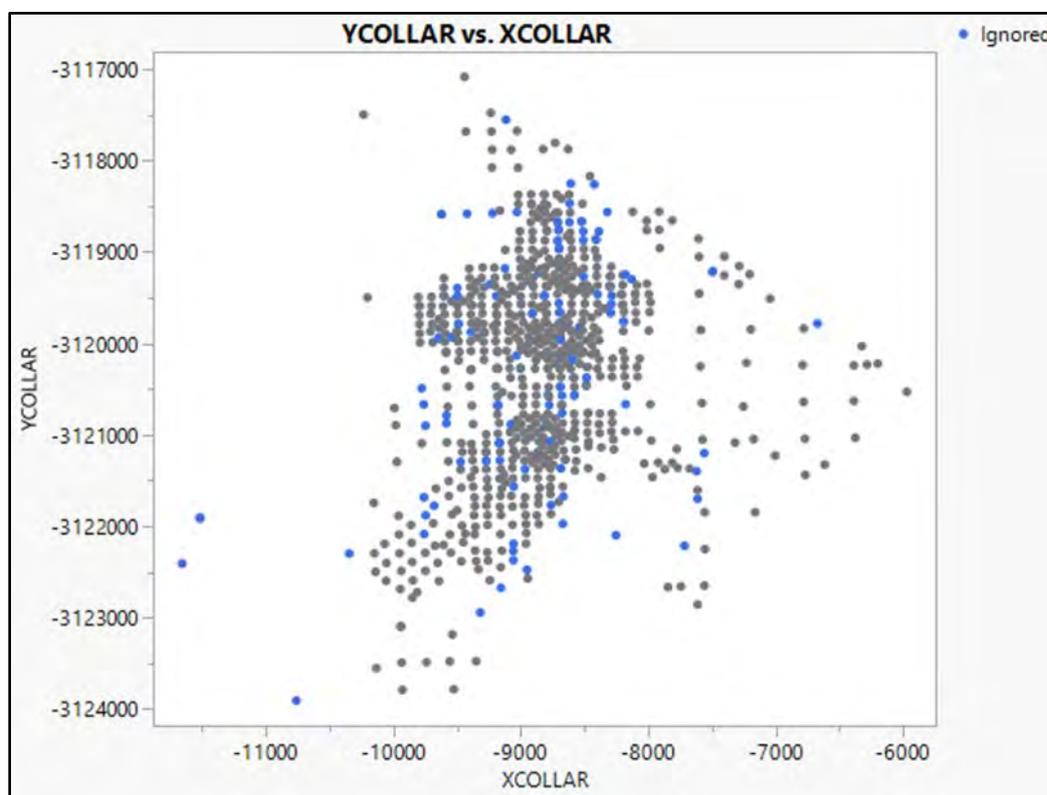


Figure 26: Position of boreholes excluded from the estimation process

8.2.1.2 Borehole Down-hole Deflection Surveys

The deflection of all cored boreholes drilled from February 2012 onwards, were surveyed on completion of the drilling. A multi-shot survey instrument (DeviFlex) was used to measure:

- Inclination: The angle of the borehole relative to vertical using three high-accuracy accelerometers.
- Changes in Azimuth/Direction: It uses four strain gauges (a direction sensor) to measure the curvature and change in direction relative to the previous station.

The borehole trajectory is then calculated using the collected data points (depth, inclination, and change in azimuth) to plot the full, accurate path of the borehole.

The instrument was specifically designed for surveying inside casings and drill strings where magnetic interference would affect other gyro-based instruments. The decision to use a non-gyro based downhole survey tool was made due to the magnetic nature of the BIFs intersected on Heuningkranz.

All the downhole surveys on Heuningkranz were conducted by *Down Hole Survey CC*. The Heuningkranz team requested and received the calibration certificates for the equipment used by the company to conduct the surveys.

The down-hole surveyed boreholes occurring in the mining right area, are graphically displayed on **Figure 27** in yellow, while the un-surveyed drill-holes are indicated in black.

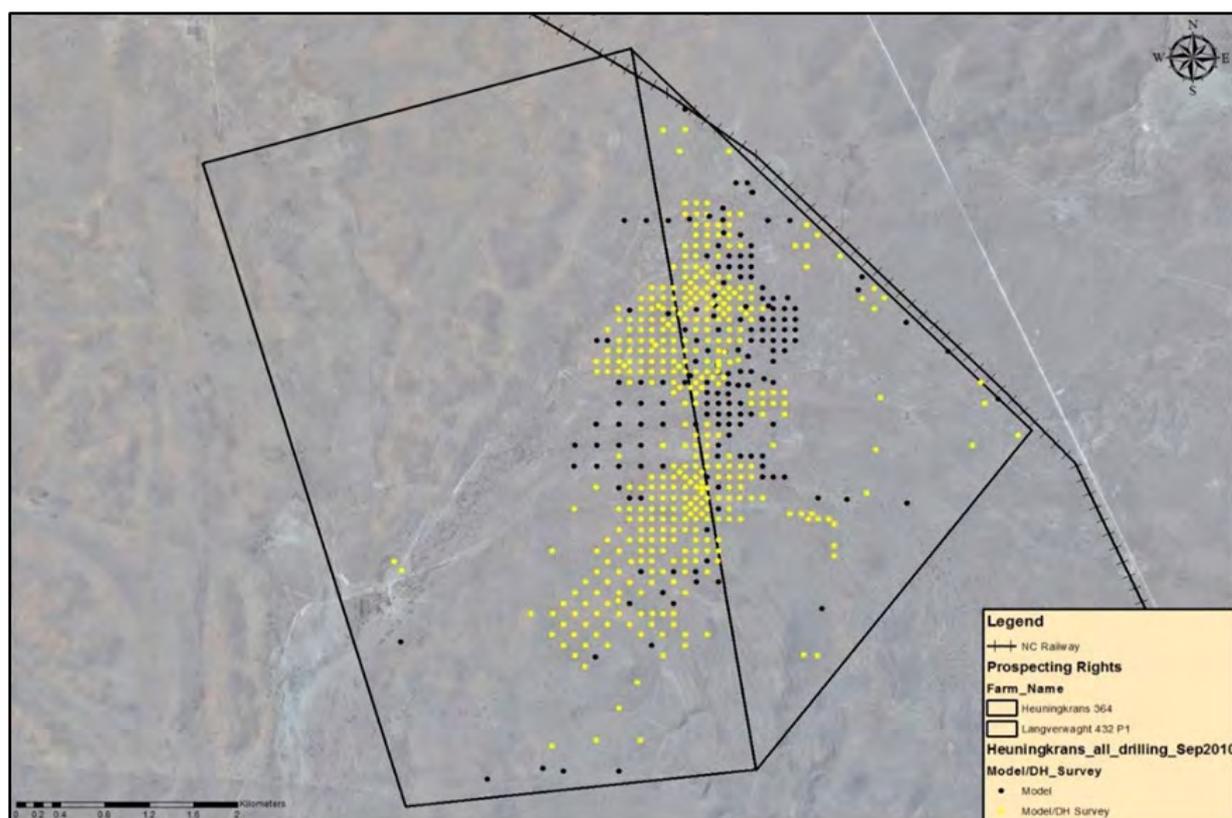


Figure 27: Down-hole deflection surveys conducted at Heuningkranz

8.2.1.3 Depth checks

In addition to borehole collar co-ordinate and borehole deflection surveys, depth checks were conducted on a regular basis by the responsible geologist to verify borehole depths. The final depth is obtained by counting all the rods inserted to the bottom of a borehole, multiplying the number of rods by the rod length, and then subtracting the stick-up - that portion of the top rod which is above ground level.

Depth checks are mandatory for the final depth of all boreholes, including percussion pilot holes. The final depth of a pilot hole is also verified when the responsible geologist checks the starting depth for core drilling. Should there be a discrepancy, (e.g. when sidewall material falls into the pilot hole after casing is inserted), the starting depth of the core drilling is deemed accurate.

Problems with depths were rare because depth-checks are conducted by the drilling contractor after every coring run. Percussion depths are also double checked by monitoring the number of samples taken. A skilled, contracted driller, or a skilled, contracted helper was permanently on-site, to ensure constant supervision and appropriate depth checking. Random depth checks by the responsible geologist contributed to oversight.

It is stipulated in the drill contractor’s agreement, that a borehole be re-drilled at the driller’s expense, if the difference between the driller’s depth and the geologist’s depth cannot be reconciled and rectified.

The responsible geologist was responsible for stopping core drilling at the planned depth.

8.2.2 Drilling Techniques

8.2.2.1 Percussion drilling

Reconnaissance drilling started with percussion holes being drilled from surface, through the mineralised zones into footwall lithologies. When a percussion borehole was drilled through the ore zone, the final depth was checked by the “stick-up” method after borehole completion.

Samples of the mineralised zones were taken at 1 m intervals but are invariably contaminated by overlying residual drill chips. It is accepted these initial percussion drill phases do not generate representative chemical assays. It is, however, still possible to use the data for geological interpretation, 3D solids modelling, geostatistical estimation and block/grade modelling. Their impact is mitigated by downgrading the percussion drill sample’s weight of influence in the estimation process. There are 122 full percussion boreholes in the Heuningkranz database that were used in the estimation process.

Percussion drilling was also used to pilot boreholes through sterile overburden for later core drilling. The drilling contractor drilled either 8.5-inch or 7.5-inch diameter, vertical, percussion boreholes, until the target depth was reached. Casing was installed to prevent collapse of the borehole. The hangingwall, mineralised zone and footwall was then penetrated by core drilling. If a borehole was piloted, the percussion depth was verified when the responsible geologist checked the starting depth of the core drilling. The standard practice of percussion drilling through sterile overburden, and stopped just above the mineralised zone, has been used since 2009 in SIOC. It is accepted as good industry practice, as it saves prospecting costs and time.

8.2.2.2 Reverse Circulation (RC) drilling

No reverse circulation drilling has been conducted at Heuningkranz due to the presence of strong groundwater.

8.2.2.3 Core drilling – HQ, NQ and BQ sizes

690 validated core boreholes have been used in the estimation process, of which 323 were piloted by percussion drilling, 367 holes were cored from surface and 122 were full percussion exploration boreholes. Logging and sampling of standard tube HQ (63.5 mm core sample diameter), NQ (47.6 mm core sample diameter) and BQ (36.4 mm core sample diameter) sized core boreholes (**Figure 28**) thus accounts for the bulk of the geology data gathered on the Heuningkranz Project.



Figure 28: Rosond (Contractor) core drill rig in operation at Heuningkranz

8.2.2.4 Core drilling - PQ/T2”101” size

Since 2013, 68 large diameter core boreholes were drilled to collect bulk samples for geometallurgical test work. The PQ drilling equipment, also known as “size 101” in the drilling fraternity, recovers core of 84 mm in diameter. Iron ore intersections weigh about 27 kg per metre length. At Heuningkranz, drill runs were executed at 1 m intervals. All the large-diameter boreholes were piloted by percussion drilling (150 mm diameter) into which 127 mm diameter casing (3 mm thick) was inserted before the diamond drilling (PQ) commenced. The drill core was not split. It was sampled whole, at 1 m intervals, for geometallurgical test work.

8.2.3 Logging

Marking and handling of drill core by the drilling contractor was done as prescribed by KIO logging standards under direction of Kumba personnel. The core with depth markers was placed in labelled core trays and transported to the Heuningkranz core shed for logging. In the core shed, the core recovery was measured first to validate depths and ensure that any problems are rectified before logging commence. Once the responsible geologist was satisfied that the core depths are correct with sufficient recovery, the core was logged in detail according to KIO defined standards and procedures. Prior to 2019, the core was logged in the core shed on a standardised logging sheet, after which the data was captured directly into the *acQuire*TM front end at the Exploration Office. Electronic logging now takes place on a “Toughbook”. Data is entered directly into *acQuire*TM via a software interface.

Logging standards have developed over the years. Before 2018, Kolomela ore texture logging standards were applied to differentiate between high-grade ore types. The Kolomela guide however did not accommodate specific characteristics found in the medium and low-grade mineralisation of the Heuningkranz banded iron formation and shales. A textural logging guide specifically for Heuningkranz (and deposits along the Western Belt) was subsequently developed.

To ensure a consistent approach and to support detailed textural differentiation of the mineralisation during modelling, all the historical diamond drill holes were re-logged. This has been completed, and all drill holes are now logged to a consistent standard, which is aligned to all geometallurgical requirements

Currently, a minimum of four criteria are recorded during the logging process, i.e. Main code (lithology), e.g. shale; Sub code (lithology), e.g. iron-rich; dip; and structure. There are an additional eight fields available for recording other lithological characteristics such as colour, grain size, alteration, presence/absence of clay, fractures, etc. All descriptions are chosen from standardised drop-down lists in the software.

Internal waste zones thicker than 400 mm are described as separate lithological units. If thinner than 400 mm, they are included in the ore zone and noted as a comment in the description.

Structural features are logged and captured from both the exploration and geometallurgical cores during logging as part of the standard logging approach. The *acQuire*TM database is set up with specific tabs that needs to be filled, which includes basic structural and geotechnical parameters.

The depth and estimated yield of all groundwater strikes were recorded on the geological log.

8.2.4 Sampling

8.2.4.1 Percussion

Percussion samples at 1 m intervals were collected in pie-shaped sample pans from under the collar shroud by the drill contractor. The entire sample was heaped on cleared ground, individual samples were arranged in rows of 10, every row representing 10 m drilled. Due to very strong groundwater conditions, automated samplers could not be deployed on the percussion rigs.

All percussion samples were used for geological logging by the responsible geologist. In the case of mineralised percussion chips, the geologist identified the relevant sample depths, compiled and printed a list to be sampled. A geological helper then sampled the relevant heaps using a handheld scoop. The samples (at 1 m intervals) comprised just sufficient mass as required for analysis (between 0.5 kg and 1.5 kg). Sampling at the percussion rigs was always supervised.

It must be noted that the drilling of ferruginised units with percussion drilling is not preferred practice. Borehole data based on percussion chip analysis are treated with caution, as it is recognised that the sampling methods are not representative and contamination across lithological boundaries can take place. Such contamination is aggravated by the presence of groundwater. Kumba protocol dictates that estimates from percussion samples receive a low confidence classification. Most of the percussion holes that intersected high-grade ore have since been twinned with core drilling.

Batches of percussion chip samples were sent to the Anglo Research Technical Solutions Laboratory in Johannesburg for sample preparation and assaying. Where significant mineralisation was intersected in percussion boreholes, a core borehole was re-drilled in close proximity, to obtain representative samples for assaying, geological modelling and grade estimation.

8.2.4.2 Core

Prior to 2016, core length recovery was the method employed to determine sample recovery. The total length of core recovered during the drill run was compared to the theoretical length of core that should have been recovered. This was expressed as a percentage of core recovered.

Sample mass recovery is however the preferred method of measuring recovery, where the recovered mass is compared to the theoretical mass which should have been recovered. This method has been implemented post 2016.

Sample mass recoveries are calculated using the actual half-core primary sample's weight x 2, and dividing it by the "expected" weight of the sample, calculated as follows:

The “expected” weight is determined by multiplying the in-situ density (as measured by a gas pycnometer on a pulp sample) with the theoretical volume of the sample to determine the expected weight:

$$\text{Volume} = \pi r^2 h$$

Where: r = inner diameter of core bit / 2;

h = length of core run

The result is multiplied with 100 to convert it into a percentage. Kumba Iron Ore expects core-recoveries to be $\geq 80\%$ when measured using sample weights.

After geological logging, the responsible geologist supervises the marking of sample intervals on the core. The core is then photographed and the photographs stored in an Imago database. This system processes the photos so that they can be viewed down the hole and with other data such as the geological log or down-hole geophysical data, etc.

The core is also routinely scanned. Hyperspectral images are stored on the *Terracore* (OEM of the Hyperspectral scanner) online database, where processing of the images is also done. All historical core is currently undergoing scanning.

Once photographed and scanned, the core to be sampled is then moved to the core-cutter area in the core shed, where the core was cut in half, perpendicular to the apparent dip on the core. A list of samples to be taken was compiled by the geologist and handed over to the sampling team. The geologist supervised the sampling of the half-core with an experienced and well-trained team whose competency is regularly checked with planned task observations. The samples were placed into plastic bags, whereafter it is dispatched to the ATS Chemistry Laboratory for assaying.

Core samples were taken so that they do not cut across lithological boundaries. All mineralisation where the Fe content was estimated to be $> 30\%$ was sampled to confirm the potential of medium-grade and low-grade ore. In the past, this was not always the case and the historical core in the core shed was re-sampled when the new logging protocol was adopted. The re-logging and additional sampling are now complete.

Waste samples were taken continuously up to 10 m, above and below, any mineralisation where the Fe content is estimated to be $> 30\%$.

Core boreholes on a 400 m x 400 m grid were sampled continuously from surface to end of hole, across all waste and mineralised zones. This was done to determine waste chemistry and densities of all lithologies. The data is used for mine planning (waste dump planning, strip ratios, equipment selection, etc.) and is also required for environmental impact studies.

The remaining half-cores were retained in the core trays and together with any unsampled core portions, are currently stored at the KIO Demaneng core shed in the Northern Cape.

8.2.5 Sample Dispatch

Weighing of samples at the Heuningkranz core shed was conducted and these weights were recorded and imported into the *acQuire*TM database. Historically this practise was not consistently used, and some samples have not been weighed prior to dispatch.

Samples were combined into batches of 20 primary samples as well as associated QA/QC samples, which includes:

- one CRM (Certified Reference Material), and
- one field duplicate (quarter core sample randomly taken from within the batch).

A hard-copy sample dispatch instruction, with blind sample numbers and associated sample weights as measured on site, and samples identified for the generation of a coarse and pulp duplicate by the Laboratory, was issued to the Laboratory and accompanied the samples to the Laboratory

The following metadata was consistently captured for each borehole in the *acQuire*TM drillhole database:

- Borehole ID
- Type (e.g. core, percussion)
- Collar co-ordinates (planned, final)
- Final depth
- Surveyed deflections
- Core depths and core recovery
- Geological log
- Sample depths
- Photographs
- Assayed chemistry and density of samples
- Responsible geologist approval

8.2.6 Primary Laboratory

Sishen Iron Ore Company contracted (by means of a signed service level agreement) the ANGLO AMERICAN TECHNICAL SOLUTIONS (ATS) Division of Anglo Operations Limited CHEMISTRY LABORATORY (Co. reg no: 1921/0067130/06) at address:

8 Schonland Street
Theta, Johannesburg

to prepare and analyse all geological samples, used for Mineral Resource estimation purposes.

The ATS Chemistry Laboratory is accredited in accordance with the recognised International Standard ISO/IEC 17025:2005 by the South African National Accreditation System (SANAS) under the Facility Accreditation Number T0051 (valid until 30 April 2026) for:

- the preparation of iron ore samples to a homogenous pulp.
- The analyses of ferrous Iron by potentiometric titration for solid samples.
- Al₂O₃, BaO, CaO, Fe, K₂O, MgO, Mn, Na₂O, P, SiO₂ and TiO₂ by X-Ray FS Fusion
- C and S by combustion analysis
- Pulp densities are measured in a gas pycnometer.

8.2.7 Sample Preparation

8.2.7.1 Protocol

The minimum requirements for sample preparation as prescribed by Kumba Iron Ore Geosciences are illustrated in **Figure 29** overleaf by means of a process flow diagram.

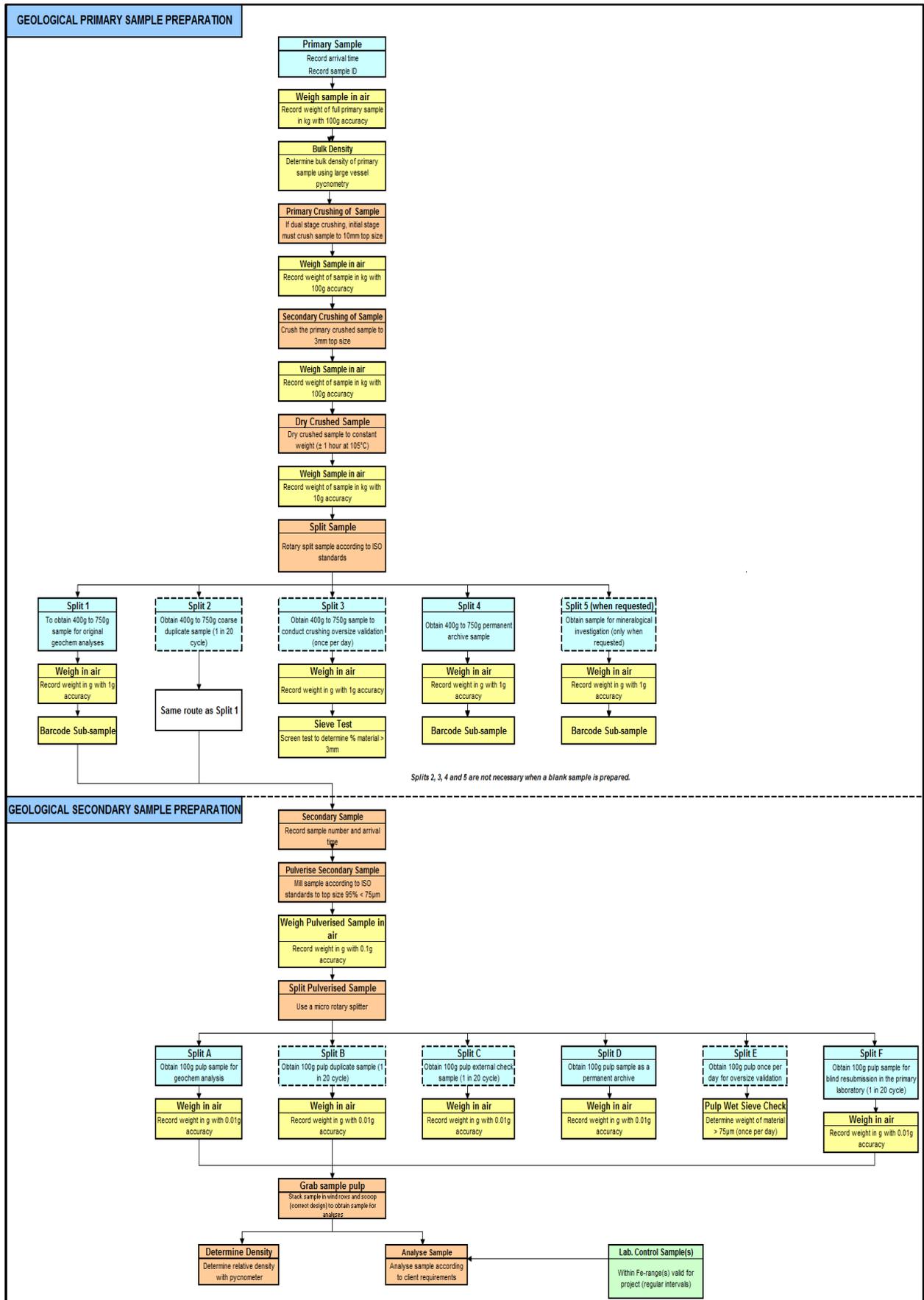


Figure 29: Kumba Geosciences prescribed Sample Preparation Protocol

The sample preparation process followed by the Anglo Research Chemistry Laboratory is described below:

Sample Receipt

- Samples are received with an accompanying Dispatch Advice from the client.
- Samples are sorted and checked against the Dispatch Advice for any discrepancies (extra, missing or miss labelled samples).
- All discrepancies are reported to the client and work on the batch will only commence once queries are resolved.
- The Date Received and the number of samples received are recorded.
- A project is opened in Starlims®, with client's order number and samples are logged in as batches as indicated on the Dispatch Advice. Each batch automatically receives a sequential, unique batch (folder) and order number (lab sample number).
- Batch Reports are printed and sequenced according to batch number.

Sample Drying

- The samples are transferred from the sample bags to pan(s).
- The pan and sample catch weights are recorded into Starlims®.
- Each pan containing the sample is then placed onto an oven trolley.
- Samples are dried for a minimum of 18 hours at 105°C (±5°C).
- Samples are randomly checked every 2hrs to see if samples are dry.
- Once dry, the oven trolley is removed and allowed to cool.
- Once cooled, the dry catch weights are recorded.
- Dry mass is calculated and the worksheet containing these masses are printed and attached to the batch report

Crushing

- Samples are crushed with Boyd Crusher to optimal of T95 <3 mm (minimum of T90 <3 mm).
- The crusher is vacuumed and cleaned between every sample.
- Samples are weighed after crushing to determine the mass loss. Mass loss must not exceed 5%.

Dry Screening

- Adherence to optimal of T95 <3 mm and minimum of T90 <3 mm crusher product is performed randomly at a rate of 1 per batch of 22 samples.
- If product does not adhere to specifications, the samples are re-crushed.
- Screens are vacuum cleaned and wiped with a damp cloth.

Splitting

- Samples that weigh > 8 kg undergo two stages of rotary splitting (10 cup splitter), remainder of samples undergo only 1 stage.
- 10 cup rotary sample dividers with 5L, 10L, 20L and 30L capacity available.
- Once splitting is completed (Stage 1 and Stage 2 where applicable), all splits are weighed into the Starlims®. The split is calculated to determine the split equalisation.
- For stage 2 splitting, once the weights have been recorded in Starlims®, the system indicates which split portions are to be combined to ensure that between 400g to 800g of material is available for the milling process (analytical split). Rest of the splits, i.e. a coarse duplicate and a coarse archive are created as per client instruction.
- When 2 stages of splitting are done; the remainder of the first stage splits are placed in individually labelled ziplock plastic bags within a bigger plastic bag.
- The coarse archive is placed in a glass jar (1L), labelled and returned to client.
- Maximum mass difference for combined splits to original mass is 5% (optimum is 2%).
- Rotary splitter components are cleaned between every sample by vacuum cleaning and then blowing with compressed air.

Milling

- The samples are milled for 5 to 7 minutes in an 800cc mill pot (low chrome).
- Mill pots are washed with water between every sample.
- Samples are weighed after milling to determine the mass loss. Mass loss must not exceed 5%.

Micro Splitting

- Milled samples are subjected to 10 cup micro rotary splitting.
- Once splitting is completed, all the splits are weighed into *Starlims*®
- The splits are calculated to determine the split equalisation check. Combination of splits (e.g. 1-6, 2-7, 3-8, 4-9, 5-10) are determined and used as follows:
 - P1 - Chemical Analysis (labelled 100ml plastic jar)
 - P2 - Pulp Duplicate (labelled Ziploc plastic bag)
 - P3 - Archive (labelled Ziploc plastic bag)
 - P4 - External (labelled Ziploc plastic bag)
 - P5 - Oversize Check (labelled Ziploc plastic bag)
- The pulp samples are put into a Ziploc bag with the rest of the entire sample, closed with cable ties and stored.

Wet Screening

- Adherence to optimal of T95 <75µm and minimum of T90 <75µm mill product is performed randomly at a rate of 1 per batch of 22 samples.
- If product does not adhere to specifications, the samples are re-crushed.
- Screens are cleaned in an ultrasonic bath

8.2.7.2 Protocol validation

Heterogeneity tests (Figure 30) have been conducted on banded iron formation core samples from nearby Kolomela Mine to quantify the impact of sub-sampling in the ATS laboratory. The tests measured K₂O variance between 5 kg half cores through the sub-sampling processes until they reached 1 g pulverised, split samples destined for bead fusion.

| Sample Preparation Steps | Size (cm) | Mass (g) | Standardised Relative Variance | Rel. Std. Dev. | Position |
|----------------------------------|-----------|----------|--------------------------------|----------------|----------|
| Primary Half Core | 5.0000 | 5,600 | 0.19875 | 44.6% | A |
| Primary & Secondary Crushing | 0.3000 | 5,320 | 0.00018 | 44.6% | B |
| 10-way Rotary Splitting | 0.3000 | 532 | 0.00184 | 4.2% | C |
| Pulverisation | 0.0075 | 505 | 0.00000 | 0.0% | D |
| 10-way Rotary Splitting | 0.0075 | 51 | 0.00000 | 0.1% | E |
| Sub-sampling (material for TGA) | 0.0075 | 2.5 | 0.00004 | 0.6% | F |
| Sub-sampling (material for bead) | 0.0075 | 1.0 | 0.00010 | 1.0% | G |
| | 0.0075 | 1 | 0.00010 | 1.0% | |
| | 0.0075 | 1 | 0.00010 | 1.0% | |
| | 0.0075 | 1 | 0.00010 | 1.0% | |
| Incremental variance | | | 0.20 | 44.9% | |
| Alpha= | | | 2.5 | | |
| K= | | | 19.9 | | |
| % Error | | | 44.9 | | |
| % Maximum Stage Error | | | 44.6 | | |

6153414: Average mass of primary sample submitted to laboratory.

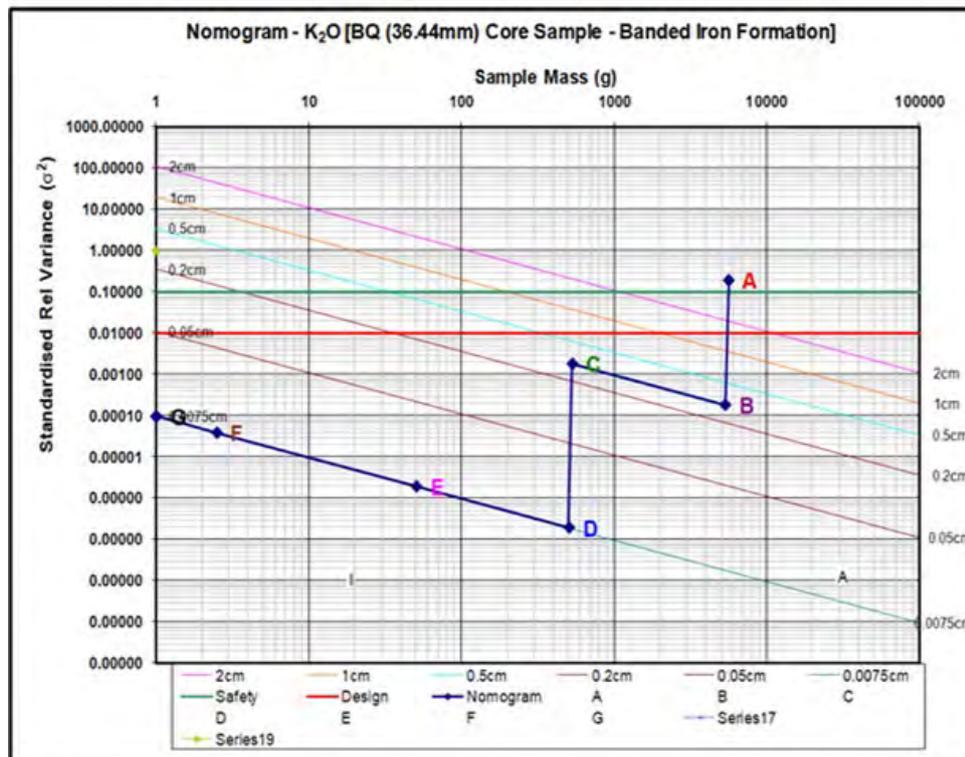


Figure 30: Nomogram for Kolomela Mine BQ Core 36.44 mm based on the “K” Constant for K₂O

The standardised relative variances of the ATS laboratory sub-sampling practices are comfortably below the theoretical safety level (red line). The sub-sampling protocol at the ATS laboratory has thus been validated.

8.2.8 Sample Analyses

An exploration pulp sub-sample undergoes the following analytical testing as a minimum standard at the ATS facility since 2010:

- A sub-sample is ignited at 1000°C in a Thermo Gravimetric Analyser (TGA) to determine the (LOI);
- A fixed mass of the ignited material is combined with a lithium borate flux. The flux and sample mixture (ratio of 1:9) is placed in crucibles (95% Pt - 5% Au) are placed in a *Katanax K2* electrical fluxer. The flux and sample mixture is fused at a temperature of 1100°C for 15 minutes. The resulting melt is swirled during fusion to ensure mixing and dissolution and is then cast into 40 mm diameter moulds to anneal and cool.
- The prepared fused bead is measured on a calibrated wavelength dispersive X-ray Fluorescence Spectrometer (WD-XRF) to determine Fe, SiO₂, Al₂O₃, K₂O, P, Mn, CaO, MgO, TiO₂, Na₂O, V₂O₅, BaO and PbO. Total oxides are calculated.
- Sulphur content was measured on the -75µm fraction by combustion and infrared techniques using LECO or ELTRA instrumentation.
- A gas pycnometer is used to measure pulp densities

8.2.8.1 Sample preparation and assay data feedback to Kumba

The sample preparation metadata and assay results were captured on the Anglo American Iron Ore Chemistry Laboratory's *Starlims*® system (a laboratory information management system) and exported to an interface, where sample preparation and assay batch data was evaluated according to Kumba's QA/QC pass-fail criteria, whereafter it was electronically imported into the Heuningkranz *acQuire*TM database after achieving a QA/QC pass.

As per routine, the laboratory returns a coarse and a pulp duplicate sample to the site for each sample submitted. These duplicates are stored at the KIO Demaneng core shed. Upon request, ATS also sends sample remnants to site for the creation of site-specific Certified Reference Material.

8.2.9 Primary Sampling, Sample Preparation and Analyses QA/QC conducted by site

The Heuningkranz field sampling methods plus the ATS laboratory sample preparation and assay techniques were subjected to quality assurance and quality control checks by KIO site personnel in 2023. Their QA/QC report covered the period 1 May 2021 to 30 April 2023 and is attached in **Addendum A**. The key aspects that were checked during the QA/QC investigation, are in accordance with Kumba Geoscience guidelines and is summarised in **Figure 31**.

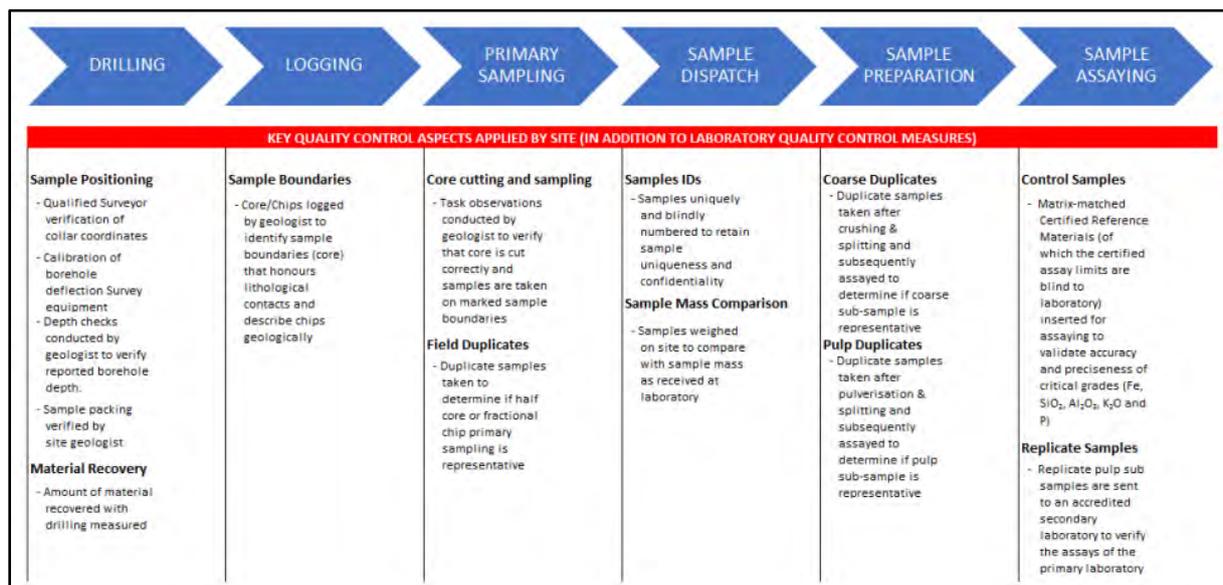


Figure 31: Summary of KIO QA/QC checks

Primary sampling methods conducted by the site and checks made to validate the accuracy of the methods are described in **Section 4** of the QA/QC report. The process followed by the ATS laboratory to prepare samples for analysis is described and validated in **Section 6** and the quality assurance and quality control measures applied to the assaying of the samples, is presented in **Section 7**.

There was one **Priority 1** finding emanating from the 2023 QA/QC exercise:

- Despite a significant improvement on previous years, the Absolute Relative Difference of assayed pulp duplicates was still below the 90% Kumba pass/failure criteria for Sulphur. Approximately 12% of the Sulphur assays from duplicate pulp core samples failed.

The ATS laboratory was tasked to investigate and solve the issue. In April 2024, the laboratory introduced WD-XRF measurement of % S. KIO is still monitoring the accuracy and precision of the new method. Recent external check sample results (measured against the Bureau Veritas umpire Laboratory in Australia) showed that the Laboratory is still analysing bias low on S and that the XRF equipment must be recalibrated for more accurate Sulphur analysis.

8.3 IN-SITU DENSITY

All laboratory density measurements were derived from small-vessel, gas pycnometer instrumentation using a pulp sub-sample of the primary sample.

It is acknowledged that these density measurements are not ideal proxies for in-situ bulk density, as it delivers solid density results without the natural voids that occur in nature. It is assumed that this will result in a slight over-estimation of Mineral Resource tonnages.

A bulk density measurement like the Archimedes method, that better considers pores and fissures in the case of core samples, should theoretically be more representative. To date, only a limited number of Archimedes type density tests have been carried out on whole, large diameter, geometallurgy borehole cores. Comparative results confirm that the pulp sample density measurements are overestimating Relative Density. Full results are provided in **Section 8.5.3.5. Geometallurgy**

The project has recently acquired a bulk density scale, to enable Archimedes type testing on site by Exploration personnel from 2026.

Waste tonnages for the Heuningkranz deposit were essentially calculated using spatially estimated, relative density values obtained from dry, pulped waste samples in a laboratory gas pycnometer.

Pulp density measurements taken in the Laboratory by a gas pycnometer were subjected to validation prior to use in the estimation process. RD was plotted against Fe in a scattergram. The strong positive correlation between Fe vs RD implies the RD measurements should plot in a very narrow band (**Figure 67: Section 9.4.3.2 Estimation**).

To account for the limitations of the laboratory measurement, a lower 10% error limit was applied to the plot - which corresponds roughly to 99% confidence limits (**Figure 68: Section 9.4.3.2 Estimation**). Measurements plotting outside the lower error limit were considered anomalous. Approximately 53 erroneous samples below the 10% error limit were removed from the estimation dataset and replaced with a value calculated from a polynomial fitted formula as follows:

$$RD = 2.49884 + 0.0306449 * Fe + 0.0003543 * (Fe - 27.7977)^2$$

No bulk density test work has been conducted on borehole samples from the Heuningkranz deposit. Large-diameter geometallurgical core borehole sample Archimedes bulk density test work conducted at the Kapstev el South deposit at Kolomela mine indicates that:

- Pulp density overestimates in-situ bulk density for Conglomeratic ore by ~4%
- Pulp density overestimates in-situ bulk density for Brecciated ore by ~10%
- Pulp density overestimates in-situ bulk density for Laminated ore by ~8%
- Pulp density overestimates in-situ bulk density for Massive ore by ~4%

This was shown by comparing the mean of the bulk density dataset results with the mean of the pulp density dataset results retrieved from the large diameter cored borehole samples.

8.4 GEOLOGICAL BOREHOLE DATA

8.4.1 Capturing

Initially, percussion samples were logged by the responsible geologist in the field using standardised logging sheets. Core was transported to the core shed for logging. Once the geologist was satisfied that the core depths were correct and the core recovery had been captured, calculated and conformed to KIO minimum standards, the core was geologically logged in detail. Data was captured on a standardised logging sheet with defined standards, codes and procedures – aligned with the structure of the geology database.

The sheets not only captured geology, but included sample numbers and depth intervals, QC info, groundwater intersections, etc. From the sheets, the data was transferred directly into the *acQuire™* geology database at the exploration offices.

KIO implemented electronic logging across all exploration sites in 2019, to replace the paper system. Logging now takes place on a “Toughbook” with Wi-Fi connectivity. The data is entered directly into *acQuire™* via a software interface. Assay data is received electronically from the laboratory information management system (Starlims®) and imported directly into *acQuire™*.

The Heuningkranz *acQuire™* borehole database is managed by a Borehole Database Manager currently working at the Kumba Corporate Office in Rosebank. The borehole metadata (ID and co-ordinates, downhole deflection, etc.), logging data, sample preparation QC metadata, assay data, assay QC metadata and geometallurgical data are stored in relevant relational tables in *acQuire™* and stored in centralised Anglo American servers, with relevant access control and data changes monitored and managed by the

Borehole Database Manager. Relations between tables are established through geological logging interval depths and where sampled, through sample IDs.

The acQuire™ borehole dataset backup procedure adheres to IT General Controls (ITGC) under the SOX and COBIT frameworks, ensuring reliable backup and recovery processes to maintain data integrity and business continuity. We have implemented two backup procedures: an on-premises backup of the database and a full system backup stored offsite.

The on-premises database backups are managed by the Anglo American IM Department, scheduled daily at 18:00. The offsite backups are handled by a third-party vendor, *Sithabile*. The on-site backup frequencies are as follows:

- Daily: Saturday to Thursday, with a retention period of two weeks.
- Weekly: Every Friday, except the first Friday of the month, with a retention period of two months.
- Monthly: The first Friday of each month, excluding January, with a retention period of one year.
- Yearly: The first Friday of January, with a retention period of five years.

Daily status reports of the backups are sent to the Anglo American IM Product Support Team for review.

8.4.2 Validation

The data stored in the acQuire™ borehole database is subject to standardised Kumba validation procedures before the construction of the geology solids models or grade estimation into the block models.

The Heuningkranz drill hole database was subject to a validation exercise in April 2023 using a cut-off date of 31 March 2023. Note that the cut-off date was not quite aligned with the QA/QC report – the latter included data up to the 30th April 2023.

During the database validation exercise, the following scripts and processes were run in the acQuire™ database to test the validity of the following data (**Table 17**):

Table 17: Borehole data checked by validation scripts in *acquire*TM

| Mandatory Fields | Optional Fields |
|------------------|---|
| Borehole collar | Depth comparisons |
| Geology | Duplicate borehole co-ordinates |
| Assays | Boreholes within area |
| Downhole Survey | Geology gaps |
| | Overlapping geology intervals |
| | Holes with no geology |
| | Assays but no material recovery or limits |
| | Total oxide outside limits |
| | Ore vs %Fe |
| | Ore vs % Waste |
| | Sample Representivity Index |

The KIO validation procedure provides a comprehensive list of pass/fail criteria. At Heuningkranz the presence of historical boreholes with sparse data restricted the pass/fail validations to the following critical fields:

| | |
|---|--|
| Final co-ordinates | Primary lithology logged |
| Duplicate boreholes | Samples with the 5 main elements assayed |
| Boreholes within area | Final depth |
| Any samples logged as “HEM” but have missing assay results. | |

Only boreholes passing the above criteria were used for the construction of the geology solids model and their data was used for the Sample Representivity Index ranking. In total, 707 boreholes passed and 254 boreholes failed this validation process. The high failure rate at that time was attributed to numerous holes that were not logged, holes that were logged, but had not been sampled, numerous re-drills and re-sampling of old boreholes. The entire core of some geometallurgical boreholes were sampled for metallurgical test work and therefore had no assays. Details of the excluded boreholes are provided in the validation report.

Of the 707 boreholes, 99 boreholes were flagged (primarily with assay issues) and restricted only for use in solids model construction and not grade estimation

An earlier peer review of the 2018 baseline geology solids model identified an additional 16 boreholes with anomalous geological interpretations that did not fit the surrounding borehole information. These holes were flagged and excluded from the construction of the geology solids model and the later grade estimation process.

8.4.3 Cut-off date for Geological Borehole Data

The Heuningkranz drill hole database was subject to a validation exercise in April 2023 using a cut-off date of 31 March 2023. Only data prior to this date, that successfully passed the validation processes, were used for estimation.

8.4.4 Borehole data informing geological model

The number and type of drill holes used in the latest Mineral Resource Estimation are provided in **Table 18**:

Table 18: Borehole types informing the 2025 Heuningkranz Mineral Resource estimate

| Drill Hole Type | Number |
|------------------------|--------|
| Full Percussion | 122 |
| Full Core | 367 |
| Hybrid Percussion-Core | 201 |
| Total | 690 |

The borehole database comprised 82 828 samples of which 56 808 samples had assays that were used in the estimation process.

8.5 GEOMETALLURGICAL TEST WORK

Kumba made a concerted effort to cover the Heuningkranz deposit with large diameter geometallurgical drilling and sampling. The drilling was conducted in two phases, an initial phase conducted between 2013 and 2014 (blue) and a later phase of drilling from 2016 to current (black) as illustrated in **Figure 32** overleaf.

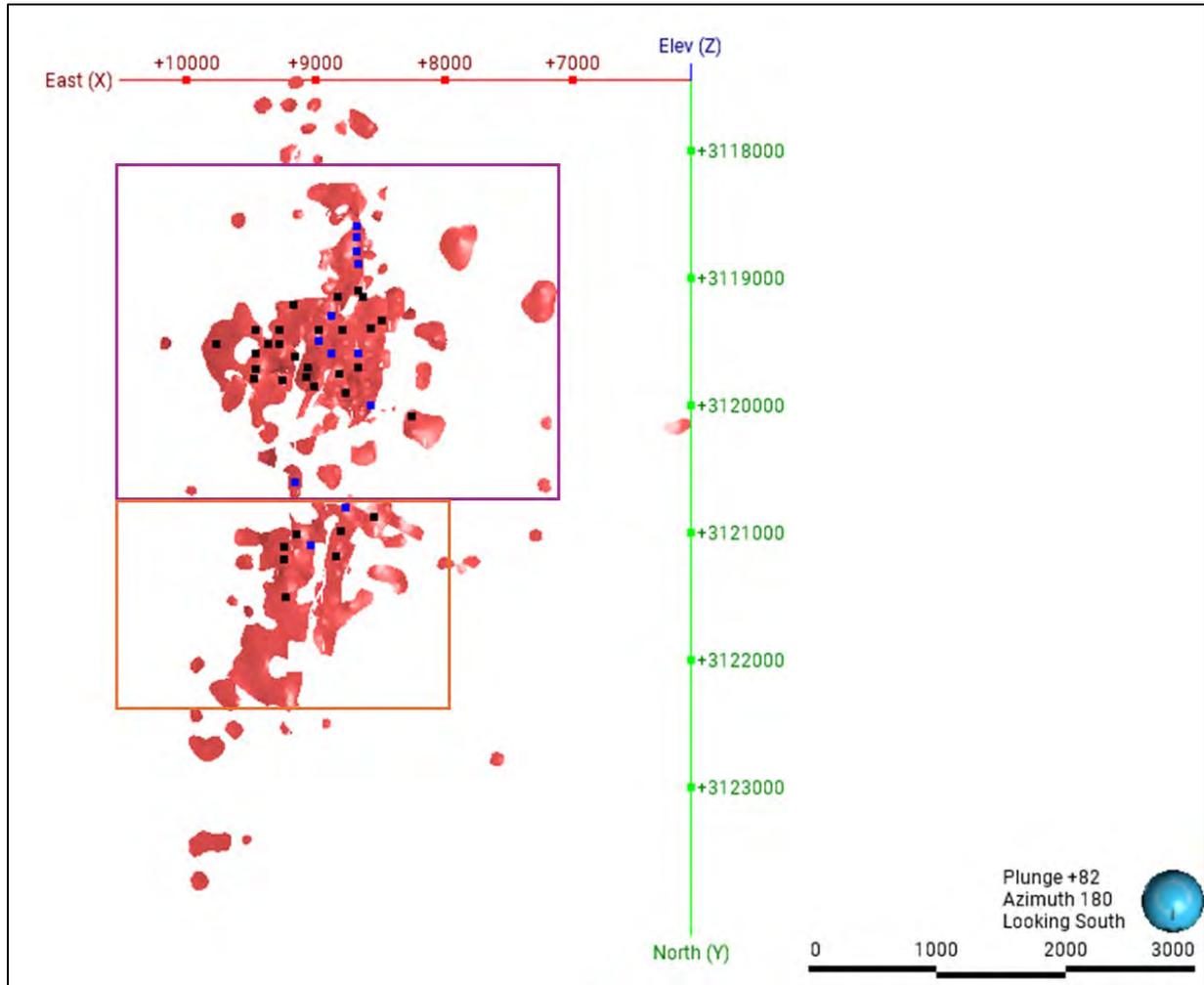


Figure 32: Geometallurgical borehole distribution at Heuningkranz

Borehole numbers are illustrated on **Figure 33** overleaf:

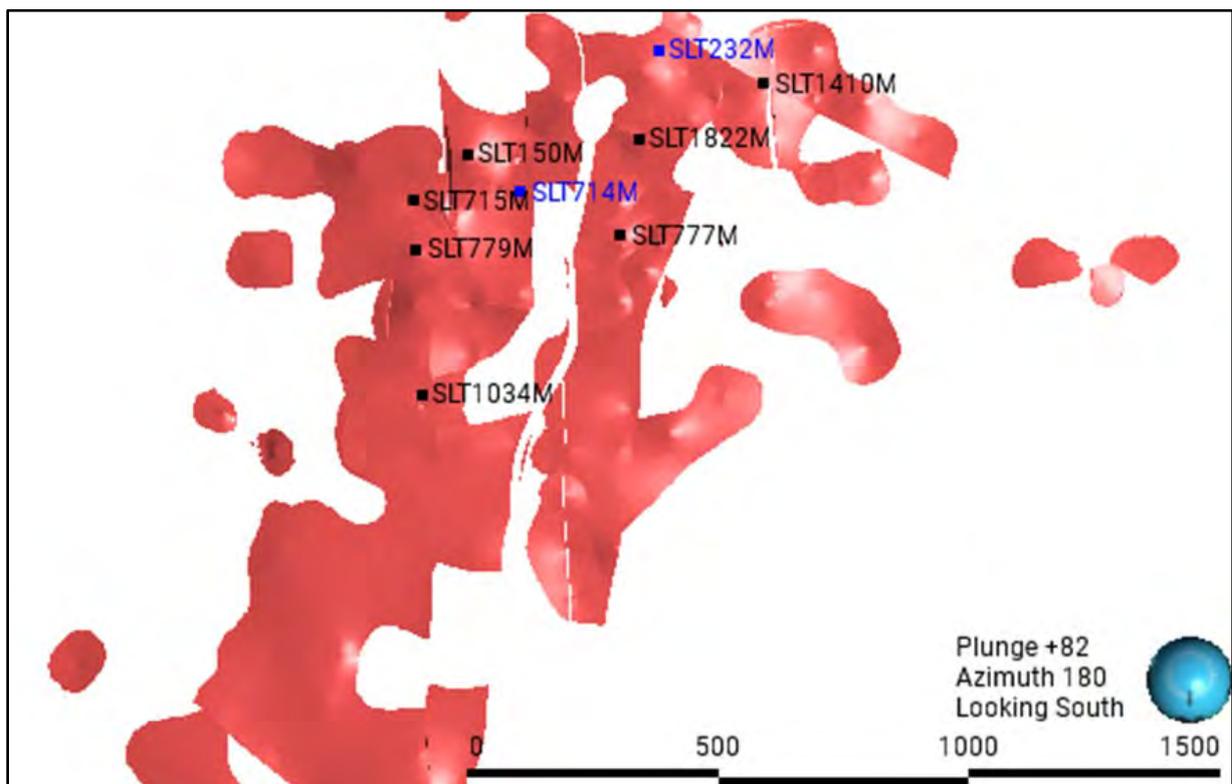
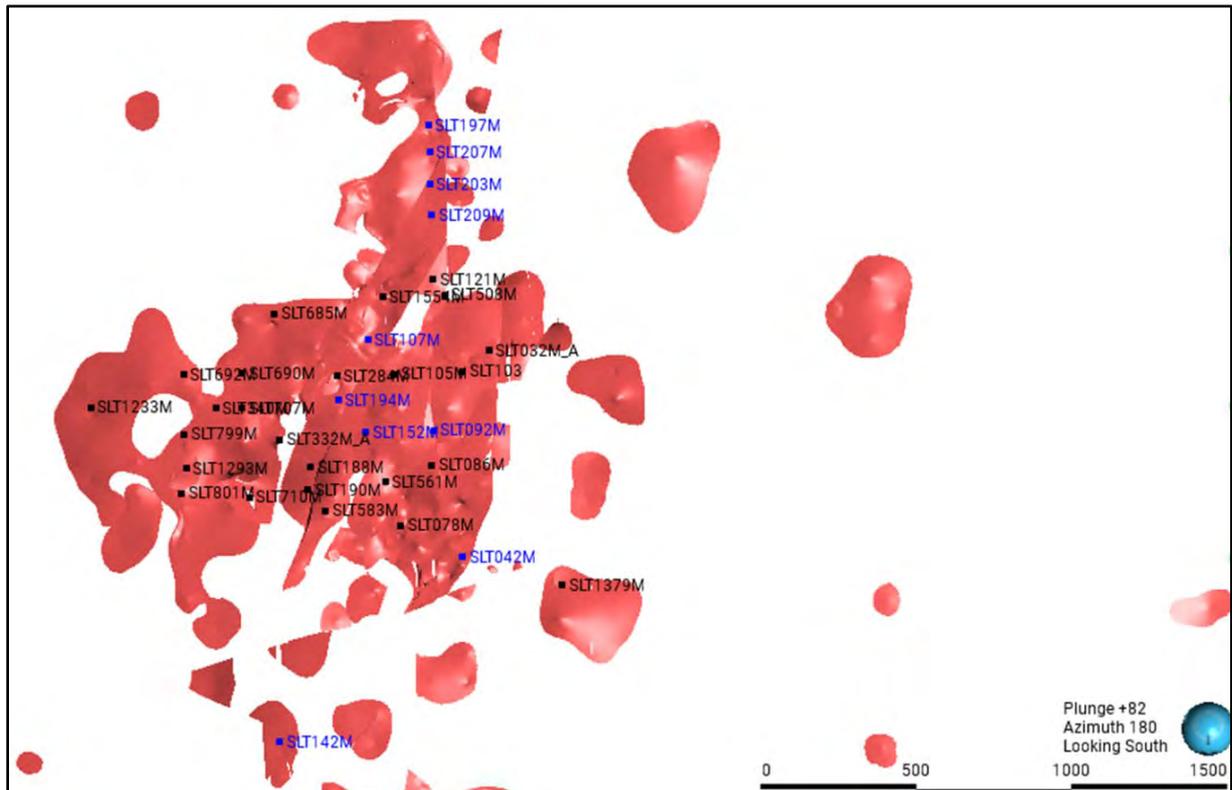


Figure 33: Geometallurgical borehole positions with ID numbers

The aim of the initial geometallurgical drilling (blue) was to generate representative samples for geometallurgical test work to characterise the various high- and medium-grade ore types of the Heuningkranz deposit in terms of their beneficiation and refinement potential, i.e. to understand the conversion of Ore Reserves to Saleable Product and Saleable Product to pig iron. Due to resource constraints at the time, the samples generated were stored for two years prior to any test work, which limited the test options. The aim of the later geometallurgical drilling (black), was to generate spatially representative samples across the orebody, to characterise the hardness and comminution properties of the ore, as well as their beneficiation and refinement potential.

All geometallurgical drill holes (core size of 84 mm) were planned and drilled as twin holes adjacent to existing exploration holes (within 5 m of original collars), to ensure targeted sampling. Drilling was executed under the KIO exploration drilling protocol as applied at Heuningkranz.

Work on the initial boreholes commenced in 2016 with the geological logging of all holes. The data was reviewed and in places, re-logged to ensure sufficient textural detail was captured for sampling, compositing and data analysis. The sampling, compositing and test work conducted on these holes were done prior to the finalisation of the Kumba Geometallurgical drilling, sampling, test work and QA/QC protocol in 2016, however the tests were aligned to the protocol. All holes drilled from 2016 onwards followed the protocol.

The geometallurgical protocol requires spatially representative boreholes across an orebody with samples and composites targeted for all ore types and textures. The number of samples per ore type must reflect the proportion of each ore type in the deposit. The characterisation prescribed in the protocol provides spatial data for Kumba Iron Ore's current value drivers namely, lump to fine ratio (hardness and comminution properties), yield and product grades for densimetric characterisation (sink float and mineralogy) and refinement characterisation which characterises lump ore degradation and reduction within a blast furnace. Mineralisation was sampled continuously but waste intersections were sampled intermittently. A 0.5 m to 1.5 m sample length was used. Once chemical assays are received, consecutive samples within a lithological unit, are selected for compositing for either beneficiation or refinement characterisation. Compositing lengths vary depending on the mass required for the test work.

The tables below (**Table 19**, **Table 20** and **Table 21**) summarise the number of tests per hole drilled across the HKZ orebody for the main ore types namely, Haematite (Laminated (LAM), Delaminated (DLAM), Rhythmic Laminated (RLAM), Massive (MAS), Conglomeratic (CGT)), Banded Iron Formation (BIF), Gamagara Shale (SHG) and Conglomerate (CGT):

- 1) Hardness characterisation (ore and waste lithologies).
- 2) Comminution characterisation (ferruginised/ore samples).

- 3) Beneficiation characterisation (ferruginised/ore samples – sink float tests and mineralogy).
- 4) Refinement characterisation (DSO samples)

Table 19: Hardness and comminution tests per drillhole (pre-2016 holes in blue)

| HOLE ID | Uniaxial Compressive Strength (UCS) | Crusher Work Index (CWI) | Steve Morell Comminution (SMC) |
|--------------|-------------------------------------|--------------------------|--------------------------------|
| SLT032M_A | 3 | 10 | 6 |
| SLT078M | 11 | 19 | 21 |
| SLT086M | 11 | 11 | 17 |
| SLT092M | | 3 | 3 |
| SLT103M | 9 | 1 | 4 |
| SLT105M | 7 | 9 | 10 |
| SLT107M | | 1 | 4 |
| SLT121M | 6 | 4 | 4 |
| SLT1233M | 6 | 0 | 0 |
| SLT1293M | 8 | 5 | 11 |
| SLT1379M | 11 | 12 | 7 |
| SLT1410M | 8 | 6 | 5 |
| SLT142M | | 3 | |
| SLT150M | 9 | 15 | 13 |
| SLT152M | | 6 | 3 |
| SLT1554M | 13 | 21 | 17 |
| SLT1822M | 13 | 12 | 11 |
| SLT188M | 6 | 4 | 5 |
| SLT190M | 13 | 5 | 6 |
| SLT194M | | 1 | 1 |
| SLT207M | | 2 | 3 |
| SLT209M | | 1 | 1 |
| SLT332M_A | 15 | 3 | 3 |
| SLT340M | 8 | 13 | 15 |
| SLT561M | 9 | 14 | 9 |
| SLT583M | 13 | 8 | 7 |
| SLT685M | 5 | 6 | 5 |
| SLT690M | 10 | 5 | 7 |
| SLT692M | 10 | 10 | 8 |
| SLT710M | 9 | 26 | 22 |
| SLT714M | | 3 | |
| SLT715M | 6 | 2 | 1 |
| SLT777M | 9 | 11 | 5 |
| SLT779M | 14 | 17 | 16 |
| TOTAL | 242 | 269 | 250 |

Table 20: Beneficiation tests (sink float) per hole per ore type (pre-2016 holes in blue)

| HOLE ID | LITHOLOGY | | | | | | |
|--------------|-----------|-----------|-----------|----------|---------------|--------------|---------------|
| | BIF | HEM | SH | CGT | BIF&HEM Blend | SH&HEM Blend | CGT&HEM Blend |
| SLT042M | | 6 | | | | | |
| SLT042M | 1 | | | | | | |
| SLT092M | 2 | 6 | | | | | |
| SLT107M | 2 | 5 | 2 | | 1 | 2 | |
| SLT142M | 1 | | | | | | |
| SLT142M | | 1 | | | | | |
| SLT152M | 1 | 1 | | | | 1 | |
| SLT152M | | 1 | | | | | |
| SLT194M | 1 | | 1 | | | 1 | |
| SLT194M | | 1 | | | | | |
| SLT197M | | | 1 | | | | |
| SLT203M | | 1 | | | | | |
| SLT207M | 3 | 2 | 4 | | 3 | | |
| SLT209M | 6 | 3 | 6 | | | 1 | |
| SLT209M | | 2 | | | | | |
| SLT714M | 2 | 3 | | | 1 | | |
| SLT032M_A | 2 | 2 | | 1 | | | |
| SLT078M | 1 | 6 | 3 | | 1 | | |
| SLT086M | 5 | 2 | | | | | |
| SLT103M | | 1 | | | | | |
| SLT105M | | | | | | | 1 |
| SLT121M | | 2 | 3 | | | | |
| SLT1233M | | | 1 | | | | |
| SLT1379M | | 2 | | 1 | | | 1 |
| SLT1410M | | | 1 | | | | |
| SLT150M | | 4 | | | | | |
| SLT1554M | 2 | 6 | 11 | | | 3 | |
| SLT190M | 1 | | | | | | |
| SLT340M | | 2 | | | | | |
| SLT561M | | 2 | 1 | | | 1 | |
| SLT583M | | 1 | | | 1 | | |
| SLT685M | | 2 | | | | | |
| SLT710M | | | 1 | | | | |
| SLT777M | 2 | 3 | | 1 | | 1 | |
| SLT779M | 6 | 2 | | | 1 | | |
| Total | 38 | 69 | 35 | 3 | 8 | 10 | 2 |

Table 21: Refinement tests per hole and HEM texture (pre-2016 holes in blue)

| HOLE ID | HEM TEXTURE | | | | | |
|--------------|-------------|-----------|-----------|-----------|----------|----------|
| | CGT | DLAM | RLAM | LAM | MAS | LAM-MAS |
| SLT032M_A | | | | 4 | | |
| SLT042M | | | | 1 | | |
| SLT078M | | | | 9 | | |
| SLT086M | | | 3 | | | |
| SLT092M | | | | | | 3 |
| SLT103M | | | 1 | | | |
| SLT105M | | 1 | | | | |
| SLT107M | | | | | 1 | |
| SLT121M | 1 | | | | | |
| SLT1293M | | 4 | | | | |
| SLT1379M | 1 | | | | | |
| SLT1410M | | | | | 1 | |
| SLT150M | | 2 | 1 | | | |
| SLT152M | | | | | 1 | |
| SLT1554M | | 1 | | 4 | | |
| SLT190M | | 5 | | | | |
| SLT194M | | | | | 3 | |
| SLT207M | | | | 2 | | |
| SLT209M | | | | | 2 | |
| SLT561M | | 2 | | | 1 | |
| SLT714M | | | | 2 | | |
| SLT777M | | 2 | | | | |
| SLT779M | | 4 | 5 | 1 | | |
| Total | 2 | 21 | 10 | 23 | 9 | 3 |

8.5.1 Hardness and comminution characterisation

Hardness and comminution characterisation is conducted to gain a better understanding of the physical properties of the ore, which is indicative of run-of-mine fragmentation and product sizing. If the variability of hardness through an orebody is understood and modelled, it assists in the optimisation of blasting practices and lump-to-fine ratio estimations of product, while also delivering valuable input to crusher design and optimisation.

8.5.1.1 Uniaxial (Unconfined) Compressive Strength (UCS) Testing

Uniaxial Compressive Strength (UCS) test is a common, more comprehensive, method used to measure rock shear strength. The UCS data is an input to geotechnical slope designs and drill and blast designs. The latter is an opportunity to optimise blast fragmentation and subsequently influence the lump to fine ratio. All tests were performed by ROCKLAB, an independent laboratory.

Due to the residence time of the samples drilled pre-2016, no historical samples were selected for UCS testing. The number of tests and mean UCS per lithology for the holes drilled post-2016 are summarised in **Table 22** below:

Table 22: Uniaxial core strength of Heuningkranz lithologies

| Lithology | Uniaxial core strength (Mpa)* | | |
|------------------|-------------------------------|--------------|------|
| | N | Mean | SD |
| BIF | 54 | 106.0 | 54.2 |
| Shale (Gamagara) | 11 | 62.4 | 52.5 |
| CGT | 11 | 136.2 | 81.2 |
| HEM | 46 | 101.8 | 61.0 |

* Data excludes samples that are not valid due to test requirements (L/D ratio)

Based on the international Society for Rock mechanics (IRSM) classification for UCS strength, the HKZ HEM falls just within the high UCS category (100 to 250 Mpa). For all lithologies, a high variability is indicated by the standard deviation.

In comparison to the existing operations, Heuningkranz HEM ore is similar to Kolomela Mine (96.91 Mpa). Both are lower in compressive strength than Sishen Mine (165.62 Mpa). The comparison is based on the 2025 Sishen and Kolomela UCS models. Currently, the UCS data is not spatially modelled for Heuningkranz as the geometallurgy machine learning modelling workflows, have not yet been developed.

8.5.1.2 Bond Crushing Work Index (CWi) Comminution Test

Bonds' Crushing Work Index (CWi) tests were also performed by ROCKLAB. The index is an expression of a rock impact strength, which is the amount of impact energy a rock can sustain until breakage. It is used for the calculation of the actual crusher power requirements of a processing circuit. The number of tests and mean CWi per lithology for the holes drilled pre- and post-2016 are summarised in the **Table 23** overleaf:

Table 23: Bond crusher work index for Heuningkranz lithologies

| Lithology | Crusher Work Index (kWh/t) | | |
|------------------|----------------------------|-------------|-----|
| | N | Mean | SD |
| BIF | 102 | 11.2 | 6.4 |
| Shale (Gamagara) | 39 | 7.9 | 5.3 |
| CGT | 23 | 9.6 | 6.8 |
| HEM | 95 | 9.9 | 6.3 |

Based on the CWi classification, the Heuningkranz HEM is classified as Hard (8-13 kWh/t). In comparison to the existing operations, Heuningkranz HEM ore is intermediate between Sishen Mine (12.5 kWh/t) and Kolomela Mine (6.95 kWh/t), where the latter is classified as Medium.

Currently, the CWi data is not spatially modelled for Heuningkranz as the geometallurgy machine learning modelling workflows, (currently in use at Sishen and Kolomela), are not yet developed.

8.5.1.3 SAG Mill Comminution (SMC) Test

The purpose of an SAG mill comminution test is to characterise the ore's hardness and breakage properties to design, optimize, and forecast the performance of comminution circuits. Tests generate parameters such as the Drop Weight Index (DWI), Morrell parameters (M_{ia} , M_{ic} and M_{in}), and JK hardness parameters (A and b) that are used in software simulations to predict how a specific ore will behave in a SAG mill circuit. The tests provide data to determine the required energy for grinding, to predict throughput, and to size equipment to achieve an optimum particle size for efficient and economic mineral liberation.

SAG Mill Crushing (SMC) tests were performed by Anglo Technical Services laboratory. It is a bench-scale experiment measuring a rock's breakability parameters, which is an expression of an ore's hardness towards comminution processes. From the test, several parameters are derived such as the energy requirement to crush a ton of ore (kWh/m^3), an indication of the ore's abrasiveness, as well as its hardness to impact crushing; as expressed by the A^*b value.

The number of tests and mean kWh/m^3 and A^*b per lithology for the holes drilled pre- and post-2016 are summarised in **Table 24** overleaf.

Table 24: Mill Comminution tests of Heuningkranz lithologies

| Lithology | Comminution - SMC (kWh/m ³) | | | Comminution - SMC (A*b) | | |
|------------------|--|------------|-----|----------------------------|-------------|------|
| | N | Mean | SD | N | Mean | SD |
| BIF | 102 | 7.0 | 1.7 | 102 | 52.1 | 10.2 |
| Shale (Gamagara) | 34 | 5.9 | 2.0 | 34 | 70.5 | 23.0 |
| CGT | 18 | 7.4 | 1.8 | 18 | 56.6 | 15.8 |
| HEM | 91 | 8.7 | 3.0 | 91 | 62.9 | 24.0 |

Based on the SMC classification for A*b, the Heuningkranz HEM is classified as Soft (56-127). In comparison to the existing operations, Heuningkranz ore requires less crushing and milling energy than both Sishen and Kolomela Mines.

Currently, the SMC data is not spatially modelled for HKZ and for existing KIO operations. The application of the SMC data is forward looking in terms of future process flows that may require reduction in particle size through milling.

8.5.2 Densimetric and associated Mineralogical Testing

The Heuningkranz composite samples were selected in the main ore lithologies where Fe > 38%. Composites selected for beneficiation characterisation did not meet typical product specifications. For the drill holes drilled pre-2016, composites were crushed and screened into the following size fractions: -25+6.3 mm, -6.3+1 mm and -1 mm. Post-2016 composite samples were crushed and screened into the following size fractions: -25+8mm, -8+3mm, -3+1 mm and -1 mm which reflect modern sizing specifications.

Densimetric characterisation was conducted on the lump and fine portions, i.e. >-1 mm using the sink float or Rhovol test. A sink-float test (SF) is performed by introducing a sample into a liquid of known density, generally referred to as a medium. Samples are a non-homogeneous mix of particles of varying density. Separation will happen between the light particles (which float) and heavier particles, which sink. A particle is defined as light or heavy based on its relative density compared to that of the medium.

The sink product is then re-used in a new medium of higher density, to perform another separation. This is repeated several times, with the medium density increasing at each new test. Based on prescribed test programme, densities investigated range from 2.8 g/cm³ to 5.2 g/cm³, with 0.2 g/cm³ increments between each test; generating a total of 13 products (unless there is no material reporting in a density bin). For every product bin, its mass is measured and chemical composition analysed, recorded and reported.

The RHOVOL test is a validated proxy test for the sink float test that was implemented at Anglo Technical Services (ATS). The RHOVOL creates a single stream of particles that passes through the machine where each particle is weighed, and a collection of cameras creates a 3D image of the particle to determine its volume. The density of the particle is calculated. The primary outcome from the RHOVOL process is that the sample is separated into fractions according to the particles' specific gravity. Material is collected in bins representing 0.2 g/cm³ increments. The bins range from 2.8 g/cm³ to 4.8 g/cm³. For every density bin product, its mass is measured and chemical composition analysed, recorded and reported.

For the -1 mm size fraction, selected composites are submitted for mineralogical liberation analysis utilising the QEMSCAN (Quantitative Evaluation of Minerals by Scanning Electron Microscopy).

8.5.2.1 Densimetric and associated Minerology test results

The high costs of geometallurgical drilling and testing, renders full-scale, closely spaced drilling and extensive test work unaffordable. Kumba followed an approach of deriving beneficiation algorithms from its densimetric test work results by relating yield and product grades to in-situ grades. It is noted that this approach does average the beneficiation potential and does not fully represent geometallurgical variance e.g. textural variances.

The beneficiation characterisation data was handed over to Processing to develop beneficiation algorithms per ore lithology, which provide an estimated yield and product qualities related to the estimated in-situ grades.

The graphs below summarise the beneficiation characteristics per size fraction for the 3.6 g/cm³ (current Sishen Dense Medium Separation operation) and 4.2 g/cm³ (future Ultra High Dense Medium Separation) cut densities.

8.5.2.2 3.6 g/cm³

The densimetric results at a 3.6 cut density indicates poor liberation of contaminant minerals from haematite (**Figure 34** and **Figure 35**), resulting in minimal upgrading of Fe and high Al₂O₃ and K₂O values reporting into product for all ore types. The fine fraction indicates a marginal improvement in product grades vs lump ore.

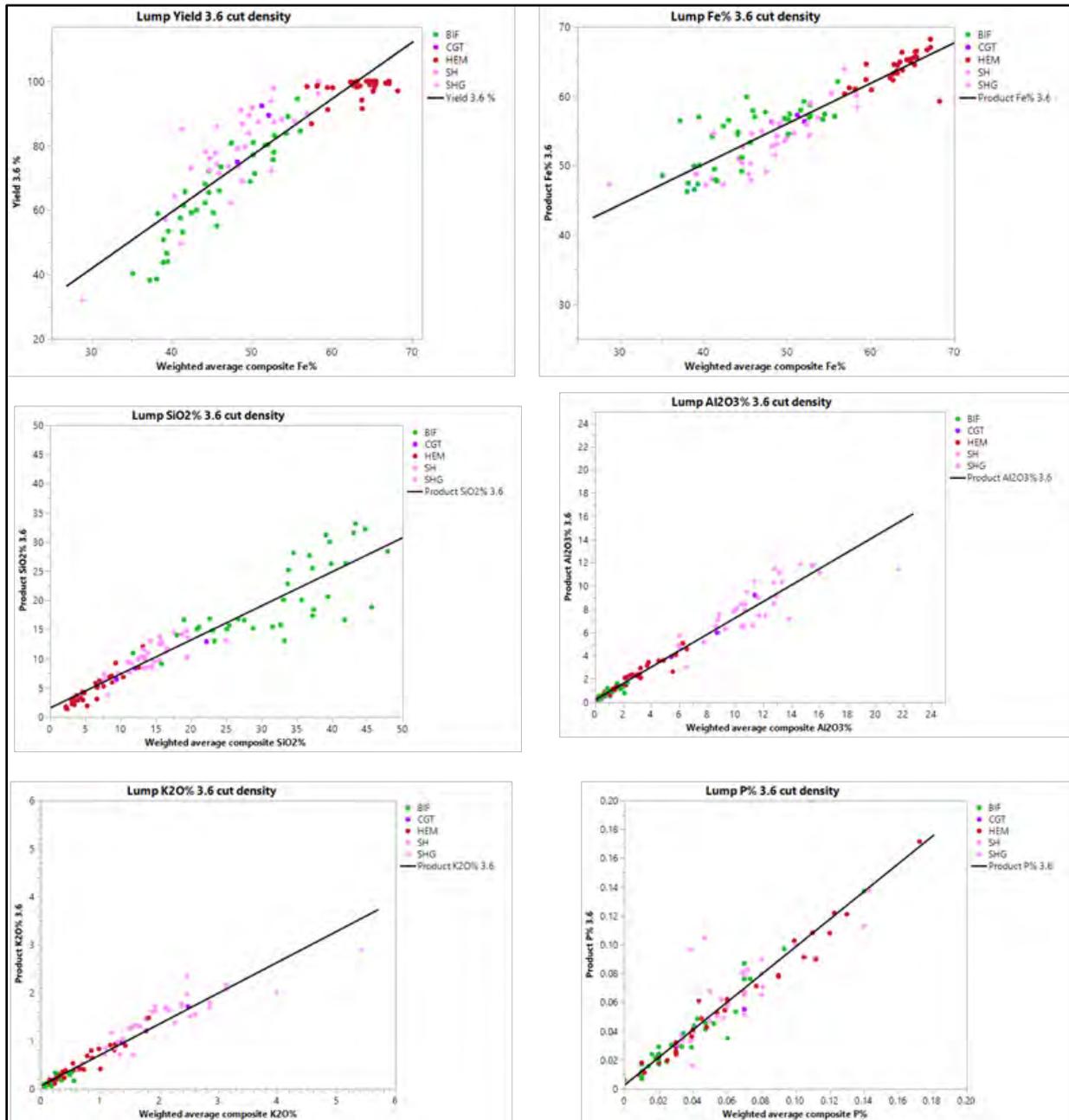


Figure 34: Lump sized ore at 3.6 cut density

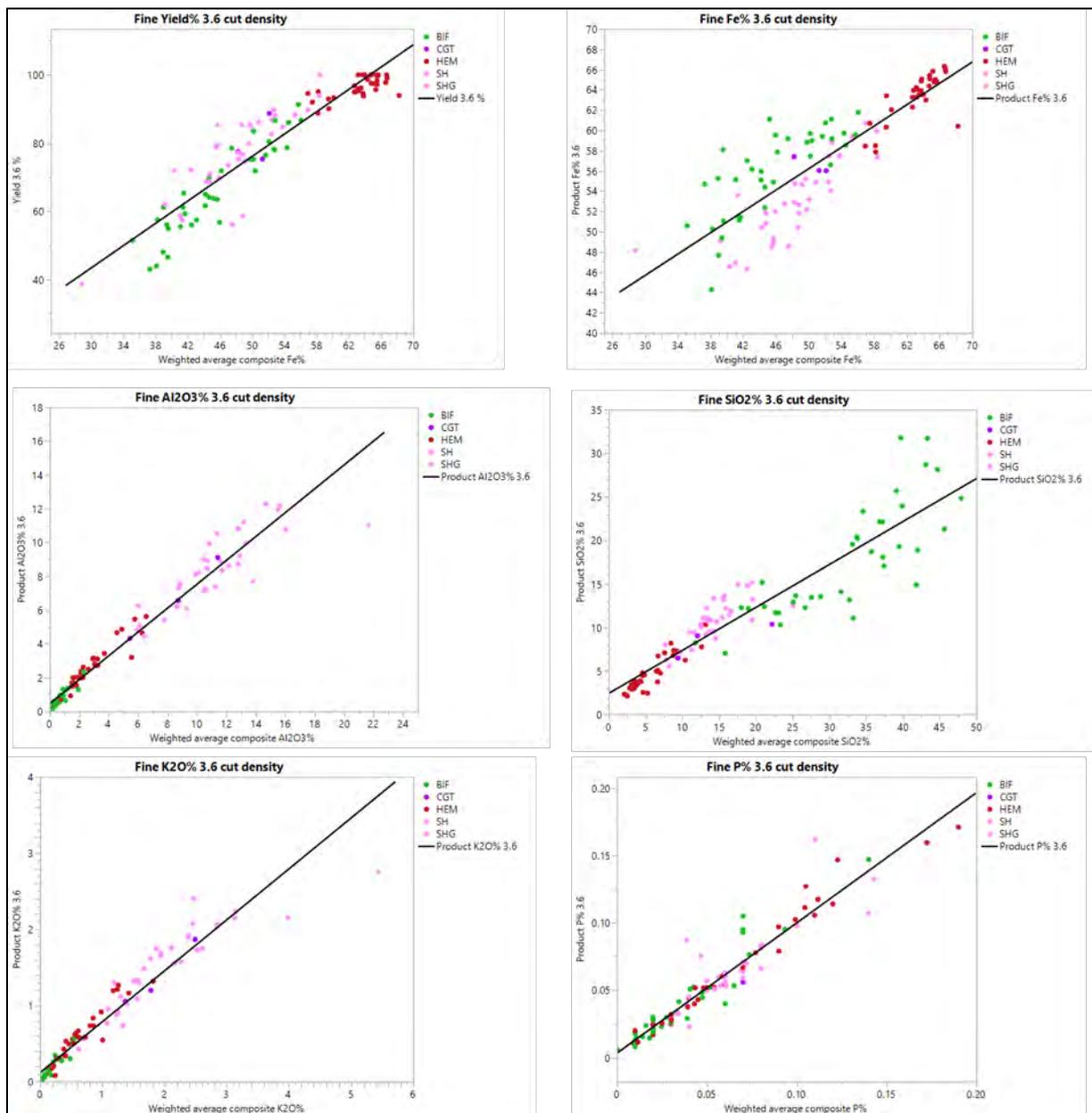


Figure 35: Fine sized ore at 3.6 cut density

8.5.2.3 4.2 g/cm³

As expected, the densimetric data at a 4.2 cut density indicates better liberation of contaminant minerals, but at a lower yield when compared to a 3.6 cut density. The fine ore again performs better than the lump sized fractions (Figure 36 and Figure 37). Unfortunately, the contaminant grades of both products are still high and outside current DSO specifications.

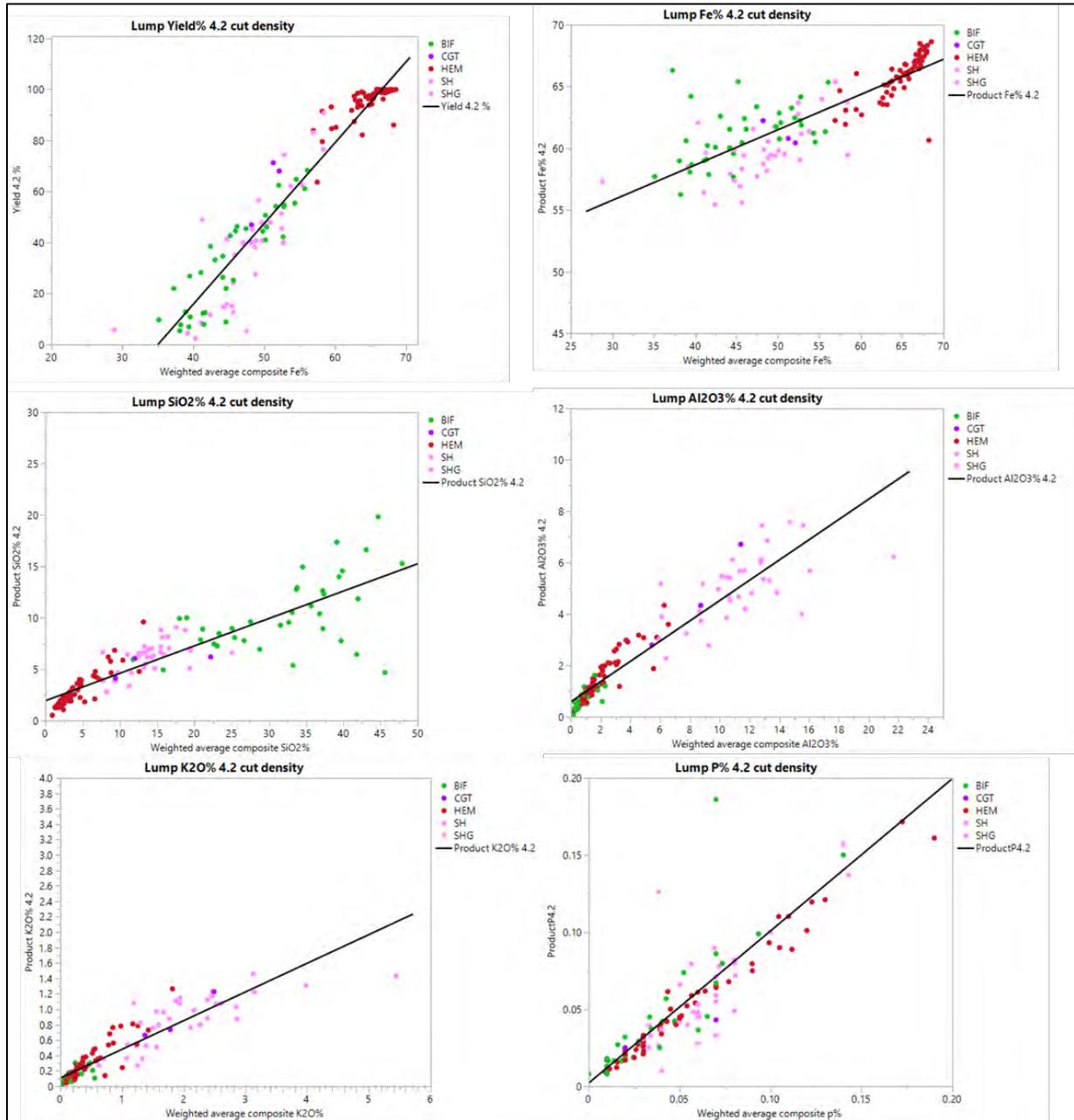


Figure 36: Lump sized ore at a 4.2 cut density

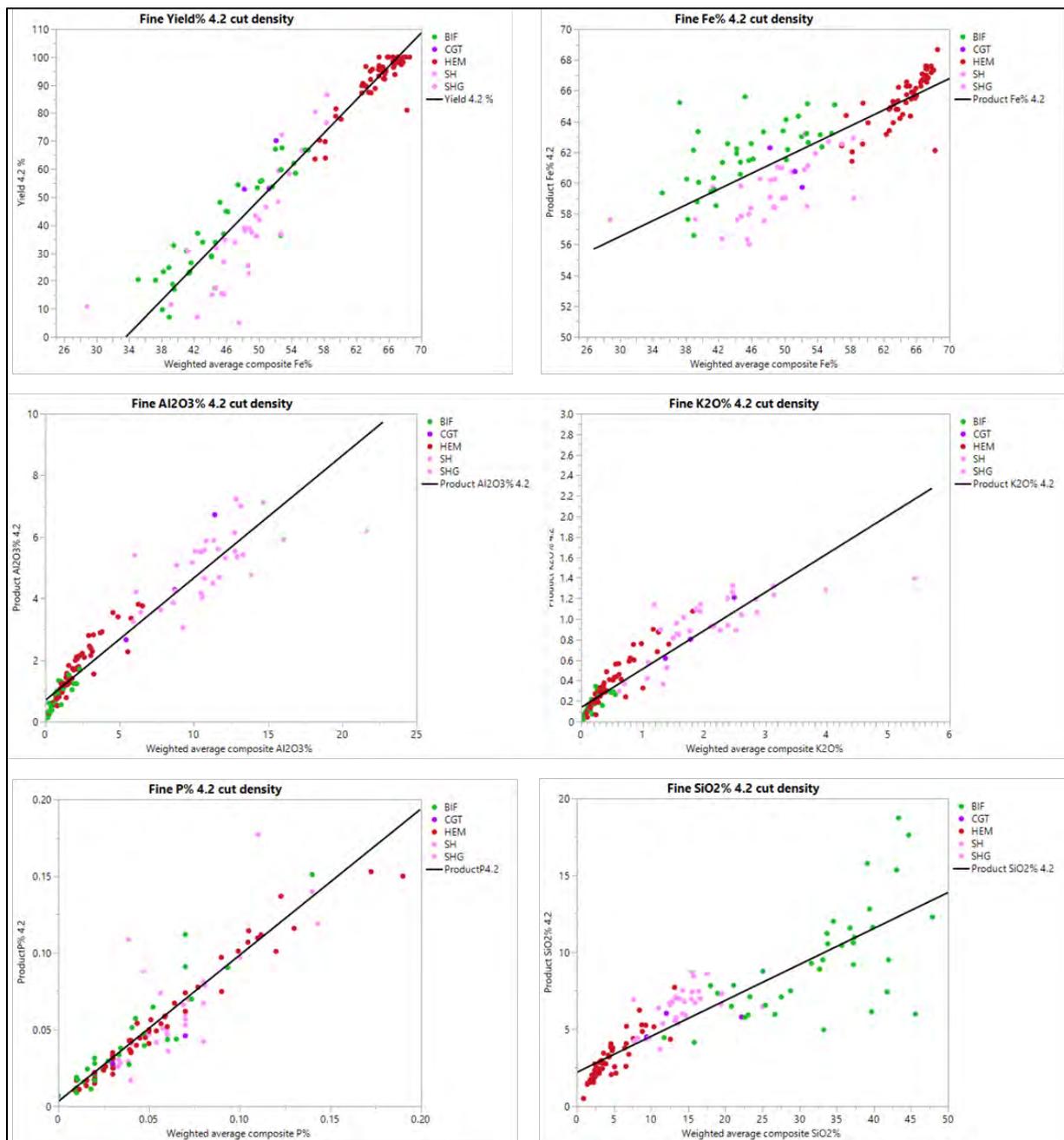


Figure 37: Fine sized ore at a 4.2 cut density

Based on the data received from the MLA images, the waste minerals which are mainly quartz, muscovite and kaolinite are finely intergrown in the haematite (**Figure 38**) and are not liberated by the current lump/fine size fractions.

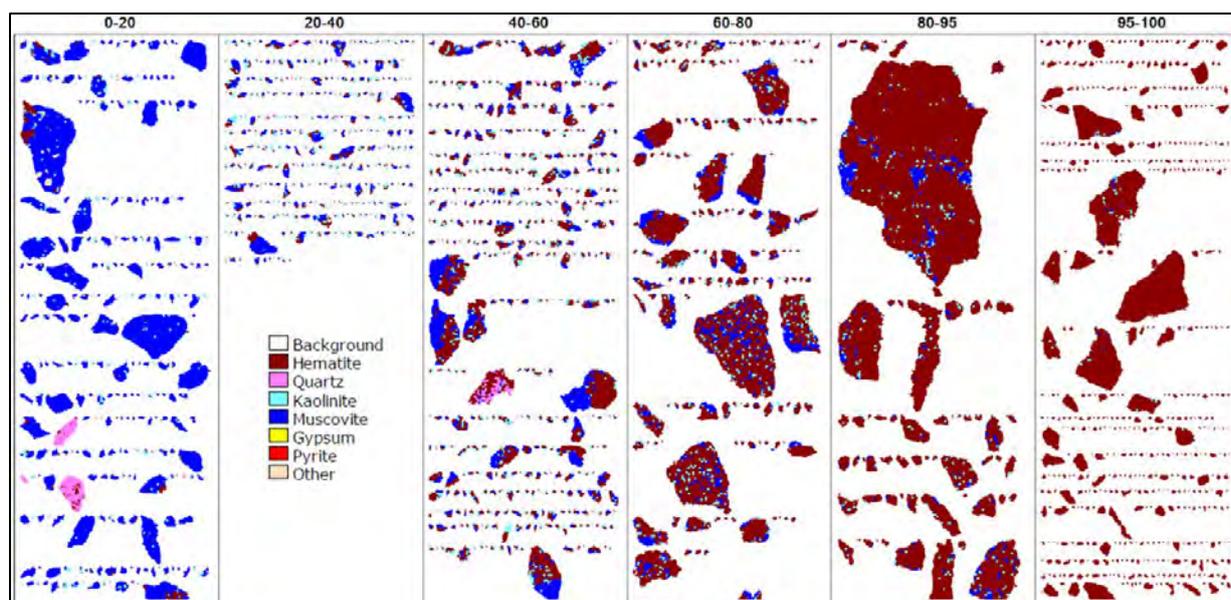


Figure 38: MLA image of sample SLT095_HEM007

8.5.3 Refinement Testing

Refinement testing predicts the decrepitation and reduction behaviour of lump iron ore in a blast furnace. It was conducted on Heuningkranz ore types that would constitute a typical future DSO product.

Samples are composited at ATS and the screened -25+10 mm portion is submitted to the Value-In-Use (VIU) laboratory for characterisation. The tests are conducted to determine the physical properties of the ore during transportation and reduction in a blast furnace.

Currently all the refinement data for Heuningkranz is not spatially modelled as the machine learning modelling workflows were only developed post the initial Heuningkranz study.

8.5.3.1 Tumble and Abrasion Index

The aim of the test is to provide a relative measure for evaluating the resistance of iron ore to size degradation by impact and abrasion. The cold strength of the ore is important because it measures the tendency of the material to break down under handling and transportation prior to charging in the furnace. The Tumble- and Abrasion Index (ISO 3271) is a relative measure for evaluating the resistance of iron ores to size degradation by impact and abrasion, where the Tumbling index (TI) = +6.3 mm size fraction and Abrasion index (AI) = -0.5 mm size fraction. The TI represents the resistance to volume breakage due to impact, while the AI gives an indication of the degree of fines generation due to abrasion.

To quantify the actual degradation due to handling and transportation from the discharge port to the stockyard at the steelmaker, Value in Use has developed an “in-house” test based on the tumble test. Data gathered over a period with respect to PSD at dispatch port and PSD at the discharge ports led to the conclusion that material in the stockyard has disintegrated equivalent to tumbling a total of 200 to 250 revolutions.

The degradation test uses duplicate samples of 15kg of the full product (-40 mm, including undersize). The sample is screened to determine the Before Tumbling PSD, then tumbled for 100 revs at 25 revs/min, screened, tumbled for another 100 revs and screened. This process is repeated until the sample has been tumbled for a total of 400 revs. Degradation curves are compiled of percentage cumulative passing versus screen size. The -6.3 mm size fraction after 200 to 300 revolutions of tumbling is a good prediction of the amount of material which will be screened out in the stockyard before charging into the blast furnace.

Mechanical degradation also occurs within the furnace due to impact and abrasion. An individual particle is likely to break down and generate fines if it is incapable of accommodating the energy due to impact during charging. It will also break down with abrasion between particles and between the particle and the furnace wall. The fines fill the voids in the packed burden material and reduce the permeability of the furnace shaft.

Figure 39 illustrates the Tumble index per texture/ore type for Heuningkranz. Based on the results, the laminated textures (LAM and DLAM) are the most variable and contain samples with a higher number of fines. The RLAM texture has the highest Tumble Index, indicating less breakdown during transportation and handling.

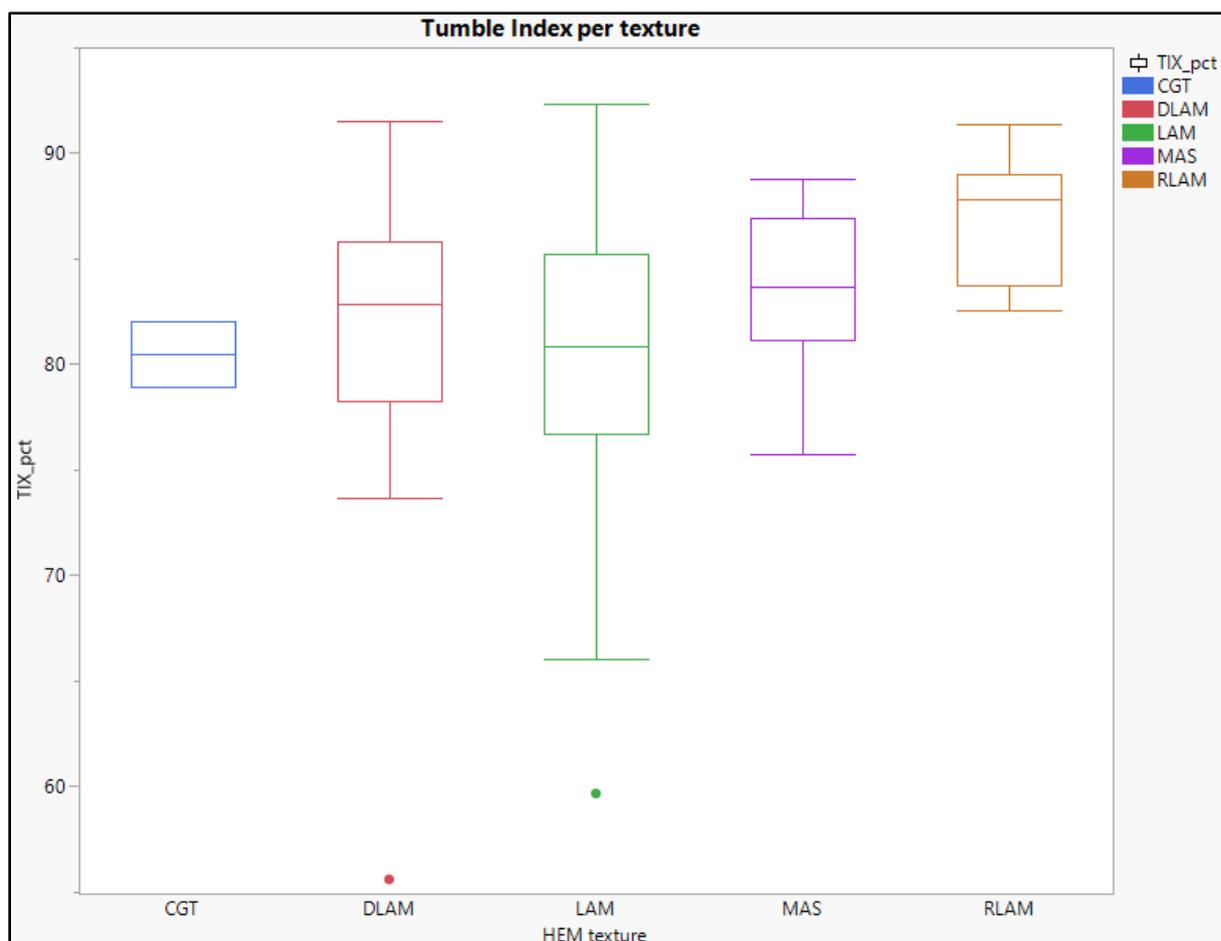


Figure 39: Tumble Index results per ore type

8.5.3.2 Reduction Disintegration Index

The RDI of the ore is a measure of the hot strength of the material, it evaluates the degree of size degradation of iron ores in a hot, reducing atmosphere. The RDI test is important because it characterises how materials behave in the mid-region of the lumpy zone. It also predicts the expected permeability in the furnace.

This test simulates the disintegration of DSO ore samples in a blast furnace at 500°C in a reducing environment. The sample is screened after undergoing this test and three size fractions are reported, namely, >6.3 mm, <3.15 mm and <0.5 mm. The size fraction of focus is 3.15 mm, as this is the size which was found to perfectly fit (intentionally) between larger size fractions and effectively prevents oxygen from escaping during ore reduction.

The results per ore texture are illustrated in **Figure 40** overleaf. The laminated texture has high variability and a higher average RDI than the other HEM textures, indicating more fines generation in the blast furnace.

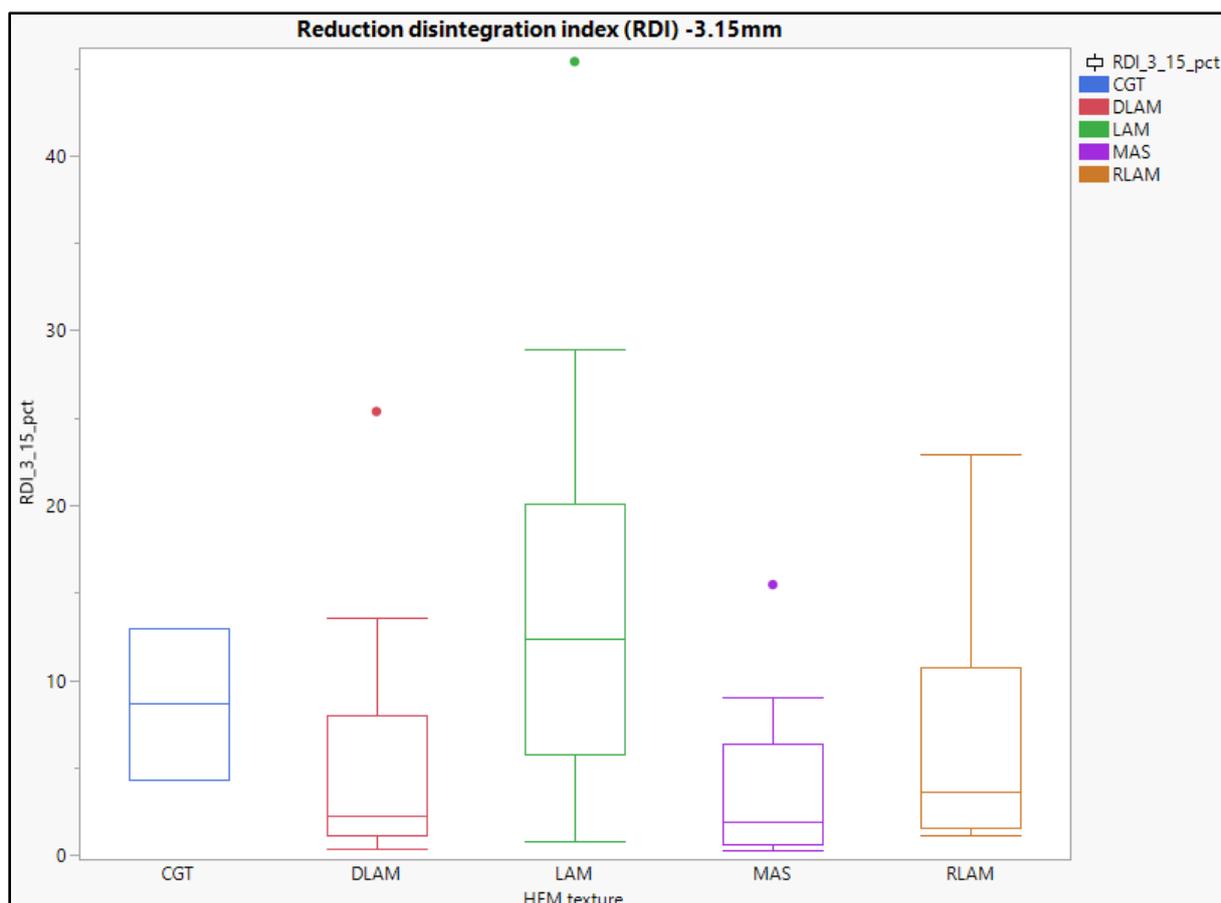


Figure 40: Reduction disintegration index per ore type

8.5.3.3 Reducibility by Rate of Reduction Index (RI140)

The RI40 (ISO4695) is a relative measure for evaluating the extent to, and ease with which oxygen can be removed from iron ores, when reduced under conditions resembling those prevailing in the reduction zone of a blast furnace. Hard/dense ores tend to have a lower reducibility than softer and porous ores. Larger size particles tend to take a longer time to reduce than smaller sizes.

The results for Heuningkranz are summarised in **Figure 41** per texture, where the Laminated ore indicates the highest reducibility when compared to other textures. Based on the high reduction disintegration index, the laminated ore breaks down quicker in the blast furnace, allowing for better reduction, however generating fines within the blast furnace.

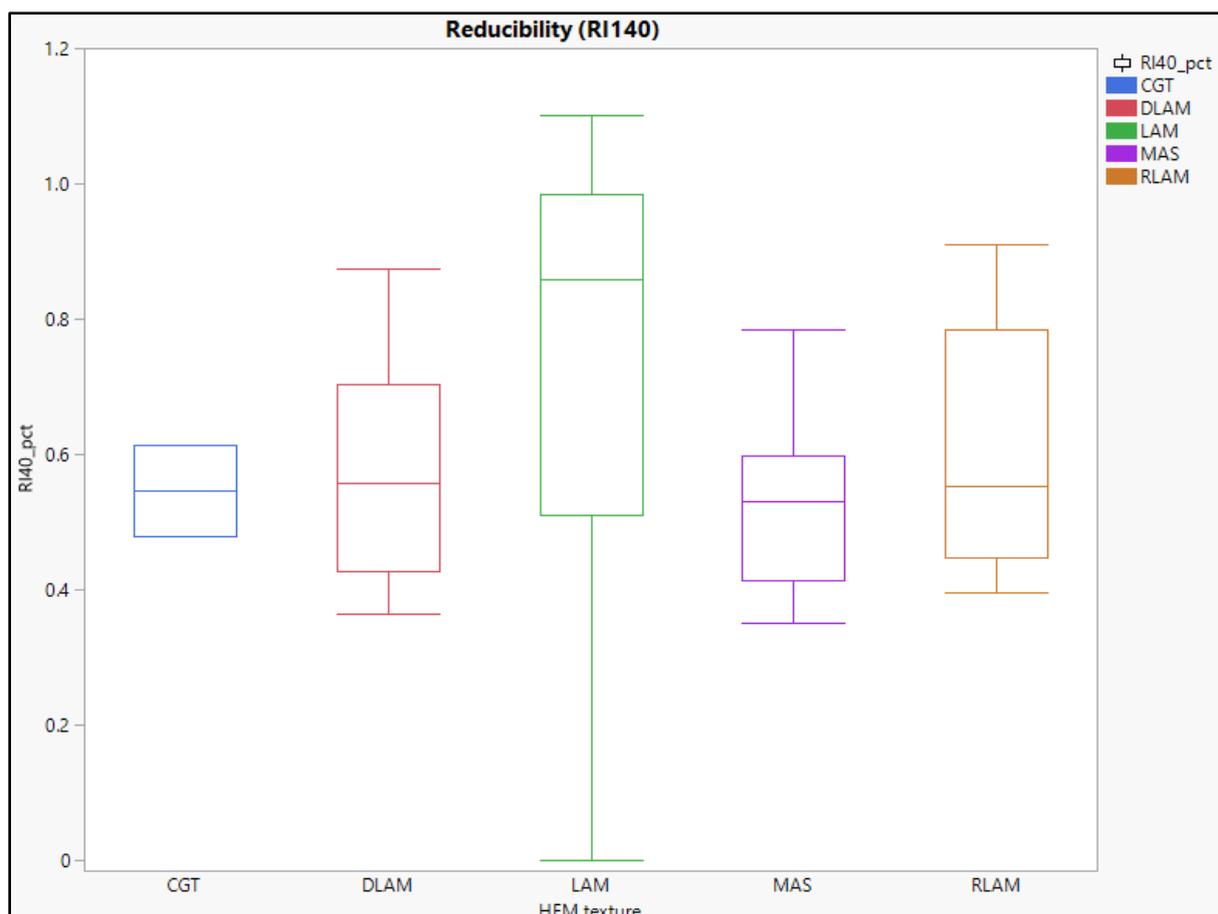


Figure 41: Reducibility by rate of reduction index for Heuningkranz ore types

8.5.3.4 Decrepitation Index (RI140)

As lump particles land on top of the hot burden in a furnace, they are subjected to thermal shock, which may also cause breakdown of the particles. This behaviour of lump ore is called decrepitation.

ISO 8371:2015 was developed to assess this behaviour for lump ore. Based on ISO 8371, the decrepitation index (DI) is defined as the weight percentage of – 6.3 mm material generated after a sized, natural ore sample (-25; +20 mm) of about 500 g is heated to 700°C in 30 min. The DI quantifies the resistance of lump ore to thermal degradation. Ore textures play an important role on the degree of decrepitation. Massive ores have the highest resistance to decrepitation.

The results for the Heuningkranz samples are summarised in **Figure 42** per texture. The RLAM ores indicates a slightly higher average DI when compared to the other textures.

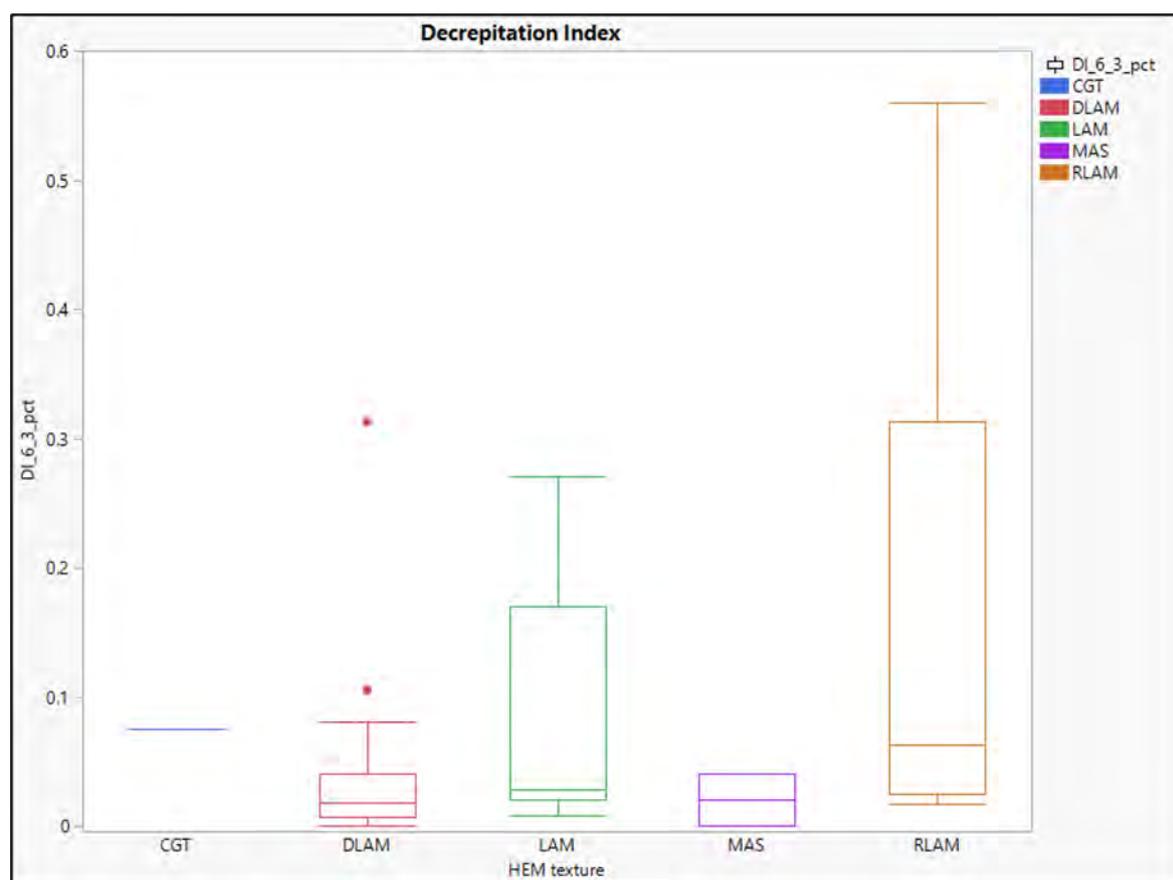


Figure 42: Decrepitation index per ore type

8.5.3.5 Bulk Density

The bulk density of 231 samples was determined by applying the Archimedes method and the following formula:

$$\text{Density} = \text{Dry mass} / (\text{Dry Mass} - \text{Wet mass})$$

Where the Wet mass is the mass recorded per sample submerged in a water bath and Dry Mass is the mass of the sample in air, dried overnight in the oven at 105 degrees Celsius and cooled down to room temperature. For this calculation, the density of water is assumed to be 1, therefore it is not shown in the above equation.

Bulk density measurements were introduced in the Geometallurgy protocol in 2019 and therefore only limited data exists for Heuningkranz. **Table 25** overleaf is a summary of the number of samples taken per lithology. Each sample also has a corresponding measured pulp RD.

Table 25: Number of borehole samples taken for Bulk Density test work

| Lithology | Borehole ID | | | | | | Total per lithology |
|--------------|--------------|-------------|-------------|-------------|-------------|-------------|---------------------|
| | SLT1034 M | SLT284 M | SLT508 M | SLT707 M | SLT799 M | SLT801 M | |
| BIF | 12 | 7 | 3 | 20 | 28 | 20 | 90 |
| CGT | 2 | 2 | | 1 | | | 5 |
| CH | | | 1 | | | | 1 |
| DMT | | | 2 | | | | 2 |
| HEM | 1 | 16 | | | 8 | 15 | 40 |
| KFM | 7 | | | | | | 7 |
| LAV | | | | | 7 | 7 | 14 |
| QTZ | | 2 | 21 | 5 | | | 28 |
| SHG | | 17 | 17 | 5 | 3 | 2 | 44 |
| Total | | | | | | | 231 |

Figure 43 below summarises the Bulk RD data for all lithologies measured against pulp RD data for the same sample.

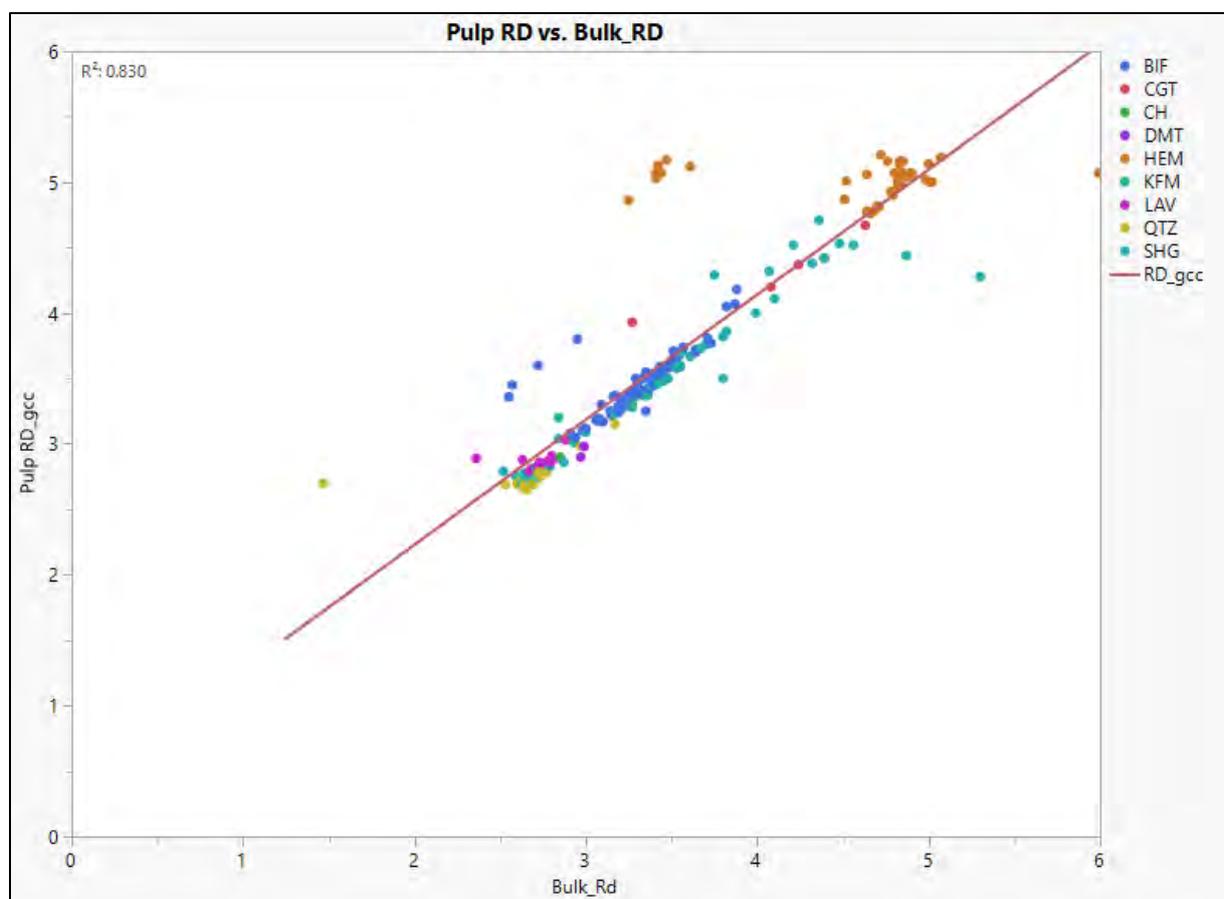


Figure 43: Comparison of Bulk RD vs pulp RD measurements

The table below (**Table 26**) summarises the average Bulk RD versus pulp RD measurements per lithology.

Table 26: Comparison of Bulk RD vs Pulp RD per lithology

| Lithology | Mean Bulk_RD | Mean Pulp RD gcc | Diff (%) |
|-----------|--------------|------------------|----------|
| BIF | 3,300 | 3,442 | -4,3% |
| CGT | 4,122 | 4,318 | -4,8% |
| CH | 2,850 | 2,900 | -1,8% |
| DMT | 2,980 | 2,940 | 1,3% |
| HEM | 4,593 | 5,019 | -9,3% |
| KFM | 3,187 | 3,279 | -2,9% |
| LAV | 2,722 | 2,868 | -5,4% |
| QTZ | 2,640 | 2,726 | -3,3% |
| SHG | 3,445 | 3,502 | -1,7% |

As expected, for all lithologies, the pulp RD is higher than the bulk RD. In haematite samples, the pulp RD is materially higher, i.e. density is overestimated due to the destruction of in-situ porosity. The 2025 Heuningkranz Mineral Resource tonnage estimate is based on spatially estimated RD derived pulp sample measurements only. This preliminary work indicates it could potentially be overestimated by ~ 9.3%. More test work is required to confirm the accuracy of the Bulk Relative Density data.

8.6 GEOPHYSICAL AND REMOTE SENSING DATA

A regional geophysical survey (aerial magnetics and gravity) was conducted in the early 2000's as part of a joint venture exercise with BHP Billiton named the Sibelo Project. The regional airborne geophysical survey (*Falcon survey*) extended over the western margin of the Kaapvaal craton (from the Orange river to north of Sishen Mine) and led to the identification of numerous high-density anomalies. Amongst others, a prominent subsurface anomaly on the Farm 364 Heuningkranz was targeted for follow-up investigations. Upon the granting of a prospecting permit late in 2007, a reconnaissance percussion drill programme, led to the discovery of high-grade iron ore mineralisation in the following year. Core drilling, sampling and assaying of the high-grade ores started soon after.

In 2010, SIOC contracted *GRS Consulting* to undertake a combined gravity and magnetic ground survey on the Heuningkranz prospecting right. The survey was done with 50 m x 50 m station spacing over most of the area, with 100 m x 50 m spacing in two smaller peripheral areas. The objective of the survey was to follow up on the *Falcon* identified anomalies with greater resolution geophysics. As expected, the ground survey (done at a considerably higher resolution than the airborne survey) improved the delineation of the of the subsurface high-density targets and identified numerous fault structures.

The residual gravity image (**Figure 44**), which removes the regional gradient and shows only anomalous features, clearly depicts the presence of two, large, separate gravity highs on Heuningkranz, extending northwards onto Langverwacht. These anomalies are approximately 2.5 mGal in amplitude. The two gravity highs appear to be structurally offset. To define their relative position and shapes, an arcuate, en-echelon fault relationship was interpreted. Lineaments and structures are well exposed by the residual gravity and demonstrate the high resolution and good quality of the dataset. The anomalies have been drilled and proven to contain significant iron mineralisation at varying depths.

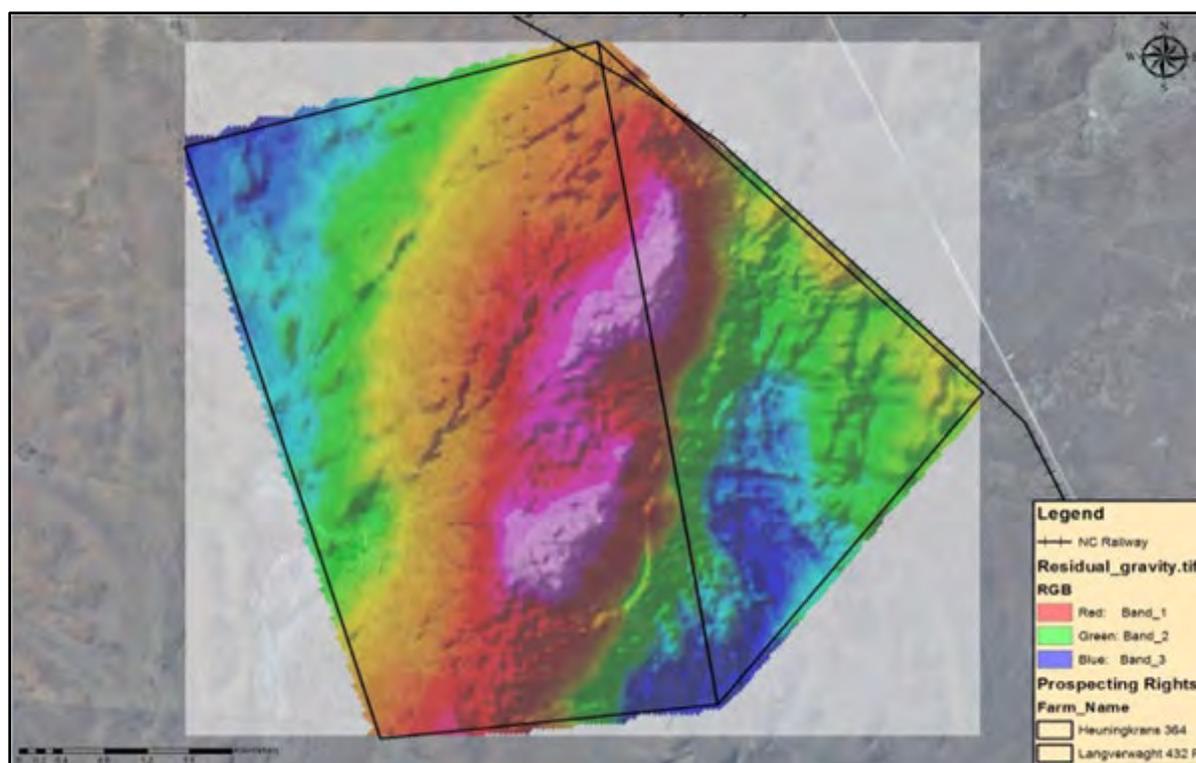


Figure 44: Residual gravity survey conducted at Heuningkranz in 2010

In 2015, a regional airborne electromagnetic survey (measuring conductivity, resistivity and magnetics) was conducted by Anglo American over a widespread area of the Northern Cape province. It was named the *Spectrum* survey and included the Heuningkranz properties. The results of the *Spectrum* survey (**Figure 45**) contributed to the identification of subsurface banded iron formation and additional primary lineaments

Figure removed

Figure 45: For in-house reporting purposes

Not all these lineaments were later modelled as faults within the geological solids model, as most have no associated displacement when checked against borehole data.

The gravity surveys culminated in 2018 with an extensive, micro-spaced, (20 m x 20 m) gravity survey over the eastern half of the properties by *Xpotential Geoscientific Consulting*. More than 40,000 readings and existing borehole data was used to model subsurface stratigraphy and structures. The modelling (**Figure 46**) identified shallow ore targets, defined subsurface structures (such as channels, faults, sinkholes, cavities and fractures) and was used to delineate sterile areas for future infrastructure and waste dump positions.

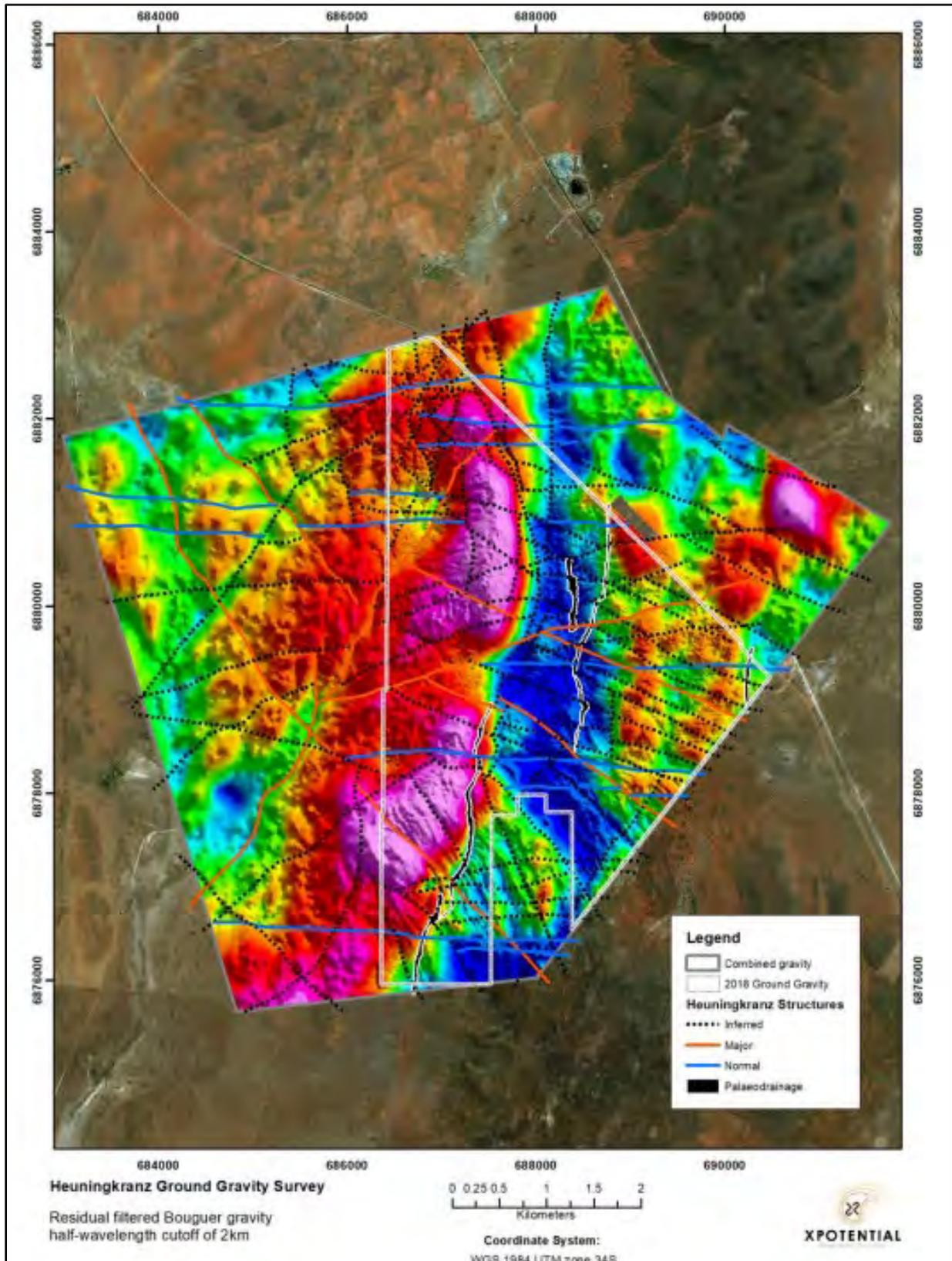


Figure 46: Structural interpretation overlain on residual filtered Bouguer gravity

8.6.1 Topography

The Heuningkranz topography as assigned in the geological solids model has been derived from the planar modelling of the surveyed borehole collar co-ordinates using the *Leapfrog* (solids modelling software) “Topography - from points” function.

In future geological model updates, the topography assigned will make use of more detailed LIDAR elevation survey data that has become available since the last update.

It is common practise to include a topo-cadastral map as per SAMREC Code reporting requirements. Please note that the topo-cadastral map as per **Figure 47**, has not been used to inform the geological solids model from which the Heuningkranz 2025 Mineral Resource estimate was derived.

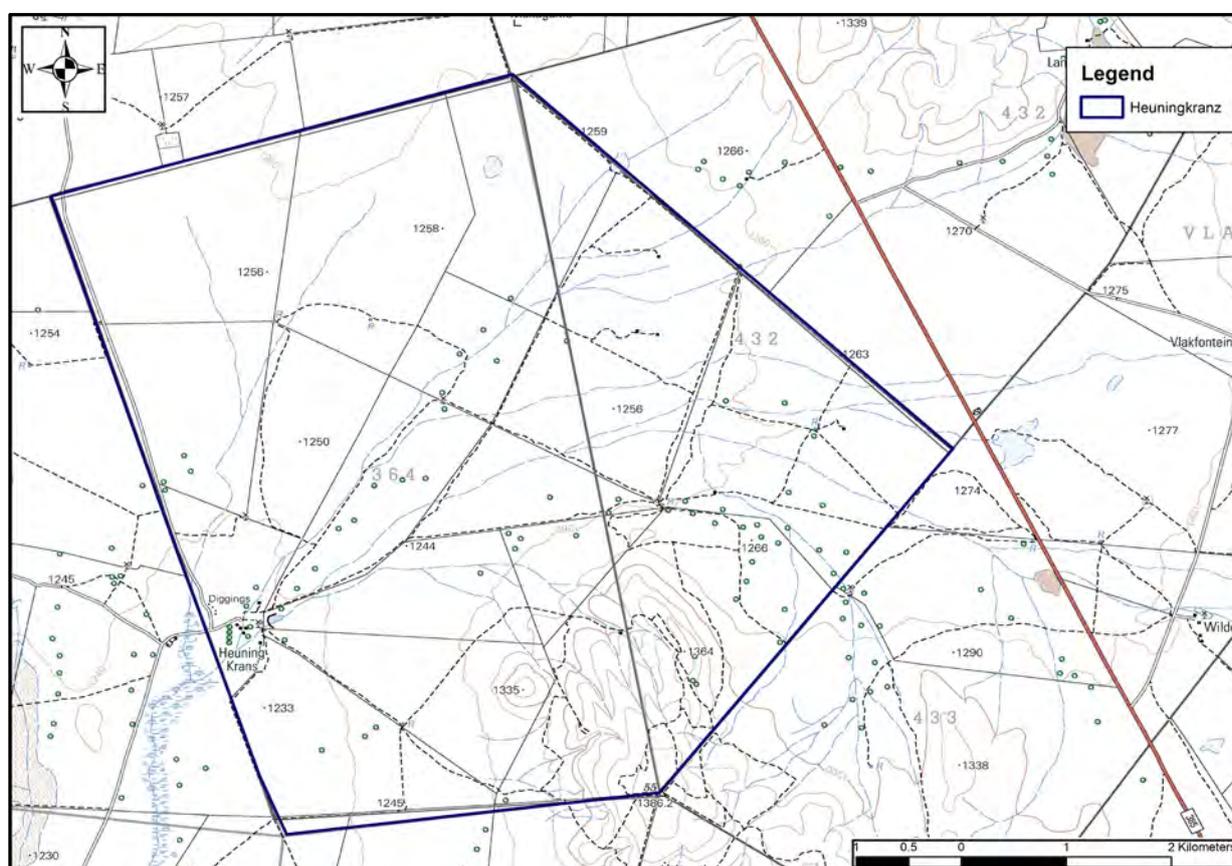


Figure 47: Topo-cadastral map covering the Heuningkranz mining right and adjacent areas.

8.7 STRUCTURAL STUDIES

Three structural studies have been completed on the Heuningkranz deposit.

The first study by Dr Ian Basson at *Tect Geological Consulting*, utilised regional geophysical data and early borehole information to compile a baseline structural model which was used in the construction of the 2012, 3D-resource model.

An update of the model with additional borehole data was undertaken by *Tect Geological Consulting* in 2013.

The third study in 2016, by *Tect Geological Consulting* produced the latest, official structural interpretation. It included the geophysical data collected during the *Spectrum* airborne electromagnetic survey. This was combined with an updated genetic model for mineralisation. The product of this study (a sub-surface, structural framework of the ore deposit) is built into the current Heuningkranz geological solids model.

Unfortunately, the results of the 2018 *Xpotential* micro gravity survey have not yet been included into the structural model. This work is planned for the next model update.

It is again emphasised that more lineaments were identified during these studies than what has been constructed in the solids model, i.e. only those lineaments with confirmed displacement (confirmed by borehole information), have been included.

9 MINERAL RESOURCE ESTIMATION

9.1 MINERAL RESOURCE ESTIMATION PROCESS

The 3D geological solids (tectono-stratigraphic) model was built by *Tect Geological Consulting* using implicit modelling methods.

The geological block model, with grade estimates was built in-house by the Kumba Geodata section.

The estimation approach and the processes applied to derive the 2025 Mineral Resource estimates are summarised in **Table 27** below. Flowcharts depicting the controls and validation processes employed during the estimation and reporting of the 2025 Heuningkranz Mineral Resource are mapped out in **Figure 48** and **Figure 49** respectively.

Table 27: Mineral Resource Estimation Approach

| Process step | Explanation | Software |
|---------------------------|---|-----------------------------------|
| Data assembly and quality | <p>The data generated by exploration, primarily drilling, aims to be representative of the volume of material being sampled. Samples are generated through quasi-regular sampling (drilling) grids and are validated by means of a stringent quality control programme, which monitors sample location, primary sampling, sample preparation and sample assaying for representivity. Because some of the historically drilled samples used for estimation do not have QA/QC metadata, Kumba introduced a sample representivity indexing method, which is considered during spatial geological confidence classification.</p> <p>Validated exploration data is used to compile spatially referenced 3D tectono-stratigraphic models based on the geologists' understanding and interpretation of the regional and local geology and ore genesis.</p> | acQuire™ |
| Solids modelling | <p>The solids model geometrically domains the high-grade iron ore types in relation to the waste lithologies within primary structural domains. Each deposit for which Mineral Resources are declared is represented by a full 3D tectono-stratigraphical solids model.</p> <p>Because of the pervasive nature of the iron ore mineralisation in the Northern Cape province of South Africa, medium- and low-grade ferruginisation are of such a nature that it can only be distinguished from "sterile" waste applying soft boundaries or Fe cut-off grades in the geological block models, i.e. medium and low-grade ore and waste can occur in the same solids model domain.</p> <p>Each domain's boundary surface in effect provides an efficient volume description of the tectono-stratigraphic unit.</p> | Seequent Leapfrog Geo™ (Kolomela) |

Table 27 (continued): Mineral Resource Estimation Approach

| Process step | Explanation | Software |
|----------------------------|--|-----------------------------|
| Exploratory data analysis | The validated borehole sample in-situ grade and density data intersecting the various solids model domains are composited to achieve constant sample support and statistically analysed (univariate and multivariate) per domain. Sub-domaining is conducted if different sample populations within a single solids domain can be spatially distinguished based on grade or drilling method. | JMP™ and Isatis™ (Kolomela) |
| Geological block modelling | <p>The optimal parent block size is determined using Quantitative Kriging Neighbourhood Analysis. The Quantitative Kriging Neighbourhood Analysis is used to determine the best search envelope (number of samples and ranges) by optimising the kriging variance and slope-of-regression while minimising negative weights in the kriging matrix.</p> <p>Iron ore is a typical multivariate grade commodity and Kolomela/Heuningkranz spatially estimates the composited in-situ sample density and the in-situ sample grades, i.e. Fe, SiO₂, Al₂O₃, K₂O, P, Mn and S (as a minimum) of the high-grade ore domains and associated hanging and footwall domains (typically Shale, Banded Iron Formation and Conglomerate). Conventional variograms were derived for all variables. These calculations are done using unfolded data. The variograms are interpreted to consider spatial anisotropy. Sterile waste lithologies at Heuningkranz have excellent sample coverage. Grades and RD for waste have been estimated</p> <p>The high-grade ore estimated block grades are informed during three rounds of interpolation. In the first-round block grades are estimated using Ordinary Kriging to populate all blocks within the optimal Kriging neighbourhood. This represents the best possible estimates. Blocks not estimated in the first pass are then kriged using an enlarged (x 2) neighbourhood. These estimates thus use samples beyond the range of the variogram and are extrapolated and of a lower confidence. Any blocks still not informed after the second kriging run receive the global mean grade. This process is repeated for each variable.</p> <p>The estimated block grades of the ferruginised hangingwall and footwall material are informed during three rounds of interpolation. In the first-round block grades are estimated using Ordinary Kriging to populate all blocks within the optimal Kriging neighbourhood. This represents the best possible estimates. Blocks not estimated in the first pass are then Simple Kriged where some sample data are available. These estimates thus use samples beyond the range of the variogram and are extrapolated and of a lower confidence. Any blocks still not informed after the second estimation run, receive the global mean grade. This process is repeated for each variable.</p> <p>The sterile waste blocks grades are estimated by Simple Kriging for the first round. Thereafter default mean values are applied to blocks that have not been populated.</p> | Isatis™ (Kolomela) |
| Confidence classification | <p>The blocks populated in the first Kriging run are classified using a scorecard approach based on the <i>KIO Geological Confidence Classification Guideline (Version 5)</i>, whereby certain key site-specific parameters as identified by the CP, are indexed and used to measure geometry and grade continuity. The individual grade indices and geometry indices are then weighted as per the CP's understanding of its impact. The weights are applied to derive a combined grade index as well as a combined geometry index, which in turn is weighted as per the CP's understanding of the deposit to derive a final single geological confidence index. The final confidence index is then classed against index boundaries as derived by the CP to distinguish between Measured, Indicated and Inferred Mineral Resources.</p> <p>The CP also has the authority to override areas of indexed classification and downgrade it. In 2025, the CP decided to benchmark the Scorecard derived classification against an equivalent grid statistic calculation developed by Anglo American, which basically considers sample density. This was used to downgrade Measured to Indicated and Indicated to Inferred in certain areas.</p> <p>All blocks in the geological block model populated by the second estimation Kriging run or by default grades are classified as Inferred (extrapolated).</p> | Isatis Neo™ |
| Resource reporting | Inclusive Mineral Resources are determined as that portion of the ore in the 3D geological block model, which has in-situ grades above a specified cut-off (61% Fe for Heuningkranz) within a 1.0 RF resource shell -as derived through pit optimisation. No Mineral Reserve has been declared for Heuningkranz. The Inclusive Mineral Resource thus equates to the Exclusive Mineral Resource for public reporting. | Datamine (Studio 2) |

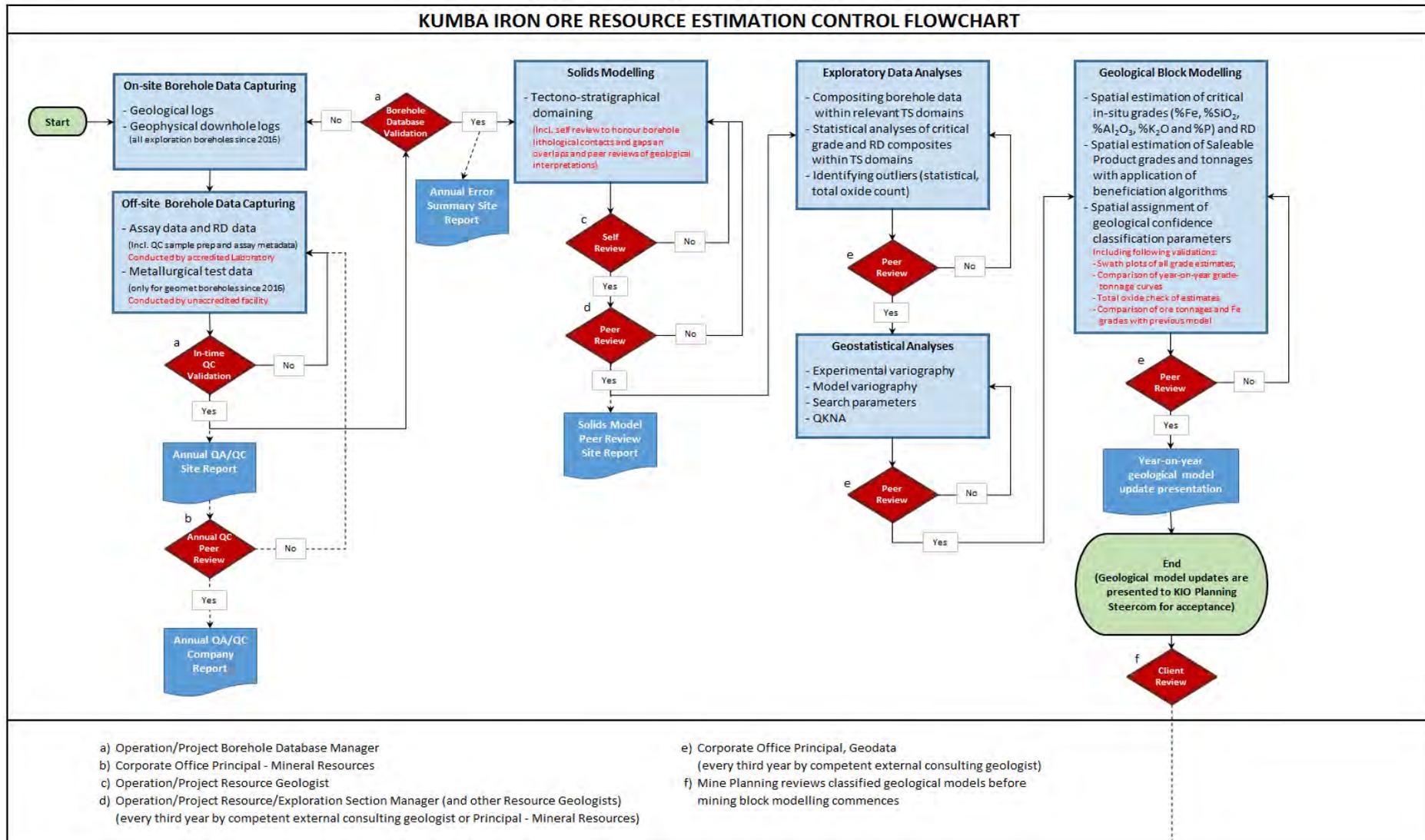


Figure 48: Heuningkraz Resource Estimation Control/Validation Flowchart

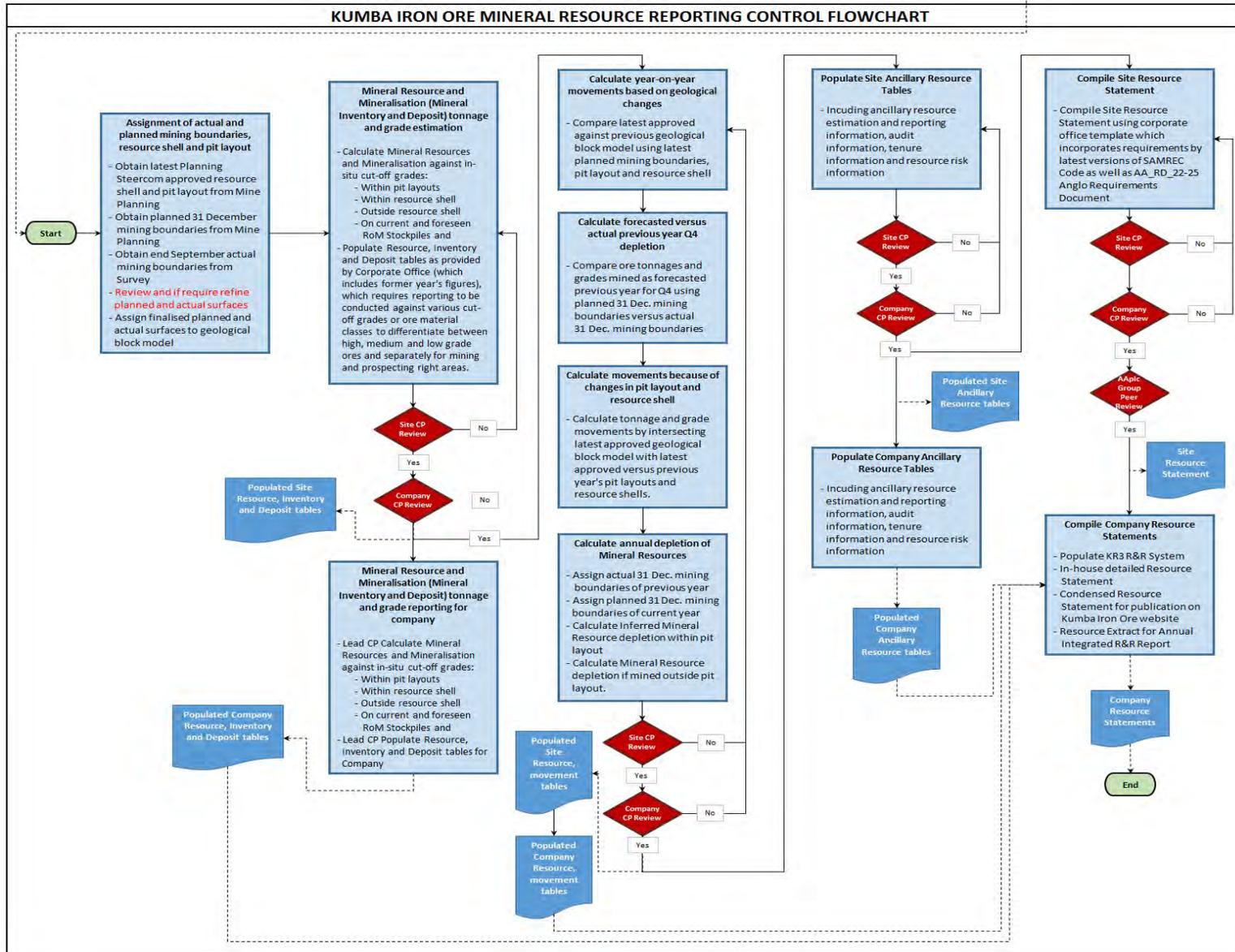


Figure 49: Heuningkranz Resource Reporting Control/Validation Flowchart

9.2 GEOLOGICAL MODELLING

9.2.1 Borehole data import and validation

Tect Geological Consulting was appointed by Kumba in 2023 to update the 2018 geological solids model of Heuningkranz using implicit modelling software (*Seequent Leapfrog Geo Version 2023.1.1*). In May 2023, Kumba supplied *Tect Geological Consulting* with a bulk drillhole database handover of 806 boreholes of which, 99 boreholes were flagged as “non-valid” for failing a database validation exercise held prior to the handover. Most of the boreholes had failed due to no final collar co-ordinates and/or outstanding assays. The geology logs of the “non- valid” holes could be referenced during wireframe construction, but all their assays were to be excluded from the later grade estimation process.

With the handover, Kumba advised *Tect* that an additional 16 boreholes were to be ignored. These boreholes had been flagged during an earlier Kumba peer review/validation exercise of the previous solids model, where the borehole log does not agree with the stratigraphic interpretation, based on surrounding borehole information. The specific reasons for the flagging are listed in **Table 28** below:

Table 28: Heuningkranz boreholes ignored during solids modelling

| Hole ID | Reason |
|----------|---|
| SLT105 | Conflicting lithology with neighbouring geometallurgy drillhole. Geometallurgy drillhole considered more accurate and so SLT105 has been ignored |
| SLT150 | Conflicting HEM intersections with redrilled SLT150A hole. SLT150 is older and has therefore been ignored |
| SLT142 | Conflicting HEM intersections with redrilled SLT142A hole. SLT142 is older and has therefore been ignored |
| SLT133 | Conflicting HEM intersections with redrilled SLT133A hole. SLT133 is older and has therefore been ignored |
| SLT046 | Conflicting HEM intersections with redrilled SLT046A hole. SLT046 is older and has therefore been ignored |
| SLT047 | Conflicting HEM intersections with redrilled SLT047A hole. SLT047 is older and has therefore been ignored |
| SLT710 | Conflicting HEM intersections with neighbouring geometallurgy drillhole SLT710M. Geometallurgy drillhole considered more accurate and so SLT710 has been ignored |
| SLT203 | Conflicting HEM intersections with redrilled SLT203A hole. SLT203 is older and has therefore been ignored |
| SLT060 | Conflicting HEM intersections with redrilled SLT060A hole. SLT060 is older and has therefore been ignored |
| SLT255 | Conflicting HEM and lithology intersections with redrilled SLT255A hole. SLT255 is older and has therefore been ignored |
| SLT2079W | Conflicting HEM intersections with SLT1253. SLT2079W is a percussion hydrogeological drillhole so the exploration SLT1253 has been considered priority |
| SLT777M | Conflicting HEM intersections with neighbouring exploration drillhole SLT777. SLT777 is a diamond exploration drillhole that has been drilled deeper than the corresponding geometallurgy drillhole and as a result the geometallurgy drillhole in this case has been ignored |
| SLT066 | Conflicting HEM and lithology intersections with redrilled SLT066A hole. SLT066 is older and has therefore been ignored |
| SLT068 | Conflicting HEM and lithology intersections with redrilled SLT068A hole. SLT068 is older and has therefore been ignored |
| SLT692M | Conflicting HEM intersections with neighbouring exploration drillhole SLT692. SLT692 is a diamond exploration drillhole that has been drilled deeper than the corresponding geometallurgy drillhole and as a result the geometallurgy drillhole in this case has been ignored |
| SLT2053 | Conflicting HEM intersections with SLT2058. Discussions with KIO geoscientists confirmed the SLT2053 co-ordinates were incorrect and has therefore been ignored with the intention of re-introducing the corrected drillhole within the next model update iteration |

Upon handover, Tect conducted a validation exercise on the data received and compared the input data between the 2018 model baseline data (Central ID: 2963) and 2023 update (Central ID: 3136). The comparison indicated the following: 163 boreholes had been added, 256 boreholes amended (historical core was re-logged with an updated textural-based logging guide, additional low-grade mineralisation was also sampled), 99 boreholes had been flagged as “non-valid” (with restricted use) but a further 16 boreholes were to be completely ignored during wireframe modelling. The position of the ‘non-valid’ and “ignored” boreholes together with old, amended and new boreholes are depicted in **Figure 50** below:

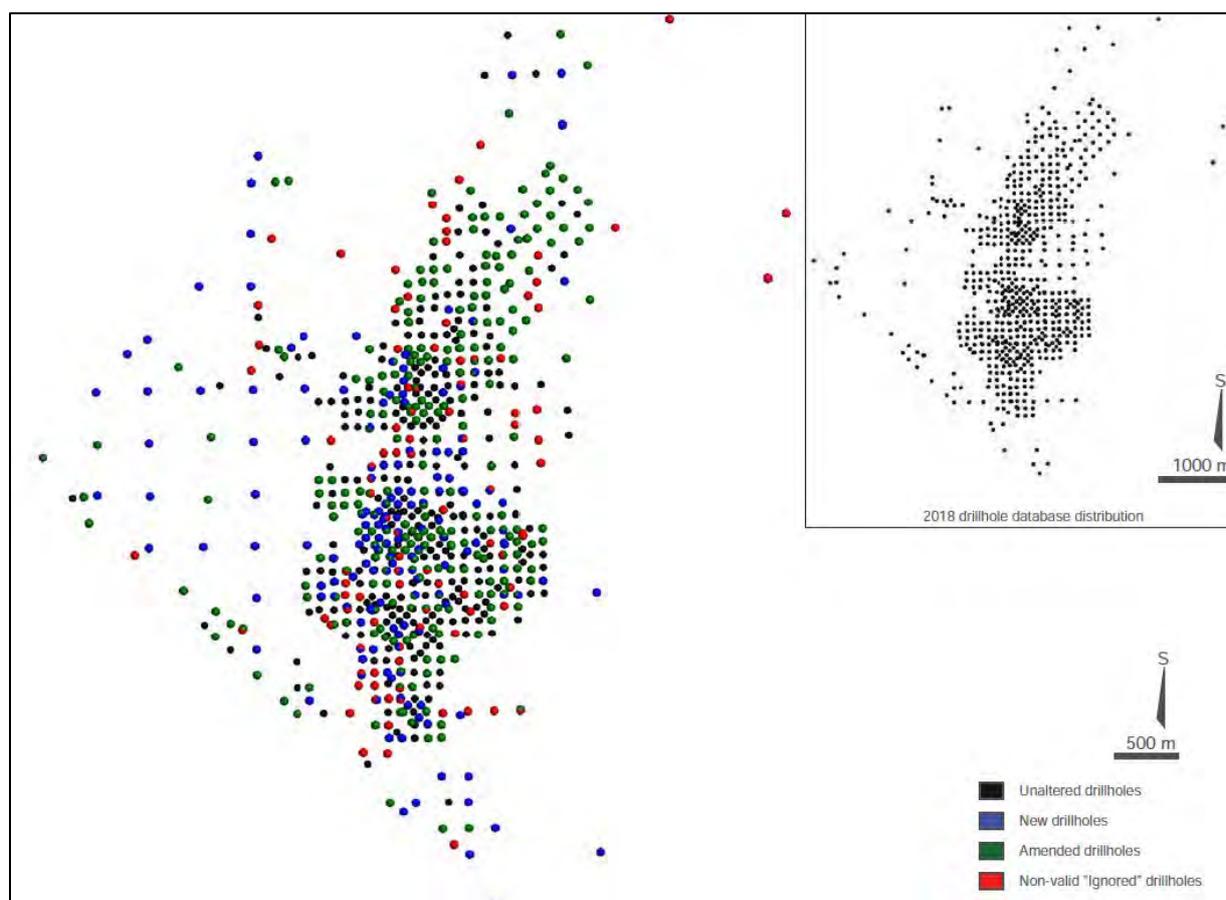


Figure 50: Heuningkranz borehole distribution and changes from 2018 to 2023

The significant changes to the underlying borehole database (additional and amended boreholes) were expected to have material geometric and volumetric impact in the gabbro, stratigraphy, and ore model domains.

The remaining borehole data (total of 690 boreholes) passed the validation, except the borehole collar and down-hole survey data which required a correction for the north-down site grid system. A 180-degree survey azimuth correction was made to the survey data by multiplying the X and Y co-ordinates by -1.

9.2.2 Modelling Approach

The implicit solids model that informed the 2025 geological block model, was constructed in 2023 by an external company: *TECT Geological Consulting*. The company employs structural and implicit solids modelling experts (on which Kumba has relied for more than 10 years), to assist with the structural interpretation of its Kolomela, Heuningkranz and Sishen deposits.

In 2023, *Tect* was approached to update the previous 2018 geological solids model as a significant number of boreholes had been drilled and added to the Heuningkranz database. Furthermore, improvements in the capabilities of the implicit modelling software were to be captured in the latest geology model.

9.2.2.1 Model Workflow

The 2023 Heuningkranz model update incorporated several workflow re-configurations, following Leapfrog Geo’s software advancements at the time (*Leapfrog Version 4.3.1*). The most notable improvements were made within its borehole database and vein modelling capabilities, since the construction of the 2018 baseline model. The implicit solids model Leapfrog Central ID is 3136.

The modelling approach is schematically represented in **Figure 51** overleaf. It utilises three individual geological models, namely:

- “Gabbro Intrusives”,
- “Stratigraphy” and
- “Ore (Fe > 60%)”

When combined, these models generate the structural framework with intrusive bodies, country rock lithologies and finally, the haematite (HEM) orebody.

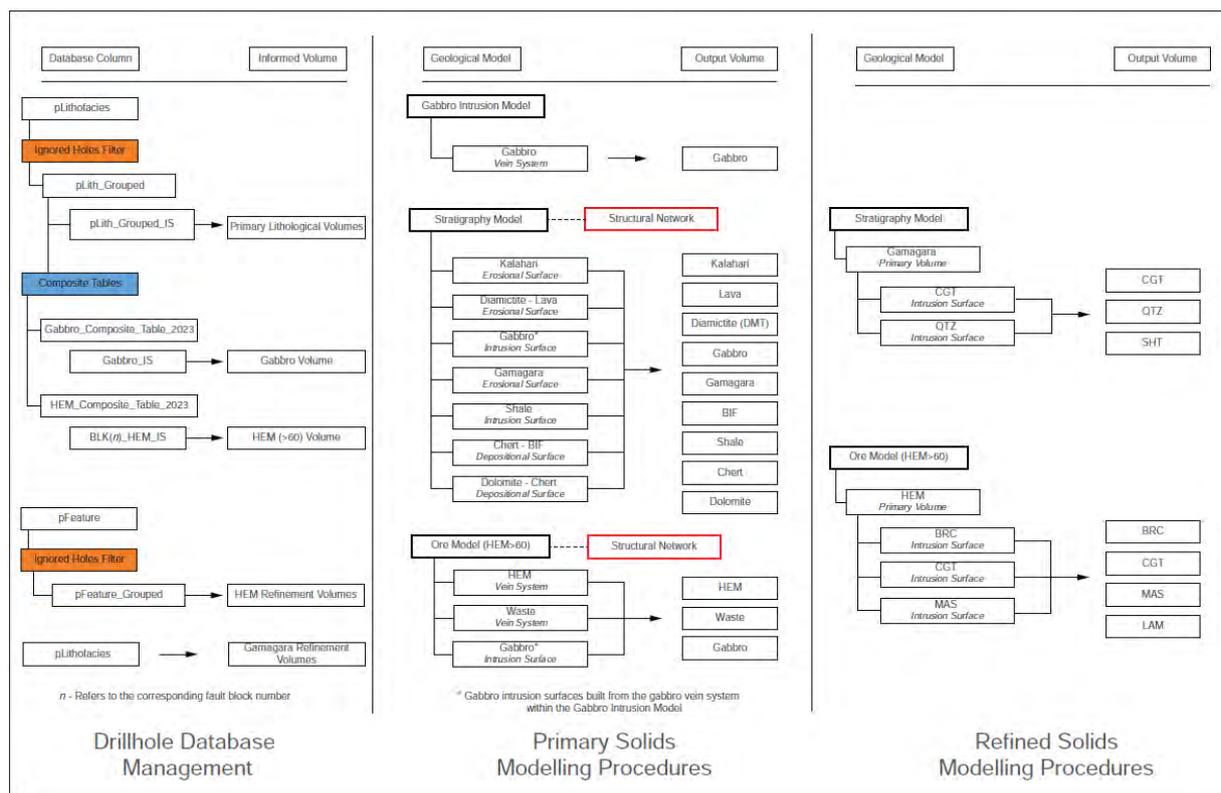


Figure 51: 2023 Heuningkranz implicit solids model workflow

The structural network and delineation of fault blocks is constructed within the Stratigraphy and Ore models (**Figure 47**) above. For modelling purposes, only the “PG Unconformity Structure” has been activated within the Gabbro Intrusive model.

An “Ignored” drillhole filter was incorporated into all the downstream solids modelling. This filter allows boreholes that have been flagged as “non-valid” to still be viewed in 3D space but not be utilised in the modelling process, e.g. cannot snap onto the borehole trace.

9.2.2.2 Primary Tectonostratigraphic Surface Construction

9.2.2.2.1 Gabbro Intrusives Model

The borehole database records several intersections of both gabbro (GAB) and an undifferentiated intrusive (INT) within the model Volume of Interest (VOI). A 3D overview and analysis of these intersections, suggest they form part of a single intrusive system and have therefore been grouped and collectively modelled as a series of veins within a single vein system (**Figure 47**). The individual veins have been modelled to terminate below the modelled Postmasburg Group Unconformity. This follows the observation that the gabbro intrusives are consistently truncated below this thrust structure.

The geometry and cross-cutting relationships of the modelled gabbro veins are based exclusively on borehole intersections and their apparent 3D interconnectivity within the VOI. As a result, the relative “confidence” of these vein geometries, especially down-dip, should be considered low.

9.2.2.2 Stratigraphic Model

To best portray the primary tectonostratigraphic sequences and their relative relationships in 3D, the Kalahari, Diamictite, Lava and Gamagara sequences are each modelled using erosional surfaces. The Banded Iron Formation (BIF), Chert and Dolomite volumes, however, are defined using deposit surfaces. Additionally, shale horizons intersected within the lower BIF, Chert or Dolomite envelopes have been modelled separately using the intrusion surface (**Figure 52**).

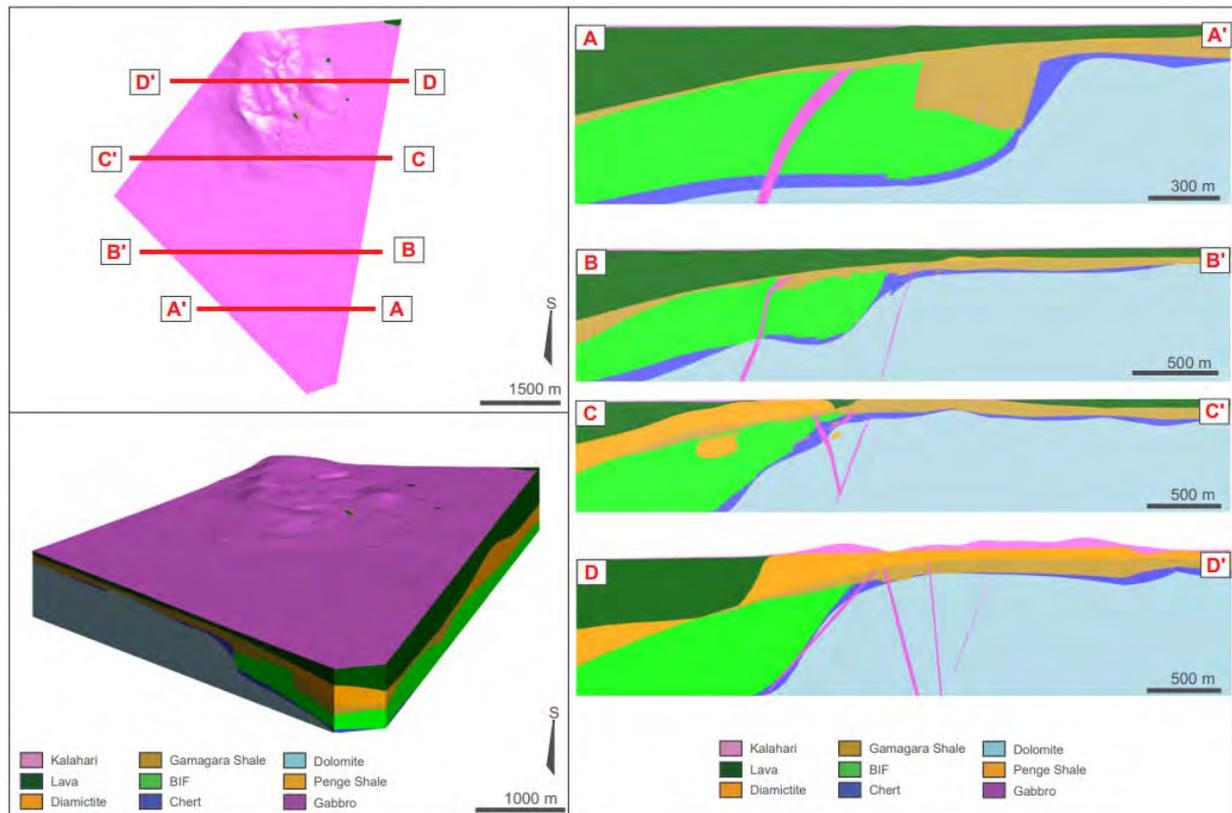


Figure 52: Views from the updated Heuningkranz stratigraphic model

Use of the intrusion tool allows for the generation of isolated lenses developing across multiple lithological envelopes. The geometry and interconnectivity of the shale lenses have been improved by the application of a structural trend.

The Gabbro Intrusion Model vein system has been mimicked and incorporated within the Stratigraphic Model by means of the intrusion tool. This creates a holistic model that incorporates all country rock sequences within the VOI.

9.2.2.2.3 Ore (Fe > 60%) Model

The HEM (Fe >60%) orebody was constructed as a series of *veins within vein systems* for each fault block. Lower grade and waste veins, i.e. where HEM Fe <60%, have also been modelled separately - where prominent lenses occur within HEM orebodies. These modelled vein systems use composited primary logged, lithological units and have undergone interval selection, i.e. data is separated from interpretation. This allows the modeller to select and quickly update veins on a block-by-block basis, without necessitating a complete re-run of all the Ore Model vein systems.

An additional re-configuration of the HEM vein modelling workflow allows the use of the Gamagara erosional surface as a dynamic vein reference surface input. This honours the strong spatial correlation between the Gamagara Unconformity and the primary orebody. Incorporation of the Gamagara erosional surface produces a dynamically updateable vein system wherein new drillhole data (indicating orebody extensions), will be automatically guided by the stratigraphic control.

Following an earlier Kumba review finding that HEM is in places “over-extrapolated”, a *Distance Function* numeric model was introduced. This function reduces the lateral continuity of the HEM volume in regions of low drillhole density, i.e. towards the periphery of the model VOI.

To prevent the HEM over-extrapolation, a 50 m drillhole buffer was constructed to serve as a ‘soft’ boundary. The Modeller can choose to selectively allow HEM extrapolation further than 50 m, but only when deemed geologically reasonable and representative of an established nearby orebody. In most cases this buffer was enforced. Explicit polyline controls are then introduced to artificially pinch out the HEM veins to prevent over-extrapolation.

9.2.2.2.4 Secondary (Refined) Tectonostratigraphic Surface Construction

As per the established modelling methodology, the primary Gamagara and HEM output volumes were refined into their base lithological and textural sub-components. The Gamagara volume was domained into the Gamagara conglomerate (CGT), Gamagara quartzite (QTZ) and Gamagara tectonised shales (SHT) sub-lithologies, using the lithological base column, *pLithofacies* (**Figure 47**). The geometry and interconnectivity of the CGT and QTZ has been improved by incorporating specific fault block, structural trends.

The HEM volume was domained into four high-grade ore, textural classifications, namely brecciated (BRC), laminated (LAM), massive (MAS) and conglomeratic (CGT) ore types. These volumes, generated using the intrusion tool, utilised the *pFeature_Grouped* drillhole column. To improve the geometry and interconnectivity of these modelled intrusions, fault block structural trends were applied by using the respective HEM vein system to guide the interpolation.

9.2.2.2.5 **HEM Vein Modelling Workflow: Advantages vs Deficiencies**

Incorporation of *vein system modelling* as opposed to the *intrusion* tool, is a function of both the orebody geometries evident within the VOI, as well as the capabilities of the *Leapfrog Geo* vein tool. The modelled Heuningkranz orebody is generally thin and laterally continuous. For these reasons the vein tool is considered the best modelling tool to generate geologically representative volumes. Interpolation between boreholes is guided by drillhole intersection midpoints and/or a representative surface. The vein tool will extrapolate along the trend of a reference surface, until it is pinched out by sterilisation drilling or artificially pinched out by means of explicit controls.

In contrast, interpolation by the intrusion tool is guided by an ellipsoid ratio enforced as a function of orebody drillhole intersection length, i.e. the smaller the intersection, the smaller the extrapolation distance. The use of the intrusion tool would have unsuccessfully interpolated between drilling intercepts, likely resulting in the construction of excessive numbers of isolated ore lenses.

Use of the vein tool does however have two key deficiencies, namely (1) the potential for over-extrapolation of the HEM orebody in regions of low drillhole density and (2) it is more user-intensive, i.e. time consuming.

To resolve the issue, HEM extrapolation has been regulated with the application of a 50 m numeric soft buffer as discussed above in **Section 9.3.1.1.3**. The second deficiency has been addressed by incorporating the pre-Gamagara erosion surface as a dynamic, updateable, reference surface.

9.2.2.3 **Lithological Codes and Groupings**

To simplify the modelling, the primary logged lithological units (*pLithofacies*) were grouped into the major tectono-stratigraphic packages (**Table 29**) of the deposit and termed *pLith_Grouped*.

Table 29: pLith_Grouped lithological codes

| pLith_Grouped | pLithofacies |
|---------------|---|
| BIF | BIF |
| Breccia | BRC |
| Chert | CH; CBR; CHM |
| DMT | DMT |
| Dolomite | DOL |
| FEM | FEM |
| Gabbro | GAB; INT |
| Gamgara | QTZ; GRS; SST; CGT; SHT; FLS; SHG; SLT; MDS |
| HEM | HEM |
| Kalahari | CC; SCR; SD; CL; SL; GRV |
| Koegas | KFM |
| Lava | LAV |
| Shale | SH |
| Ungrouped | VQ; MYL; NI; JAS; NICK; MAG; MN; VB; VC; MUD; LIM; TIL; PEB; VG; DI; KIM; CAN; TAL; QV; SPB; WAD; NICM; FFF |

The primary lithological groupings (*pLith_Grouped*) have undergone subsequent interval selection, resulting in the downhole column file *pLith_Grouped_IS* (**Figure 47**). This interval selection step separates the drillhole database into two sub-components: data and interpretation, thereby allowing the modeller to selectively re-code intervals with the interval selection tool, whilst preserving the original drillhole database.

The introduction of interval selection allows for downstream stratigraphic surfaces and output volumes to be built directly from drillhole data, thereby producing a dynamic, updatable modelling workflow. The latter negates the requirement of re-processing the complete drillhole database each time a re-code is made, resulting in significantly shorter processing times.

Secondary (refined) volumes were constructed for the Gamagara and HEM primary volumes. The Gamagara volume was refined, based on its stratigraphic (*plithofacies*) components, while the HEM volume was refined based on textural subdivisions in the ore (*pFeature*), which have been grouped as *pFeatured_Grouped* (**Table 30**):

Table 30: HEM textural sub-classification and groupings

| pFeature_Grouped | pFeature |
|------------------|-----------------|
| BRC | BRC |
| CGT | CT |
| LAM | LAM; RLAM; DLAM |
| MAS | MAS |
| NULL | NULL |

Furthermore, given the extensive duplication or “barcoding” of downhole *plithofacies* intervals and use of the vein modelling methodology, composite tables (**Table 31**) were generated and used to inform both the gabbro and HEM primary volumes.

Table 31: Drillhole database composite tables and their compositing parameters

| Composite Table | Compositing Parameters |
|-----------------------------|---|
| Gabbro_Composite_Table_2023 | Convert enclosed ignored segments shorter than 2m |
| | Convert primary segments shorter than 2m |
| | Convert exterior segments shorter than 2m |
| HEM_Composite_Table_2023 | Convert primary segments shorter than 1.99m |
| | Convert exterior segments shorter than 1.99m |

9.2.2.4 Development of Fault Delineation and Fault Domain Models

The Heuningkranz VOI straddles the eastern frontal margin of the Kheis Belt and is characterised by a distinct thrust structure at the base of the Postmasburg Group which overrides shale and sandstone of the Gamagara Subgroup. Regionally, this structure represents a continuity of the Blackridge Thrust. The thrust plane is identified by the base of the Postmasburg Group and as such, is marked by the lowermost interval of either Ongeluk Formation lava or diamictite belonging to the Makganyene Formation. This structure is modelled as the ‘Postmasburg Group Unconformity’.

Previous Heuningkranz models have shown the thrust plane to be laterally continuous, with a consistent top-to-the-SE verging geometry. It has no clear offset by other structures. This indicates that earlier faults (i.e. faults that pre-date the Kheis Orogeny) are largely constrained below or are truncated by the Blackridge Thrust. These structural relationships are comparable to that found at Sishen Mine.

In effect, the broadly eastwards-directed stress of the Kheis Orogeny is pervasive and transgressive throughout the Heuningkranz sequence. Even below the Blackridge Thrust, there are low-angle thrusts which imbricate, stack and, in parts, invert the stratigraphy. Despite the pervasive nature of these structures with evidence in drill core, they remain very difficult to identify and constrain spatially - as such they are very difficult to model from the available data.

Current geophysical data outlines significant mineralisation (dense gravity anomalies) below the Blackridge thrust. The data also indicates prominent NNE-NE and SSW-SW-trending, high-angle normal faults. The geometry and full kinematic characteristics of these normal faults are not clear. Regional trends on the western margin of the Maremane Anticline and the marginal effects of the propagation of the Kheis fold-and-thrust belt, suggest gentle SE to ESE vergence of normal faults, potential inversion and a relatively small component of dextral strike-slip.

Lateral (oblique slip) displacement along normal faults has also been documented but is subordinate. Typical high-angle structures (i.e. inverted, normal faults) are interpreted as listric, graben-type faults at depth which were initiated during the 2.64 Ga Ventersdorp rift basin formation. They were later reactivated/inverted during the 1.83 Ga Kheis Orogeny.

Geophysical data and cross-cutting structural relationships indicate a set of sub-vertical, conjugate, SE-NW and SW-NE trending faults along which southernmost blocks appear marginally upthrown. The origin of these faults is attributed to eastward propagation of the Kheis Orogeny and later north to north-westwards directed Namaqua orogeny. The latter event, causing southern blocks to be upthrown, is suggested to have caused erosion, affecting the preservation of high-grade haematite ore.

The current structural network interpretation is based largely on regional-scale geophysics (airborne gravity and magnetic surveys) and drilling intercepts that were built into the 2018 baseline geology solids model.

Major structures, i.e. thrusts and faults, were derived from regional geophysical data (electromagnetic, gravity), downhole porosity and fracture frequencies, ATV/OTV measurements and lithological off-sets in drillhole intersections, of which the latter was most significant. The source of the geophysical data used in the fault interpretation is listed in **Table 32**:

Table 32: Geophysical datasets utilised in Heuningkranz fault interpretation

| Dataset | Type |
|---------------------------|---|
| Bouguer_Residual_Shaded1 | Bouguer Anomaly Map – Gravity Survey |
| Full_Block_RTP_TDR | Reduced to Pole, Tilt Derivative. - Magnetic Survey |
| South_Block_AGC_RTP_315SS | Automatic Gain Control, Reduced to Pole - Magnetic Survey |

Identified structures were compared to the regional structural evolution and kinematic history of the Maremane Dome and compared to nearby modelled structural networks for Kolomela Mine. Fault justification parameters were evaluated in collaboration with Kumba exploration geologists. A fault confidence rating was assigned to each of the modelled faults, based on the quality, type and density of data that contributed to the confirmation of each modelled fault surface (**Table 33**).

Table 33: Confidence Rating System for Major Fault Structures

| Supporting Data | Rating |
|---|----------------|
| Geophysical data only (e.g. magnetic, gravity or EM survey) Or Limited data of a single type (e.g. only 2 mapping points**) | 1 Low |
| At least 2 data types: Mapping points** (distributed along strike) Stratigraphic evidence ("barcoding" or significant variability of lithologies, development of conglomerate or clastic-textured units in adjacent graben or half-graben) Significant offsets in contacts between adjacent drillholes Geophysical evidence, ATV/OTV macrostructural logging Photographs Lidar/l-site picks or traces | 2 Moderate |
| Minimum 3 pit mapping points** AND significant offsets between drillholes As well as one of the following: Stratigraphic evidence Geophysical evidence, ATV/OTV macrostructural logging Photographs Lidar/l-site picks or traces | 3 High |
| More than 3 mapping points** AND Significant offsets between drillholes AND Stratigraphic evidence AND Photograph AND Geophysical evidence, ATV/OTV macrostructural logging AND Lidar/l-site picks or traces OR Suspected cause of failure | 4 Very high |

The structures within Heuningkranz are yet to be exposed by mining and are consequently assigned lower confidence ratings than those exposed in the pits at Kolomela Mine. Oriented drill core with macrostructural logging and downhole surveys such as ATV/OTV, fracture frequency and porosity data add confidence to the presence/existence of a fault.

The fault network was built in *LeapfrogGeo* using a series of orientated structural disks. Faults with the greatest supporting data were used to subdivide Heuningkranz into several fault-bounded blocks. Such faults were assigned interactions that comprise rules for cross-cutting or terminating relationships between each fault e.g. for a fault to terminate against another fault, it must be lower in the fault chronology (i.e. older). Following identification and modelling of all the major structures at Heuningkranz, the solids model was subdivided into 21 fault-bounded blocks (**Figure 53**) beneath the Blackridge thrust.

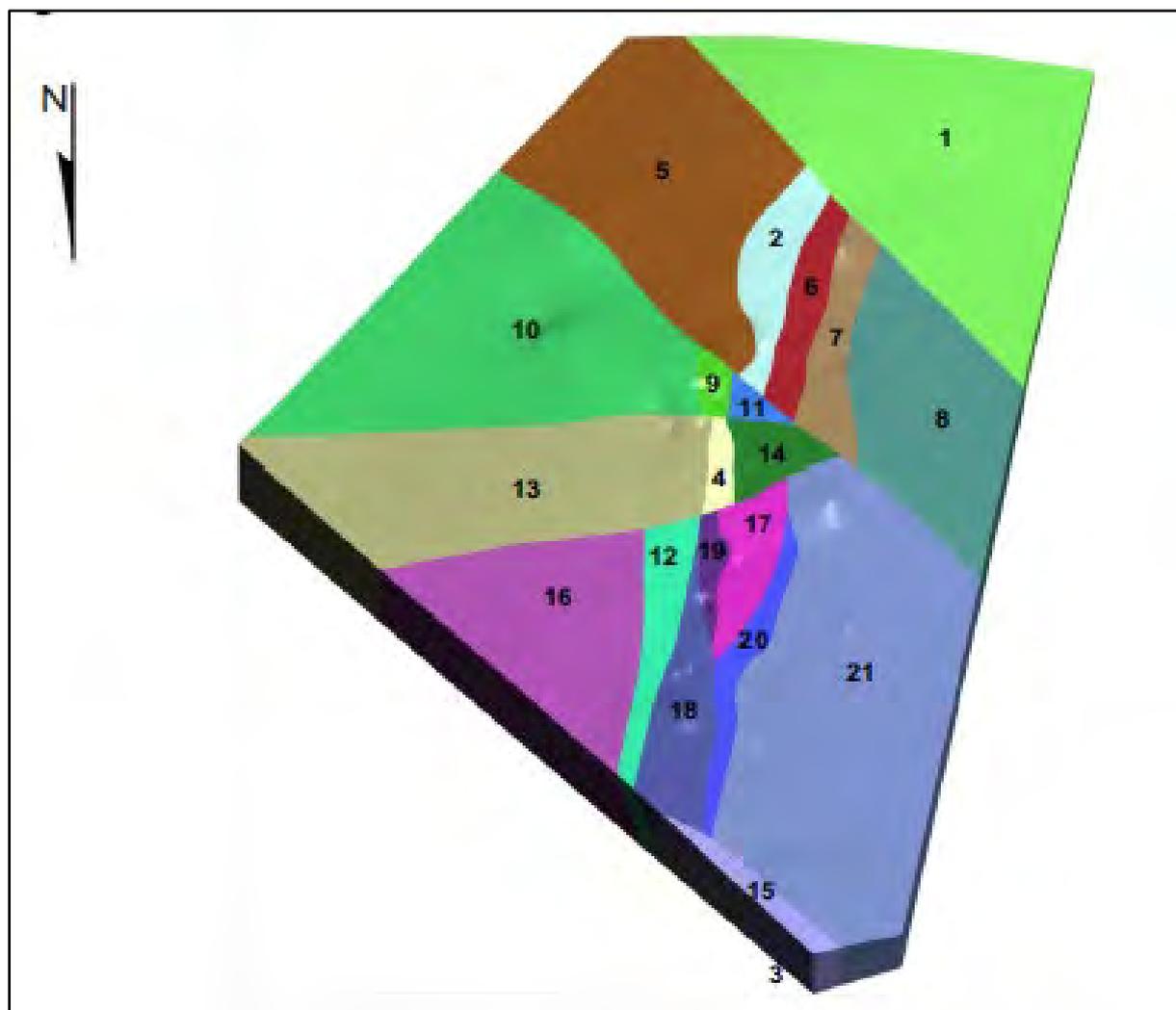


Figure 53: Fault-bounded blocks of Heuningkranz geology model beneath the Blackridge thrust

Blocks 1 to 20 delineate faulted lithologies below the Postmasburg tectonic unconformity, while lithologies above the thrust plane are assigned to a single coherent block.

Boundary filters may be set on or off for each lithological surface within each fault block. If boundary filters are on, the modelling function only considers drillhole data within the fault block. Resulting surfaces and solids will generally appear offset by faults.

Lithological units which are younger than the major faulting episode and which have lower contacts that are transgressive across underlying geology are modelled with boundary filters off, so that underlying faults do not propagate through these upper units. The fault planes are displayed in **Figure 54** overleaf.

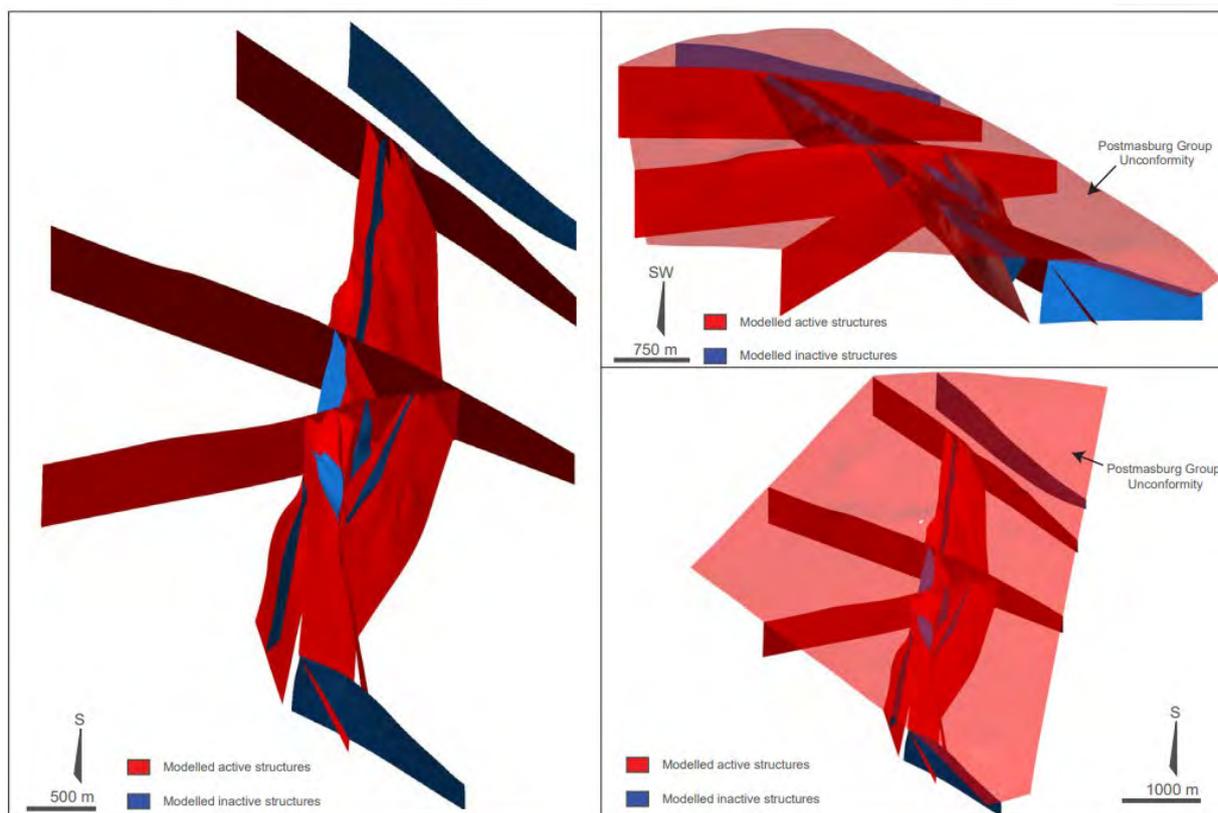


Figure 54: Views of fault plane network from 2023 Heuningkranz geology model

No new (confirmed) structural or geophysical data was supplied and/or captured in the 2023 model update. As a result, the structural network remains almost identical to that which was built in the 2018 baseline model, except for a small modification to NNE_SSW04, (Table 34) below.

Table 34: 2023 model update of structural network

| Fault Name | Adjustment |
|------------|---|
| NNE_SSW04 | Minor shift in structure position along the northern extension of the structure to accommodate new drilling intercepts in SLT2046 |

The lack of an updated structural model is considered a risk to the 2025 estimated volumes. The risk is evaluated in **Section 13: Risks associated with Mineral Resources**. Should high-resolution geophysical data be captured or additional core drilling or field mapping be conducted (e.g. during the development of an open pit), the current structural framework needs to be updated.

9.2.2.5 Model Update Results

Significant changes to the underlying borehole database (additional and amended boreholes, use of percussion holes) resulted in several geometric and volumetric adjustments in the gabbro, stratigraphy, and ore model outputs. A comparison of HEM volumes (**Table 35**) between the 2018 baseline and the 2023 model update indicate a minor (~ 5%) decrease in overall HEM volume, however, there are significant volumetric changes between the ore types.

Table 35: HEM volume comparison between the 2018 and 2023 solids models

| Ore Category | | *2018 Heuningkranz Geological Model: Central ID 2953 (m ³) | 2023 Heuningkranz Geological Model: Central ID 3136 (m ³) | % Difference |
|----------------|-----|--|---|--------------|
| HEM Refinement | BRC | 358 970 | 1 763 600 | 391.29 |
| | CGT | 3 789 700 | 2 230 600 | -41.14 |
| | MAS | 15 971 000 | 9 141 300 | -42.76 |
| | LAM | 13 329 000 | 18 578 000 | 39.38 |
| HEM | | 33 449 000 | 31 713 500 | -5.19 |

**Volumes reported for the 2018 baseline HK model have been extracted from the original ver.4.3.1 Leapfrog Geo project. During upload to central, as requested by KIO geoscientists, the baseline project underwent several version upgrades and re-runs. As a result, volumes reported within the 2018 central upload (Central ID: 2953) may not be identical to those reported in the table above.*

The changes are attributed to the additional borehole information, the introduction of a 50 m soft boundary to prevent over-extrapolation and the incorporation of percussion borehole data to define lithological boundaries.

In conclusion, the HEM orebody continues to exhibit a strong stratiform-like relationship with the modelled Gamagara Unconformity. Thin and laterally continuous horizons of HEM are conspicuously and markedly thicker within the central orebody region. These anomalously thick HEM zones may comprise multiple or “stacked” orebody horizons (“barcoded”) and/or anomalously thick individual horizons within graben-like structures.

9.2.2.6 Solids Model Review

The 2023 Heuningkranz geological model underwent a peer review by Kumba geologists on 17 August 2023. The following observations were provided as saved scenes within the Kumba review Leapfrog project (Central ID: 3083), as well as in pdf presentation format. In addition to the saved scenes, general comments and/or observations were recorded in the supplied presentation. The observations, saved scenes and corresponding amendments are tabulated overleaf in **Table 36**.

Table 36: 2023 Heuningkranz Solids Model Peer Review Findings

| Scene Name | Observation/Requested Amendment | Comment/Amendment |
|-----------------|---|---|
| General Comment | It is found that extrapolation is too far with little drill hole support. If possible, limit extrapolation where holes are in isolation extrapolation distance should be half the HEM interval length | HEM extrapolation in regions of low drillhole density has been reduced through the implementation of a 50m soft boundary buffer |
| General Comment | Where the data density is dense keep to current methodology in terms of extrapolation | Current orebody extrapolation in these regions has been maintained |
| General Comment | Please confirm compositing length 1.5/2m for Hem intervals | HEM compositing has been conducted at 1.99m (Table 5), thereby including all intervals of 2m and above |
| General Comment | Ore trend should follow overall geology trend | Ore trend follows the trend delineated by the Gamagara Unconformity |
| Scene 1 | Ore needs to follow Dolomite/Lava contact | The HK orebody exhibits a strong correlation with the BIF/Gamagara unconformity contact. The orebody has been modelled to correlate with this trend and as a result does not always mimic surrounding sequence geometries As a result, no adjustments were made to the orebody geometry in this case |
| Scene 12 | Duplicate of scene 1 | See reasoning for scene 1 |
| Scene 13 | What orientation inform the fault? | Structural disks, generated from geophysical interpretation and downhole drillhole intersections |
| Scene 14 | Ore contact missed | Scene not viewing orebody intersection correctly. Ore contact has not been missed |
| Scene 15 | Keep to previous years of ore interpretation | Orebody geometry modified to replicate original geometrical interpretation |
| Scene 16 | Follow previous HEM interpretation but keep separate lenses | Orebody trend modified to replicate original geometrical interpretation |
| Scene 17 | Ore flat and not following rest of ore interpretation | Orebody trend modified to replicate overlying orebody trends |
| Scene 18 | Scene saved for KIO targeting purposes | No amendment required |
| Scene 19 | Thin layer ore extrapolated too far | Orebody extrapolation reduced |
| Scene 20 | Ore not following previous year's interpretation | Orebody trend modified to replicate original geometrical interpretation |
| Scene 21 | Ore modelled as one lens and not two lenses | Ore modelled as two separate lenses |
| Scene 22 | SLT413 informing ore lens extrapolation too far | Orebody extrapolation reduced |
| Scene 23 | Bottom ore lens not supported by drilling. Limit the extrapolation | Orebody extrapolation reduced |
| Scene 24 | Ore lens extrapolated too far with no supporting drillholes | Orebody extrapolation reduced |
| Scene 25 | Ore lens extrapolated too far | Orebody extrapolation reduced |
| Scene 26 | Refinement on ore a bit of an artifact. What cut the ores to make it two separate lenses | The orebody is pinching out in response to drillholes not containing ore intersections above the compositing parameter range. No amendment conducted |
| Scene 27 | Ore to stop against the fault or the fault must be moved. No support for the ore on the other side of the fault | Orebody modelled to terminate against the modelled structure |
| Scene 28 | Ore to stop against the western gabbro contact | Orebody extrapolation reduced to terminate against the western gabbro contact |

The model was altered according to the comments listed above, before delivery to Kumba Iron Ore.

9.3 GRADE ESTIMATION

The update of the solids model by *Tect Geological Consulting Services* was completed in October 2023 and subsequently handed over to the Kumba Geodata section. Labelled as hk022024.v1, the updated model required a re-estimation of grades - driven by the additional exploration data and a re-interpretation of the geology. The re-estimation and reporting of grades were completed in June 2024.

9.3.1 Borehole Data Input

After validation of the Heuningkranz database by Kumba Exploration the following files containing data of 806 boreholes from the Heuningkranz drillhole database were made available for the estimation update:

Collar_CI3136 Survey_CI3136 PLith_2023_CI3136 Assay_2023_CI3136

The estimation process ignored 99 boreholes flagged by Kumba Exploration as ‘non-valid’ for failing various validation checks and a further 16 containing unreliable geological logs. The remaining dataset (within the modelling boundary area) comprised 690 boreholes with 56 808 samples with assays. The boreholes comprised 367 fully cored boreholes drilled from surface, 201 hybrid holes piloted with percussion drilling to above the ore and then cored, and 122 full percussion exploration boreholes.

KIO resource Geology used scripts to validate the input data. The exercise revealed the following:

- No issues with collar surveys (complete records, all re-surveyed)
- No issues were identified with 40 635 downhole survey records (26 boreholes had a dip < 60° and confirmed to be inclined holes. Boreholes with no surveys were assumed vertical.
- No gaps or duplicates were identified in the 24 793 PLith Geology records.
- Several zero values in the assay data were replaced by null values
- A few negative values were observed and set to half detection limits for later analysis
- Erroneous values confirmed by Fe vs SiO₂ and Fe vs RD scatterplots were removed and replaced with theoretical calculated values. More details are provided in **Section 9.4.3.2**
- Extreme values honouring statistical distribution trends were retained but capped later during estimation. More detail is provided in **Section 9.4.3.1**

9.3.2 Data Preparation

9.3.2.1 De-surveying and intersection with solids model

The solids model built by *Tect* using *Leapfrog* software comprised thirteen individual zones/domains representing all the ore and waste lithologies found on the Heuningkranz deposit. (Table 37).

Table 37: Heuningkranz geological zones

| Rocktype | Description | Code |
|----------|-----------------------|------|
| hemcgt | Conglomeratic Ore | 110 |
| hemlam | Laminated Ore | 120 |
| hemmas | Massive Ore | 140 |
| hembrc | Brecciated Ore | 150 |
| shl | Gamagara shale | 240 |
| kal | Kalahari | 300 |
| bif | Banded iron formation | 400 |
| ch | Chert breccia | 500 |
| dol | Dolomite | 600 |
| lav | Andesitic Lava | 730 |
| dmt | Diamictite | 800 |
| gab | Gabbro | 900 |
| gam | Gamagara | 905 |

All thirteen zones were imported into *Datamine*. The wireframes and the collar files were converted into north-up space in *Datamine*, by multiplying X and Y co-ordinates with (-1).

A volume comparison (Table 38) between the *Leapfrog* and *Datamine* models revealed negligible volume differences (< 1%).

Table 38: Volume comparison of models after import into *Datamine*

| Zcode | Rock | Datamine Volume(cm3) | Leapfrog Volume(cm3) | Difference % |
|-------|----------|----------------------|----------------------|--------------|
| 100 | Hem | 31 453 821,87 | 31 713 500,00 | -0,8 |
| 110 | Hemcgt | 2 228 921,72 | 2 230 600,00 | -0,1 |
| 130 | Hemlam | 18 495 901,35 | 18 578 000,00 | -0,4 |
| 140 | Hemmas | 9 135 149,48 | 9 141 300,00 | -0,1 |
| 150 | Hembrc | 1 763 646,04 | 1 763 600,00 | 0,0 |
| 240 | Shl | 43 854 432,41 | 43 901 000,00 | -0,1 |
| 300 | Kalahari | 278 652 516,33 | 278 650 000,00 | 0,0 |
| 400 | Bif | 3 238 871 872,08 | 3 255 400 000,00 | -0,5 |
| 500 | Ch | 721 269 428,49 | 721 170 000,00 | 0,0 |
| 600 | Dol | 8 058 944 858,71 | 8 058 900 000,00 | 0,0 |
| 730 | Lava | 2 328 211 538,19 | 2 328 200 000,00 | 0,0 |
| 800 | Dmt | 947 861 475,63 | 947 860 000,00 | 0,0 |
| 900 | Gab | 159 172 789,94 | 159 170 000,00 | 0,0 |
| 905 | Gam | 1 218 539 693,44 | 1 230 100 000,00 | -1,0 |

9.3.2.2 Sampling Length and Data Compositing

9.3.2.2.1 Sample length

Figure 55 below illustrates the distribution of sample lengths in the raw Heuningkranz drillhole database.

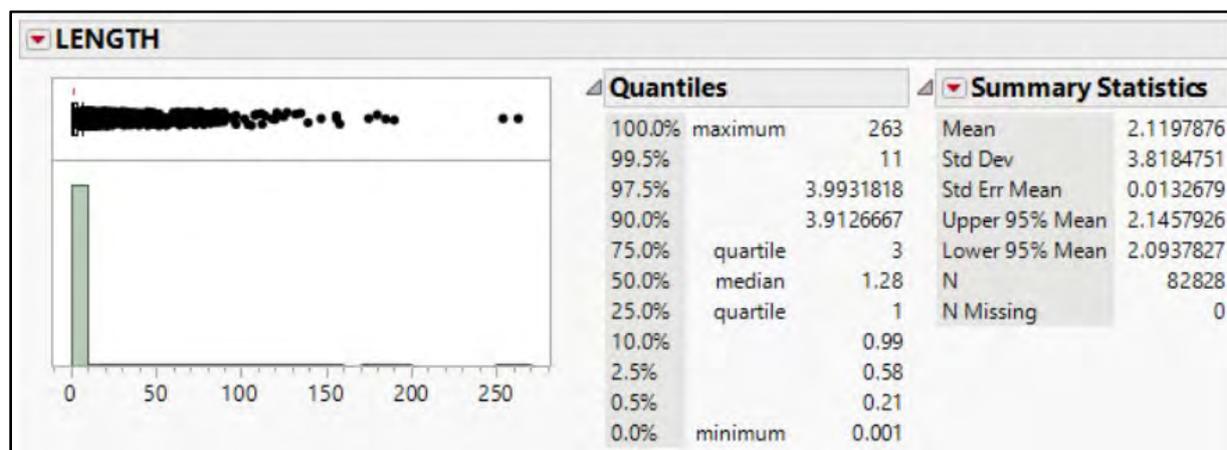


Figure 55: Sample lengths in Heuningkranz drillhole database

All samples with sampling lengths greater than 3 m were investigated (Table 39). It was noted that virtually all had no assays. There were also no samples >3 m in length, in the high-grade ore zones.

Table 39: Number of samples > 3 m in length, with assays

| ZONE | No. samples | N(Fe) | N(SiO ₂) | N(Al ₂ O ₃) | N(K ₂ O) | N(P) | N(S) | N(Mn) | N(BaO) | N(RD) |
|------|-------------|-------|----------------------|------------------------------------|---------------------|------|------|-------|--------|-------|
| 240 | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 300 | 66 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 400 | 47 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 500 | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 600 | 47 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 730 | 306 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 800 | 67 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 900 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 905 | 178 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

The three samples >3 m in length, with assays, were set to null.

9.3.2.2.2 Compositing

Compositing of assay data within each lithological domain (before geostatistical analysis and interpolation), ensures equal, additive support. Different compositing lengths (1 m, 2 m and 3 m) were tested. A length-weighted, fixed 2 m interval for downhole compositing for sample assays and density data proved best. A threshold of 1.0 m was applied – if the residual composite length is ≤ 1.0 m, assays are merged with the composite above, if the composite length is ≥ 1.0 m, the residual assay forms a separate composite. Run-length compositing was conducted to the dominant sampling length of 2 m for all the samples intersecting the various ore zones, per zone. A minimum sampling length of 1m was applied, and residuals were merged with last full composite.

No extreme sample lengths (> 3 m) were identified in the high-grade ore domains (Zones 110, 130, 140 and 150) but 73 samples in the medium and low-grade ore domains (Zones 240 and 400) and many in the waste lithologies were found. Those with assays were set to null before compositing.

A statistical comparison of raw data vs composited data for Fe content per lithological domain is illustrated overleaf in **Table 40**. Calculated differences are negligible.

Table 40: Comparison of Fe grade per domain, before and after, compositing at 2 m length intervals

| Raw Data | | | | | | | | Composites | | | | | | |
|----------|--------|-------|------|------|-------------|-----------|-------|------------|------|------|-------------|-----------|-------|------|
| Var | Domain | Count | Min | Max | Mean | Std. Dev. | Var | Count | Min | Max | Mean | Std. Dev. | Var | Diff |
| Fe | 110 | 369 | 12,6 | 69,4 | 63,3 | 5,7 | 32,3 | 227 | 31,8 | 69,2 | 63,3 | 4,7 | 22,4 | 0,1 |
| Fe | 130 | 3004 | 7,0 | 69,8 | 65,1 | 5,5 | 30,1 | 1862 | 15,8 | 69,7 | 65,1 | 4,5 | 20,4 | 0,0 |
| Fe | 140 | 1384 | 0,2 | 70,0 | 64,1 | 6,5 | 42,5 | 776 | 15,5 | 69,5 | 64,1 | 5,6 | 31,9 | 0,0 |
| Fe | 150 | 357 | 18,7 | 69,4 | 64,3 | 5,6 | 31,3 | 195 | 41,0 | 69,0 | 64,1 | 4,6 | 21,3 | 0,3 |
| Fe | 240 | 1343 | 0,2 | 67,5 | 20,1 | 12,0 | 144,8 | 858 | 0,3 | 62,8 | 20,0 | 10,9 | 118,0 | 0,6 |
| Fe | 300 | 65 | 0,3 | 44,6 | 10,7 | 11,3 | 127,3 | 47 | 0,3 | 41,3 | 10,5 | 10,7 | 114,9 | 1,3 |
| Fe | 400 | 26352 | 0,2 | 68,6 | 29,8 | 9,3 | 85,9 | 16600 | 0,3 | 66,3 | 29,8 | 8,5 | 72,9 | 0,1 |
| Fe | 500 | 2809 | 0,3 | 63,1 | 15,6 | 10,5 | 110,0 | 1732 | 0,4 | 61,2 | 15,5 | 9,5 | 90,9 | 1,0 |
| Fe | 600 | 782 | 0,4 | 66,8 | 7,2 | 8,4 | 70,5 | 420 | 0,4 | 51,2 | 7,0 | 7,5 | 55,9 | 2,1 |
| Fe | 730 | 1654 | 2,6 | 39,3 | 9,0 | 3,9 | 15,5 | 1104 | 3,2 | 39,0 | 9,1 | 3,9 | 15,0 | 0,9 |
| Fe | 800 | 1167 | 0,5 | 62,3 | 16,9 | 7,0 | 49,4 | 921 | 1,1 | 41,0 | 16,8 | 6,7 | 44,8 | 0,5 |
| Fe | 900 | 2730 | 0,3 | 69,0 | 19,5 | 12,4 | 154,9 | 1849 | 0,3 | 68,3 | 19,4 | 11,9 | 140,5 | 0,2 |
| Fe | 905 | 14751 | 0,1 | 68,6 | 19,4 | 18,0 | 322,2 | 8986 | 0,2 | 67,8 | 19,2 | 16,9 | 286,5 | 1,3 |

A comparison of averaged raw grades vs composited grades for each ore type/zone is provided below in **Table 41**, again confirming that the composited data is representative of the original sample data.

Table 41: Averaged Grades of Original vs Composited samples per domain

| Ore Type (Domain) | Average Grade % Fe | | | Average Grade % SiO ₂ | | | Average Grade % Al ₂ O ₃ | | | Average Grade % K ₂ O | | |
|-----------------------------|--------------------|-----------|-----------|----------------------------------|-----------|-----------|--|-----------|-----------|----------------------------------|-----------|-----------|
| | Original | Composite | Rel Diff% | Original | Composite | Rel Diff% | Original | Composite | Rel Diff% | Original | Composite | Rel Diff% |
| Conglomeratic Ore (110) | 63,3 | 63,3 | -0,1 | 5,15 | 5,15 | 0,0 | 2,62 | 2,59 | 1,2 | 0,49 | 0,48 | 1,2 |
| Laminated Ore (130) | 65,1 | 65,1 | 0,0 | 4,25 | 4,24 | 0,3 | 1,54 | 1,54 | -0,3 | 0,32 | 0,32 | -0,3 |
| Massive Ore (140) | 64,1 | 64,1 | 0,0 | 5,07 | 5,10 | -0,5 | 1,87 | 1,84 | 1,6 | 0,37 | 0,37 | 2,4 |
| Brecciated Ore (150) | 64,3 | 64,1 | 0,3 | 4,62 | 4,72 | -2,2 | 2,01 | 2,15 | -6,9 | 0,39 | 0,43 | -9,2 |
| Banded Iron Formation (400) | 29,8 | 29,8 | 0,1 | 54,65 | 54,67 | 0,0 | 0,83 | 0,83 | 0,0 | 0,14 | 0,15 | -0,7 |
| Gamagara Shale (240) | 20,1 | 20,0 | 0,6 | 53,01 | 53,17 | -0,3 | 9,60 | 9,58 | 0,2 | 2,08 | 2,09 | -0,1 |

| Ore Type (Domain) | Average Grade % P | | | Average Grade % Mn | | | Average Grade % S | | | Relative Density | | |
|-----------------------------|-------------------|-----------|-----------|--------------------|-----------|-----------|-------------------|-----------|-----------|------------------|-----------|-----------|
| | Original | Composite | Rel Diff% | Original | Composite | Rel Diff% | Original | Composite | Rel Diff% | Original | Composite | Rel Diff% |
| Conglomeratic Ore (110) | 0,041 | 0,041 | 4,5 | 0,08 | 0,082 | -2,5 | 0,022 | 0,021 | 4,5 | 4,90 | 4,90 | 0,0 |
| Laminated Ore (130) | 0,047 | 0,047 | 0,0 | 0,017 | 0,017 | 0,0 | 0,028 | 0,028 | 0,0 | 5,01 | 5,01 | 0,0 |
| Massive Ore (140) | 0,045 | 0,044 | 0,0 | 0,02 | 0,021 | -5,0 | 0,067 | 0,067 | 0,0 | 4,95 | 4,95 | 0,0 |
| Brecciated Ore (150) | 0,044 | 0,043 | -5,3 | 0,033 | 0,035 | -6,1 | 0,019 | 0,02 | -5,3 | 4,98 | 4,96 | 0,2 |
| Banded Iron Formation (400) | 0,023 | 0,023 | -0,7 | 0,015 | 0,015 | 0,0 | 0,151 | 0,152 | -0,7 | 3,42 | 3,42 | 0,0 |
| Gamagara Shale (240) | 0,056 | 0,057 | -25,9 | 0,727 | 0,764 | -5,1 | 0,058 | 0,073 | -25,9 | 3,22 | 3,22 | 0,1 |

9.3.3 Exploratory Data Analyses

The Exploratory Data Analysis (EDA) step explores the composited data by means of statistical analysis of a sample dataset, using univariate and multivariate techniques, to understand trends and patterns in the data. EDA is performed on each geological domain (zone) which has been modelled and is to be estimated. The analysis can also reveal non-assay related errors or trends, assay related errors or trends, and can indicate where sub-domaining is required.

9.3.3.1 Fe Grade distributions in solids model domains

To understand grade continuity and distributions within the high-grade ore zones, a count is made of composite samples representing interbedded waste or intercalations of lower grade ore. Results are provided in **Table 42** below:

Table 42: Lithology count of composites within high-grade ore zones

| ZONE | Plitho | Litho_Count |
|------|--------|-------------|
| 110 | BIF | 4 |
| 110 | CGT | 13 |
| 110 | FLS | 1 |
| 110 | HEM | 336 |
| 110 | INT | 2 |
| 110 | SHG | 13 |
| 130 | BIF | 70 |
| 130 | BRC | 1 |
| 130 | CH | 1 |
| 130 | FLS | 1 |
| 130 | GAB | 2 |
| 130 | HEM | 2862 |
| 130 | INT | 1 |
| 130 | MYL | 1 |
| 130 | SH | 3 |
| 130 | SHG | 68 |
| 140 | BIF | 47 |
| 140 | CGT | 1 |
| 140 | GAB | 3 |
| 140 | HEM | 1289 |
| 140 | INT | 1 |
| 140 | SH | 4 |
| 140 | SHG | 41 |
| 140 | SHT | 4 |
| 140 | VG | 1 |
| 150 | BIF | 7 |
| 150 | CGT | 1 |
| 150 | HEM | 358 |
| 150 | INT | 1 |
| 150 | SHG | 23 |

The counts confirm that haematite is the dominant lithology within the ore zones with minor banded iron formation and shale. Some of the BIF and shale is partially mineralised to medium- and low-grades.

A threshold of 1.5 m in thickness was applied to the domaining, thus all lenses logged as waste within ore zones (≥ 1.5 m in thickness) have been modelled individually. Intersections logged as waste but < 1.5 m in thickness, are included in the haematite zone. The latter samples account for less than 10% of the haematite domains as illustrated below in **Figure 56**.

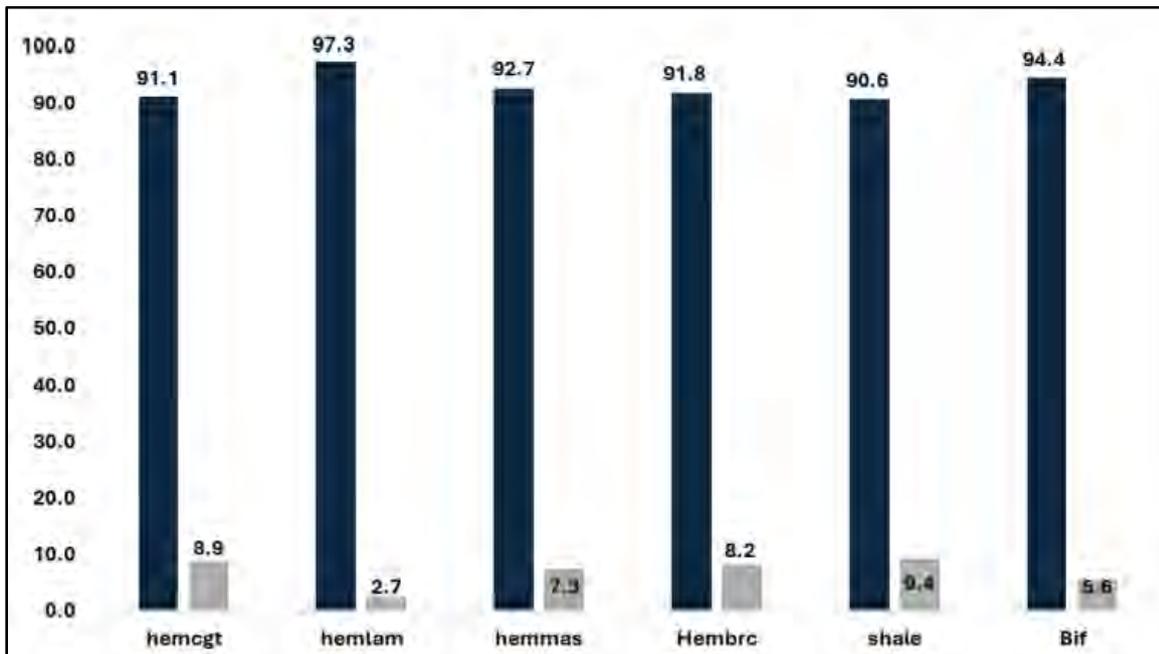


Figure 56: Number of samples logged as non-haematite but included in haematite domains at Heuningkranz

The average grade and standard deviation of the Fe content within the high-grade ore zones are illustrated in the box plots (**Figure 57**) overleaf.

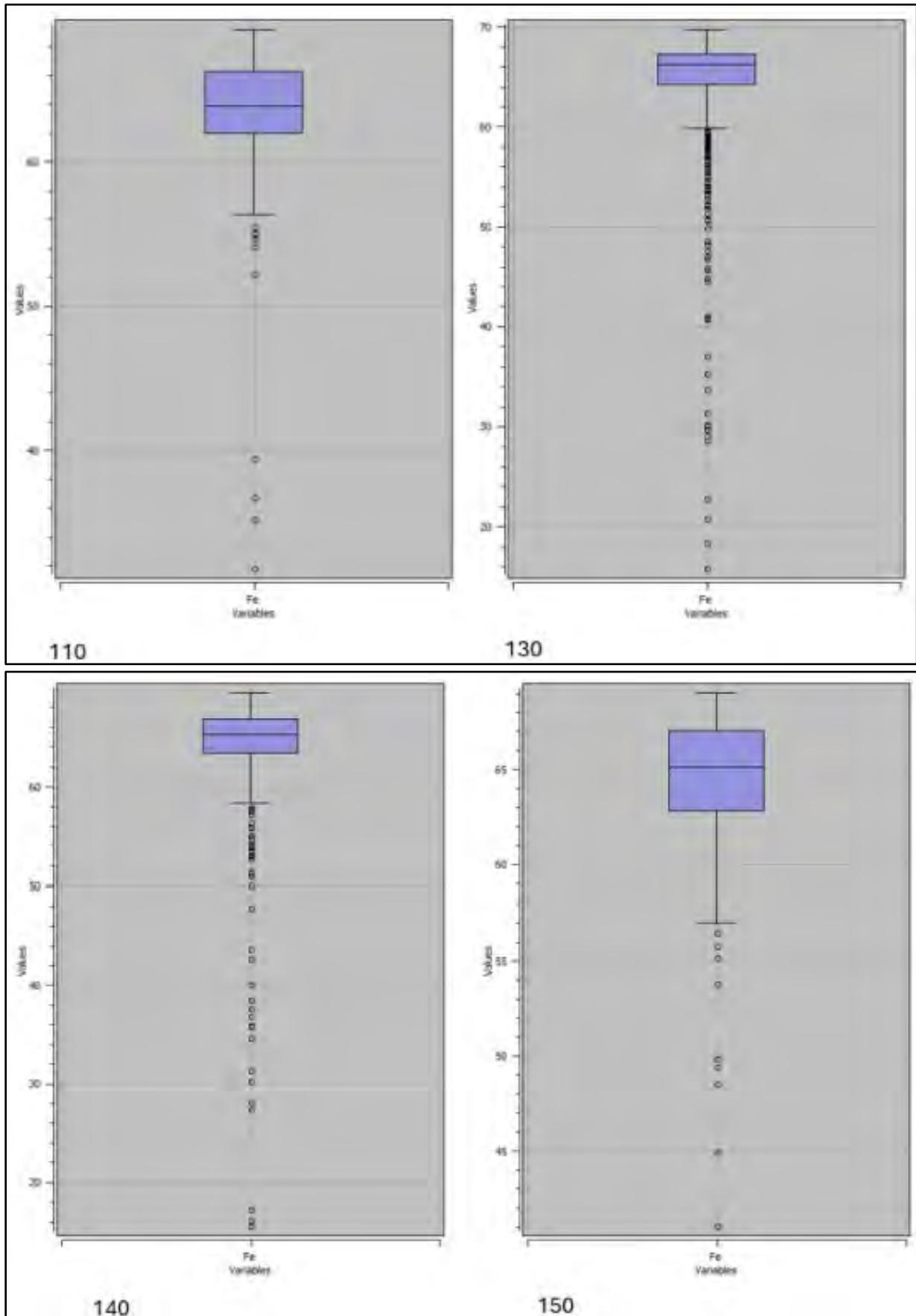


Figure 57: %Fe Box plots of ore domains at Heuningkranz

Box plots are also helpful in identifying outliers. One possible approach to avoid ‘smearing’ of these values, involves zoning them out separately. It is however rarely successful if extreme grades are spatially scattered.

An alternative approach is to cap the extreme values, mitigating the risk of over-representing them within the estimate. To cap data implies re-setting any composite grades that are higher than the top cap value, to the top or bottom cap value.

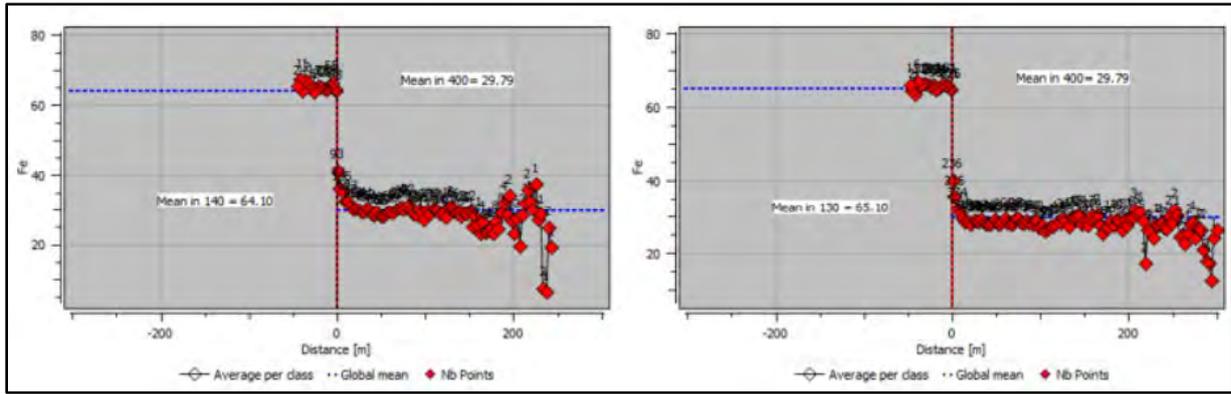
The following variables (**Table 43**) were capped for both variography and estimation. The variables, the number of outliers affected and the percentile at which the cap is applied, is listed.

Table 43: Capped data per variable per zone

| Zone | Variables | Grade | No. Samples | Percentile |
|------|-----------|-------|-------------|------------|
| 110 | BaO | 0,500 | 5 | 97,50% |
| | S | 0,188 | 6 | 97,50% |
| | Mn | 0,809 | 2 | 97,50% |
| 130 | S | 0,240 | 2 | 97,50% |
| | BaO | 0,127 | 10 | 97,50% |
| 140 | K2O | 1,125 | 2 | 97,50% |
| | Mn | 0,034 | 3 | 97,50% |
| | S | 0,409 | 6 | 97,50% |
| | BaO | 0,595 | 4 | 97,50% |
| 150 | K2O | 1,244 | 11 | 97,50% |
| | Mn | 0,098 | 2 | 97,50% |
| | S | 0,167 | 4 | 97,50% |
| | BaO | 0,230 | 6 | 97,50% |
| 240 | S | 0,279 | 4 | 97,50% |
| 400 | Mn | 0,041 | 2 | 97,50% |

A Boundary Contact Analysis was undertaken to understand the nature of grade transitions across several of the key domain boundaries. This analysis is important in determining how these boundaries are subsequently treated in the estimation of the model, i.e. hard versus soft boundary applications.

Figure 58 below illustrates a relatively sharp transition for Fe between the high-grade massive and laminated ores and host banded iron formation.



*Zone 140 = Massive ore Zone 130 = Laminated ore Zone 400 = BIF

Figure 58: Contact analysis between massive and laminated ores and BIF host rock

This relationship is supported by thin, gradational contacts observed in borehole core.

Figure 59 shows a very sharp transition for Fe between conglomeratic ore (zone 110) and BIF (zone 400) and between Brecciated ore (zone 150) and BIF. The relationship is supported by observations in borehole core, as these ore types are usually separated from BIF by an erosional unconformity.

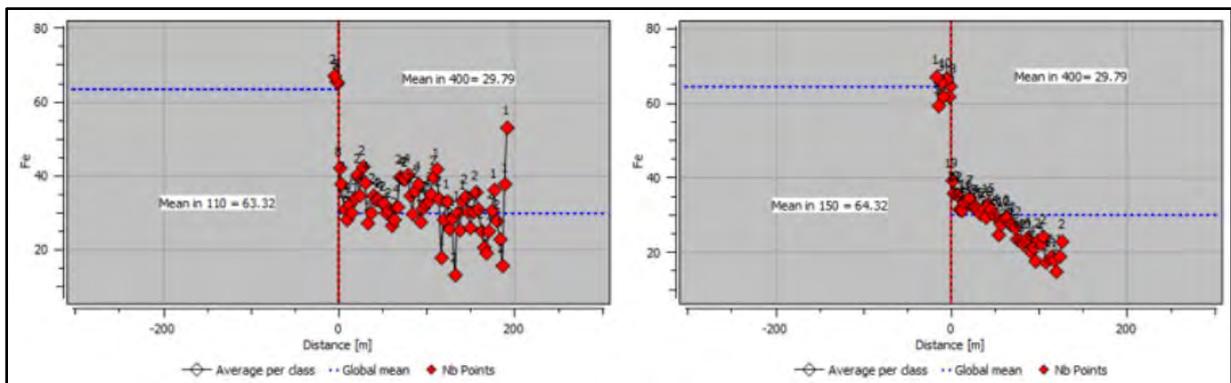


Figure 59: Contact analysis between conglomeratic ore, breccia ore and BIF

A slightly more gradational contact exists between high-grade massive ore (zone 140) and shale (zone 240) (**Figure 60**) whereas the contact between laminated ore (zone 130) and shale (zone 240) is relatively sharp.

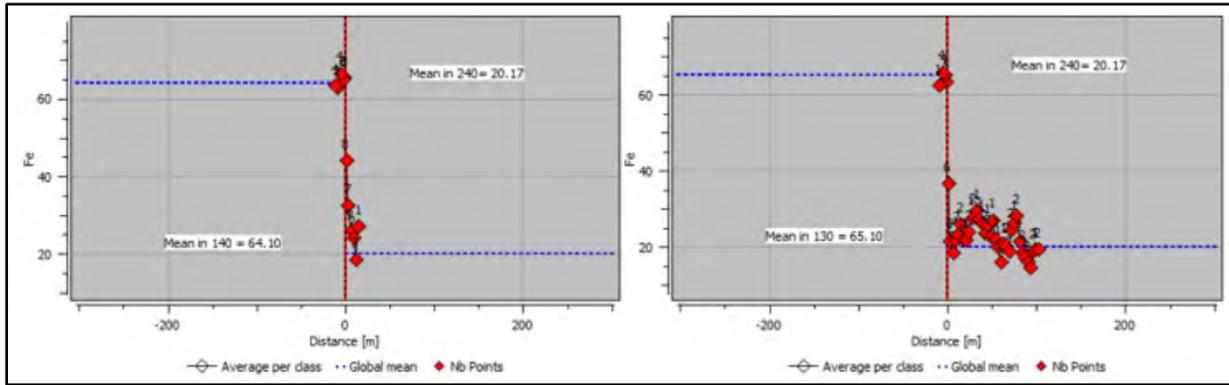


Figure 60: Contact analysis between massive ore, laminated ore and shale

9.3.3.2 Univariate and Multivariate Statistics

9.3.3.2.1 Univariate Statistics

Grade distributions of the major chemical elements (plus RD) for each of the high-grade ore zones as well as the Shale (typical roof material) and BIF (typical floor material), are illustrated by means of histograms from **Figure 61 to Figure 66**.

Conglomeratic Ore: Zone 110:

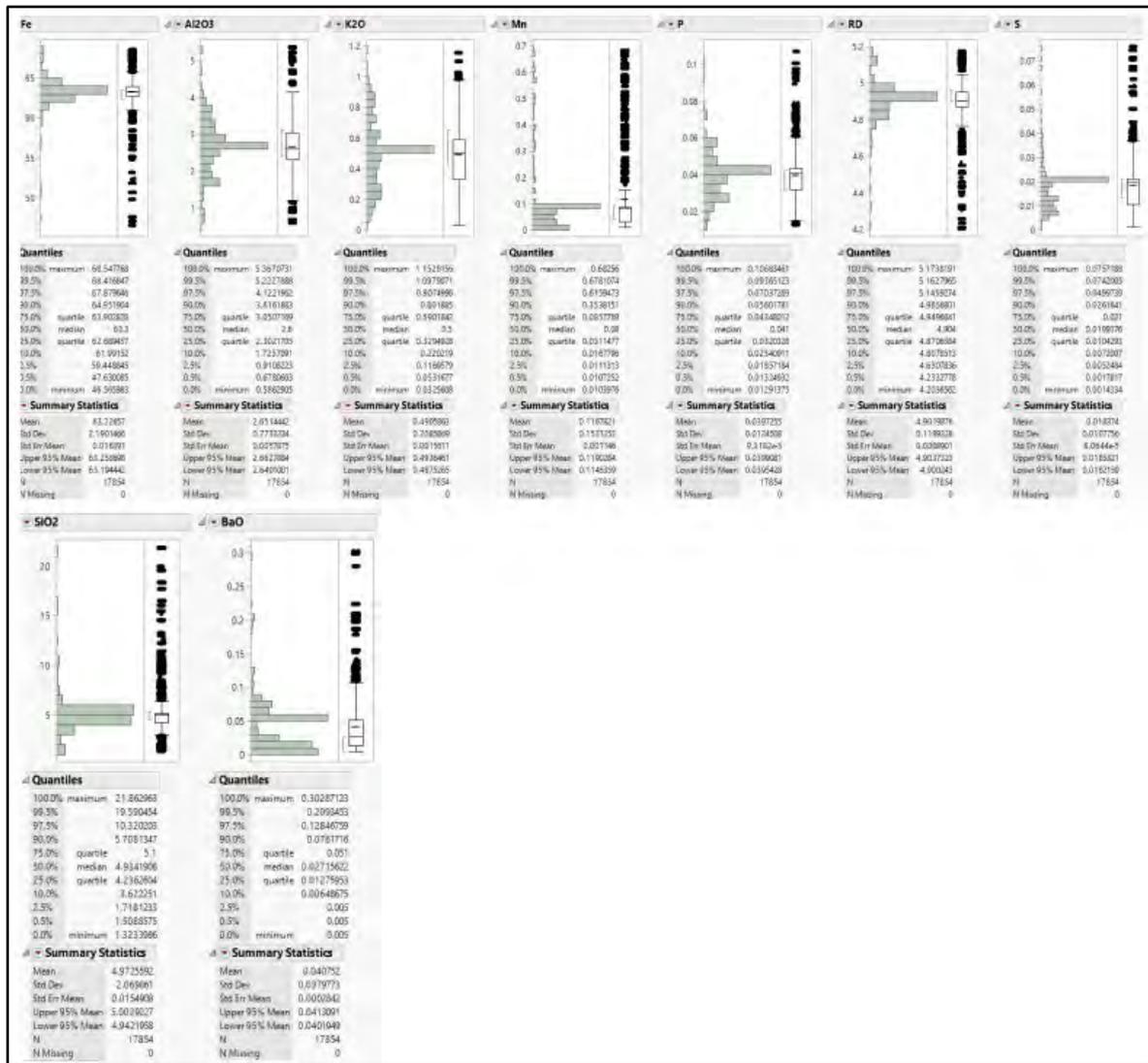


Figure 61: Grade distribution of Conglomeratic ore

Laminated ore: Zone 130:

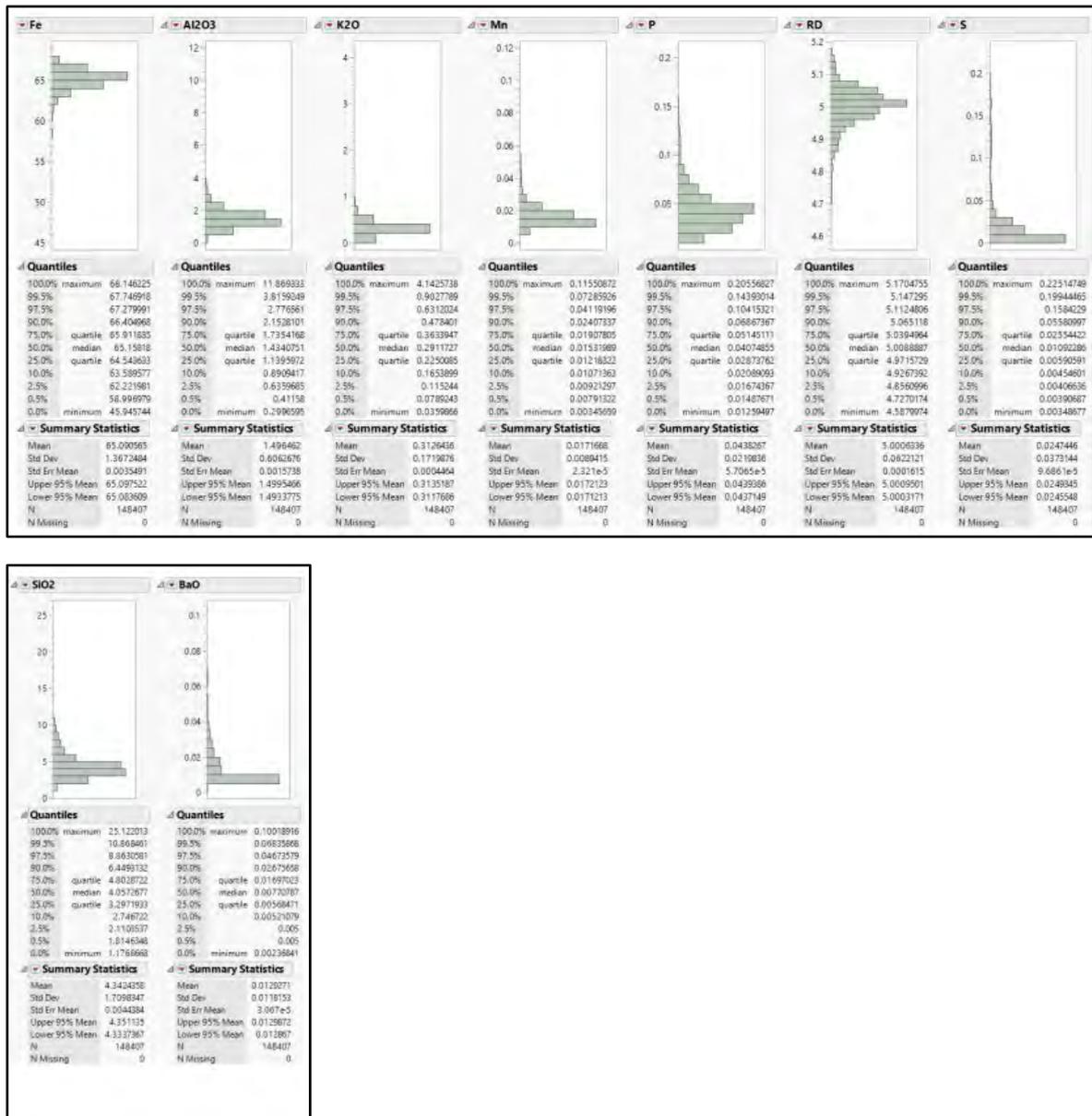


Figure 62: Grade distribution of Laminated ore

Massive ore: Zone 140:

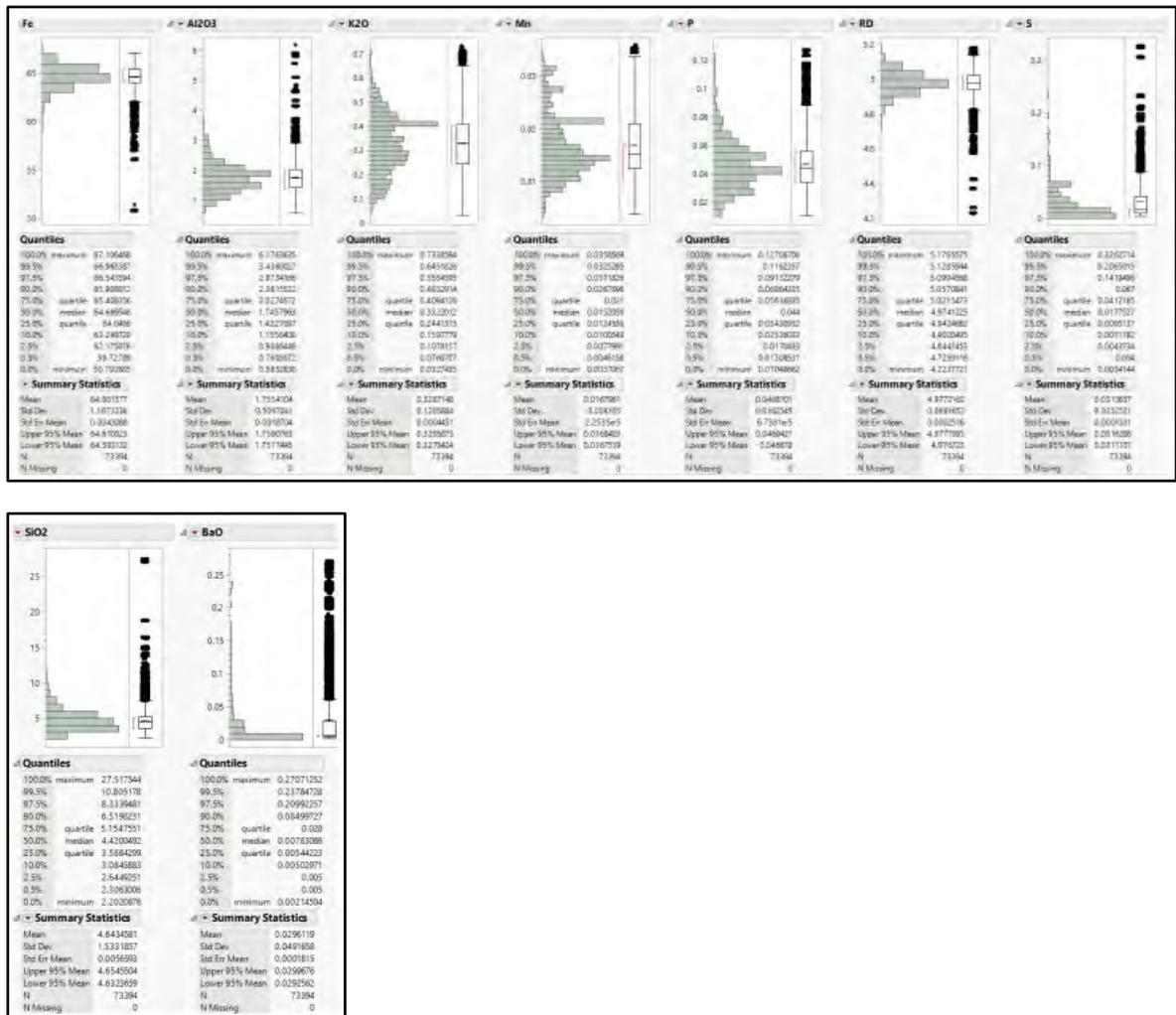


Figure 63: Grade distribution of Massive ore

Brecciated ore: Zone 150:

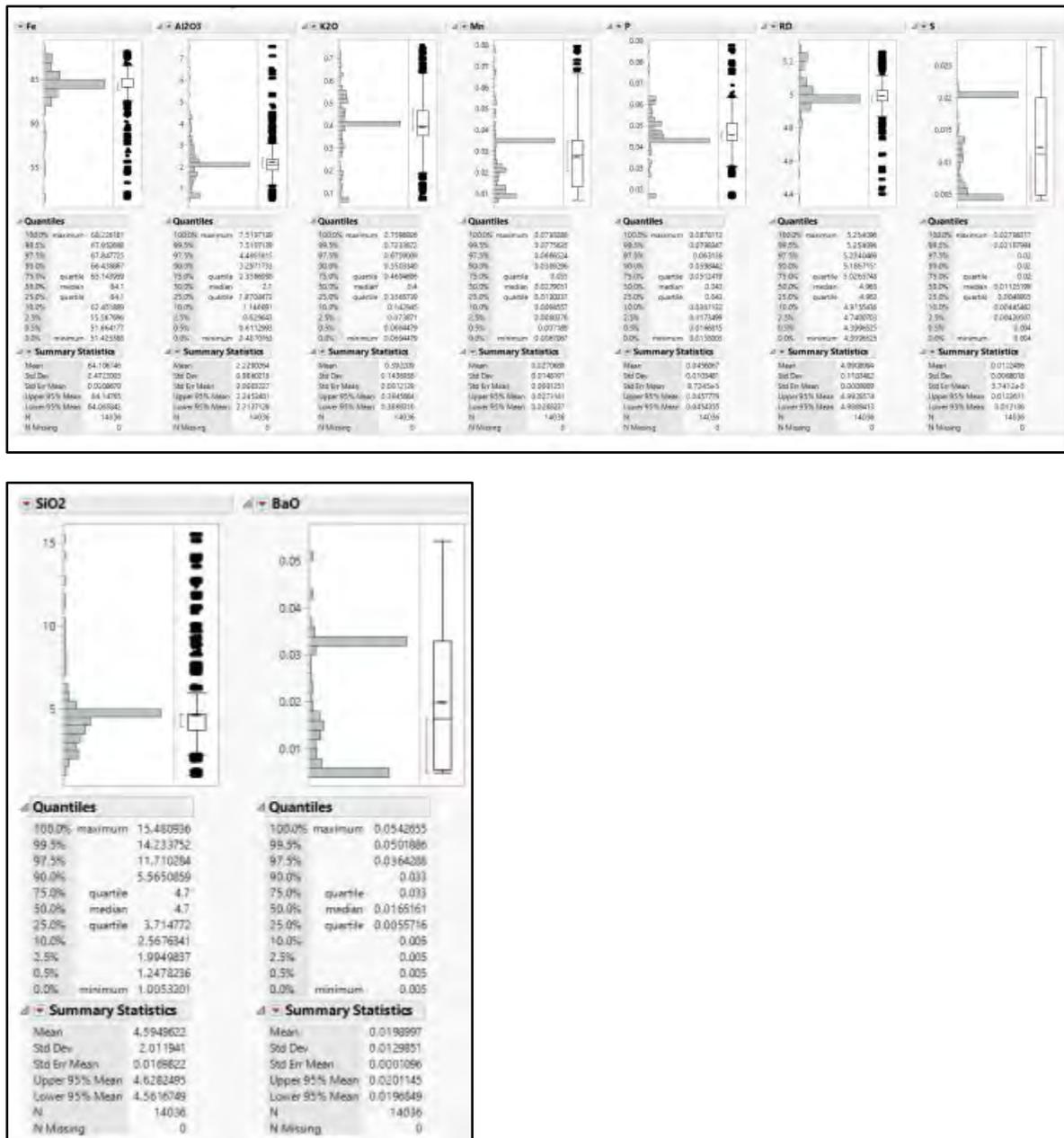


Figure 64: Grade distribution of Brecciated ore

Gamagara Shale: Zone240:

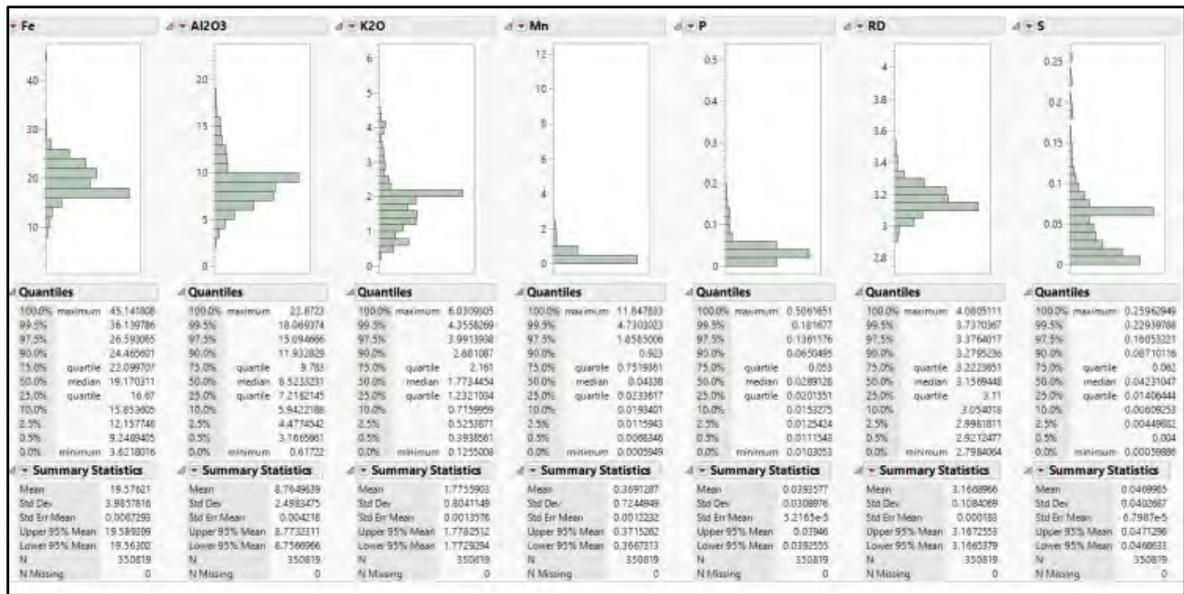


Figure 65: Grade distribution of Gamagara Shale

Banded Iron Formation: Zone 400:

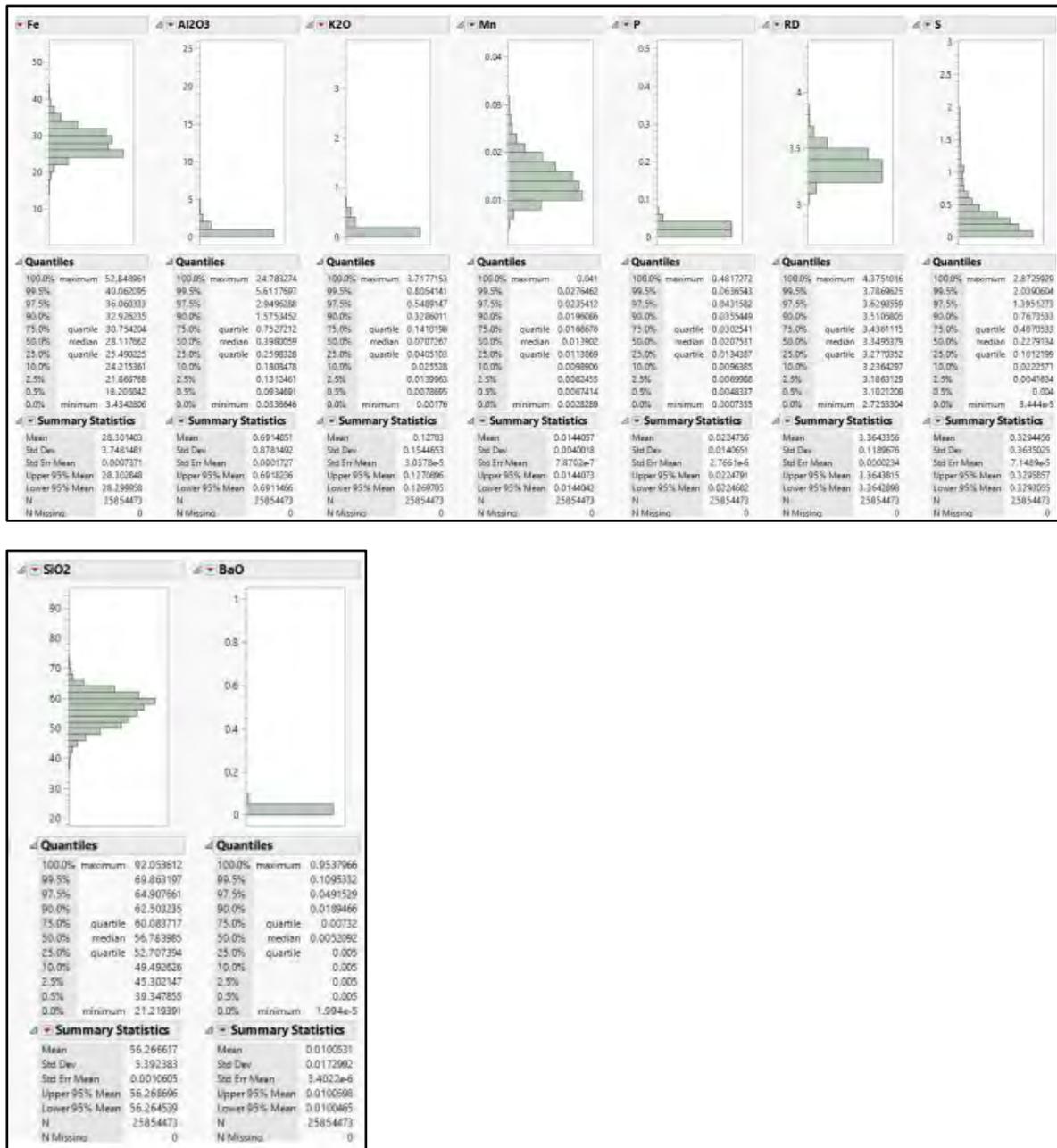


Figure 66: Grade distribution of Banded Iron Formation

9.3.3.2.2 Multivariate statistics Relationships between the chemical elements of the high-grade ores are illustrated in correlation matrix tables below. A Pearson’s correlation coefficient was used to measure the linear relationship between all nine variables. The correlation coefficient is a number between -1 and 1; where negative 1 implies a perfect negative correlation and positive 1 implies a perfect positive correlation and 0 implies no correlation.

Table 44 illustrates multivariate relationships for the chemistry and RD of the high- grade ore zones at Heuningkranz. The analysis was performed on composite samples.

Table 44: Correlation coefficients of chemical content and RD for each ore type

Conglomeratic ore: Zone 110:

| | Fe | SiO2 | Al2O3 | K2O | P | Mn | S | BaO | RD |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Fe | 1 | -0.94 | -0.55 | -0.48 | 0 | -0.07 | -0.1 | -0.09 | 0.98 |
| SiO2 | -0.94 | 1 | 0.26 | 0.26 | -0.07 | -0.02 | 0.06 | 0.02 | -0.91 |
| Al2O3 | -0.55 | 0.26 | 1 | 0.82 | 0.1 | -0.06 | 0.04 | 0.05 | -0.57 |
| K2O | -0.48 | 0.26 | 0.82 | 1 | 0.07 | -0.1 | 0.11 | 0.13 | -0.48 |
| P | 0 | -0.07 | 0.1 | 0.07 | 1 | -0.02 | 0.06 | -0.01 | 0.01 |
| Mn | -0.07 | -0.02 | -0.06 | -0.1 | -0.02 | 1 | 0.04 | 0.18 | -0.03 |
| S | -0.1 | 0.06 | 0.04 | 0.11 | 0.06 | 0.04 | 1 | 0.87 | -0.09 |
| BaO | -0.09 | 0.02 | 0.05 | 0.13 | -0.01 | 0.18 | 0.87 | 1 | -0.07 |
| RD | 0.98 | -0.91 | -0.57 | -0.48 | 0.01 | -0.03 | -0.09 | -0.07 | 1 |

Laminated ore: Zone 130:

| | Fe | SiO2 | Al2O3 | K2O | P | Mn | S | BaO | RD |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Fe | 1 | -0.92 | -0.63 | -0.61 | 0.01 | -0.07 | -0.02 | -0.04 | 0.96 |
| SiO2 | -0.92 | 1 | 0.3 | 0.31 | -0.08 | 0 | -0.02 | 0.01 | -0.91 |
| Al2O3 | -0.63 | 0.3 | 1 | 0.94 | 0.04 | 0.13 | -0.04 | 0.02 | -0.56 |
| K2O | -0.61 | 0.31 | 0.94 | 1 | 0.04 | 0.04 | -0.07 | 0.02 | -0.52 |
| P | 0.01 | -0.08 | 0.04 | 0.04 | 1 | -0.06 | -0.04 | 0 | 0.03 |
| Mn | -0.07 | 0 | 0.13 | 0.04 | -0.06 | 1 | 0.05 | 0.11 | -0.08 |
| S | -0.02 | -0.02 | -0.04 | -0.07 | -0.04 | 0.05 | 1 | 0.31 | -0.06 |
| BaO | -0.04 | 0.01 | 0.02 | 0.02 | 0 | 0.11 | 0.31 | 1 | -0.02 |
| RD | 0.96 | -0.91 | -0.56 | -0.52 | 0.03 | -0.08 | -0.06 | -0.02 | 1 |

Table 44 cont.: Correlation coefficients of chemical content and RD for each ore type

Massive ore: Zone 140:

| | Fe | SiO ₂ | Al ₂ O ₃ | K ₂ O | P | Mn | S | BaO | RD |
|--------------------------------|-------|------------------|--------------------------------|------------------|-------|-------|-------|-------|-------|
| Fe | 1 | -0.92 | -0.59 | -0.6 | 0.12 | -0.03 | -0.2 | -0.03 | 0.96 |
| SiO ₂ | -0.92 | 1 | 0.29 | 0.33 | -0.16 | -0.01 | 0 | 0 | -0.91 |
| Al ₂ O ₃ | -0.59 | 0.29 | 1 | 0.95 | 0 | 0.06 | -0.04 | 0.02 | -0.52 |
| K ₂ O | -0.6 | 0.33 | 0.95 | 1 | -0.04 | 0.02 | -0.05 | 0.02 | -0.51 |
| P | 0.12 | -0.16 | 0 | -0.04 | 1 | -0.07 | -0.03 | -0.07 | 0.13 |
| Mn | -0.03 | -0.01 | 0.06 | 0.02 | -0.07 | 1 | -0.01 | 0.15 | -0.04 |
| S | -0.2 | 0 | -0.04 | -0.05 | -0.03 | -0.01 | 1 | 0.04 | -0.16 |
| BaO | -0.03 | 0 | 0.02 | 0.02 | -0.07 | 0.15 | 0.04 | 1 | 0.01 |
| RD | 0.96 | -0.91 | -0.52 | -0.51 | 0.13 | -0.04 | -0.16 | 0.01 | 1 |

Brecciated ore: Zone 150:

| | Fe | SiO ₂ | Al ₂ O ₃ | K ₂ O | P | Mn | S | BaO | RD |
|--------------------------------|-------|------------------|--------------------------------|------------------|-------|-------|-------|-------|-------|
| Fe | 1 | -0.9 | -0.67 | -0.62 | 0.09 | -0.05 | -0.09 | -0.05 | 0.96 |
| SiO ₂ | -0.9 | 1 | 0.32 | 0.31 | -0.17 | 0 | 0.03 | -0.02 | -0.87 |
| Al ₂ O ₃ | -0.67 | 0.32 | 1 | 0.89 | 0.07 | 0.05 | 0.03 | 0.06 | -0.63 |
| K ₂ O | -0.62 | 0.31 | 0.89 | 1 | 0.01 | 0 | -0.02 | 0.05 | -0.58 |
| P | 0.09 | -0.17 | 0.07 | 0.01 | 1 | -0.08 | -0.05 | -0.15 | 0.11 |
| Mn | -0.05 | 0 | 0.05 | 0 | -0.08 | 1 | -0.01 | 0.06 | -0.02 |
| S | -0.09 | 0.03 | 0.03 | -0.02 | -0.05 | -0.01 | 1 | 0.39 | -0.12 |
| BaO | -0.05 | -0.02 | 0.06 | 0.05 | -0.15 | 0.06 | 0.39 | 1 | -0.05 |
| RD | 0.96 | -0.87 | -0.63 | -0.58 | 0.11 | -0.02 | -0.12 | -0.05 | 1 |

In all ore types, Fe and RD display the strongest positive correlation whereas SiO₂ is strongly negatively correlated with both Fe and RD. Iron content is directly proportional to density (i.e. the higher the grade of the ore, the higher the density) whereas SiO₂ is inversely related (the higher the Fe content, the higher the density, but the lower the SiO₂ content).

Al₂O₃ and K₂O are moderately negatively correlated with Fe, while the remainder of the elements have virtually no relationship with Fe.

The relationships described above are common to Sishen and Kolomela ores and are reflected in the ore mineralogy. Haematite (Fe) in high-grade ores, displaces silica which is usually present in the form of chert layers, quartz veins, blebs and interstitial crystals. Clay minerals (which are predominantly Al + K silicates) are also displaced by increasing haematite content. The presence of aluminosilicates supports the strong positive correlation between Al₂O₃ and K₂O.

Scatterplots

Scatterplots can indicate changes in mineralogy/grade, that when clustered, may justify sub-domaining of the primary lithological unit. They also provide a quick visual check for erroneous/extreme values between elements that are strongly correlated.

Fe content vs Relative density

The strong positive correlation between Fe vs RD should generate plots in a narrow band. The relationship for raw assay values is illustrated in **Figure 67**.

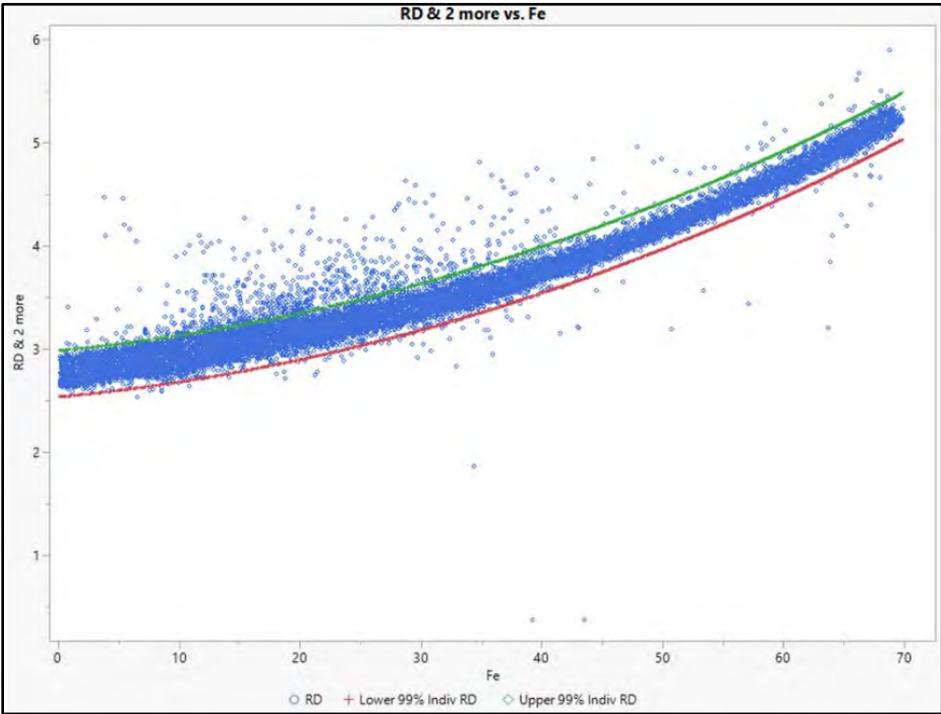


Figure 67: Fe vs RD relationship in raw assay data

Relative Density was measured in a laboratory using a pycnometer. To account for the limitations of the laboratory measurement, a lower 10% error limit was applied - which corresponds roughly to 99% confidence limits. The results obtained are illustrated in **Figure 68** overleaf:

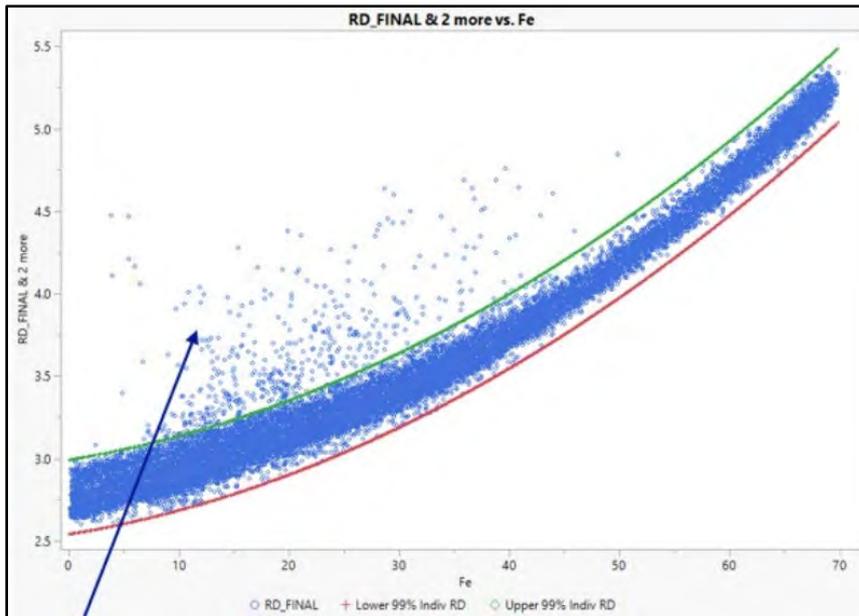


Figure 68: Fe vs RD after removing erroneous values

Samples logged as FEM (ferromanganese) or Mn (Manganese) - position indicated with the blue arrow, above the 10% upper error limit, were retained, as they can have a high RD with a relatively low Fe content (Fe is substituted by Mn in the crystal structure).

Approximately 53 erroneous samples below the 10% error limit were removed from the dataset and replaced with a value calculated from a polynomial fitted formula as follows:

$$RD = 2.49884 + 0.0306449 * Fe + 0.0003543 * (Fe - 27.7977)^2$$

Total Oxides

In compositional datasets where the suite of assayed analytes approaches a whole rock analysis, sample mass balance calculations are very useful in validating the analytical dataset's accuracy. A standard sample quality assurance procedure is to calculate the total percentage sample mass from the analytes. If this calculated value falls within a range considered reasonable (typically 98% to 102%), the sample is accepted for inclusion into resource estimation. Samples which fall just outside of this range require investigation. Those samples which are grossly outside of the range, without adequate explanation, must be inaccurate or biased and, therefore, excluded from resource estimation.

To minimise calculation errors, every sample reported in the Heuningkranz database has a lab reported TOX associated with that assay, which took precedence over any calculated TOX outside of the database. The distribution of Total Oxide values in the dataset is illustrated in **Figure 69** below:

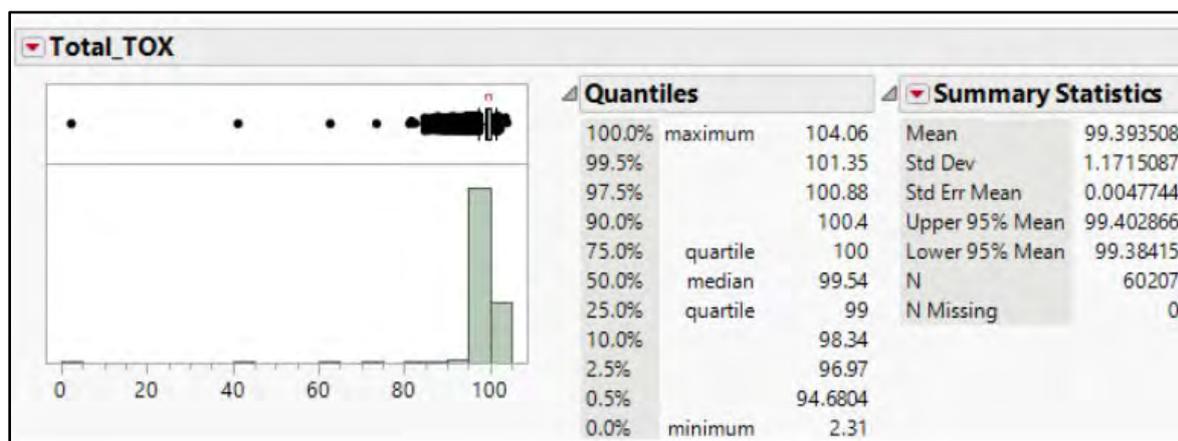


Figure 69: Histogram and statistics of TOX measurements

It is observed that there are a few samples with total oxide greater than 102% (up to a maximum of 104.06%) and some samples with total oxide of less than 90%.

The TOX mass balance equation might not necessarily hold true for rock types that are not completely haematite e.g. partially ferruginised shale or partially ferruginised banded iron formation.

To address the outliers, all samples with total oxide above 102% were ignored for estimation - as per the KIO standard. **Table 45** lists the number of samples above 102% TOX that were removed from the dataset during this validation procedure.

Table 45: Samples removed from dataset with TOX > 102%

| ZONE | No. of Samples |
|------|----------------|
| 130 | 2 |
| 140 | 3 |
| 400 | 7 |
| 500 | 1 |
| 600 | 2 |
| 800 | 1 |
| 905 | 4 |

Samples with TOX less than 90% were retained only if the main lithological code was not PLITHO HEM - to include partially ferruginised BIF and shale in the estimation process. There were no samples logged as HEM with TOX < 90%, which informs the Mineral Resource estimate.

9.3.3.2.3 Grade Sub-domaining

The Exploratory Data Analysis confirmed it was not necessary to do any grade sub-domaining for estimation.

The orebodies were not considered localised, so no cluster analyses were performed to check for significantly different grades.

9.3.4 Variography

Given the significant quantity of new or amended borehole data and the re-interpretation of the subsurface geometry of the orebodies, a complete refresh of the variography was required.

9.3.4.1 *Unfolding*

No levelling or unfolding of the strata was done. Directions were based on the overall strike, dip and plunge of the mineralised zones.

9.3.4.2 *Experimental and derived Modelled Variograms*

New variograms were generated for the high-grade mineralised zones: conglomeratic ore (hemcgt), laminated ore (hemlam), massive ore (hemmas) and brecciated ore (hembrc) plus the Banded Iron Formation and Gamagara shale zones.

Omnidirectional variograms were generated from raw, untransformed data for the 8-grade variables plus RD within the high- and medium- and low-grade ore zones: Hemcgt, Hemlam, Hemmas, Hembrc, Gamagara Shale, and BIF. The principal axes of the omnidirectional variograms were determined by generating 9 experimental variograms in the plane of maximum continuity for each ore zone. The plane of maximum continuity has the same orientation as the general ore strike of the deposit.

The experimental variogram with the lowest apparent nugget, longest range and slowest rate of increase (continuity) within the plane of maximum continuity, was interpreted as the major direction.

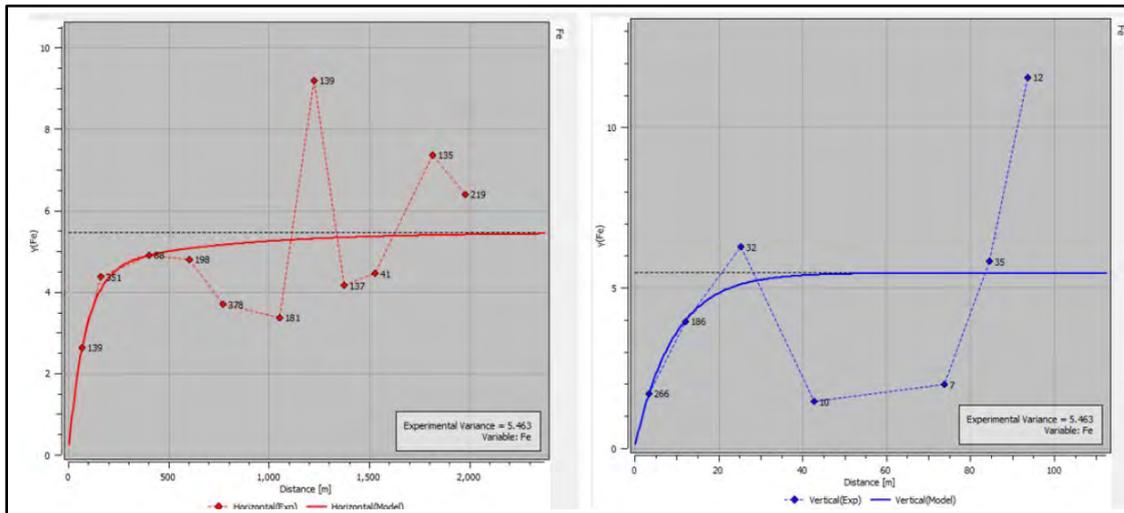
There are a limited number of samples for the hemcgt and hembrc ore zones which precluded the application of directional variography. As a result, omnidirectional variography was modelled. The horizontal plane along the strike of the orebody was considered the plane of maximum continuity and a perpendicular, vertical direction was used to model the nugget. The modelled variography was assessed using a few rotations, lag distances and slicing heights.

The best results were obtained in the horizontal plane, with the major and vertical directions demonstrating very short ranges. Lag distances were set at between 80 m and 100 m in the horizontal direction and between 10 – 20 m in the vertical direction, with an angular tolerance of 45°. The final rotation was set at 20 degrees to align with the strike of the orebody and maximise the number of pairs for mineralised zones. For the major direction in the mineralised zones, a lag of 80 m was used, with an angular tolerance of 45°. The vertical direction used a lag of 2 m.

Downhole variography were used to determine the nuggets, which were about 10% to 35% of the total sill for Fe in the mineralised zones. All the variograms have been modelled with a nugget and two or three spherical structures.

The omnidirectional experimental and modelled variograms for % Fe in each of the high-grade zones are presented below and overlaid in **Figure 66**.

Conglomeratic ore: Zone 110:



Laminated ore: Zone 130:

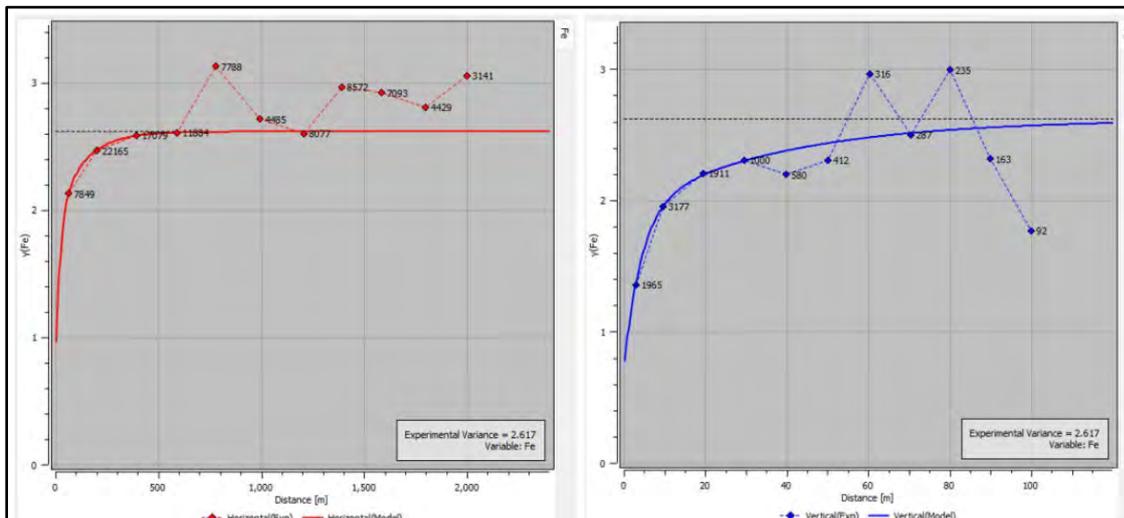
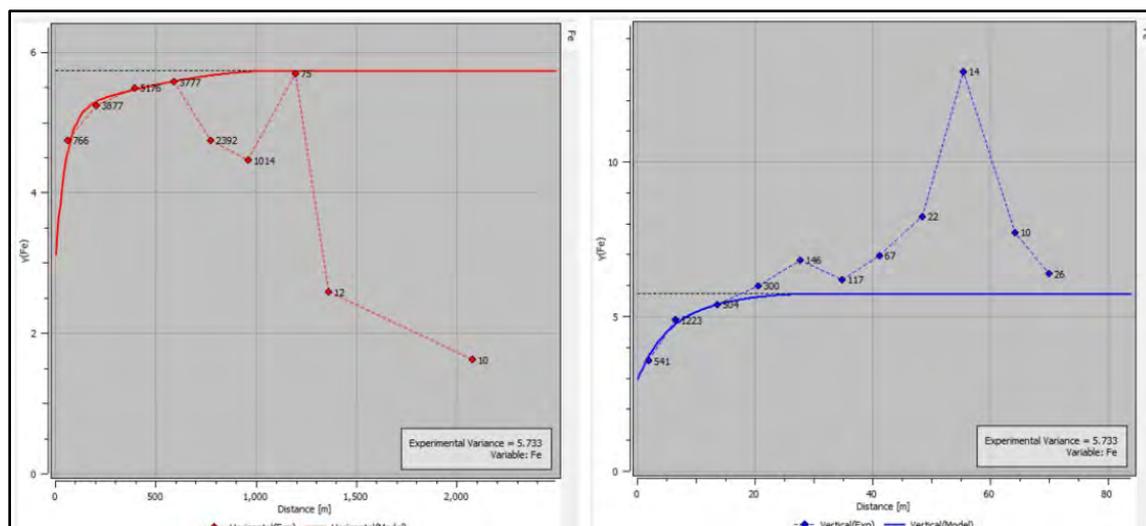


Figure 66: Experimental and modelled variograms for high-grade ore zones

Massive ore: Zone 140:



Brecciated ore: Zone 150:

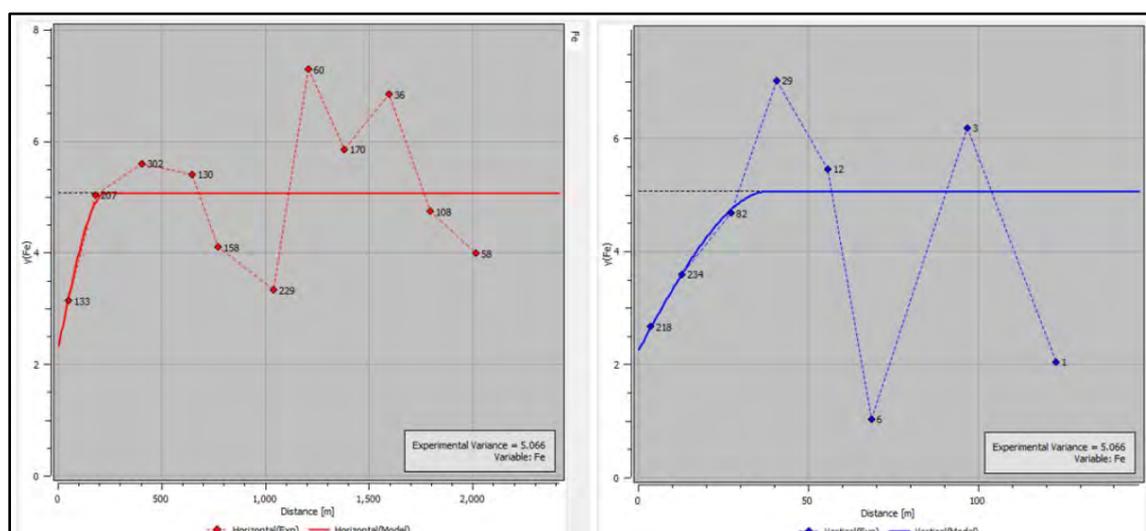


Figure 66 cont.: Experimental and modelled variograms for high-grade ore zones

A summary of the modelled Fe-variogram parameters for all high- and medium-grade ore domains is provided in **Table 46**.

Table 46: Summary of Fe-variogram parameters for all zones

| Zone | Structure Type | Dip | Dip Azimuth | Pitch | Ranges UVW [m] | | | Sill |
|------|----------------|-----|-------------|-------|----------------|-------|-------|--------|
| 110 | Nugget | | | | | | | 0.000 |
| | Exponential | 0° | 20° | 90° | 250 | 200 | 28 | 4.501 |
| | Exponential | 0° | 20° | 90° | 2000 | 500 | 27 | 0.962 |
| 130 | Nugget | | | | | | | 0.7064 |
| | Exponential | 0° | 20° | 90° | 66.6 | 66.6 | 12.76 | 1.2127 |
| | Exponential | 0° | 20° | 90° | 386.5 | 386.5 | 111.3 | 0.6983 |
| 140 | Nugget | | | | | | | 2.895 |
| | Exponential | 0° | 90° | 90° | 150 | 105 | 15 | 2.281 |
| | Spherical | 0° | 90° | 90° | 1100 | 500 | 30 | 0.557 |
| 150 | Nugget | | | | | | | 2.232 |
| | Spherical | 0° | 20° | 90° | 230.2 | 230.2 | 38.74 | 2.834 |
| 240 | Nugget | | | | | | | 8.67 |
| | Spherical | 0° | 20° | 90° | 129.4 | 129.4 | 75.19 | 9.03 |
| 400 | Nugget | | | | | | | 16.41 |
| | Exponential | 0° | 20° | 90° | 100.3 | 100.3 | 97.23 | 29.01 |
| | Spherical | 0° | 20° | 90° | 1488 | 1488 | 242.5 | 5.55 |

Footnote: UWV refers to X, Y and Z directions defining the ellipse axes

9.3.4.3 Search Parameters

A comprehensive Quantitative Kriging Neighbourhood Analysis (QKNA) was run to quantify and optimise the search parameters for use in Ordinary Kriging (OK) of Fe within the ore zones.

The estimation neighbourhood test work was carried out in *Isatis* and the results were analysed in Excel. The framework for QKNA was documented in Vann et al. (2003) and has been tailored to meet the specific needs of the Heuningkranz model.

For Fe variables within each ore zone, a series of OK estimations were run in batches using the 103_QKNA_Fe.jnl. *Isatis* journal file. Each estimate permitted an increasing number of neighbouring samples to inform the estimate. Two scenarios were completed; one with the estimation search radius used intentionally unrestrictive and one using anisotropic, re-scaled search distance as the 'optimum' number of samples was increased from 2 to 80 in increments of 5. Each estimated variable was recorded, in addition to numerous estimation quality metrics, including the slope of regression and the sum of the positive weights. Statistics for these metrics were generated across each of the estimation domains and were exported to Excel for analysis.

The resultant search parameters applied for the estimation of Fe, are summarised in **Table 47** below:

Table 47: Summary of Search Parameters for Fe in all zones

| Search Parameters | | | | | | | | |
|-------------------|-----------|----------------|------|-------|----------------|------|---------|-----------|
| | Isatis | Ellipse Radius | | | No. of Samples | | Octants | Max. Samp |
| ZONE | Geo Plane | Major | Semi | Minor | Min. | Max. | Used? | per hole |
| HEMCGT | (20,0,0) | 500 | 250 | 40 | 5 | 40 | Y | 10 |
| HEMLAM | (20,0,0) | 500 | 350 | 40 | 5 | 40 | Y | 10 |
| HEMMAS | (20,0,0) | 400 | 200 | 40 | 5 | 40 | Y | 10 |
| HEMBRC | (20,0,0) | 220 | 120 | 40 | 5 | 40 | Y | 10 |
| SH | (20,0,0) | 220 | 120 | 20 | 5 | 40 | Y | 10 |
| BIF | (20,0,0) | 200 | 100 | 20 | 5 | 40 | Y | 10 |

The search ellipse dimensions for conglomeratic, laminated and massive ores are typical of Northern Cape iron ore deposits. These ores invariably have thin, stratiform, lensoid geometries. Grade continuity is best developed down-dip, parallel to bedding planes (major X axis), somewhat less in the Y direction, but very restricted in the perpendicular Z plane.

Breccia ores are preserved in palaeo-sinkholes and along fault and thrust planes. Primary grade continuity is destroyed by the chaotic nature of the rock type. However, the breccia ores invariably display limited overprinting by later Fe-rich fluids. Their search ellipsoids will thus have much reduced ranges in all directions. Ranges of ores in the Shale and BIF host units will also be restricted due to the secondary nature of the iron mineralisation.

Note: The parent block size was not optimised during the Quantitative Kriging Neighbourhood Analysis. A historical block size of 40 m x 40 m x 10 m was used, as determined in the previous estimation model update.

9.3.4.4 Estimation

Estimation by Ordinary Kriging methods using the search and variogram parameters derived above, was conducted for the high-grade ore zones using *Isatis* software.

The estimation parameters were set at a maximum of 40 samples with a minimum of 10 samples for the first Kriging run. The range of the individual variogram models (in the horizontal plane) was limited to a minimum of 200 m for four optimum number of sectors used. A limit of 20 m in the vertical direction was imposed to reflect the strong anisotropy. Estimation was into parent cells using a cell discretisation of 5 m(Easting) x 5 m(Northing) x 2,5 m(RL).

Fe, SiO₂, Al₂O₃, K₂O, P, S, Mn, BaO and Relative Density were estimated using Ordinary Kriging for all ore zones. BaO was subsequently converted to Ba in the final model.

In the BIF and shale zones, Ordinary Kriging was used for the first kriging run but Simple Kriging was applied in the second kriging run.

Simple Kriging was used to estimate grades within all the remaining waste lithologies.

Primary faults were applied to enforce hard boundaries.

The estimation methods applied to each lithological unit are summarised below in **Table 48**.

Table 48: Estimation methods applied to the 2024 Heuningkranz block model

| Ore/Waste Type | Estimation Method | | | | | | | | |
|----------------|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| | Fe | SiO2 | Al2O3 | K2O | P | S | Mn | BaO | RD |
| Hem | OK | OK | OK | OK | OK | OK | OK | OK | OK |
| Hemcgt | OK | OK | OK | OK | OK | OK | OK | OK | OK |
| Hemlam | OK | OK | OK | OK | OK | OK | OK | OK | OK |
| Hemmas | OK | OK | OK | OK | OK | OK | OK | OK | OK |
| Hembrc | OK | OK | OK | OK | OK | OK | OK | OK | OK |
| Sh | OK/SK | OK/SK | OK/SK | OK/SK | OK/SK | OK/SK | OK/SK | OK/SK | OK/SK |
| Kalahari | SK | SK | SK | SK | SK | SK | SK | SK | SK |
| Bif | OK/SK | OK/SK | OK/SK | OK/SK | OK/SK | OK/SK | OK/SK | OK/SK | OK/SK |
| Ch | SK | SK | SK | SK | SK | SK | SK | SK | SK |
| Dol | SK | SK | SK | SK | SK | SK | SK | SK | SK |
| Lava | SK | SK | SK | SK | SK | SK | SK | SK | SK |
| Dmt | SK | SK | SK | SK | SK | SK | SK | SK | SK |
| Gab | SK | SK | SK | SK | SK | SK | SK | SK | SK |
| Gam | SK | SK | SK | SK | SK | SK | SK | SK | SK |

OK – Ordinary Kriging; SK – Simple Kriging

9.3.4.4.1 High-grade ore estimation

If parent cells of the high-grade orebodies were not populated with the relevant grades during the first kriging run, it was populated using a second Ordinary Kriging run with a search radius double that of the original Kriging run. Blocks populated during the second runs are flagged and classified with a low geological confidence of Inferred 2.

Cells not populated during the first and second Ordinary Kriging runs were assigned default grade and relative density values. A very low geological confidence classification of Inferred 3 was then applied. The proportion of high-grade ore blocks filled per run is summarised in **Table 49**.

Table 49: Proportion of ore domains informed per search pass

| Zone | Total no. Blocks | Krigrun 1 | | Krigrun 2 | | Assign Default (3) | |
|---------------|------------------|--------------|----------|--------------|----------|--------------------|------------|
| | | Block Filled | % Filled | Block Filled | % Filled | Block Filled | % Required |
| Hemcgt | 17854 | 9663 | 54.1 | 3374 | 18.9 | 4817 | 27.0 |
| Hemlam | 148407 | 143502 | 96.7 | 3607 | 2.4 | 1298 | 0.87 |
| Hemmas | 73394 | 62924 | 85.7 | 7403 | 10.1 | 3067 | 4.2 |
| Hembrc | 14036 | 6136 | 43.7 | 4469 | 31.8 | 3431 | 24.4 |

The percentage of un-estimated blocks after the first run in the Conglomeratic and Breccia ore domains reflect limited sample coverage and consequently weak variograms and neighbourhood parameters.

The un-estimated blocks in high-grade ore domains that were not populated during the first and second Kriging runs, were attributed an average default value, derived from sample data within each ore domain. The default mean grades applied to the high-grade ore domains is tabulated below (**Table 50**):

Table 50: Default mean grades applied to high-grade ore zones in the block model

| Ore type (domain) | Mean of High-grade Ore composites | | | | | | | | |
|--------------------------------|-----------------------------------|------------------|--------------------------------|------------------|-------|-------|-------|-------|------|
| | Fe | SiO ₂ | Al ₂ O ₃ | K ₂ O | P | S | Mn | BaO | RD |
| Conglomeratic Ore (110) | 63,3 | 5,1 | 2,6 | 0,5 | 0,041 | 0,021 | 0,080 | 0,051 | 4,90 |
| Laminated Ore (130) | 65,1 | 4,2 | 1,5 | 0,3 | 0,047 | 0,028 | 0,017 | 0,018 | 5,01 |
| Massive Ore (140) | 64,1 | 5,1 | 1,8 | 0,4 | 0,044 | 0,067 | 0,021 | 0,028 | 4,95 |
| Breccia Ore (150) | 64,1 | 4,7 | 2,1 | 0,4 | 0,043 | 0,020 | 0,035 | 0,033 | 4,96 |

The default mean grades and default mean RD values for the high-grade ore zones were calculated from the composited assay database per ore domain.

9.3.4.4.2 Hangingwall and footwall and other waste estimation

In the hanging and footwall zones, Ordinary Kriging was used for the first Kriging run and Simple Kriging was applied in the second Kriging run.

Only Simple Kriging was used to estimate grades within the remaining waste lithologies. If blocks were not informed during the Simple Kriging exercise, the block was then populated with default mean grade. The default mean grades applied to the hanging and footwall and other waste domains are illustrated in **Table 51** below:

Table 51: Default mean grades applied to waste zones in the block model

| ZONE | N Rows | Mean(Fe) | Mean(SiO2) | Mean(Al2O3) | Mean(K2O) | Mean(P) | Mean(S) | Mean(Mn) | Mean(BaO) | Mean(RD) |
|------|--------|----------|------------|-------------|-----------|---------|---------|----------|-----------|----------|
| 240 | 1443 | 16.67 | 56.75 | 9.78 | 2.16 | 0.053 | 0.062 | 0.923 | 0.075 | 3.11 |
| 300 | 1240 | 7.44 | 37.94 | 3.46 | 0.53 | 0.015 | 0.008 | 0.226 | 0.028 | 2.80 |
| 400 | 14792 | 23.30 | 63.37 | 1.05 | 0.18 | 0.020 | 0.179 | 0.016 | 0.016 | 3.22 |
| 500 | 3298 | 13.41 | 60.54 | 4.68 | 1.15 | 0.046 | 0.050 | 4.536 | 0.240 | 3.10 |
| 600 | 1412 | 6.27 | 16.51 | 1.74 | 0.43 | 0.026 | 0.029 | 1.911 | 0.135 | 3.00 |
| 730 | 14255 | 9.02 | 52.41 | 12.34 | 1.29 | 0.048 | 0.172 | 0.197 | 0.047 | 2.88 |
| 800 | 5722 | 15.98 | 46.46 | 4.29 | 0.74 | 0.032 | 0.156 | 1.430 | 0.092 | 3.03 |
| 900 | 3048 | 15.57 | 47.12 | 17.05 | 2.85 | 0.064 | 0.026 | 0.165 | 0.027 | 3.08 |
| 905 | 14117 | 10.08 | 67.16 | 10.27 | 2.03 | 0.034 | 0.117 | 0.370 | 0.192 | 2.95 |

9.3.4.4.3 Density Estimation

Density estimation was done following the same estimation methodology as for all other analytes. Relative densities measurements were derived from pulp samples using a gas pycnometer in the ATS laboratory. The RD values were used to compile experimental and modelled variograms with associated search parameters for each ore zone. For the high-grade ore zones, RD was estimated by Ordinary Kriging runs. If parent cells were not populated during the first Kriging run, they were populated using a second OK run with an expanded search radius of not more than twice that of the original Kriging neighbourhood. Cells not populated during the first and second Ordinary Kriging runs were assigned default average relative density values. Relative density in the hanging and footwall and remaining waste blocks were estimated in precisely the same way as for the other analytes described above.

9.3.4.4.4 Negative estimates

Negative estimates are always a possible by-product of Ordinary Kriging. A small number of negative estimates (50 in total) were produced in the high-grade ore zones – mainly BaO, Mn and S. They were replaced by default average values.

9.3.4.5 Validation

Numerous validation exercises were conducted to check the accuracy of the estimates against the original (raw) data. This included calculating the slope of Regression between estimated and true attributes, checking comparative statistics for each chemical element plus RD. Visual checks were made by slicing the model and comparing block grades vs actual borehole grades. Swath plot validations per ore domain for Fe and the other analytes were also done.

9.3.4.5.1 Slope of Regression and other Kriging validation metrics

The slope of regression and other metrics presented here, represent a calculated relationship between the estimated attribute and the true attribute. They should be as close as possible to 1 to ensure that the conditional unbiased properties of kriging are realised (Vann et al., 2003).

In **Figure 71** and **Figure 72**, the Correlation mean, the Kriging Efficiency mean, the Slope of Regression mean, and the Sum of Positive Weights (maximum and mean) are plotted for the Conglomeratic ore and Laminated ore domains respectively. The metrics are plotted against an increasing number of sectors. The maximum number of samples per sector was capped at 40.

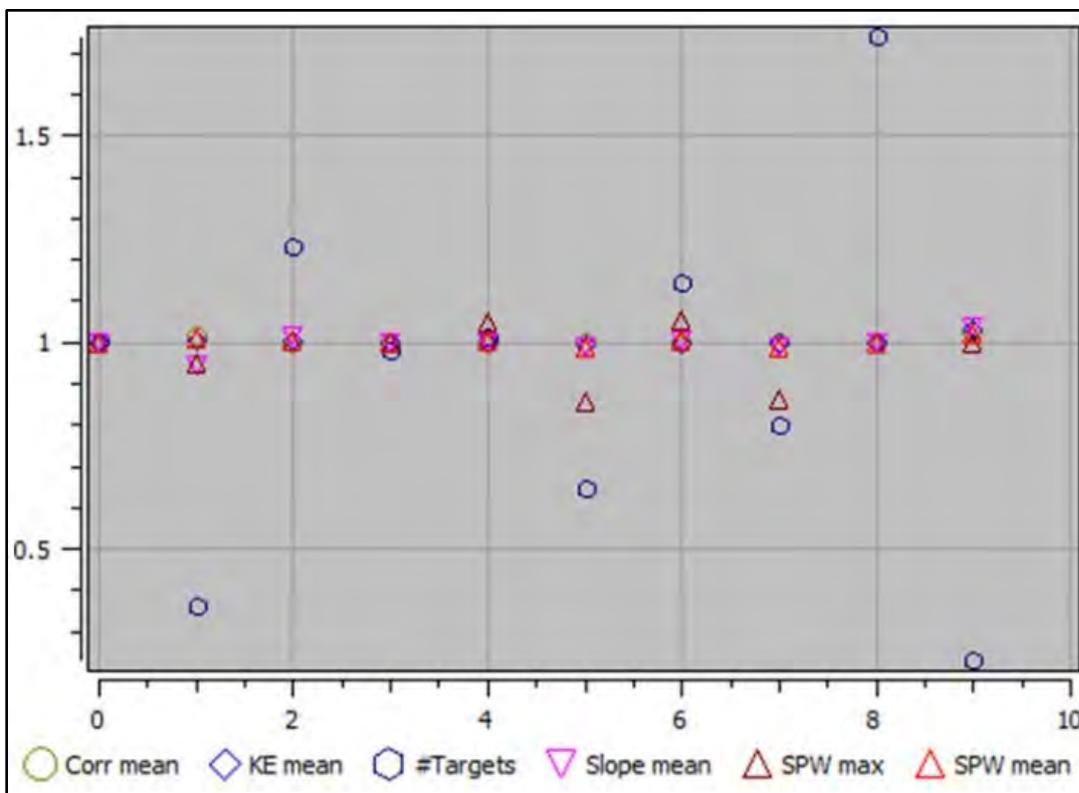


Figure 70: Fe validation metrics for Conglomeratic ore

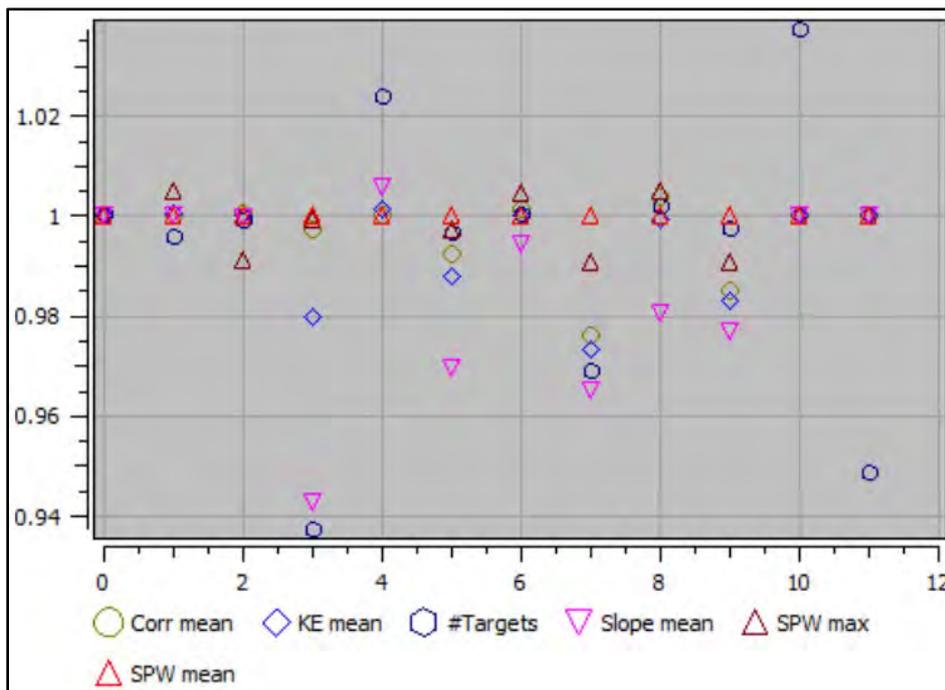


Figure 71: Fe validation metrics for Laminated ore

Overall, the slope of regression increased with an increase in the number of sectors.

9.3.4.5.2 Visual validations

Visual validations of estimated block grades against drillhole actual grades were carried out to check the continuity of estimated data in adjacent blocks. The block model was sliced into sections on which borehole traces and grades had been plotted (Figure 73).

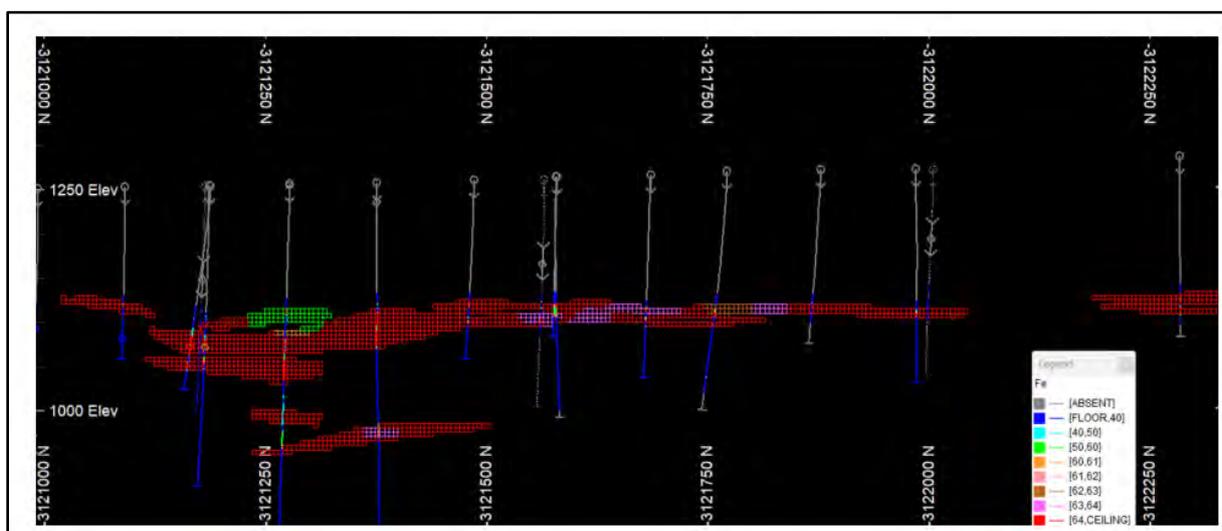


Figure 72: Drillhole section sliced through the block model

As confirmed visually, there is reasonable agreement between actual samples and estimated grades in the block model.

9.3.4.5.3 Statistical validations

Global statistics were compared between the composite samples (actual data) and the estimated data from the model. A statistical comparison of the mean analyte values for the high-grade ore zones (110, 120, 130 and 140) and ferruginised hangingwall (240) and footwall (400) domains is provided in **Table 52**.

Table 52: Raw composited data vs estimated data for all ore zones

| Model | | | | | | | | | |
|-------------|----------|-------------------------|---------------------------------------|------------------------|---------|---------|----------|-----------|----------|
| ZONE | Mean(Fe) | Mean(SiO ₂) | Mean(Al ₂ O ₃) | Mean(K ₂ O) | Mean(P) | Mean(S) | Mean(Mn) | Mean(BaO) | Mean(RD) |
| 110 | 63.29 | 4.67 | 2.82 | 0.519 | 0.037 | 0.016 | 0.164 | 0.04 | 4.908 |
| 120 | 65.09 | 4.37 | 1.48 | 0.309 | 0.043 | 0.025 | 0.018 | 0.01 | 4.999 |
| 130 | 64.58 | 4.71 | 1.75 | 0.321 | 0.048 | 0.028 | 0.016 | 0.03 | 4.974 |
| 140 | 64.27 | 4.42 | 2.18 | 0.376 | 0.048 | 0.009 | 0.018 | 0.01 | 5.020 |
| 240 | 20.66 | 55.38 | 8.82 | 1.797 | 0.039 | 0.036 | 0.263 | 0.04 | 3.199 |
| 400 | 29.20 | 55.47 | 0.72 | 0.116 | 0.022 | 0.192 | 0.014 | 0.01 | 3.396 |
| Data | | | | | | | | | |
| ZONE | Mean(Fe) | Mean(SiO ₂) | Mean(Al ₂ O ₃) | Mean(K ₂ O) | Mean(P) | Mean(S) | Mean(Mn) | Mean(RD) | Mean(Ba) |
| 110 | 63.32 | 5.15 | 2.59 | 0.484 | 0.041 | 0.021 | 0.082 | 0.05 | 4.904 |
| 120 | 65.09 | 4.24 | 1.54 | 0.324 | 0.047 | 0.028 | 0.017 | 0.02 | 5.009 |
| 130 | 64.09 | 5.10 | 1.84 | 0.365 | 0.044 | 0.067 | 0.021 | 0.03 | 4.952 |
| 140 | 64.10 | 4.72 | 2.15 | 0.428 | 0.043 | 0.020 | 0.035 | 0.03 | 4.963 |
| 240 | 20.02 | 53.17 | 9.58 | 2.087 | 0.057 | 0.073 | 0.764 | 0.07 | 3.216 |
| 400 | 29.79 | 54.67 | 0.83 | 0.145 | 0.023 | 0.152 | 0.015 | 0.02 | 3.42 |
| Differences | | | | | | | | | |
| ZONE | Mean(Fe) | Mean(SiO ₂) | Mean(Al ₂ O ₃) | Mean(K ₂ O) | Mean(P) | Mean(S) | Mean(Mn) | Mean(RD) | Mean(Ba) |
| 110 | 0.03 | 0.48 | -0.23 | -0.03 | 0.00 | 0.00 | -0.08 | 0.01 | 0.00 |
| 120 | 0.00 | -0.12 | 0.06 | 0.01 | 0.00 | 0.00 | 0.00 | 0.01 | 0.01 |
| 130 | -0.49 | 0.39 | 0.09 | 0.04 | 0.00 | 0.04 | 0.00 | 0.00 | -0.02 |
| 140 | -0.17 | 0.30 | -0.03 | 0.05 | -0.01 | 0.01 | 0.02 | 0.02 | -0.06 |
| 240 | -0.64 | -2.21 | 0.76 | 0.29 | 0.02 | 0.04 | 0.50 | 0.03 | 0.02 |
| 400 | 0.59 | -0.80 | 0.11 | 0.03 | 0.00 | -0.04 | 0.00 | 0.01 | 0.02 |

Overall, the mean differences are acceptable, with the following exceptions:

Fe

- None, correlation is good overall

SiO₂

- Over-estimation by average absolute 2.2% for zone 240 (Shale)

Al₂O₃

- Under-estimation by average absolute 0.76% for zone 240 (Shale)
- Over-estimation by average absolute 0.23% for zone 110 (Conglomeratic ore)

K₂O

- Under-estimation by average absolute 0.29% for zone 240 (Shale)

P

- Under-estimation by average absolute 0.02% for zone 240 (Shale)

Mn

- Poor correlation between estimates and raw data averages for zone 240 Shale)

S

- Under-estimation by average absolute 0.04% for zone 240 (Shale)
- Under-estimation by average absolute 0.04% for zone 130 (Massive/Laminated ore)
- Over-estimation by average absolute 0.04% for zone 400 (BIF)

The analysis indicates that the grade estimation of zone 240 (the Shale) requires significant refinement. Fortunately, this does not affect the Mineral Resource estimates for 2025.

Total Oxide Validation

It must be acknowledged that no proof could be provided that the estimated Total Oxide ranges were validated ore compared against composited Total Oxide values.

Swath Plots

The plots (**Figure 73 to Figure 76**) illustrate average grades of composited raw data versus three different estimation methods (Ordinary Kriged, inverse distance squared and near-neighbourhood estimation methods). The average grades were calculated in 10 m wide swathes orientated north-south, east-west and vertically through the ore zones and then plotted on the figures overleaf.

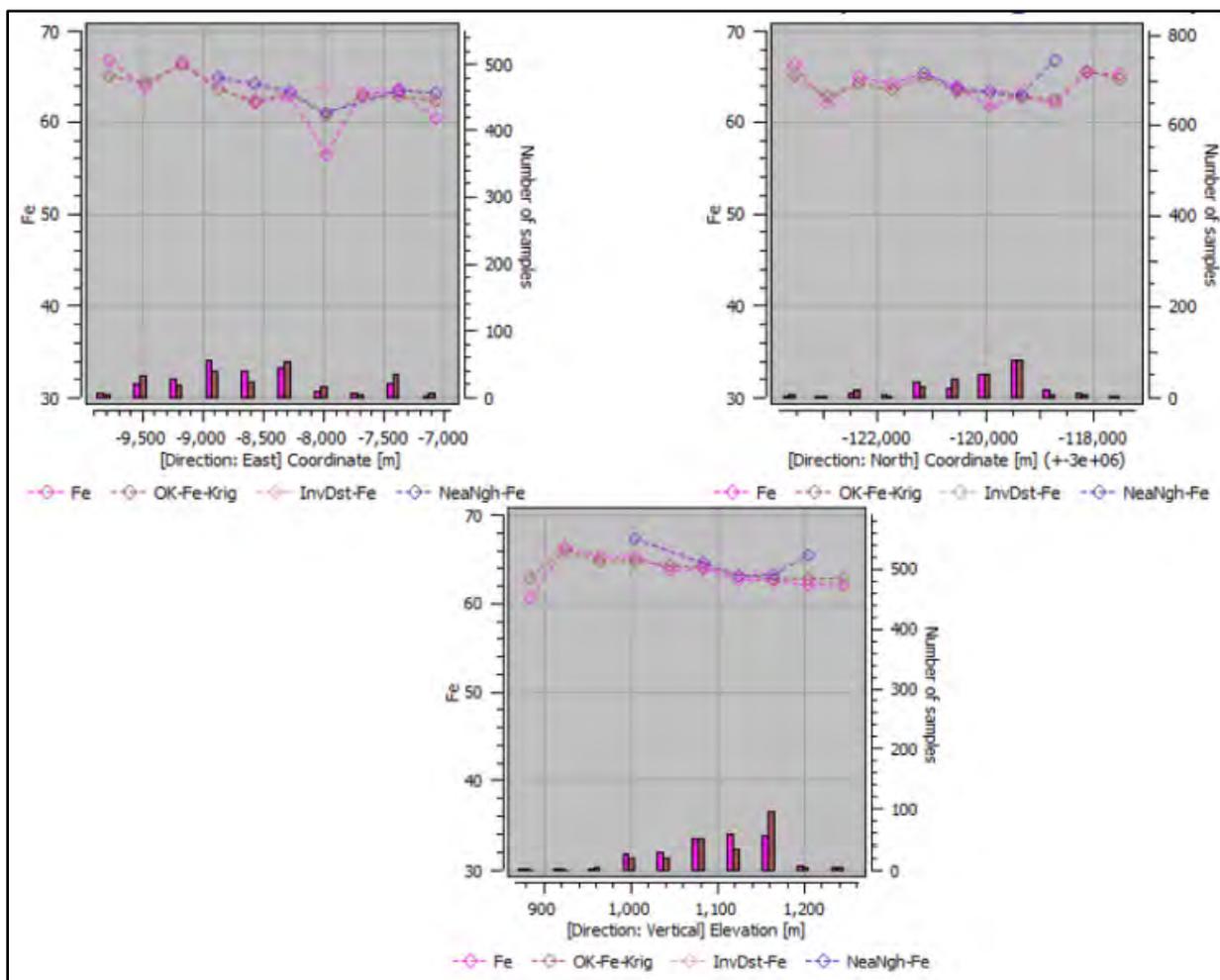


Figure 73: Swath plots for Conglomeratic ore domain

There is overall a good correlation between spatially estimated and composited data (averaged Fe) for Conglomeratic Ore.

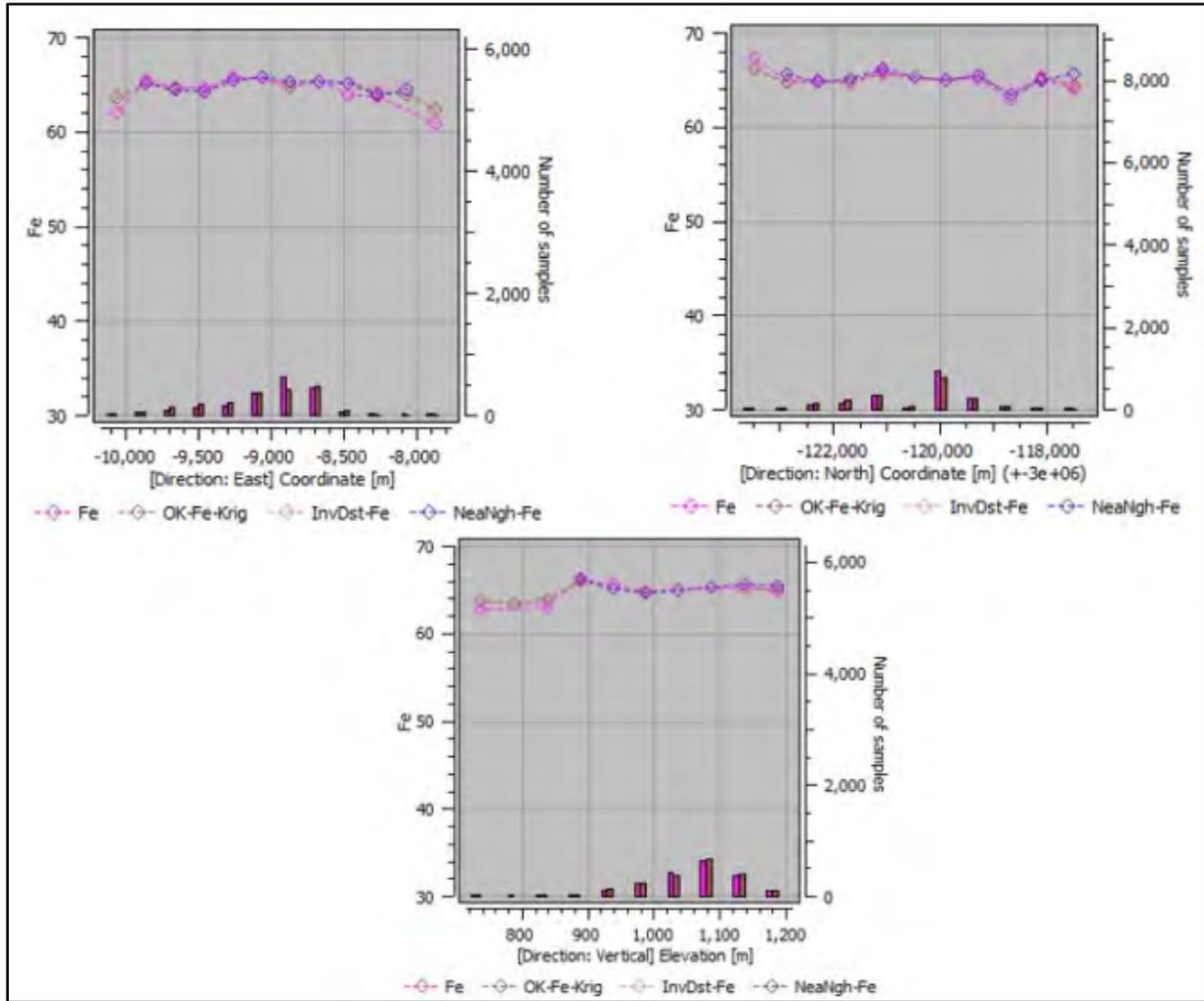


Figure 74: Swath plots for Laminated ore domain

Good correlation between spatially estimated and composited borehole sample data (Fe averages) for Laminated Ore is excellent.

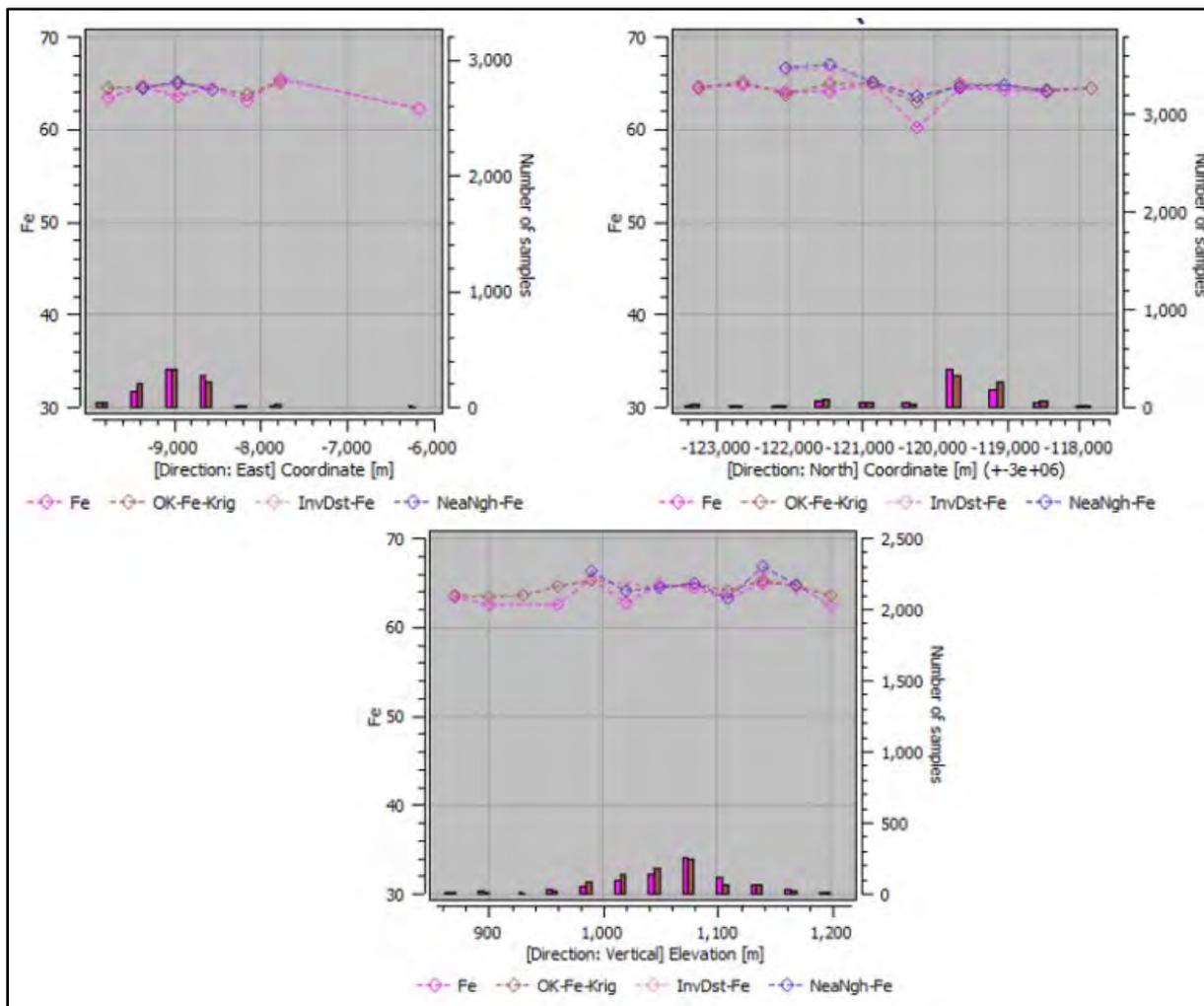


Figure 75: Swath plots for Massive ore domain

The correlation between spatially estimated and composited borehole sample data (Fe averages) for Massive Ore is good.

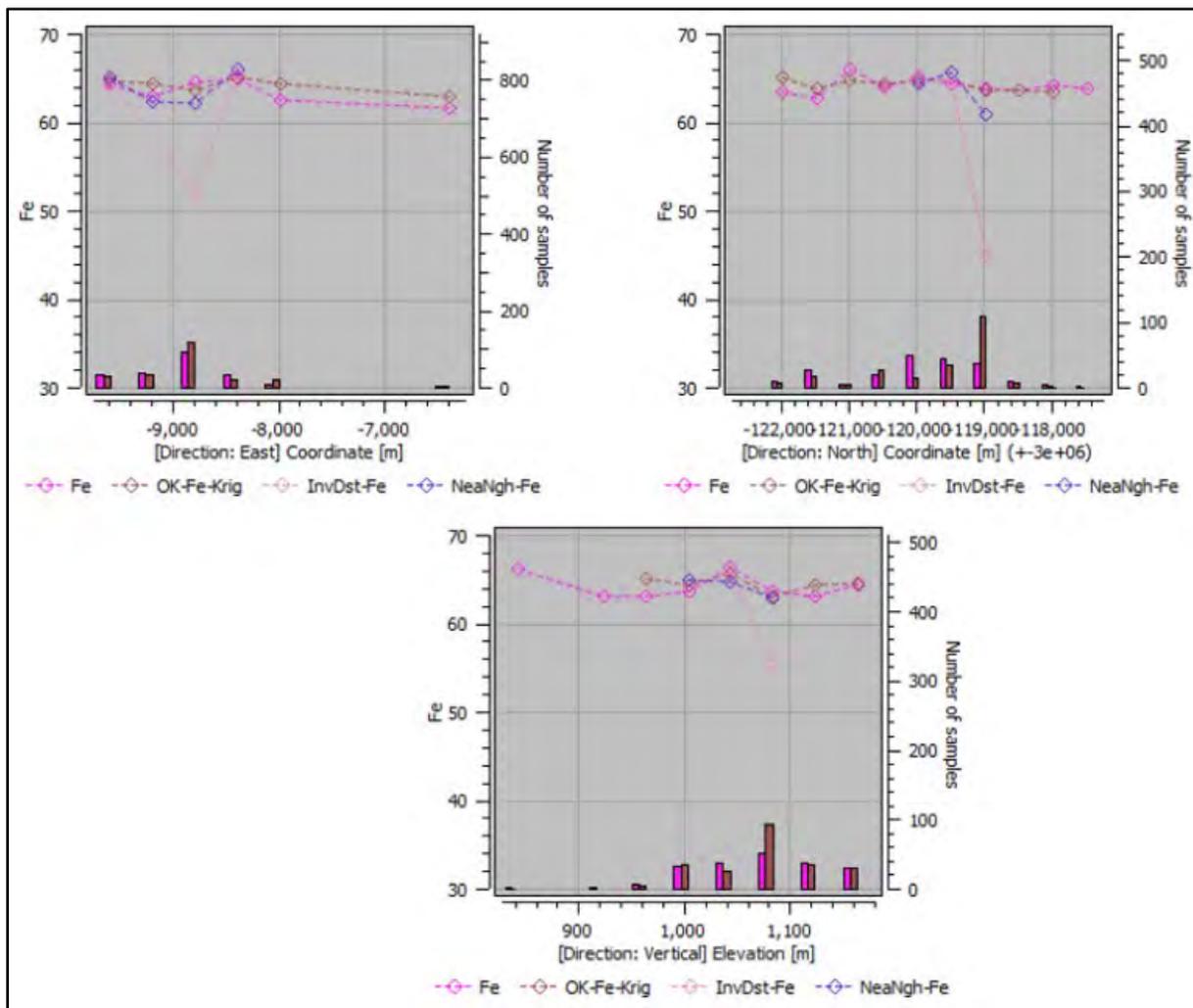


Figure 76: Swath plots for Brecciated ore domain

The correlation between spatially estimated and composited borehole sample data (Fe averages) for Brecciated Ore is acceptable.

Variable correlations

The correlation co-efficient between the composited raw assays and the estimated grades in the model were calculated for the high-grade zones. Results are summarised in **Table 53** overleaf.

Table 53: Correlation coefficients in the high-grade ore zones**Conglomeratic Ore**

| | Fe | SiO ₂ | Al ₂ O ₃ | K ₂ O | P | Mn | S | Ba | RD |
|--------------------------------|---------|------------------|--------------------------------|------------------|---------|---------|---------|---------|---------|
| Fe | 1.0000 | -0.9356 | -0.3337 | -0.2978 | 0.1589 | -0.1091 | -0.2032 | -0.2489 | 0.9513 |
| SiO ₂ | -0.9356 | 1.0000 | 0.1279 | 0.1561 | -0.1146 | 0.0468 | 0.2370 | 0.2172 | -0.9024 |
| Al ₂ O ₃ | -0.3337 | 0.1279 | 1.0000 | 0.8289 | -0.1696 | -0.2661 | -0.0973 | -0.1746 | -0.4306 |
| K ₂ O | -0.2978 | 0.1561 | 0.8289 | 1.0000 | -0.1367 | -0.3833 | 0.1007 | -0.1122 | -0.3855 |
| P | 0.1589 | -0.1146 | -0.1696 | -0.1367 | 1.0000 | -0.1324 | 0.2172 | 0.0571 | 0.1834 |
| Mn | -0.1091 | 0.0468 | -0.2661 | -0.3833 | -0.1324 | 1.0000 | -0.0992 | 0.3477 | -0.0009 |
| S | -0.2032 | 0.2370 | -0.0973 | 0.1007 | 0.2172 | -0.0992 | 1.0000 | 0.6367 | -0.1576 |
| Ba | -0.2489 | 0.2172 | -0.1746 | -0.1122 | 0.0571 | 0.3477 | 0.6367 | 1.0000 | -0.2206 |
| RD | 0.9513 | -0.9024 | -0.4306 | -0.3855 | 0.1834 | -0.0009 | -0.1576 | -0.2206 | 1.0000 |

Laminated Ore

| | Fe | SiO ₂ | Al ₂ O ₃ | K ₂ O | P | Mn | S | Ba | RD |
|--------------------------------|---------|------------------|--------------------------------|------------------|---------|---------|---------|---------|---------|
| Fe | 1.0000 | -0.8648 | -0.5891 | -0.5812 | 0.0358 | -0.1705 | 0.0122 | -0.1618 | 0.8027 |
| SiO ₂ | -0.8648 | 1.0000 | 0.1551 | 0.2680 | -0.1923 | 0.0905 | -0.1156 | -0.0058 | -0.6873 |
| Al ₂ O ₃ | -0.5891 | 0.1551 | 1.0000 | 0.8091 | 0.1290 | 0.2058 | -0.0424 | 0.1772 | -0.4278 |
| K ₂ O | -0.5812 | 0.2680 | 0.8091 | 1.0000 | 0.1693 | -0.0003 | -0.1493 | 0.1766 | -0.3271 |
| P | 0.0358 | -0.1923 | 0.1290 | 0.1693 | 1.0000 | -0.2087 | -0.1127 | 0.0245 | 0.0782 |
| Mn | -0.1705 | 0.0905 | 0.2058 | -0.0003 | -0.2087 | 1.0000 | 0.0533 | 0.0514 | -0.1805 |
| S | 0.0122 | -0.1156 | -0.0424 | -0.1493 | -0.1127 | 0.0533 | 1.0000 | 0.4796 | -0.0176 |
| Ba | -0.1618 | -0.0058 | 0.1772 | 0.1766 | 0.0245 | 0.0514 | 0.4796 | 1.0000 | -0.2068 |
| RD | 0.8027 | -0.6873 | -0.4278 | -0.3271 | 0.0782 | -0.1805 | -0.0176 | -0.2068 | 1.0000 |

Massive Ore

| | Fe | SiO ₂ | Al ₂ O ₃ | K ₂ O | P | Mn | S | Ba | RD |
|--------------------------------|---------|------------------|--------------------------------|------------------|---------|---------|---------|---------|---------|
| Fe | 1.0000 | -0.8728 | -0.3406 | -0.2167 | -0.0276 | -0.1546 | -0.1225 | -0.0085 | 0.8897 |
| SiO ₂ | -0.8728 | 1.0000 | -0.0994 | -0.1156 | -0.0067 | -0.0299 | 0.0566 | -0.0819 | -0.8185 |
| Al ₂ O ₃ | -0.3406 | -0.0994 | 1.0000 | 0.7351 | -0.0253 | 0.3221 | -0.0039 | 0.1253 | -0.2686 |
| K ₂ O | -0.2167 | -0.1156 | 0.7351 | 1.0000 | -0.3097 | 0.2146 | 0.0589 | 0.2075 | -0.1454 |
| P | -0.0276 | -0.0067 | -0.0253 | -0.3097 | 1.0000 | -0.0378 | -0.0550 | -0.1074 | -0.0231 |
| Mn | -0.1546 | -0.0299 | 0.3221 | 0.2146 | -0.0378 | 1.0000 | 0.0458 | 0.2428 | -0.0740 |
| S | -0.1225 | 0.0566 | -0.0039 | 0.0589 | -0.0550 | 0.0458 | 1.0000 | 0.1524 | -0.1007 |
| Ba | -0.0085 | -0.0819 | 0.1253 | 0.2075 | -0.1074 | 0.2428 | 0.1524 | 1.0000 | 0.1321 |
| RD | 0.8897 | -0.8185 | -0.2686 | -0.1454 | -0.0231 | -0.0740 | -0.1007 | 0.1321 | 1.0000 |

Brecciated ore

| | Fe | SiO ₂ | Al ₂ O ₃ | K ₂ O | P | Mn | S | Ba | RD |
|--------------------------------|---------|------------------|--------------------------------|------------------|---------|---------|---------|---------|---------|
| Fe | 1.0000 | -0.9036 | -0.8445 | -0.6200 | -0.1107 | -0.0083 | -0.0773 | -0.1453 | 0.8893 |
| SiO ₂ | -0.9036 | 1.0000 | 0.6225 | 0.4364 | -0.0641 | -0.0626 | 0.1352 | 0.0891 | -0.8567 |
| Al ₂ O ₃ | -0.8445 | 0.6225 | 1.0000 | 0.7161 | 0.3138 | 0.1206 | -0.0260 | 0.1657 | -0.7753 |
| K ₂ O | -0.6200 | 0.4364 | 0.7161 | 1.0000 | -0.1270 | 0.2891 | 0.1777 | 0.2840 | -0.7455 |
| P | -0.1107 | -0.0641 | 0.3138 | -0.1270 | 1.0000 | -0.3176 | -0.4462 | -0.2692 | 0.0811 |
| Mn | -0.0083 | -0.0626 | 0.1206 | 0.2891 | -0.3176 | 1.0000 | 0.6017 | 0.7830 | -0.2114 |
| S | -0.0773 | 0.1352 | -0.0260 | 0.1777 | -0.4462 | 0.6017 | 1.0000 | 0.8295 | -0.2887 |
| Ba | -0.1453 | 0.0891 | 0.1657 | 0.2840 | -0.2692 | 0.7830 | 0.8295 | 1.0000 | -0.3278 |
| RD | 0.8893 | -0.8567 | -0.7753 | -0.7455 | 0.0811 | -0.2114 | -0.2887 | -0.3278 | 1.0000 |

Albeit slightly lower than the composite correlations, the very strong positive correlation between Fe and RD is retained, as well as the strong positive correlation between Al₂O₃ and K₂O. The strong negative correlation between Fe and SiO₂ is also honoured.

10 GEOLOGICAL BLOCK MODELLING

The 2025 geological block model, from which the 2025 Mineral Resources were reported, was handed to Anglo American Strategic Planning Department for use in the compilation of the 2025 Kumba Resource Development Plan. The block model ID or filename is hk07202572025_v1.dm

10.1 SOFTWARE USED FOR BLOCK MODELLING

The volume block model was generated in *Datamine - Studio RM (64 bit) Version 1.12.12.0*. Wireframes defining the lithological domains were imported from *Seequent Leapfrog Geo Version 2023.1.1*. into the *Datamine* software. During import, the wireframes and collar files were converted to north-up space (X and Y co-ordinates were multiplied by (-1)). A sub-celled block model was constructed to provide accurate volume estimates of the geological interpretation.

10.1.1 Block Model Geometry

The physical dimensions of the total geological block model are:

- Model Origins X (-11,100) Y (-3,125,000) Z (500)
- Top of model: 1,400 m
- Bottom of model: 500 m.

The geological wireframes were imported from the Datamine solids model and used to build the volume block model with 40 m(X) x 40 m(Y) x 10 m(Z) parent cells.

The parent cells were subsequently sub-blocked to 5 m(X) x 5 m(Y) x 5 m(Z). The sub-celled blocks ensure accurate domain definition for later volume estimates.

10.1.2 Block Model Population

Populating the volume model followed the order defined in the table overleaf (**Table 54**) and the same order was followed for sample selection.

Table 54: Block model: build priority

| Rocktype | Priority |
|-----------------------|----------|
| Gamagara | 1 |
| Gabbro | 2 |
| diamactite | 3 |
| Andesitic Lava | 4 |
| Dolomite | 5 |
| Chert breccia | 6 |
| Banded Iron Formation | 7 |
| kalahari | 8 |
| Gamagara Shale | 9 |
| Brecciated ore | 10 |
| Massive Ore | 11 |
| Rythmic laminated ore | 12 |
| Conglomeratic Ore | 13 |

Primary faults were activated to be used as a hard boundary for estimation.

The parent blocks of all zones were populated during the estimation process. On submission to Mining, the model was sub-blocked to 5 m(X) x 5 m(Y) x 5 m(Z).

The question that always arises is how, in the case of a centroid model, sub-blocks near lithological domain boundaries are populated with grades. Kumba addresses this by estimating grades for a specific lithological domain into parent blocks which also extend beyond the lithological domain boundary. This means that for example for a high-grade ore and banded iron formation lithological contact, that parent blocks [40 m(X) x 40 m(Y) x 10 m(Z)] will overlap in the same three-dimensional space, one set populated with high-grade ore grade estimates and the other set, in the same spatial position, with banded iron formation grade estimations. When the two sets of parent blocks are sub-blocked into 5 m(X) x 5 m(Y) x 5 m(Z) cells, the cells with centroids falling in the high-grade ore domain will be assigned the grades as estimated for the parent block associated with the high-grade ore domain and the cells with centroids plotting in the banded iron formation will be assigned the grades as estimated for the parent block associated with the banded iron formation domain.

10.1.2.1 Validation of the block model volumes

The volume model fill was coloured by zone and reviewed on screen to assess the volume fill and suitability of the selected sub-cell sizing (**Figure 77**).

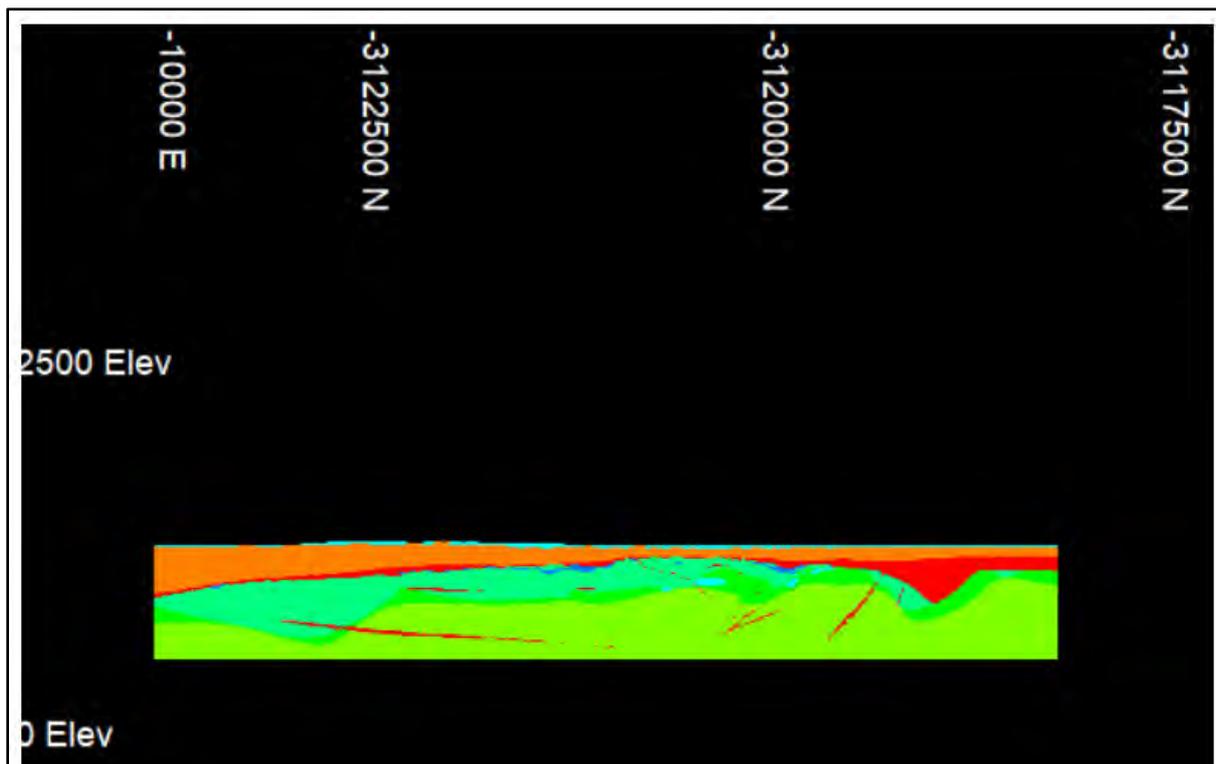


Figure 77: Block model with coloured zones/domains

No gaps between the zones were recorded.

Volumes between the block model and the solids model were compared and reported in **Table 35**. Differences are considered negligible.

The following attributes were captured in the block model (**Table 55**) and handed over to KIO Mining.

Table 55: Block Model attributes

| Block Model Attributes |
|------------------------|
| zcode |
| est_fe |
| est_sio2 |
| est_al2o3 |
| est_s |
| est_p |
| est_k2o |
| est_mn |
| est_ba |
| class |
| matclas_old |
| rescat |
| zone |
| deposit |

10.1.3 For in-house reporting purposes

Text removed.

10.1.4 Beneficiation Algorithm Assignment

The Mineral Resources declared for the Heuningkranz deposit did not consider any beneficiation algorithms, as only the high-grade, in-situ ores within the resource shell were declared as Mineral Resources. At this stage, it is assumed that the Mineral Resources will be processed and sold as DSO, i.e. not undergo any beneficiation or upgrading.

11 GEOLOGICAL CONFIDENCE CLASSIFICATION

Kumba Iron Ore provides its Competent Persons (CPs) with a guideline to classify geological confidence. The approach is based on a scorecard system. It recommends that parameters be identified to measure geometric and grade continuity. These parameters must be spatially quantified and indexed. The parameters are then weighted as per the Competent Person's understanding of its relevance/impact. The process delivers a grade continuity index plus a geometric continuity index which are captured as attributes for every cell in the block model. The grade and geometry continuity indices are again weighted by the CP's ranking of its relevance/impact to derive a single geological confidence index per cell. The Competent Person has the freedom to downgrade classifications based on his/her understanding of the geological complexity, the amount and the quality of data informing the estimates.

The Heuningkranz properties are included in the Kolomela mining right. In future, the Mineral Resources of Heuningkranz will be included and reported as part of the Kolomela Mine Mineral Resource portfolio. Consequently, Kolomela's geological confidence classification methodology has been applied for this report and the CP responsible for this report, is also responsible for Kolomela's 2025 Mineral Resource estimates.

11.1 Confidence Assignment

It frequently happens that some blocks within a geological block model are not estimated during a Kriging run. This is often due to a paucity of sample data within the estimation neighbourhood and is addressed by re-kriging the un-estimated blocks, using an inflated search neighbourhood, to include more sample data.

A search neighbourhood extending beyond the range of the variograms, will include samples that are not spatially correlated to the estimated block, and the Kriging process is essentially reduced to a moving average. It is thus important that blocks estimated with enlarged search neighbourhood Kriging runs, receive a lower classification score.

In the case of Heuningkranz, blocks estimated within a specific ore domain, with a neighbourhood equal to the Fe variogram range, were classified as described in **Section 9.4.4.4** of this report

An Inferred 2 classification (extrapolated ore) was assigned to all ore blocks populated during the second Kriging run, based on search radius of not more than twice the variogram's range.

Ore blocks that remained un-estimated after the second Kriging run, received a default grade and RD as defined per ore type and were assigned an Inferred 3 (extrapolated ore) classification as described in **Section 9.4.4.4.** of this report.

11.2 Scorecard

11.2.1 Grade Continuity

The parameters considered to estimate the confidence in the grade estimations are:

- The Slope of Regression (SOR) for %Fe:** The SOR is the slope of the regression line between the actual block grades and the estimated block grades. A slope of 1 indicates a lack of conditional bias. It is consistent with an estimate with a low Kriging variance and a low Lagrange parameter, thus implying a high confidence in the estimate. This confidence depends on the data used. If the sample data is biased, the estimate will unfortunately propagate these errors, so a high SOR implies (but does not guarantee), a block estimate with low error. The overall risk in the grade estimate of a block with an SOR close to 1, is much lower than that of a block with a low SOR.

The SOR is calculated using the following formula:

$$\text{SOR} = (\text{Block Variance} - \text{Kriging Variance} + |\mu|) / (\text{Block Variance} - \text{Kriging Variance} + |2\mu|).$$

Where:

μ is the Lagrange multiplier used to condition the kriging matrix.

The SOR is then indexed for each block using the following table (**Table 56**):

Table 56: Calculated SOR vs SOR Index

| SOR (grade) | SOR |
|-------------|---------|
| 9 | 0.8-1.0 |
| 7 | 0.6-0.8 |
| 5 | 0.4-0.6 |
| 3 | 0.2-0.4 |
| 1 | 0.0-0.2 |

- Sample Representivity:** A Sample Representivity Index Matrix has been developed by KIO whereby each assay is rated according to the precision of the primary sampling, sample preparation and sample analysis (**Table 57**). Parameters considered to be critical to the accuracy of the assay are ranked and weighted, e.g. sample type, sample recovery, etc.

Table 57: KIO sample representivity index

| SAMPLE REPRESENTIVITY ATTRIBUTE | REPRESENTIVITY RATING | | | | | WEIGHT % |
|--|--|--|--|--|--|----------|
| | 1 | 3 | 5 | 7 | 9 | |
| PRIMARY SAMPLING | | | | | | |
| 1 Sample Type | Grab | Percussion | Reverse Circulation | Sonic / Channel | Core | 20 |
| 2 Sample Position | Final Collar Coordinates that cannot be verified by Qualified Surveyor | | Final Collar Coordinates by Differential GPS referenced against based station Surveyed in by Qualified Surveyor. | Collar Coordinates by Qualified Surveyor and no Downhole Deflection or Downhole Deflection by Magnetic tool | Collar Coordinates by Qualified Surveyor and Downhole Deflection by Gyro | 20 |
| 3 Material Recovery of sample | Length Derived Total Core Recovery (LDR) LDR < 35% or 125 < LDR or Mass Derived Recovery (MDR) MDR < 30% | Length Derived Total Core Recovery (LDR) 35% ≤ LDR < 50% or 115 < LDR ≤ 125 or Mass Derived Recovery (MDR) 30% ≤ MDR < 50% | Length Derived Total Core Recovery (LDR) 50% ≤ LDR < 75% or 105 < LDR ≤ 115 or Mass Derived Recovery (MDR) 50% ≤ MDR < 65% | Length Derived Total Core Recovery (LDR) 75% ≤ LDR < 90% or 100 < LDR ≤ 105 or Mass Derived Recovery (MDR) 65% ≤ MDR < 80% | Length Derived Total Core Recovery (LDR) 90% ≤ LDR ≤ 100% or Mass Derived Recovery (MDR) 80% ≤ MDR ≤ 100% | 20 |
| SAMPLE PREPARATION | | | | | | |
| 4 Status of sample preparation QC metadata | No sample preparation metadata | | Sample part of batch that failed Kumba Tier 3 QC Criteria but conducted according to Kumba sample protocol. | Sample part of batch that passed Kumba Tier 3 QC criteria and the split and mass loss data is available and not met as per criteria or not available in the borehole database for the specific sample. | Sample part of batch that passed Kumba Tier 3 QC criteria and the split and mass loss data is available and met as per criteria in the borehole database for the specific sample. | 20 |
| SAMPLE ANALYSES | | | | | | |
| 5 Status of sample analyses QC metadata | Sample has no QC metadata to indicate the status of the assay representivity | Sample is part of batch that failed Kumba Tier 1 QC criteria and was analysed using XRF pressed powder pellet method. | Sample is part of batch that failed Kumba Tier 1 QC criteria and was analysed using XRF fused bead method. | Sample is part of batch that passed Kumba Tier 1 QC criteria and analysed using XRF pressed powder pellet method. | Sample is part of batch that passed Kumba Tier 1 QC criteria and was analysed using XRF fused bead method or wet chemical analyses method | 10 |
| 6 Total Oxide (TO) Percentage of sample assay | Using the Laboratory Reported Total Oxide (LTO) LTO < 90% or LTO > 105% or if LTO is not available and the Kumba calculated Total Oxide percentage (CTO) is used CTO < 90% or CTO > 105% | Using the Laboratory Reported Total Oxide (LTO) 90% ≤ LTO < 93% or 104% < LTO ≤ 105% or if LTO is not available and the Kumba calculated Total Oxide percentage (CTO) is used 90% ≤ CTO < 92% or 104% < CTO ≤ 105% | Using the Laboratory Reported Total Oxide (LTO) 93% ≤ LTO < 96% or 103% < LTO ≤ 104% or if LTO is not available and the Kumba calculated Total Oxide percentage (CTO) is used 92% ≤ CTO < 95% or 103% < CTO ≤ 104% | Using the Laboratory Reported Total Oxide (LTO) 96% ≤ LTO < 98% or 102% < LTO ≤ 103% or if LTO is not available and the Kumba calculated Total Oxide percentage (CTO) is used 95% ≤ CTO < 97% or 102% < CTO ≤ 103% | Using the Laboratory Reported Total Oxide (LTO) 98% ≤ LTO ≤ 102% or if LTO is not available and the Kumba calculated Total Oxide percentage (CTO) is used 97% ≤ CTO ≤ 102% | 10 |

Maximum Score Achievable for Sample Representivity (SR) = [(20 x 9) + (20 x 9) + (20 x 9) + (20 x 9) + (10 x 9) + (10 x 9) = 900

Minimum Score Achievable for SR = 100

Index to be assigned for sample representivity (SR) for later stage Mineral Resource Classification

751 to 900 equals a 9 SR Index

601 to 750 equals a 7 SR Index

401 to 600 equals a 5 SR Index

201 to 400 equals a 3 SR Index

100 to 200 equals a 1 SR Index

These rankings or index figures are then grouped by means of assigning weights to each index figure. A workshop involving Technical Specialist input from each Kumba site has recommended that the weights assigned to the parameters must consider Sampling Theory. Thus, errors made in the beginning of the sampling value chain during primary sampling (sample type, sample position and sample recovery) are orders of magnitude bigger than those made at the end of the sampling value chain, e.g. errors during assaying. The weights are assigned accordingly:

- primary sampling - 3 parameters, each with a weight of 20
- sample preparation - 1 parameter with a weight of 20
- sample assaying - 2 parameters, each with a weight of 10

One Sample Representivity Index (SRI) value for each sample is captured in the *acQuire™* borehole database based on the above calculation.

The Sample Representivity Index figures are then estimated spatially. The SRI figure is assigned to every estimated parent block in the geological block model using the variography and search neighbourhood of %Fe. Kumba is in the process of refining this spatial assignment of SRI as the figure is not additive and spatial estimation must consider this.

11.2.2 Geometric Continuity

The confidence in the geometric continuity of the orebody is determined by considering the following parameters:

- **Distance to closest sample (DST):** This measure assumes that geology and grade closer to a sample point, is more confidently interpreted, than geology further removed from samples. The distance from a block centroid to the closest sample is calculated and the measure is then defined, applying a sliding scale such that blocks which include samples receive the highest score (9) and blocks a 100 m and more away receive a score of 0 (**Table 58**).

Table 58: Ranking of Distance to closest sample

| DST(geom) | Normalised Distance to Closest Sample |
|-----------|---------------------------------------|
| 9 | 0.7 to 1.0 |
| 7 | 0.5 to 0.7 |
| 5 | 0.3 to 0.5 |
| 3 | 0.1 to 0.2 |
| 1 | 0 to 0.1 |

- **Variability in Thickness (DIM):** This parameter measures the variability in thickness of the orebody as an indicator of dimensional complexity. The range in thickness within a 5 m x 5 m moving search neighbourhood is calculated and assigned to the central block. This range is then scaled to a 0 to 9 index using the maximum thickness as a limiting factor (**Table 59**).

Table 59: Ranking of Thickness variability

| DIM(geom) | Normalised Range in Thickness |
|-----------|-------------------------------|
| 9 | 0.8 to 1.0 |
| 7 | 0.6 to 0.8 |
| 5 | 0.4 to 0.6 |
| 3 | 0.2 to 0.4 |
| 1 | 0 to 0.2 |

- **Variability in Dip (STR):** This is an indication of structural complexity by measuring the variability in dip of the orebody. The range in thickness within a 5 m x 5 m moving search neighbourhood is calculated and assigned to the central block. This range is then scaled to a 0 to 9 index (**Table 60**) using the maximum dip as a limiting factor.

Table 60: Ranking of dip variability

| STR(geom) | Range in Dip (degrees) |
|-----------|------------------------|
| 9 | 0 to 10 |
| 7 | 10 to 20 |
| 5 | 20 to 30 |
| 3 | 30 – 50 |
| 1 | 50 to 90 |

- **Density Measurement:** The accuracy of the measure is ranked according to the methodology employed e.g. 9 = bulk density Archimedes type measurement, 7 = pulp density measurement, 5 = estimated RD, 3 = default RD (**Table 61**). These RD factors are then spatially estimated using the relevant RD variography and search neighbourhood parameters. The final RD(geom) index is captured in the parent cell.

Table 61: RD ranking

| RD(geol) | Estimated RD(factor) |
|-----------------|---------------------------------|
| 9 | 7 to 9 |
| 7 | 5 to 7 |
| 5 | 4 to 5 |
| 3 | 3 to 4 |

The parameters defining grade and geometric continuity, with their weightings, are then classified into Measured, Indicated and Inferred confidence thresholds, as depicted in **Figure 78** overleaf:

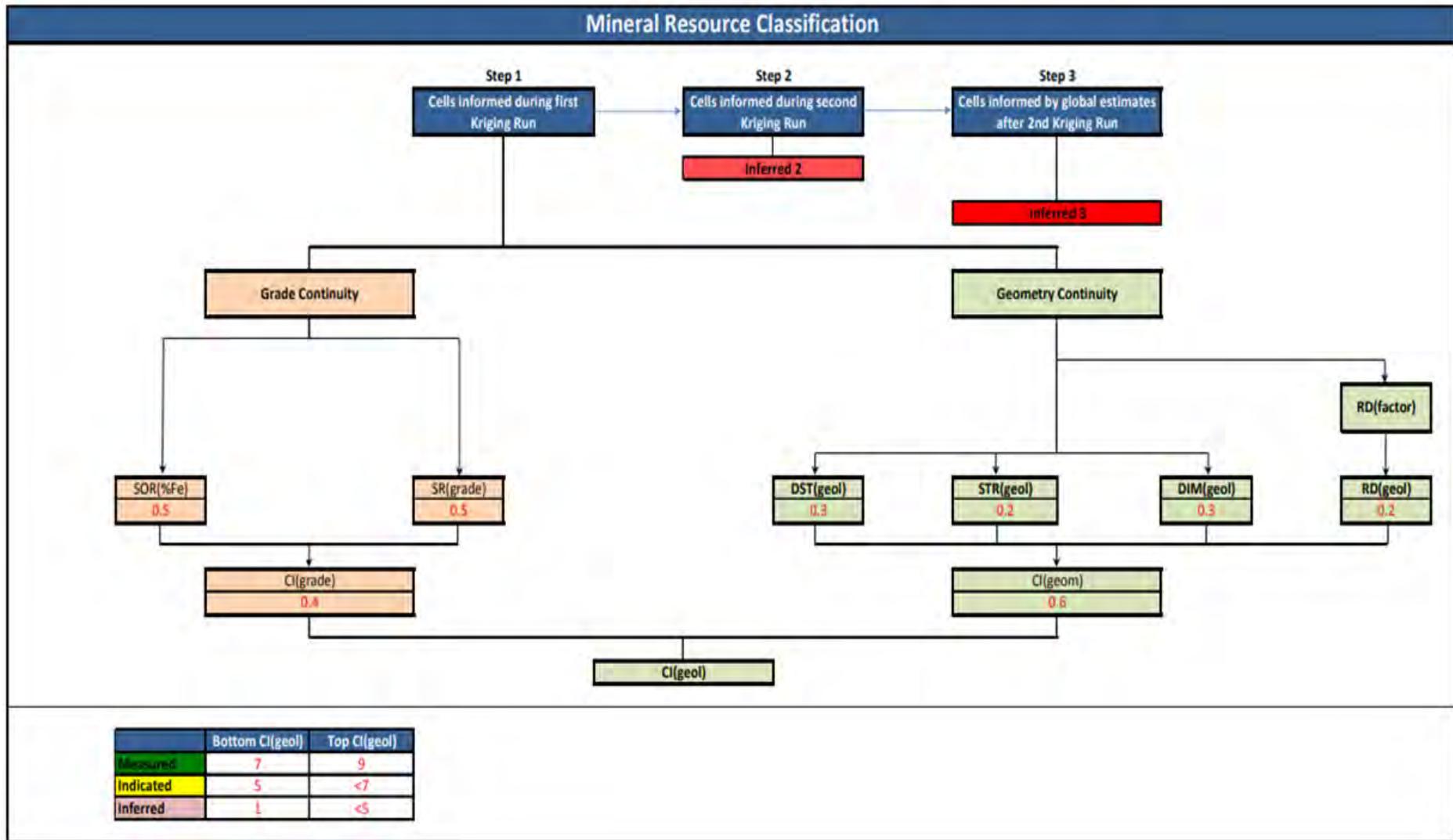


Figure 78: Summary of the KIO Geological Confidence Classification system applied at Heuningkranz

11.3 CP Override

Despite the use of the latest modelling software versions to build the geological solids model, the CP for Heuningkranz Mineral Resources remained uncomfortable with the unbroken interpolation and extrapolation of the orebody domains. In his expert opinion, the geology model did not accurately reflect the lensoid/fractured nature of the deposit. The CP, however, does not believe the overall impact on Mineral Resource tonnage estimates will be material – especially when one considers there was only a 5% volume impact between the 2018 and 2023 model updates, with numerous additional borehole data.

To mitigate any potential risk to the tonnage estimates, the CP applied his/her prerogative and downgraded all Measured Mineral Resources as classified by the scorecard approach to Indicated Mineral Resources.

Subsequent to the above, Kumba in 2025 introduced an Equivalent Grid (EQG) Statistic parameter to its confidence classification system. The EQG standardises the approach and assists the CPs, if downgrading of Measured Mineral Resources to Indicated, and Indicated Mineral Resources to Inferred Mineral Resources, is considered necessary.

The EQG analysis is designed to enhance the accuracy of a resource estimate. It does this by creating detailed grids that represent the spatial distribution of grade within the deposit. The EQG analysis identifies areas within the different grids, where data points or samples are sparse. These areas are more likely to have a higher uncertainty in the resource estimate. The spatial continuity of this data is then assessed and areas with poor spatial continuity may require downgrading, as it is directly correlated to the data density.

The EQG is calculated by evaluating the data (drillhole samples), in relation to a discrete point in the orebody (**Figure 79**). The evaluation considers the three closest data points to the target. Only one datapoint per drillhole (orebody intercept) is selected. An average three-dimensional distance to the target location is calculated from the selected data points, and a subsequent square root value is taken, to give the final EQG value for the target location.

Figure removed.

Figure 79: For in-house reporting purposes

Due to the dense drilling of the orebodies, a 50 m grid reference was applied at Heuningkranz. The equivalent grid statistic was calculated for every grid location in the target.

The change in Endowment high-grade ore tonnages per confidence class, after application of the EQG system is illustrated below in **Table 62** below:

Table 62: EQG-based downgrading of Geological Confidence of Heuningkranz Mineral Resources

| Confidence Class | KIO Scorecard | EQG Downgrade | Difference |
|------------------|---------------|---------------|------------|
| | Mt | Mt | % |
| Measured | 0 | 0 | 0 |
| Indicated | 69.6 | 62.1 | -11 |
| Inferred 1 | 2.3 | 8.7 | >100 |
| Inferred 2 | 2.8 | 3.9 | 40 |
| Inferred 3 | 0.7 | 0.7 | 0 |

The EQG system had a moderate impact on the classification of high-grade ore Mineral Resources. In total, 11% of Indicated Mineral Resources were downgraded to Inferred and Inferred 1 Mineral Resources.

The final confidence classification of the Heuningkranz ore deposits is illustrated in **Section 7.3.2 (Figures 19, 21 and 23)** reported in **Table 64** and **Table 67**.

12 MINERAL ENDOWMENT STATEMENTS

12.1 Period of Reporting

This is the first-time reporting of the Heuningkranz Mineral Resources.

The Mineral Resources quoted in this document were included in the 2025 Kolomela Resource Statement. The estimates quoted in this report represent those remaining for Heuningkranz as at 31 December 2025.

12.2 Reporting Governance

The Heuningkranz Mineral Resource reporting is governed by the Kumba Resource and Reserve reporting framework as summarised in **Figure 81** overleaf. Kumba Iron Ore is a listed Minerals Company on the Johannesburg Stock Exchange (“JSE”). The company complies with Section 12.13 of the JSE listing rules which requires strict adherence to the SAMREC Code when reporting Mineral Resources and Mineral Reserves.

The JSE Listing Rules and SAMREC Code requirements regarding Resource and Reserve reporting are internalised via the *Anglo American plc Group Policy for Reporting of Ore Reserves and Mineral Resources*, supported by a group technical standard (AA_GTS_22) and associated *Requirements Document (AA_RD_22_25 Ver 15)* as well as the *Kumba Iron Ore Mineral Resource and Ore Reserve Reporting Policy*. These documents stipulate standardised reporting requirements and processes, which in turn, are supported by Kumba site-specific Reporting Templates. The latter are derived from, and therefore assumed to be aligned with, the SAMREC Code.

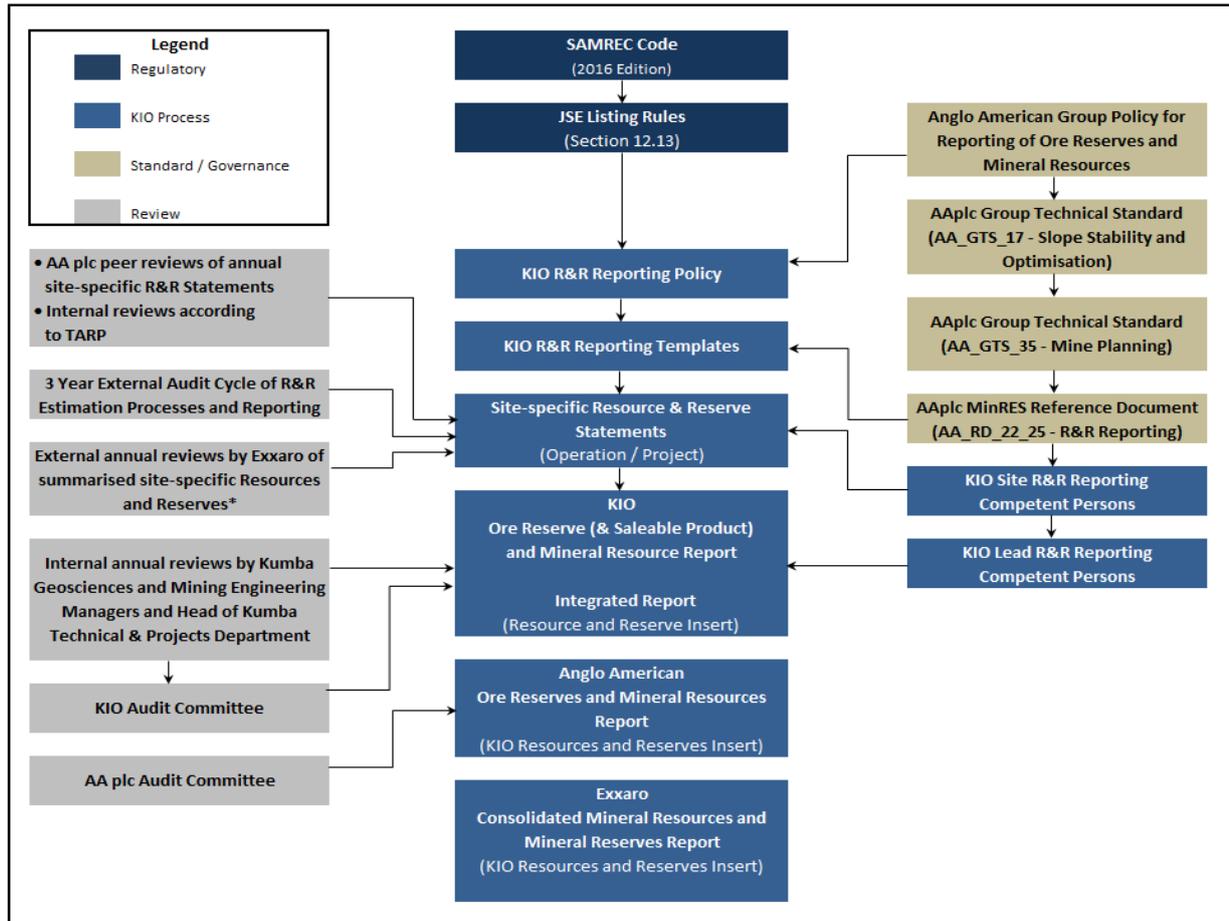


Figure 80: Kumba Iron Ore Resource and Reserve Reporting Governance Framework

12.3 Breakdown of Mineral Endowment (Points of Reference)

Kumba Iron Ore requires each site to separate the Mineral Endowment contained within the site-specific mining and/or prospecting right boundaries into Mineral Resources and Mineral Inventory:

Mineral Resources, is that portion of the mineralisation:

- that has been spatially defined by a 3D geological model primarily informed by boreholes with assayed samples intersecting the ore portions declared as Mineral Resources,
- of which the confidence in the tonnage and grade estimates have been spatially classified (Measured, Indicated, Inferred and Inferred extrapolated) in the same 3D geological model in terms of geological and grade continuity,
- constrained to occur within a spatially defined revenue factor 1 resource shell (derived during pit optimisation), to demonstrate reasonable prospects for eventual economic extraction (RPEEE), and
- reported above a specified cut-off that considers the beneficiation potential of the ore.

A Mineral Resource, as declared by Kumba Iron Ore, is thus not an inventory of all mineralisation drilled or sampled, regardless of cut-off grades, likely mining dimensions, location or continuity.

Figure removed.

Figure 81: For in-house reporting purposes

12.4 Reasonable Prospects of Eventual Economic Extraction (RPEEE)

Mineral Resources are declared exclusive of Ore Reserves, i.e. the Mineral Resources are additional to, or in excess of, Ore Reserves. In the case of Heuningkranz, it is the first time that Mineral Resources are declared for the deposit, and since no Ore Reserves are currently declared, the exclusive Mineral Resources equals the inclusive Mineral Resources.

Apart from a 61% Fe cut-off grade at Heuningkranz, which is suitable for the DSO processes at Kolomela Mine, the in-situ Mineral Resources are spatially distinguished from other in-situ mineral occurrences, by applying a resource shell.

The resource shell for Heuningkranz was derived during the 2025 annual pit optimisation process conducted on the 2025 validated 3D mining block model [10 m(X) x 10 m(Y) x 5 m(Z) resolution] derived from the 2025 geological block model [5 m(X) x 5 m(Y) x 5 m(Z) resolution]. A selective mining unit or practical mining unit size (which accounts for dilution and mining loss) of 10 m(X) x 10 m(Y) x 5 m(Z) was selected for Heuningkranz.

The optimisation process furthermore considered foreseen long-term revenues versus site-specific, operating and production costs (mining and beneficiation) plus the cost of sales.

Long-term price: Kumba prefers not to disclose its forward-looking iron ore price and therefore provides a breakdown of how it is derived. The iron ore price (denoted in US\$/tonne terms), as provided by the *Anglo American* Strategy Department, representing Anglo American's view of the long-term Platts 62% price, is adjusted by Kumba to convert it from a general market figure to a site-specific figure used to define current and eventual economic extractability for each operation:

The first adjustments made are price adjustments from the cost and freight (CFR) 62% Fine Iron Ore China price (Real, LT US\$/tonne) to the CFR Kumba product price in China (Real, LT US\$/tonne). These adjustments are premiums for higher Fe content and Lump products, penalties for gangue adjustments and any adjustment due to Kumba price realisations achieved in the market. This represents the CFR Kumba product price in China (Real, LT US\$/tonne).

The second adjustment is the sea freight adjustment (including estimated port and demurrage costs) and is done to reflect the long-term Kumba product price at Saldanha (Kumba's export harbour) in US\$/tonne FOB terms.

Once the product prices are calculated in US\$/tonne FOB terms, the long-term real exchange rate (also provided by the *Anglo American* Strategy Department) is applied to convert the price to a Rand/tonne FOB Saldanha base.

To calculate the Rand/tonne free-on-rail (FOR) price for the products, the long-term rail cost is subtracted for each of the sites. The rail cost includes related logistics and marketing costs.

As a final adjustment, contractual obligations are considered to derive what is termed an effective site market price in Rand/tonne (FOR). This equates to a RF 1 pit shell price.

Costing - Cost assumptions are based on site-specific averages of the first three years of the operational budget, escalated over time using RSA and USA consumer price indices. Costs applied in pit optimisation consist of three main components:

- Mining cost (expressed as Rand/tonne mined)
- Processing cost (expressed as Rand/tonne processed, and comprises of plant and services costs)
- Selling cost (expressed as Rand/tonne product and consists only of royalties – calculated as 4% of the selling price).

Mining cost is calculated and updated during the annual budget process and is driven by mining activity. The cost is made up of petroleum products, blasting material, drilling equipment, other consumables, energy cost, general expenses, maintenance cost and outside services. It is zero based and is escalated using USA CPI factors/RSA CPI factors into nominal terms. In addition, a mining cost adjustment factor based on cycle times was applied to cater for pit progress (longer hauling distances) over time.

For the pit optimisation, the nominal mining cost for the Kolomela three-year budget period was converted back to real terms and a weighted average was calculated for the three-year period. In the same manner, mining stay-in-business cost was calculated and added to the mining operational expenditure.

Processing cost considered the DSO crushing and screening plant costs (and includes fixed and variable but excludes stay-in-business cost) in nominal terms over the five-year budget period into a weighted average real Rand/tonne feed for the five-year period using the approved USA CPI factors/RSA CPI factors.

The services cost (on-mine services) is also a weighted average real cost Rand/tonne feed and was added to the plant cost to arrive at the processing cost that was used in the pit optimisation.

Selling cost is purely royalty cost and is calculated by applying 4% to the long-term real FOR Rand/tonne price.

Lerchs-Grosmann algorithms were then applied to the 3D mining models to derive a series of incremental, nested pit shells. The optimal shell enclosing the Mineral Resource was chosen at a 1 revenue factor, i.e. a break-even scenario where the cost of mining, processing and selling an ore block equals the revenue generated by the block.

The resource shell was converted to a practically designed 1.0 revenue factor pit layout, enclosing that portion of the orebody which Kumba considers a Mineral Resource. This resource shell was subsequently applied to the geological block model. The classified ore occurring inside the practical Heuningkranz resource shell, is thus considered to have RPEEE and is reported as the in-situ Mineral Resource.

This process, therefore, considers site-specific mining and beneficiation practices as well as realistic pricing and costs. The applicable macro-economic parameters applied in the 2025 pit optimisation process is summarised in **Table 63** below:

Table 63: For inhouse reporting purposes

Table removed.

12.5 For in-house reporting purposes

Text removed.

Figure removed.

Figure 82: For in-house reporting purposes

12.6 Resource figures are not exact

The Heuningkranz Mineral Resource figures are derived from spatial interpretation and estimation processes. These processes are informed by technical assumptions and economic forecasts, many of which may not materialise as expected. By their nature, the Mineral Resource figures quoted in this statement are thus inherently subject to some level of risk and uncertainty. They may be influenced by unforeseen future events, that could cause actual figures to differ significantly from the estimated figures.

In-situ Mineral Resources, by way of the methods they are derived (converting spatially separated data points into large-scale, semi-continuous volumetric information), are not precise and should be considered as estimates and not finite calculations.

12.7 Exclusive Mineral Resource Statement

As at 31 December 2025, the Heuningkranz Mineral Resource is estimated at 75.4 Mt at an estimated average in-situ grade of 65.1% Fe.

The Heuningkranz 2025 exclusive Mineral Resource Statement is summarised per confidence class in **Table 64** and per high-grade ore type in **Table 65** overleaf.

Table 64: 2025 Heuningkranz Exclusive Mineral Resource Statement (per confidence class)

| Resource Category | Ore Type | % Attr. To KIO | 2025 | | | | | | | |
|--|-----------|----------------|-----------------------|---------------------|------------------------------------|--|----------------------------------|--------------------|---------------------|--------------------|
| | | | Fe Cut-off Grade: 61% | | | | | | | |
| | | | Total Tonnes (Mt) | Average Grade (%Fe) | Average Grade (%SiO ₂) | Average Grade (%Al ₂ O ₃) | Average Grade (K ₂ O) | Average Grade (%P) | Average Grade (%Mn) | Average Grade (%S) |
| In-situ Mineral Resource | | | | | | | | | | |
| Measured (outside LoAP) | Haematite | 75.4 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.000 | 0.000 | 0.000 |
| Indicated (outside LoAP) | | | 62.1 | 65.1 | 4.2 | 1.60 | 0.33 | 0.050 | 0.016 | 0.017 |
| Total Measured and Indicated (outside LoAP) | | | 62.1 | 65.1 | 4.2 | 1.60 | 0.33 | 0.050 | 0.016 | 0.017 |
| Inferred (outside LoAP) | | | 13.3 | 65.0 | 4.3 | 1.71 | 0.32 | 0.046 | 0.019 | 0.020 |
| Total Inferred | | | 13.3 | 65.0 | 4.3 | 1.71 | 0.32 | 0.046 | 0.019 | 0.020 |
| Total Exclusive Mineral Resource | | | 75.4 | 65.1 | 4.2 | 1.62 | 0.33 | 0.049 | 0.017 | 0.018 |

Footnotes to Table 64

- Mineral Resources are reported as additional to Ore Reserves.
- The tonnages are quoted in dry metric tonnes and million tonnes is abbreviated as Mt.
- Rounding of figures may cause computational discrepancies.
- Mineral Resource figures are reported at 100% irrespective of percentage attributable Exxaro ownership.
- The term “outside LoAP” means that none of these Mineral Resources are considered in the 2025 Kolomela Life-of-Asset Plan.
- While it would be reasonable to expect that the majority of Inferred Mineral Resources would upgrade in confidence to Indicated Mineral Resources with continued exploration, due to the uncertainty of Inferred Mineral Resources, it should not be assumed that such upgrading will always occur on a one-to-one basis. It must be noted that 4.6 Mt of the 13.3 Mt Inferred Mineral Resources is extrapolated.

The Heuningkranz Mineral Resources per high-grade ore type are presented below in **Table 65**.

Table 65: 2025 Heuningkranz Exclusive Mineral Resources per high-grade ore lithology

| Economic cut-off | Site Name | Lithology | 2025 | | | | | | | |
|-----------------------|--------------|-------------------|---|-------------------|---------------------------------|-------------------|-------------|--------------|--------------|--------------|
| | | | In situ High-grade Ore cut-off: Fe ≥ 61% | | | | | | | |
| | | | Total Tonnes (Mt) | Average Grade | | | | | | |
| | | | %Fe | %SiO ₂ | %Al ₂ O ₃ | %K ₂ O | %P | %Mn | (%S) | |
| Inside Resource Shell | Heuningkranz | Laminated Ore | 47.6 | 65.4 | 4.0 | 1.45 | 0.32 | 0.049 | 0.014 | 0.016 |
| | | Massive Ore | 21.0 | 64.6 | 4.8 | 1.75 | 0.31 | 0.050 | 0.016 | 0.022 |
| | | Brecciated Ore | 3.5 | 65.0 | 3.9 | 2.08 | 0.34 | 0.049 | 0.022 | 0.010 |
| | | Conglomeratic Ore | 3.3 | 64.1 | 4.1 | 2.83 | 0.55 | 0.040 | 0.051 | 0.018 |
| | | TOTAL | 75.4 | 65.1 | 4.2 | 1.62 | 0.33 | 0.049 | 0.017 | 0.018 |

12.7.1 Year-on-year Exclusive Mineral Resource Movements

No year-on-year Mineral Resource movement reconciliations are declared for Heuningkranz, as this is the first-time reporting of the deposit's Mineral Resources.

12.8 Summary of Ancillary Mineral Resource Information

The information ancillary to the Mineral Resource estimates, is summarised in **Table 66** (overleaf).

Table 66a: Information ancillary to the 2025 Heuningkranz geological model Mineral Resource estimates

| HEUNINGKRA NZ DEPOSIT | 2025 | 2024 |
|---|---|--------------|
| LOCATION | | |
| Country | Republic of South Africa | Not reported |
| Province | Northern Cape | Not reported |
| % OWNERSHIP | | |
| Sishen Iron Ore Company (Pty) Ltd | 100 | Not reported |
| Kumba Iron Ore Limited | 75.4 | Not reported |
| Anglo American plc | 52.5 | Not reported |
| SECURITY OF TENURE | | |
| Number of applicable mining rights | 1 | Not reported |
| Mining right status | Registered | Not reported |
| Mining right expiry date(s) | 17 September 2038 | Not reported |
| EXPLORATION STATUS | | |
| Exploration Type | Geological Confidence (in mine) | Not reported |
| Exploration Phase | Concept (with future, post 2025, drilling conducted to inform pre-feasibility study) | Not reported |
| Ore type | Haematite Ore | Not reported |
| GOVERNANCE | | |
| Code | THE SAMREC CODE - 2016 EDITION | Not reported |
| AA plc Group Policy | Anglo American Group Policy for Reporting of Ore Reserves and Mineral Resources | Not reported |
| AA plc Requirements Document | AA_RD_22_25 - Version 15 [2024] - Exploration Results, Mineral Resources and Ore Reserves Reporting Requirements Document | Not reported |
| KIO Reporting Policy | https://www.angloamericankumba.com/~media/Files/A/Anglo-American-Group/Kumba/sustainability/approach-and-policies/kumba-mineral-resource-and-ore-reserve-reporting-policy.pdf | Not reported |
| KIO Reporting Protocols | KIO Geological Confidence Classification Guideline (version 5) | Not reported |
| KIO Reporting Template | Mineral Resource (and Additional Mineralisation) Reporting Template (2025) | Not reported |
| REPORTING METHOD | | |
| Approach | Mineral Resources are reported exclusive of Ore Reserves and not factoring in attributable ownership and only if: 1) spatially modelled; 2) spatially classified; 3) spatially constrained in terms of reasonable prospects for eventual economic extraction (occurring within an RPEEE defined envelope, in other words not all mineral occurrences are declared as Mineral Resources); 4) declared within (never outside) executed tenement boundaries. | Not reported |
| In situ metric tonnes (dry / wet) | Dry | Not reported |
| Tonnage calculation | Tonnages are added from cells in geological block model of which the centroids intersect the relevant geological ore domains in the solids models which occur inside the resource shell. The volume of each ore cell is multiplied with the estimated relative density of the same cell). | Not reported |
| Fe Grade | Weighted average above cut-off grade | Not reported |
| Fe calculation | Tonnage-weighted mean of the estimated in situ Mineral Resource Fe grades contained within geological block models, constrained by the relevant Resource geological ore domains and RPEEE resource shell. | Not reported |
| RPEEE | | |
| - Cut-off Grade | 61% Fe | Not reported |
| - Resource (Optimistic) Shell Price (R/t, Free-on-Rail, Real) | Not disclosed | Not reported |
| - Resource shell Revenue Factor | 1.0 | Not reported |
| - Exchange Rate - Real (ZAR/USD) | Not disclosed | Not reported |

Table 66 cont.: Information ancillary to the 2025 Heuningkranz geological model
Mineral Resource estimates

| | 2025 | 2024 |
|---|---|--------------|
| ESTIMATION | | |
| Heuningkranz Geological Model | | |
| Input Data | | |
| Borehole Type | Core and Percussion bore hole lithological logs and associated chemical analyses | |
| Relative Density Measurement | Picnometer analyses on pulp samples | Not reported |
| KIO QA/QC Protocol | KIO QC Protocol for Exploration Drilling Sampling and Sub sampling (version 10) | Not reported |
| Primary Laboratory | ANGLO AMERICAN RESEARCH Division of Anglo Operations Limited CHEMISTRY LABORATORY (Co. reg no: 1921/006730/07) | Not reported |
| - Accreditation | Accredited under International Standard ISO/IEC 17025:2005 by the South African National Accreditation System (SANAS) under the Facility Accreditation Number T0051 (valid until 30 April 2026) | Not reported |
| Borehole Database Software | acQuire | Not reported |
| Borehole Database Cut-off Date | 31 March 2023 | Not reported |
| Database Validation Conducted | Yes (April 2023) | Not reported |
| Segmentation Conducted | Yes. To allow for simplification of logged lithologies for spatial correlation purposes | Not reported |
| Nr. of boreholes informing geological model | | |
| - Exploration boreholes | 690 | Not reported |
| - Ore Control boreholes | 0 | Not reported |
| Statistical and Geostatistical Evaluation | | |
| Data Compositing Interval | 2m | Not reported |
| Data Compositing Method | Length-weighted fixed interval downhole compositing per lithological domain. Threshold of 1.0m applied – if residual composite length is $\leq 1.0m$, merge with composite above, if $\geq 1.0m$ residual forms separate composite | Not reported |
| Grade parameters evaluated | %Fe, %SiO ₂ , %Al ₂ O ₃ , %K ₂ O, %S, %Mn and %P as well as Relative Density | Not reported |
| Variography updated in current year | No | Not reported |
| Search Parameters updated in current year | No | Not reported |
| Solids Modelling | | |
| Solids Modelling Software | Leapfrog | Not reported |
| Input | Previous 3D implicit solids, borehole data, structural in pit mapping, geophysical surface and downhole data. | Not reported |
| Method | Implicit modelling for all domains | Not reported |
| Domaining | Yes, by lithology and structural controls | Not reported |
| Topography and pit progression assigned | (Surface topography derived from borehole collar coordinates) | Not reported |
| Validation conducted | Yes (for domain gaps and overlaps by software queries as well as honouring of borehole contacts) and peer reviewed for geological interpretation | Not reported |
| Solids Modeller | | |
| Modeller (Name and Surname) | L Carlton | Not reported |
| Modeller status (Internal Comp. Person / Internal Tech. Specialist / External Comp. Person / External Tech. Specialist) | External Tech Specialist | Not reported |
| Modeller Employer | TECT Geological Consulting | Not reported |
| Grade Estimation Methodology | | |
| Ore segments | Ordinary/Simple Kriging | Not reported |
| Waste segments | Ordinary/Simple Kriging | Not reported |
| Geological Block Modelling | | |
| Block Modelling Software | Isatis | Not reported |
| Model Type | Centroid Model | Not reported |
| Parent cell size | 40m(X) x 40m(Y) x 10m(Z) | Not reported |
| Minimum sub-block cell size | 5m(X) x 5m(Y) x 5m(Z) | Not reported |
| Cell population method | | |
| - Tonnage | Volume of lithology intersected by cell centroid and constrained by cell limits, multiplied with relative density estimate of the same lithology at same unique cell centroid position in space. | Not reported |
| - Grade | Estimate of grade at unique cell centroid position in space applicable to total volume or tonnage constrained by the cell. | Not reported |
| Updated Geological Block Model ID (file name + extension) | hk072025_v1 | Not reported |
| Update completion date | 31 July 2025 | Not reported |
| Estimator | | |
| Resource estimator (Name and Surname) | Elelwani Machaka | Not reported |
| Resource estimator status (Internal Comp. Person / Internal Tech. Specialist / External Comp. Person / External Tech. Specialist) | Internal Tech. Specialist | Not reported |
| Estimator Employer | Sishen Iron Ore Company (Pty) Ltd | Not reported |

**Table 66 cont.: Information ancillary to the 2025 Heuningkranz geological model
Mineral Resource estimates**

| GEOLOGICAL CONFIDENCE CLASSIFICATION | 2025 | 2024 |
|---|---|--------------|
| Method Summary Relative Kriging Variance / Slope of regression / Kriging variance / COV (specify type in comments) / Conditional simulation / Scorecard - CP Over-ride / Borehole spacing / Two-indicator method / Variogram range(s) | Scorecard / CP Over-ride | Not reported |
| Scorecard Method | <p>All blocks in the geological block model for which the Fe-estimate is populated during the first Kriging run, are classified as per the scorecard methodology as set out in the 2010 Kumba Iron Ore Geological Confidence Classification Guideline (quantitative scorecard approach), where critical parameters measuring grade and geometry continuity are indexed, with weighting assigned to parameters and index cut-offs applied are the prerogative of the Competent Person to spatially assign confidence classes.</p> <p>All blocks in the geological block model for which the Fe-estimate is populated during the second Kriging run (optimum search radius is doubled) are classified as Inferred.</p> <p>All blocks in the geological block model for which Fe is not populated during the first and second Kriging run, are populated using default grades (per lithology / main ore type) and assigned an Extrapolated Inferred geological confidence class.</p> | Not reported |
| Grade Continuity Parameters (& associated weighting) | Fe estimate Slope-of-Regression (50%); Sample Representivity Index (50%) | Not reported |
| Geometry Continuity Parameters (& associated weighting) | Distance to Closest Sample (40%), Variability in orebody dimension (20%), Variability in orebody structure (20%) and Density (real or inferred) (20%) | Not reported |
| Geological Confidence | | |
| - Grade continuity weighting (%) | 40 | Not reported |
| - Geometry continuity weighting (%) | 60 | Not reported |
| Classification Thresholding (Confidence Index cut-offs within 1 to 9 range) | | |
| - Measured | ≥ 7 | Not reported |
| - Indicated | 5 to < 7 | Not reported |
| - Inferred | < 5 | Not reported |
| CP Over-ride | Two step downgrading: 1) All Measured Mineral Resources downgraded to Indicated Mineral Resources based on confidence in the geological solids model; 2) Downgrading as per benchmarking against the Anglo American standard Equivalent Grid Statistic (EQG) Calculation, using a 50m EQG as a reference benchmark. | Not reported |
| - Measured to Indicated (Mt) | 0 Mt | Not reported |
| - Indicated to Inferred (Mt) | 7.5 Mt | Not reported |

12.9 For in-house reporting purposes

Text removed.

12.9.1 For in-house reporting purposes

Text removed.

Table 67: For in-house reporting purposes

Table removed.

12.9.2 For in-house reporting purposes

Text removed.

Table 68: For in-house reporting purposes

Table removed.

12.10 For in-house reporting purposes

Text removed.

Table 69: For in-house reporting purposes

Table removed.

13 RISKS ASSOCIATED WITH MINERAL RESOURCES

13.1 Mineral Resource Risks

Apart from the Mineral Resource estimation confidence classifications, Kumba, on an annual basis, requires identification and assessment of all risks pertaining to the estimates that are being endorsed.

All risks, notwithstanding their risk level, are recorded and registered with pre- and post-mitigation risk ratings.

The 2025 R&R risk evaluation sessions comprised scheduled meetings where all relevant technical specialists were involved. Risks are evaluated by means of working through a set of standard topics as bulleted below:

- Natural Catastrophe
- Macro-economic Uncertainty
- Political
- Community/Social Relations
- Regulatory and Permitting
- Orebody Knowledge
- Operational Performance
- Technical
- Climate Change
- Infrastructure and Services
- Future Demand
- Governance
- Environmental

For each site, the risks are quantified in terms of tonnes at risk and are then ranked according to the likelihood of it realising within a specific time frame. The risks are then rolled up to a business level by the Lead CPs, to evaluate their potential impact on the whole of Kumba's business.

The top five Mineral Resource risks as identified in 2025 for the Heuningkranz deposit, are plotted on the risk matrix (**Figure 83**) and explained in more detail in the remainder of this section. Those ranked high or significant are also documented and evaluated in the 2025 Kolomela Mine Mineral Resource Statement.

13.1.1 Resource Risk Summary

| RISK MATRIX | | CONSEQUENCE (Where an event has more than one 'Consequence Type', choose the 'Consequence Type' with the highest rating) | | | | |
|---|---|---|---|--|--|---|
| | | 1 - Insignificant | 2 - Minor | 3 - Moderate | 4 - High | 5 - Major |
| Risk of change in Inclusive Resource/Ore Reserve reported estimates | | 0-5% of the Exclusive Resources or Reserves reduction possible if the event occurs | 5-10% of the Exclusive Resources or Reserves reduction possible if the event occurs | 10-20% of the Exclusive Resources or Reserves reduction possible if the event occurs | 20-50% of the Exclusive Resources or Reserves reduction possible if the event occurs | More than 50% of the Exclusive Resources or Reserves reduction possible if the event occurs |
| LIKELIHOOD | | RISK RATING | | | | |
| E Almost Certain | 5 Impact on Exclusive Resources and Reserves within the budget period of 0 - 5 years | 11 (Medium) | 16 (Significant) | 20 (Significant) | 23 (High) | 25 (High) |
| D Likely | 4 Impact on Exclusive Resources and Reserves within the period of 5-10 years | 7 (Medium) | 12 (Medium) | 17 (Significant) | 21 (High) | 24 (High) |
| C Possible | 3 Impact on Exclusive Resources and Reserves within the period of 10-15 years | 4 (Low) | 8 (Medium) | 13 (Significant) | 18 (Significant) | 22 (High) |
| B Unlikely | 2 Impact on Exclusive Resources and Reserves within the period of 15-20 years | 2 (Low) | MR2 5 (Low) MRS | MR1 9 (Medium) MR4 MR5 | MR3 14 (Significant) | MR1 19 (Significant) MR2 |
| A Rare | 1 Impact on Exclusive Resources and Reserves within the period of more than 20 years | 1 (Low) | 3 (Low) | 6 (Medium) | 10 (Medium) | 15 (Significant) |

| Risk Rating | Risk Level | Guidelines for Risk Matrix |
|-------------|-------------|---|
| 21 to 25 | High | Appropriate mitigation strategy to be devised immediately. MR1 Mineral Resource Risk # 1 Pre-mitigation MR1 Mineral Resource Risk # 1 Post-mitigation |
| 13 to 20 | Significant | Appropriate mitigation strategy to be devised as soon as possible. |
| 6 to 12 | Medium | Appropriate mitigation strategy to be devised as part of the normal management process. |
| 1 to 5 | Low | Monitor risk, no further mitigation required. |

Figure 83: Exclusive Mineral Resource and Reserve risk matrix

Risk MR1: Future demand – product specifications

Risk description: The Heuningkranz high-grade ore has relatively high K₂O and to a lesser extend Al₂O₃ contaminant grade contents, which, if mined or partially mined in future as a single source of ore, will not always comply with current Kolomela mine product grade specifications.

Mitigation: 1) Planned run-of-mine blending of the Heuningkranz ore with other sources of ore at Kolomela mine and co-stacking of Kolomela and Sishen product at the harbour. 2) Selective mining of the Conglomeratic and Brecciated high-grade ore types. 3) Penalties will be assigned to account for contaminant grade breaches of agreed product specifications, should Ore Reserves be declared for the Heuningkranz deposit in the future, to consider its valuation.

Risk MR2:Regulatory and permitting - Mining license competing/overlapping Rights claims

Risk description: One competing (same commodity and same area) iron and one competing (same area) manganese prospecting right have been awarded by the DMPR to 3rd parties over the Heuningkranz portion of the Kolomela mining right owned by SIOC.

Mitigation: Legal representation on Kumba’s behalf has submitted an objection with the DMPR in terms of both competing rights and is awaiting an outcome. Past competing rights issues have been resolved without business interruption.

Risk MR3: Climate change – targets

Risk description: Kumba’s climate change ambitions set for 2030 are applicable to Ore Reserves. However, it is expected that these targets will become more stringent in future, when the Heuningkrantz Mineral Resources are foreseen to come in play, as it is assumed that the global focus on environmental guardianship will intensify over time. The net result is an increase in production costs. Since Kumba is a relatively small player in the iron ore mining industry, and in the third quartile of the world iron ore producer cost curve, it may not be able to absorb the cost as efficiently as the bigger role players.

Mitigation: To remain competitive, Kumba must achieve its climate change ambitions in a cost-effective and sustainable manner to remain competitive in the long term. The success of mitigation is therefore dependent on Kumba’s demonstrated performance to achieve its climate change ambitions in a cost-effective and sustainable manner. The post-mitigation risk rating remains unchanged from the pre-mitigation risk rating as the Kumba pit optimisation process did not consider elevation of environmental cost over time.

Risk MR4: Macro-economic uncertainty – commodity price

Risk description: The method applied to economically distinguish between Mineral Resources and other additional mineralisation in terms of RPEEE, i.e. applying a revenue factor 1.0 resource shell to the geological block model, is price sensitive. The resource shell can therefore decrease in size should Anglo American decide to reduce its outlook on the long-term forward-looking iron ore price, with at current is more positive than that of the medium-term industry consensus iron ore price.

Mitigation: Although Kumba deems the supply and demand fundamentals informing the Anglo American model used to drive the long-term iron ore price as robust, the post-mitigation risk rating remains unchanged from the pre-mitigation risk rating as Kumba is a price taker in the global iron ore market.

Risk MR5: Political – Legislation/regulation

Risk description: On 20 May 2025, the DMPR published the Draft Mineral Resources Development Bill, 2025 for public comment. The Bill proposes significant and comprehensive amendments to the Mineral and Petroleum Resources Development Act, 2002 (“MPRDA”). The stated intent by the DMPR with the proposed amendments is to enhance investor confidence, streamline licensing, promote equitable distribution of mining benefits, support local processing and beneficiation, tackle illegal mining and align with critical minerals strategy. Kumba’s concern with the proposed amendments include that investment promotion is not embedded in the Bill’s objectives, it contains onerous enforcement and penalty provisions, contains stringent beneficiation and environmental obligations as well as regulatory uncertainty. Many substantive details are left to future regulations (such as beneficiation requirements, empowerment rules etc.).

Mitigation: *Anglo American has made a submission to the proposed amendments on 13 August 2025. The key issues from an Anglo American point, which include Kumba Iron Ore, concern the amendments as regards beneficiation, transformation, historic residue stockpiles, strategic minerals and transfer of rights. The Minerals Council also made submissions on behalf of industry. Seeing that the regulations underpinning the proposed amendments have not been published, the full impact of the proposed amendments on the business and mineral resources cannot be ascertained with certainty at this point in time.*

14 RECOMMENDATION FOR NEXT YEAR'S MINERAL RESOURCE ESTIMATION

The following is a list of initiatives that will be undertaken in future to improve on the Mineral Resource estimation:

- Close out the findings of the Cube audit by incorporating the EQG statistic into the Kumba scorecard, replacing the “distance to closest sample” parameter and assigning a higher weight to it.
- Rectify boreholes in the borehole database that did not pass validation checks.
- Resume exploration drilling targeting sub-surface structures and where EQG analysis indicates sparse data. Also target conglomeratic and breccia high-grade ores to recover more samples for assaying and estimation.
- Implement Archimedes-type bulk density measurements.
- Rebuild the solids model incorporating data from the above actions and ensure the model reflects the lensoid and fractured geometry of the local geology.
- Refine the Zone 240 Shale grade estimation.

15 COMPETENCY

15.1 Statement of Competence and Consent for Mineral Resources

The figures presented in this report are considered a true reflection of the Mineral Resource estimates as at 31 December 2025 for the Heuningkranz deposit. Reporting has been carried out in accordance with the principles and guidelines of the SAMREC Code (2016), to the best of the knowledge of the Competent Person.

I, the undersigned have not been unduly influenced by Kumba Iron Ore, or any person commissioning the Mineral Resource Statement. I am of the opinion, that all assumptions are well documented, and adequate disclosure is made of all material aspects that the informed reader may require, to make a reasonable and balanced judgement of the Mineral Resource figures.

The process to determine the Mineral Resource estimates presented in this report has been reviewed and was found to comply with the Anglo American Group Policy for Reporting of Ore Reserves and Mineral Resources (as updated from time to time). It is thus accepted that the figures presented in this report are a true reflection of the Mineral Resource estimates as at 31st December 2025 for the Heuningkranz deposit.

I, the undersigned, consent to their inclusion in the *Kumba Ore Reserve (and Saleable Product) and Mineral Resource Report* and R&R Section in the annual *Kumba Iron Ore Integrated Report*, as well as in the *Anglo American Ore Reserves and Mineral Resources (R&R) Report 2025* and R&R Summary section of the *Anglo American Integrated Annual Report*, in the form and context in which it appears in this statement (**Table 70**).

Table 70: Competent Person for Kolomela Mine’s 2025 Mineral Resources (including the Heuningkranz Deposit)

| Competency Field | Name | Job Title | Employed by | Professional Organisation | Membership Number | Years relevant experience |
|-------------------|------------|---|-----------------------------------|---|-------------------|---------------------------|
| Mineral Resources | V Combrink | Specialist Modelling Resource Geologist | Sishen Iron Ore Company (Pty) Ltd | (SACNASP) Professional Natural Scientist | 400053/08 | 22 |

I have accepted my appointment as Competent Person for Mineral Resources for Kolomela Mine, including the Heuningkranz Deposit for 2025 (**Addendum B**).

2025 MINERAL RESOURCE STATEMENT – HEUNINGKRA NZ DEPOSIT



20 January 2026

J Venter Combrink

Date

CP for 2025 Mineral Resources:
Kolomela Mine including Heuningkranz

15.2 Mineral Resource Technical Specialists

The following Technical Specialists (**Table 71**) were involved in the preparation of the Mineral Resource estimates and have appropriate experience in their field of expertise with regards to the activity that they undertook. The Competent Person is satisfied that the work carried out by Technical Specialists is acceptable and has been signed off by these contributors.

Table 71: 2025 Heuningkranz Mineral Resource Estimation Technical Specialists

| ACTIVITY | NAME | JOB TITLE | NAME OF EMPLOYER | YEARS EXPERIENCE | AFFILIATION | TYPE OF MEMBERSHIP | SIGNATURE |
|--|--|---|-----------------------------------|------------------|---------------------------|-------------------------|--|
| MINERAL RESOURCES | | | | | | | |
| SECURITY OF TENURE | Thuso Mathulwe | Specialist Mineral Rights & Permitting | Sishen Iron Ore Company (Pty) Ltd | 9 | None | None |  30 Sept 2025 |
| PERMITS AND ENVIRONMENTAL AUTHORISATIONS | Isak Gous | Section Manager Environmental | Sishen Iron Ore Company (Pty) Ltd | 9 | SACNASP | Member |  |
| BOREHOLE DATABASE MANAGEMENT | O Lande | Borehole Database Co-ordinator | Sishen Iron Ore Company (Pty) Ltd | 16 | None | None |  |
| BOREHOLE DATA QA/QC VALIDATION | O Lande | Borehole Database Co-ordinator | Sishen Iron Ore Company (Pty) Ltd | 16 | None | None |  |
| GEOLOGICAL DATA | AR Malouhete | Section Manager Geotechnical | Sishen Iron Ore Company (Pty) Ltd | 14 | SACNASP, SANRE | Member |  6001402 |
| GEOLOGICAL INTERPRETATIONS | JV Combrink, H Boucher, H Foutie (L. Tafu) | Specialist Modelling Resource Geologist / Specialist Modelling Resource Geologist / (TECT consulting) | Sishen Iron Ore Company (Pty) Ltd | 32, 10 | SACNASP / SACNASP | Member / Member |  |
| SOLIDS MODELLING | JV Combrink, H Boucher, H Foutie (L. Tafu) | Specialist Modelling Resource Geologist / Specialist Modelling Resource Geologist / TECT consulting (Specialist Modelling Resource Geologist) | Sishen Iron Ore Company (Pty) Ltd | 32, 10 | SACNASP / SACNASP | Member / Member |  |
| DATA ANALYSES (STATISTICAL EVALUATION) | K Cooper, E Machaka, L Molefe | Specialist Resource Estimation Geologist / Specialist Resource Estimation Geologist / Resource Estimation Geologist | Sishen Iron Ore Company (Pty) Ltd | 17,20,11 | SACNASP/ SACNASP/ SACNASP | Member / Member/ Member |  |
| SPATIAL DATA ANALYSES (GEOSTATS) | K Cooper, E Machaka, L Molefe | Specialist Resource Estimation Geologist/ Specialist Resource Estimation Geologist/ Resource Estimation Geologist | Sishen Iron Ore Company (Pty) Ltd | 17,20,11 | SACNASP/ SACNASP/ SACNASP | Member / Member/ Member |  |
| GEOLOGICAL BLOCK MODELLING | K Cooper, E Machaka, L Molefe | Specialist Resource Estimation Geologist/ Specialist Resource Estimation Geologist/ Resource Estimation Geologist | Sishen Iron Ore Company (Pty) Ltd | 17,20,11 | SACNASP/ SACNASP/ SACNASP | Member / Member/ Member |  |
| GEOLOGICAL CONFIDENCE CLASSIFICATION | K Cooper, E Machaka, L Molefe | Specialist Resource Estimation Geologist/ Specialist Resource Estimation Geologist/ Resource Estimation Geologist | Sishen Iron Ore Company (Pty) Ltd | 17,20,11 | SACNASP/ SACNASP/ SACNASP | Member / Member/ Member |  |
| RESOURCE ESTIMATION | K Cooper, E Machaka, L Molefe | Specialist Resource Estimation Geologist/ Specialist Resource Estimation Geologist/ Resource Estimation Geologist | Sishen Iron Ore Company (Pty) Ltd | 17,20,11 | SACNASP/ SACNASP/ SACNASP | Member / Member/ Member |  |
| RESOURCE TABULATION | JV Combrink | Specialist Modelling Resource Geologist | Sishen Iron Ore Company (Pty) Ltd | 32 | SACNASP | Member |  |

16 REVIEWS / AUDITS

16.1 EXTERNAL AUDIT(S)

An external, due diligence audit of the Kolomela 2024 Mineral Resource estimation and reporting process, (including a one-week site visit) was conducted by Cube Consulting Pty Ltd during July 2025. This scope of this audit included the estimation process applied to determine the 2025 Mineral Resource estimates at Heuningkranz. Cube Consulting reported the following findings:

- No **Fatal Flaws** could be found. (These are defined as **high risks** where objectives may not be achieved, requiring immediate mitigation).
- One **Priority 1** risk was found (defined as a **significant risk** that objectives may not be achieved, mitigation required asap). The risk was identified on a specific portion of the Kapstevél South Pit on Kolomela Mine but has relevance to the Heuningkranz deposit. The geological confidence rating proved inadequate in the Kapstevél South area and Cube Consulting proposed a revision of the KIO confidence classification system (specifically the weightings of the Confidence Index Factor).

Kumba addressed the risk in this 2025 Heuningkranz Mineral Resource estimate, by applying a second geological confidence classification system termed the Equivalent Grid System (EQG) analysis. It confirmed a paucity of drillhole data in certain areas which were of Indicated status. This confirmation, together with an unease with the geology solids model (where the ore domains were overly continuous and not sufficiently lensoid/fractured), led the CP to downgrade all Measured Mineral Resources to Indicated Mineral Resources. The Cube finding has thus been completely mitigated.

- Cube Consulting also identified one **Priority 2** risk (i.e. a **moderate risk** that objectives may not be achieved, mitigation as per normal management processes) pertaining to the Kolomela and Heuningkranz estimation processes. There is a discrepancy in the cut-off date between the database validation report (31 March 2023) and that recommended by the KIO guidelines (30th April of the specific year). Cube recommends a formal data hand-over be incorporated into the database validation report, including a list of files (with file size, records, etc.) extracted from the database.

2025 MINERAL RESOURCE STATEMENT – HEUNINGKRANZ DEPOSIT

Table 72 below summarises the Priority One findings that were identified by Cube Consulting during an independent external audit of the 2025 Heuningkrantz Mineral Resource estimation and reporting. There are no outstanding findings from previous audits.

Table 72: Summary of 2025 Heuningkrantz Mineral Resource External Audit

| | | | |
|---|------|--|--|
| Was the resources reviewed (internal or external) in the current year? (Yes / No) | Yes | | |
| Next external audit scheduled for: | 2028 | | |
| Next audit level and type: | A2 | | |

| | |
|---|--|
| Year: | 2025 |
| Month: | July |
| Level: | A |
| Type: | 2 |
| Scope: | Independent External Audit of 2024 Kolomela (including Heuningkrantz) Mineral Resource Estimation and Reporting |
| Resource Audit Reference: | 7 |
| Organisation: | Cube Consulting |
| Resource Auditor Name: | Mike Job |
| Resource Auditor Yrs Experience: | 39 |
| Resource Auditor Title: | Director, Principal Geology and Geostatistics |
| Resource Auditor Affiliation: | FAusIMM, 201978 |

| Priority 1 Mineral Resource Findings | Status | | |
|--|---------------|------------|-----------|
| | Not Addressed | In Process | Addressed |
| <p>Finding: One Priority 1 risk was found (defined as a significant risk that objectives may not be achieved, mitigation required asap). The risk was identified on a specific portion of the Kapstevl South Pit on Kolomela Mine but has relevance to the Heuningkrantz deposit.</p> <p>The geological confidence rating proved inadequate in the Kapstevl South area and Cube Consulting proposed a revision of the KIO confidence classification system (specifically the weightings of the Confidence Index Factor).</p> <p><i>Mitigation Comment:</i> Kumba addressed the risk in this 2025 Heuningkrantz Mineral Resource estimate, by applying a second geological confidence classification system termed the Equivalent Grid System (EQG) analysis. It confirmed a paucity of drillhole data in some areas. This confirmation together with an unease with the geology solid model (where the ore domains were overly continuous and not sufficiently lensoid or fractured), led the CP to downgrade all Measured Mineral Resources to Indicated Mineral Resources. The Cube finding was thus temporarily mitigated in the 2025 Heuningkrantz estimate. In 2026, Kumba plans to implement a permanent solution whereby the EQG statistic analysis will be incorporated into the Kumba Confidence Classification scorecard, replacing the "distance to closest sample" parameter and assigning a higher weight to it.</p> <p>Responsible Person(s): V Combrink</p> <p>Due Date(s): 31 July 2026</p> | | x | |
| <p>Finding:</p> <p>Mitigation Comment:</p> <p>Responsible Person(s):</p> <p>Due Date(s):</p> | | | |

The next external, due diligence audit of the Heuningkrantz Mineral Resources (as part of Kolomela Mine’s 2027 Mineral Resource estimation process) is planned for 2028 (**Table 73**).

Table 73: Kumba External Audit Schedule

| Operations | Resource and/or Reserve | 2025 | | | | 2026 | | | | 2027 | | | | 2028 | | | | Comments |
|--------------|-------------------------|------|-----------------|-----|-----|------|-----|-----|-----|------------------|-----|-----|-----|------|-----|-----|-----|--|
| | | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | |
| Kolomela | Mineral Resource | | AI ¹ | | | | | | | | | | | | | | | 1) External due diligence audit of 2024 Kolomela Mineral Resource estimates and reporting by Cube Consulting completed. |
| | Ore Reserve | | AI ² | | | | | | | | | | | | | | | 2) Planned external due diligence audit of 2027 Kolomela Mineral Resource estimates and reporting. 3) External due diligence audit of 2024 Kolomela Life-of-Asset Planning process as well as Ore Reserve estimates and reporting by Cube Consulting completed. |
| Sishen | Mineral Resource | | | | | | | | | AI ³ | | | | | | | | 4) Planned external due diligence audit of 2027 Kolomela Life-of-Asset Planning process as well as Ore Reserve estimates and reporting. |
| | Ore Reserve | | | | | | | | | AI ⁴ | | | | | | | | 5) Planned external due diligence audit of 2026 Sishen Mineral Resource estimates and reporting. 6) Planned external due diligence audit of 2026 Sishen Life-of-Asset Planning process as well as Ore Reserve estimates and reporting. |
| Projects | | | | | | | | | | | | | | | | | | Projects in Concept or post-Concept study phase. |
| Heuningkranz | Mineral Resource | | AI ⁵ | | | | | | | | | | | | | | | 7) Heuningkranz Project's first time reporting of Mineral Resources was reviewed as part of the Kolomela external due diligence audit by Cube Consulting. |
| | Ore Reserves | | | | | | | | | | | | | | | | | 8) Planned independent external audit of the Heuningkranz Mineral Resources informing the prefeasibility A study. |
| Ploegfontein | Mineral Resource | | | | | | | | | AI ¹⁰ | | | | | | | | 9) Planned independent external audit of the Heuningkranz Ore Reserves informing the prefeasibility A study. |
| | Ore Reserves | | | | | | | | | AI ¹¹ | | | | | | | | 10) Planned independent external audit of the Ploegfontein Mineral Resources informing the prefeasibility A study. 11) Planned independent external audit of the Ploegfontein Ore Reserves informing the prefeasibility A study. |

1st, 2nd, 3rd and 4th refer to quarters of the year

Type

- A. **External Independent:** Audited/Reviewed by a Competent Person(s) employed by an external consultancy that was not involved in the preparation of the Mineral Resource and/or Ore Reserve estimates.
- B. **Cross Business Units:** Audited/Reviewed by a Competent Person(s) within another Anglo American Business Unit, MinRES or relevant M&T functions.
- C. **Internal Independent:** Audited / Reviewed by a Competent Person(s) within the BU who were not involved in the preparation of the Mineral Resource and/or Ore Reserve estimates.
- D. **Internal / Peer:** Audited/Reviewed by a Competent Person(s) of the same level (i.e. similar expertise and seniority), but from a different Operation/Project.
- E. **Competent Person sign-off:** Sign-off by the Competent Person(s) or Lead Competent Person responsible for the team that developed the Geological Model, Resource Estimate, Mining Model and/or Reserve Estimate.

Level

- I. **Appraisal of Methodologies applied** (about 2-7 days, may include a site visit)
- II. **Due Diligence (sign off)** (about 2 to 4 weeks and must include a site visit)
- III. **Endorsement / Conversion** (about 3 to 4 months)

16.2 INTERNAL REVIEW(S)

As standard practice, KIO internal peer reviews were conducted during the solids model update in 2023, as well as the geological block model update in 2024. The results are summarised below in **Table 74:**

Table 74: Summary of KIO internal peer reviews of geology models

| Date | Model under review | Findings | Corrective actions | Responsible person | Due Date |
|----------------------------|--|---|--|----------------------------|-----------|
| 17 August 2023 | Geology solids Model | 25 Geology interpretation findings listed in Table 25 Section 9.3.1.5 | All findings were addressed by October 2023 before model handover to KIO | Tect Geological Consulting | Completed |
| February 2024 to June 2024 | Geology Block Model. Interim reviews during estimation process | Findings recorded on MS Teams | All findings were addressed before next stage of the estimation process | E. Machaka KIO | Completed |

17 ENDORSEMENT

17.1 KOLOMELA MINE AUTHORISATION

Geology Manager – Regional Office (Northern Cape)



30/01/2016

Nomawezo Mbele

Date

Accept and endorse report content

17.2 KUMBA IRON ORE AUTHORISATION

Appointed Lead Competent Person for Mineral Resources



21 January 2026

Jean Britz

Date

Reviewed and endorse report content

Appointed Responsible Person (Manager – Geosciences)

Signed by:Stuart James Mac Gregor
Signed at:2026-02-09 10:45:45 +02:00
Reason:I approve this document

Stuart James Mac Gregor

Stuart Mac Gregor

Date

Accept and endorse report content

Addendum A

2023 Heuningkranz QA/QC Report



HEUNINGKCRANZ PROJECT

2023 QA/QC REPORT

(Reporting Period 1 May 2021 to 30 April 2023)

PREPARED FOR: J Britz
Principal – Mineral Resources

COMPILED BY: O Lande
Exploration Geologist Database Management

REVIEWED BY: C Gous
Specialist Exploration Geologist– Greenfields

DATE COMPILED: September 2023

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The aim of this report is to provide feedback on the quality control measures applied and monitored to describe the representivity of geological exploration sample information (excluding geomet samples), generated at **Heuningkranz Project** during the period **1 May 2021 to 30 April 2023**. The report is structured to demonstrate the meticulous QA/QC process adopted within the Kumba Geosciences fraternity for the total sampling value chain i.e. drilling, primary sampling, sample preparation and sample assaying. The format is based on the same principles of materiality, transparency and competence as required by the SAMREC Code for the reporting of Mineral Resource estimates.

It is the opinion of the Specialist Exploration Geologist at Heuningkranz Project that this report bears evidence to the fact that comprehensive QA/QC governance is applied to the exploration sampling value chain (**Figure 1**).

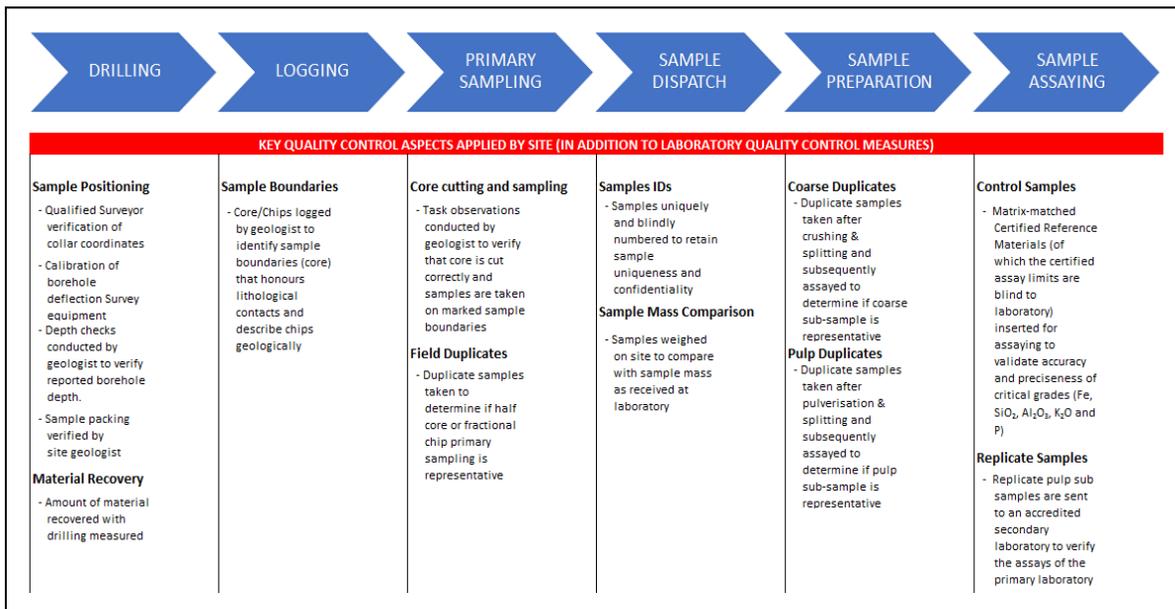


Figure 1: Kumba's Generalised Exploration Sampling Value Chain

Primary sampling of exploration boreholes is conducted on-site, either at the drill rig where chip sub-samples (from percussion rigs) are taken, or at the core-shed facility in the case of core where half-core samples are taken after geological logging, core photography and core-cutting.

Sample preparation is conducted by the Anglo Technical Solutions (ATS) Chemistry Laboratory in Johannesburg.

The ATS Chemistry Laboratory is accredited in accordance with the recognised International Standard ISO/IEC 17025:2005 by the South African National Accreditation System (SANAS)

under the Facility Accreditation Number T0051 (valid until 30 April 2026) for the preparation of iron ore samples to a homogenous pulp.

Assaying is conducted by the Anglo Technical Solutions (ATS) Chemistry Laboratory in Johannesburg.

The ATS Chemistry Laboratory is accredited in accordance with the recognised International Standard ISO/IEC 17025:2005 by the South African National Accreditation System (SANAS) under the Facility Accreditation Number T0051 (valid until 30 April 2026) for:

- The analyses of ferrous Iron by potentiometric titration for solid samples.
- Al₂O₃, BaO, CaO, Fe, K₂O, MgO, Mn, Na₂O, P, SiO₂ and TiO₂ by X-Ray Fusion
- Carbon and Sulphur by combustion

Reviewer's Note

In comparison with the normal number of samples generated by Kumba on a single project within a year, the dataset presented within the reporting period is very small. However, similar shortcomings exist from the previous reporting period to the current with some improvements.

Improvements related to sample weights and material recoveries have been slowed down due to two major events. First, being the ramp-up of a newly appointed drilling contractor. Although Rosond has been drilling for exploration projects since 2013, a new contract with different terms and objectives was negotiated and the ramp up was delayed due to the COVID-19 pandemic. Secondly, the core processing facility was and still is being moved from the farm Heuningkrantz to its new location outside of the town Kathu.

One major finding from our QAQC is the failure of external pulp duplicate, which is currently being investigated by ATS.

Due to Detection Limits having changed in the reporting period of 1 May 2022 to 30 April 2023, two summary QA/QC Performance tables are reported.

Table 1 is a snapshot of the QA/QC performance for exploration sampling For Heuningkrantz Project for the May 2021 to April 2022 and May 2022 to April 2023 reporting period as independently determined by the Reviewer.

Table 1: Summary of QA/QC Performance of Heuningkranz Sampling Process for the period 1 May 2021 to 30 April 2023

2021-2022

| Sample Type | PRIMARY SAMPLING | | SAMPLE PREPARATION | | SAMPLE ASSAYING | |
|-------------|--|--------|----------------------------|--------------------------|-------------------------------|---------------|
| | % Sample Material Recovery within limits | | Coarse Duplicate Pass Rate | Pulp Duplicate Pass Rate | External Pulp Check Pass Rate | CRM Pass Rate |
| | Ore | Waste | | | | |
| GK | 68.12% | 77.32% | 93.88% | 97.96% | 84.38% | 98.98% |

- 1 Core sample assays were generated for the reporting period
- 2 Percussion sample assays were not generated for the reporting period
- 3 RC sample assays were not generated for the reporting period

 Sample Mass Representivity (SMR) % - [(primary chip sample mass / expected mass of drilling interval from which chip sample was taken) x 100]
 (The SMR figures listed in the table for percussion and RC samples are averages).

2022-2023

| Sample Type | PRIMARY SAMPLING | | SAMPLE PREPARATION | | SAMPLE ASSAYING | |
|-------------|--|--------|----------------------------|--------------------------|-------------------------------|---------------|
| | % Sample Material Recovery within limits | | Coarse Duplicate Pass Rate | Pulp Duplicate Pass Rate | External Pulp Check Pass Rate | CRM Pass Rate |
| | Ore | Waste | | | | |
| GB | 0.04% | 0.06% | 93.33% | 96.67% | | 93.33% |
| GK | | 76.39% | 96.72% | 96.72% | 78.79% | 100% |

- 1 Core sample assays were generated for the reporting period
- 2 Percussion sample assays were generated for the reporting period
- 3 RC sample assays were not generated for the reporting period

 Sample Mass Representivity (SMR) % - [(primary chip sample mass / expected mass of drilling interval from which chip sample was taken) x 100]
 (The SMR figures listed in the table for percussion and RC samples are averages).

Material Recovery QC Limits

- 90% of the samples taken in the reporting period must have: $80\% \leq \text{Core Recovery} \leq 100\%$ (using core weight calculation) or 90% of the meters drilled in the reporting period must have: $90\% \leq \text{Core Recovery} \leq 100\%$ (using core length calculation);
- 90% of the samples taken in the reporting period must have: $70\% \leq \text{Material Recovery} \leq 100\%$ for Percussion (using percussion weight calculation)

Coarse Duplicate QC Limits

- 90% of the field duplicate pair population generated in the reporting period must plot inside the 10% XY Scatterplot error lines (formula considering the lower detection limit of the analyte in question) for %Fe and %SiO₂ as well as inside the 20% XY Scatterplot error lines (formula considering the lower detection limit of the analyte in question) for %Al₂O₃, %K₂O and %P.

Pulp Duplicate QC Limits

- 90% of the field duplicate pair population generated in the reporting period must plot inside the 5% XY Scatterplot error lines (formula considering the lower detection limit of the analyte in question) for %Fe and %SiO₂ as well as inside the 10% XY Scatterplot error lines (formula considering the lower detection limit of the analyte in question) for %Al₂O₃, %K₂O and %P.

Certified Reference Material (CRM) QC Limits

- $\geq 90\%$ of the CRM assay results must fall within the blind certified limits as applied by Kumba Iron Ore.

The high and significant risks identified with the QC programme as applied by Heuningkranz Project during the QA/QC reporting period, which compromises sample representivity are:

- The poor material recoveries.

Mitigation action:

acquire in-built validations/checks to prompt geologists when capturing recoveries, this should alert a geologist to supply a reason for the poor recovery.

Due Date: Implemented

Responsible Person: Exploration Geologist & Charl Gous

Appointment of a core master to ensure core quality including core recoveries.

Due Date: Implemented

Responsible Person: Charl Gous & Rosond

- Mass differences between Site and Lab for samples >1.0kg.

Mitigation action: Weighing from enclosed environment.

Due Date: Implemented

Responsible Person: Zanele Munyupili

Mitigation action: Automated Scale.

Due Date: Ongoing

Responsible Person: Zanele Munyupili

- Ongoing Failure rate on external check results requires investigation.

Mitigation action: Follow up with the laboratory, investigation is ongoing.

Due Date: Ongoing

Responsible person: V Nkosi

Section 3 of the SAMREC Table 1 requires the following to be detailed if a JSE listed minerals company declares Mineral Resources (only data specific points are quoted):

- (i) Describe the data acquisition or exploration techniques.
- (ii) Identify and comment on the primary data elements and the management and verification of these data or the database.
- (iii) Acknowledge and appraise data from other parties.
- (iv) Clearly distinguish between data / information.
- (v) Describe the survey methods, techniques and expected accuracies of data.
- (vi) Prescribe the type of drilling undertaken and details such as core diameter, triple or standard tube etc.
- (vii) Describe the nature and quality of sampling.
- (viii) Describe the sampling processes, including sub-sampling stages to maximise representivity of samples.
- (ix) State if orientation of sampling achieves unbiased sampling.
- (x) Describe retention policy and storage of physical samples.
- (xi) Describe the method of recording and assessing core and chip sample recoveries and results assessed, measures taken to maximise sample recovery and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.
- (xii) If drill core sample was taken, state whether it was split or sawn and whether quarter, half or full core was submitted for analysis. If a non-core sample was taken, state whether the sample was riffled, tube sampled, rotary split etc.
- (xiii) Identify the laboratory and state their accreditation status and registration number or provide a statement that the laboratory is not accredited.
- (xiv) Identify the analytical method. Discuss the nature, quality and appropriateness of the assaying and laboratory processes and procedures used and whether the technique is considered partial or total.
- (xv) Describe the process and method used for sample preparation, sub sampling or size reduction, and likelihood of inadequate or non-representative samples.

- (xvi) Discuss the governance of the sampling campaign and process, to ensure quality and representivity of samples and data, such as sample recovery, selective losses or contamination, core diameter, internal and external QA/QC and any other factors that may have resulted in or identified sample bias.
- (xvii) Describe the measures taken to ensure sample security and the chain of custody.
- (xviii) Describe the validation procedures to ensure integrity of data.
- (xix) Describe the audit process and frequency and disclose any material risks identified.
- (xx) Demonstrate that adequate field sampling process verification techniques (QA/QC) have been applied i.e. the level of duplicates and blanks, reference materials, process audits, analysis etc.
- (xxi) Describe the method of bulk density determination with reference to the frequency of measurements, the size, nature and representativeness of the samples.

This serves as a checklist for QA/QC reporting.

3 GOVERNANCE

3.1 Kumba Geosciences Exploration Sampling QA/QC Governance Framework

The Kumba Iron Ore QA/QC requirements pertaining to exploration sampling for all Kumba on-mine and near-mine and brown-/greenfield exploration programmes are specified in the *KIO Exploration Drilling Guideline and associated QC Protocol for Drilling, Sampling, Sub-sampling and Assaying (Version 10)*. Associated with this protocol are the following governance documents/templates to guide annual QA/QC reporting:

- KIO QA/QC Pass/Fail criteria (1 September 2011)
- KIO Borehole Deflection Validation Template
- KIO Nomogram Template
- 2021-2023 HKZ Duplicate Plot Summary Templates
- 2021-2023 HKZ Control Chart Summary Template
- 2021-2023 HKZ Material Recovery Summary Template
- 2021-2023 HKZ Mass Loss Charts Template
- 2021-2023 HKZ Primary Sample Mass Difference Charts Template
- 2021-2023 HKZ Sample Split Representivity Charts Template
- 2021-2023 HKZ Top Size Validation Charts Template

The on-site sample spatial position referencing and primary sampling are audited once every three years by an independent external auditor.

The primary laboratory responsible for sample preparation and assaying as stipulated by Kumba Iron Ore must be ISO 17025 accredited. The Anglo Technical Solutions Chemistry Laboratory (located in Johannesburg) used by Kumba for all exploration sample data, is accredited in accordance with the recognised International Standard ISO/IEC 17025:2005 by the South African National Accreditation System (SANAS) under the Facility Accreditation Number T0051 (valid until 30 April 2026) for:

- The preparation of iron ore samples to a homogenous pulp.
- The analyses of ferrous Iron by potentiometric titration for solid samples.
- Al₂O₃, BaO, CaO, Fe, K₂O, MgO, Mn, Na₂O, P, SiO₂ and TiO₂ by X-Ray Fusion
- Carbon and Sulphur by combustion

Kumba arranges for the independent external auditing of the primary laboratory on an annual basis. Furthermore, the Kumba Metallurgy Department includes the primary laboratory in round robin validations. There was an audit completed in June 2023.

The Kumba Geosciences Exploration Sampling QA/QC Governance Framework is summarised in **Figure 2**.

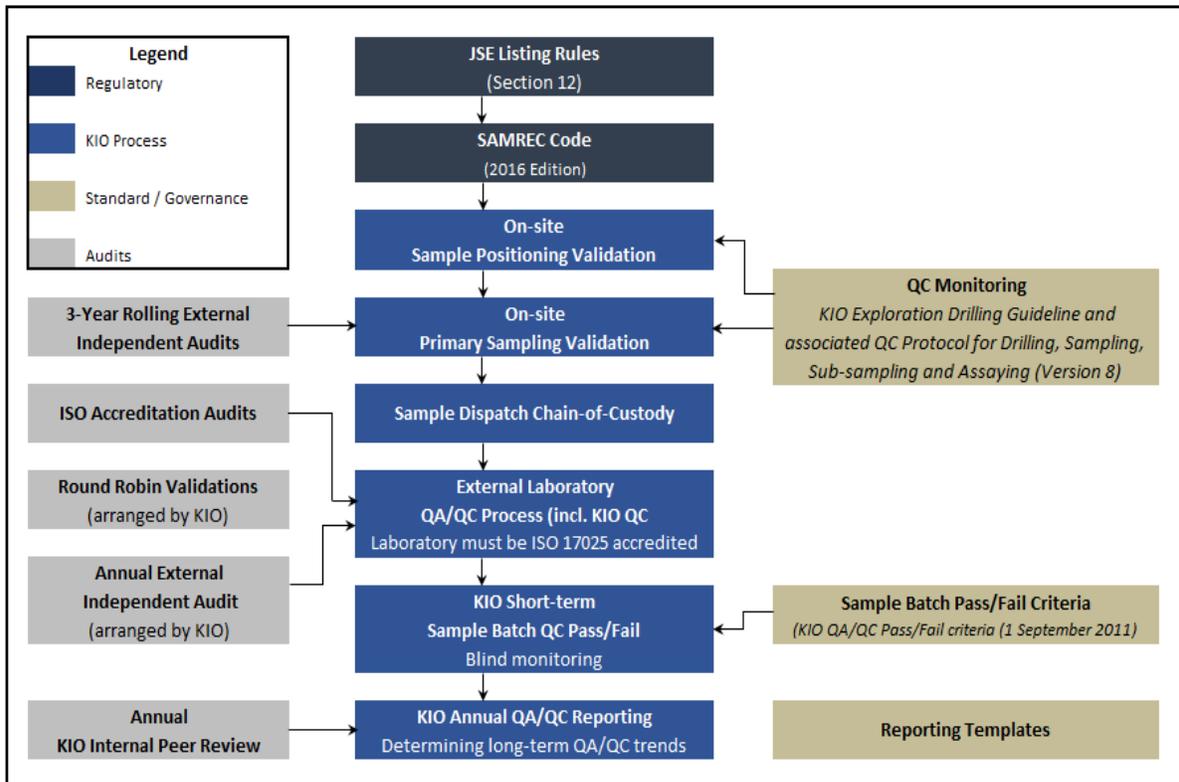


Figure 2: Kumba Iron Ore Geosciences Exploration Sampling QA/QC Governance Framework

4.1 New Exploration Sample Results

The exploration borehole sample data generated in the reporting period is summarised in **Table 2**.

During the reporting period, 44 boreholes were drilled by Kumba Northern Cape Exploration for Heuningkranz project.

NB: Re-assayed samples are not added to the totals.

Table 2: Additional exploration sample results generated in the 1 May 2021 to 30 April 2023 reporting period

| Borehole Type | Number of Boreholes Drilled | Drill Meters | Number Of Samples | | | |
|---------------------|-----------------------------|----------------|-------------------|-------------|-------------|-------------|
| | | | Samples | Submitted | Prepared | Assayed |
| Core | 26 | 4727.77 | 399 | 395 | 395 | 395 |
| Reverse Circulation | 0 | 0 | 0 | 0 | 0 | 0 |
| Percussion | 18 | 2212.2 | 1634 | 1625 | 1625 | 1625 |
| Sonic | 0 | 0 | 0 | 0 | 0 | 0 |
| Re-assayed | | | 80 | 80 | 80 | 80 |
| Total | 44 | 6939.97 | 2033 | 2020 | 2020 | 2020 |

All the drilling in the reporting period was done on the farm Heuningkranz to determine potential mineralisation for purposes of resource extension.

Geomet holes were drilled to get a clear picture of the geometallurgical properties of the Heuningkranz ore body.

Sterilization drilling was also conducted to verify the non-mineralized zones that are identified for future infrastructure.

4.2 Sample Positioning

This feedback is compiled to honour Section 7 of the *KIO Exploration Drilling Guideline and associated QC Protocol for Drilling, Sampling, Sub-sampling and Assaying (Version 10)*.

4.2.1 Heuningkranz Project Coordinate System

Kolomela Local (Projected) Coordinate System Parameters:

- Projection: Transverse_Mercator
- Central Meridian: 23,0
- Latitude_Of_Origin: 0,0
- Linear Unit: Meter (1,0)
- Datum: D_Hartebeesthoek_1994
- Spheroid: WGS_1984

Kolomela Local (Geographic) Coordinate System Parameters:

- Name: GCS_Hartebeesthoek_1994
- Prime Meridian: Greenwich (0,0)
- Datum: D_Hartebeesthoek_1994
- Spheroid: WGS_1984

4.2.2 Borehole Collar Coordinates

The Trig beacon near the Heuningkranz project and the survey stations located in Kolomela mine are used as the reference survey points for Heuningkranz for collar surveys as tabulated in Table 3.

The borehole collar coordinates are normally surveyed by environmental officers and 10% of the boreholes will then be resurveyed by qualified surveyors as a check. The final coordinates are surveyed using a dual frequency Trimble R4, R6 and R10 global positioning systems. The GPS's used will be checked against points with known co-ordinates before collar coordinates are surveyed.

Lunga Busani is the responsible surveyor who signed off the reference point coordinates based on the Kolomela survey stations position and known trigonometric beacons.

Due to limited resources for final coordinate surveying, no final collar surveys were conducted for boreholes drilled and sampled during this reporting period of 01-May-2021 to 30-April-2023. Preparations on site are underway to get the boreholes surveyed as soon as possible.

Mitigation action:

Exploration geologists to survey final collar positions themselves. Therefore exploration being less dependent on surveyors from Kolomela Mine or consultants. Implement a written procedure with QAQC protocols for the survey of borehole collars to ensure consistency along with accuracy.

Due Date: On-going

Responsible Person: Exploration Geologist & Charl Gous

Table 3: Heuningkranz Project Trig Beacon and Base Station Coordinates

| Base Station | X | Y | Z |
|--------------------------|----------|-------------|----------|
| KOLO0001 (Trig Beacon) | 3309.556 | 3141134.109 | 1288.803 |
| SB04 (Primary station) | 9858.616 | 3120522.464 | 1246.942 |
| SB05 (Secondary station) | 9917.390 | 3120612.230 | 1246.513 |

4.2.3 Borehole Deflection Surveys

Down-hole deflection surveys has been conducted for the reporting period using DHS(Down Hole Survey) as a contractor.

Gyroscopic, non-magnetic electronic multi-shot tool is used to measure down-hole dip and Azimuth.

The calibration of the equipment was last done on the 3rd of February 2023 and this is done annually. Calibration certificate has been provided by the contractor.

The downhole survey system takes measurements every 4 meters down the hole until the end of borehole, or close to the end of the borehole.

Once the downhole survey information is received, it is captured in the acQuire geological borehole database.

4.3 Primary Sampling at drill site

This feedback is compiled to honour *Sections 10 and 7.1.1.3, 7.1.1.4 and 7.1.1.5 of the KIO Exploration Drilling Guideline and associated QC Protocol for Drilling, Sampling, Sub-sampling and Assaying (Version 10)*.

4.3.1 Core Sampling

During the reporting period a total of 399 samples were produced from 26 boreholes with some of the boreholes not being sampled yet.

NQ2, HQ and T2-101 have been the main drilling diameters used at Heuningkranz during this period and the drilling equipment used is the is Rocor Diamond Drill Rigs with Rosond being the main contractor.

On site the core is extracted from the core tube and packed into core trays after each drill run has been completed. The core is packed in the core tray starting from the top row of each core tray, from left to right. The name of the borehole is written onto each core tray with a permanent marker, in addition to the start and end depth of the core in the core tray.

At the end of each drill run yellow plastic blocks are placed in the core trays indicating the end of the drill run.

The core is then transported to the Core shed where sampling and logging will occur.

The following procedures are applied when sampling drill core:

- The core trays are placed on logging stands at the core shed.
- Trained geological assistants' measure and document the total core recovery (TCR) of the borehole. It is the responsibility of the geologist to investigate any discrepancies noted during the core recovery procedure. It was noticed, however, that several of the measured core recoveries exceed 100%. For this reason, the geological assistants' have recently been retrained to ensure that the core recoveries are measured correctly.
- On completion of the core recovery, a competent exploration geologist will log the drill hole. Whilst logging, the geologist will distinguish different lithological units and mark the contacts separating lithologies on the core tray with a yellow permanent marker.
- Samples are marked from a minimum of 10 meters above and below the defined mineralized intersection. All samples including footwall and hanging wall were marked according to procedure, which dictates the following;
- As a standard, KIO requires the length of the sample to be between 50 and 250 centimetres. Exceptions to this rule include instances where the thickness of a mineralized lithological unit is less than 50 centimetres or where core loss is so severe that samples exceeding 250 centimetres are required to provide an adequate sample for analyses (meet the minimum weight requirement)

- Core trays with samples are transported to the core cutting bay, where trained geological assistants' place the core into appropriately sized core guides for the samples to be cut with a core cutting machine. The cut samples are then placed back in the core tray and transported to the sampling bay, where the samples are packed.

4.3.2 RC Sampling

No RC drilling was conducted during the reporting period therefore no RC Samples produced.

4.3.3 Percussion Sampling

During this reporting period, percussion drilling was used for piloting through waste material of 10 Geomet holes, to save drilling costs, and to drill 8 through holes for sterilization purposes. A total of 1634 samples were retrieved from 18 boreholes drilled during this reporting period.

Percussion drilling is mostly used for piloting through waste material to save drilling costs but during the reporting period a total of 1634 samples were retrieved from 18 boreholes drilled during this reporting period.

Rosond is the contractor used at Heuningkranz for all drilling including percussion drilling.

Before drilling commences, the Sampler (person) must place two large enough sampling wedges/trays very close to the drill rod directly opposite one another. Large enough means no sample material is allowed to spill over any of the tray sides as it fills up during the 1m drilling progress. If this does occur, the responsible Geologist must ensure that a second set of wedges or trays is added during the drilling of the 1m interval, directly after removing the first set before any spillage occurs. It is furthermore preferred that the sampling area where the wedges are placed be boxed in or skirted with "curtains" (e.g. old conveyer belt) to ensure that all chips following a trajectory landing outside the outer diameter edge of the wedge pan is constrained to fall inside the wedge pan. After the drill rod string has progressed 1m down the hole (check 1m markings on rod), the Sampler(s) must remove the trays immediately.

The drill rig Operator (person) should then (after the trays have been removed) "clean" the borehole by flushing it with compressed air. Thereafter a clean set of wedges (no remnant material) must be placed against the rod before drilling of the next 1m interval commences.

When the process is complete, the samples are transported to the coreshed for further processing.

4.4 Material Recovery

This feedback is compiled to honour Section 8 of the *KIO Exploration Drilling Guideline and associated QC Protocol for Drilling, Sampling, Sub-sampling and Assaying (Version 10)*.

4.4.1 Core Drilling

The core recoveries at Heuningkranz Project are determined by comparing the drill run length with the length of the core retrieved per drill run. The core recoveries of drill run intersections containing ore, and core run sections containing waste material are respectively summarised in **Figure 3** and **Figure 4**.

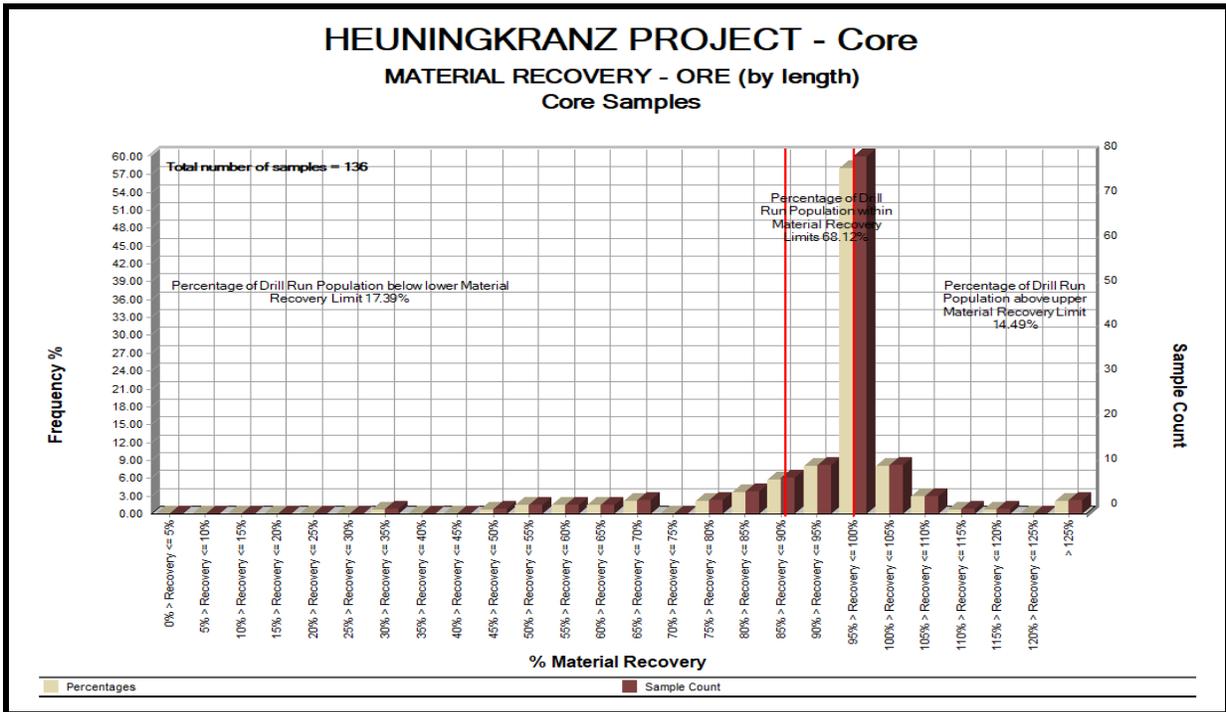


Figure 3: Core recoveries of drill runs containing ore material.

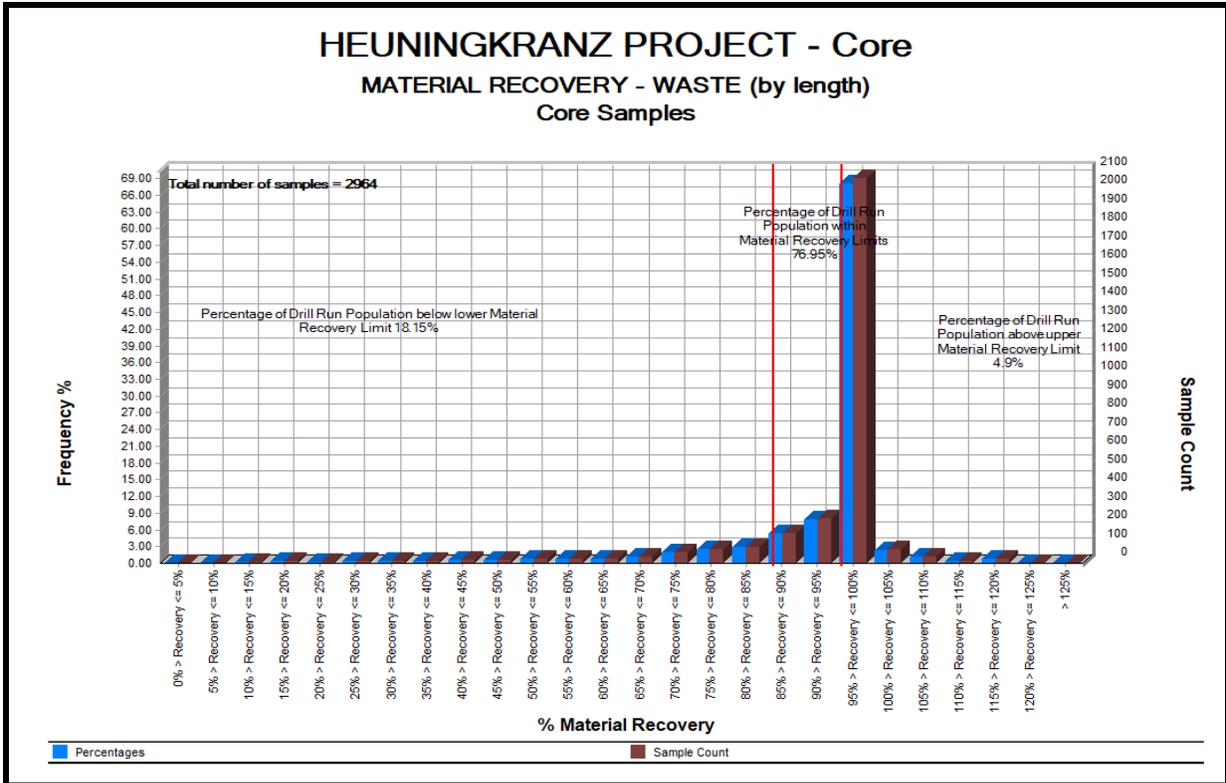


Figure 4: Core recoveries of drill runs containing waste material

During this reporting period only 68.12% of ore samples have a material recovery within the acceptable limits and 76.95% of the waste samples. This might be due to complex geological conditions at Heuningkranz.

In the past there has been interventions implemented to address this problem such as sensitizing geologist to the procedure and implementing validation checks in acquire to prompt for explanations if a recovery outside the limits has been entered into the database, an improvement has been noted since this implementation, but further investigation is warranted.

One of the action of improvement is to allocate a core master on the contractor side to optimize the retrieved core quality.

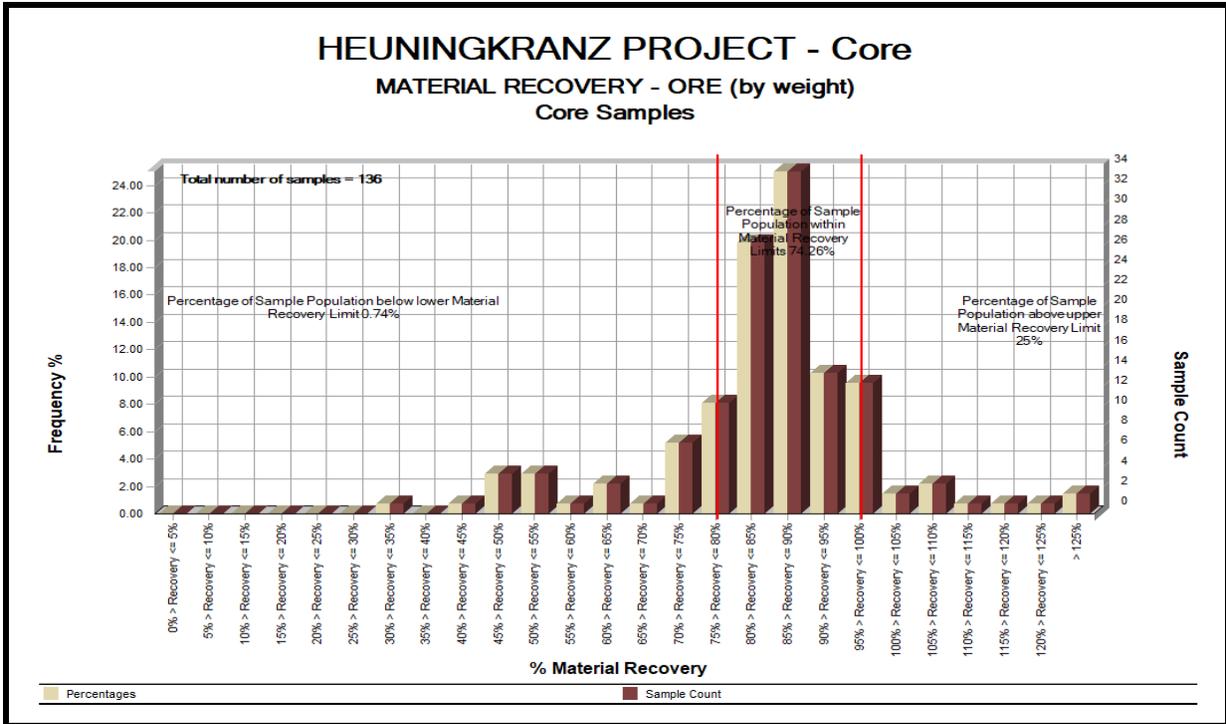


Figure 5: Weight derived material recovery for cored samples containing ore material.

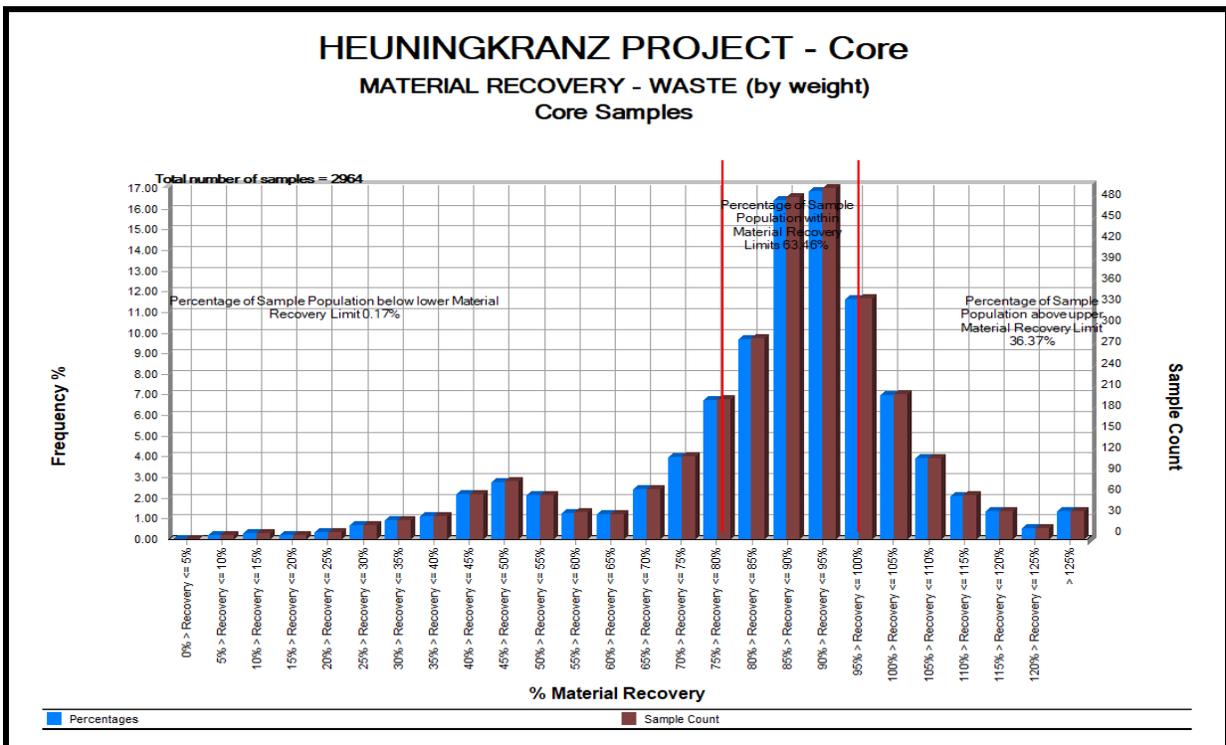


Figure 6: Weight derived material recovery for cored samples containing waste material.

The material recovery percentages for ore type samples and waste type samples, which indicate the quantity of the in-situ sample material recovered via the drilling process, are illustrated in **Figure 5** and **Figure 6** respectively.

For the ore type samples taken, 74.26% of the population had a representative material recovery. Material recoveries are significantly below what is deemed acceptable.

For the waste type samples taken, 63.46% had representative material recoveries.

These low recoveries need to be investigated to determine whether they are associated with the nature of orebody.

4.4.2 RC Drilling

No RC drilling was conducted during the reporting period.

4.4.3 Percussion Drilling

The ore and waste percussion sample mass representivity is respectively summarised in **Figure 7** and **Figure 8**.

Sample mass Representativity for Percussion is determined using the method described in Exploration Drilling Guideline and Associated QC Protocol for Drilling, Sampling, Sub-sampling, and Analyses (Version 10) document. This method uses the on-site sample mass (as weighed during dispatching process), divided by the calculated theoretical mass of the drilled sample interval, expressed as a percentage. The formula for the theoretical mass of the sample interval is given as:

$$\text{Assumed mass of interval} = \pi r^2 h \times RD$$

HEUNINGKRAZ PROJECT

SAMPLE MASS REPRESENTIVITY

(Percussion Ore Samples)

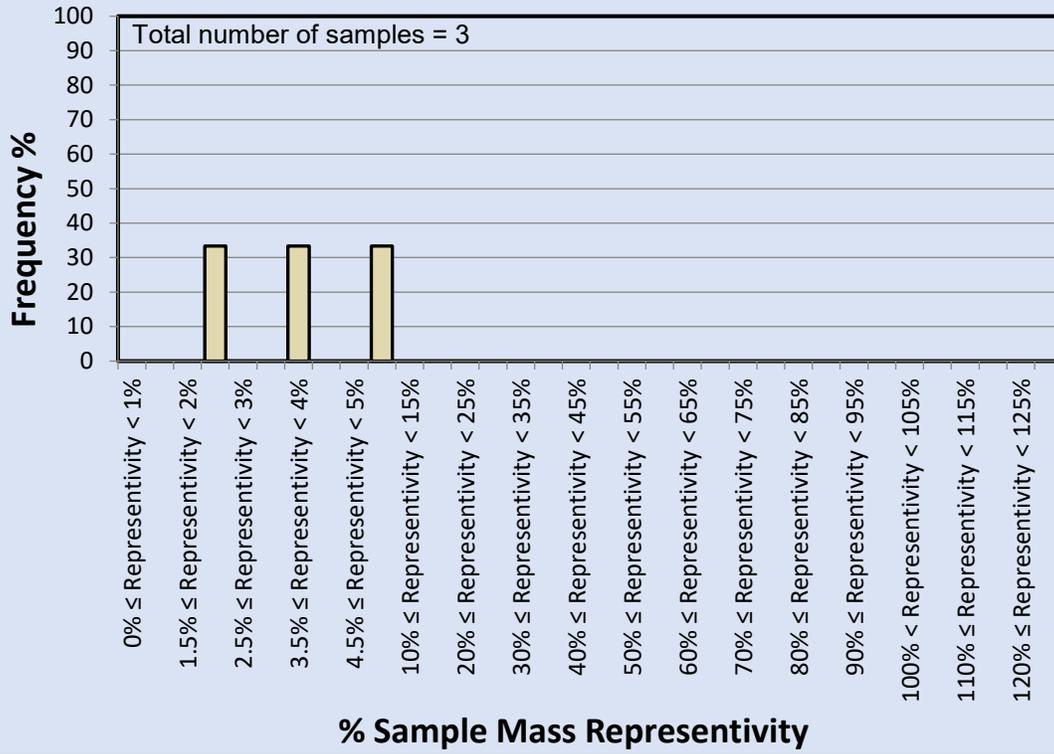


Figure 7: Percussion ore sample mass representivity

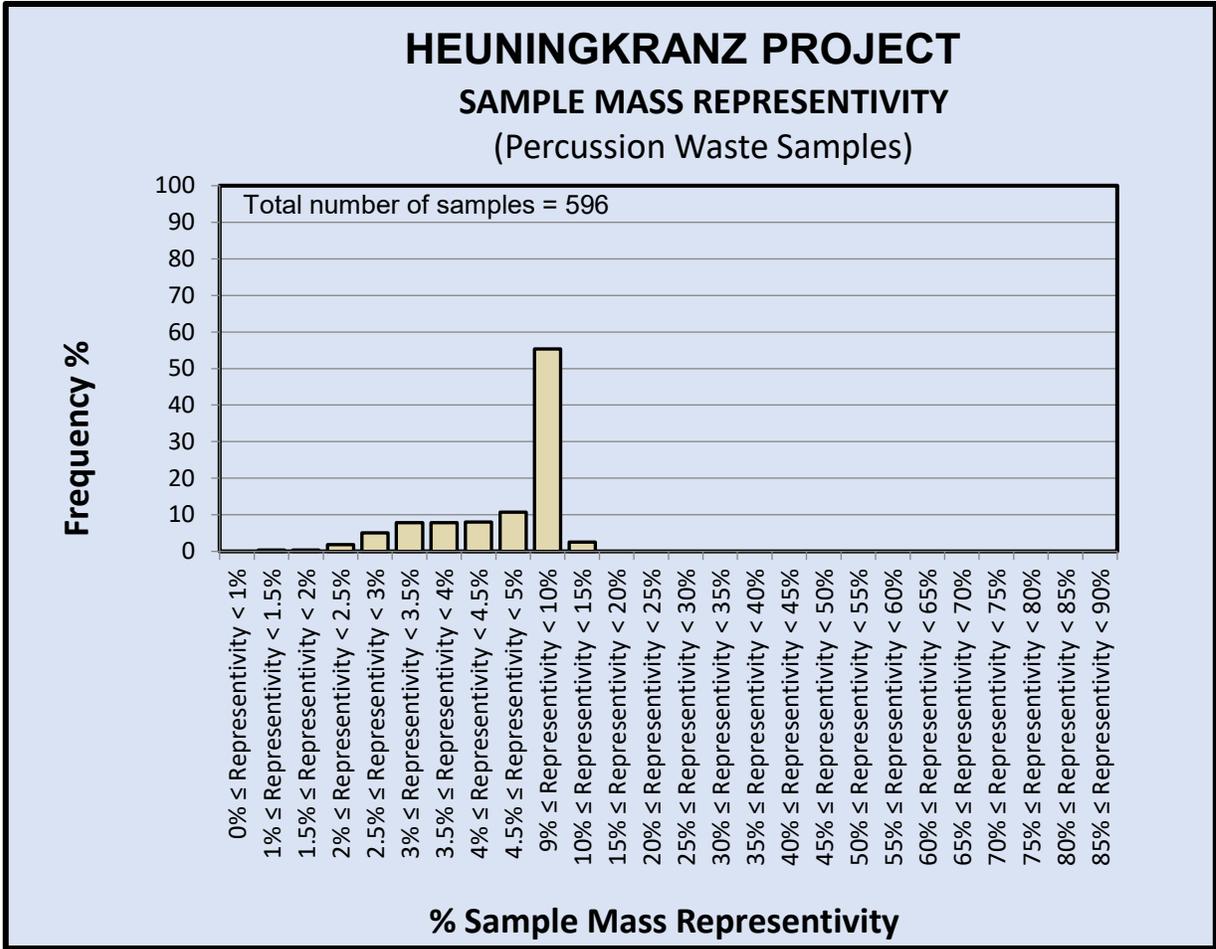


Figure 8: Percussion waste sample mass representivity

4.5 Field Duplicate Results

Kumba Geosciences has discontinued the practise of inserting field duplicates as this required the core sample to be quartered, which means it does not represent a true field duplicate as primary core samples submitted to the laboratory consists of core halves. Core half field duplicates cannot be submitted as it is a primary rule that core halves must be retained for future reference.

5.1 Sample Batching

This feedback is compiled to honour *Section 11 of the KIO Exploration Drilling Guideline and associated QC Protocol for Drilling, Sampling, Sub-sampling and Assaying (Version 10)*.

Core samples are separately batched from RC samples, which in turn are separately batched from percussion samples.

At Heuningkranz project a sample batch consists of 20 primary samples, one certified reference material sample, one Coarse duplicate, one Pulp duplicate and one external pulp duplicate making a total of 24. This approach ensures that Heuningkranz Project inserts the relevant QC samples at a 5% rate.

No blank samples are submitted as part of a batch as Kumba has not yet identified an economically viable material that can be utilised as a blank for Fe and all the other deleterious elements analysed as part of the standard suite of elements.

During the sampling process, sample numbering will consist of the hole number concatenated with the number of the sample within that specific hole. This on-site sample numbering will then be changed during dispatch in acQuire where a new sampleID will be assigned depending on the drilling type. The dispatch object in acQuire will also assign a unique dispatch no. Dispatch Internal advice and external reports will be printed from acQuire, the internal report assists the sampling team during bagging and tagging and the external report will be submitted to ALS Lab.

Core samples are given a GK prefix and all chip samples (RC and percussion) are given GB as a prefix. A sequential number is then attached to the prefix. Sample numbers are therefore blind to the analytical laboratory. Sample numbering for both GK and GB samples started at GK1000000 and GB1000000 respectively.

Each sample is placed in a thick, transparent plastic bag with a paper tag with the unique sampleID written on the tag. The bag is then closed with a cable tie to which a metal tag displaying the BatchID and unique SampleID is attached.

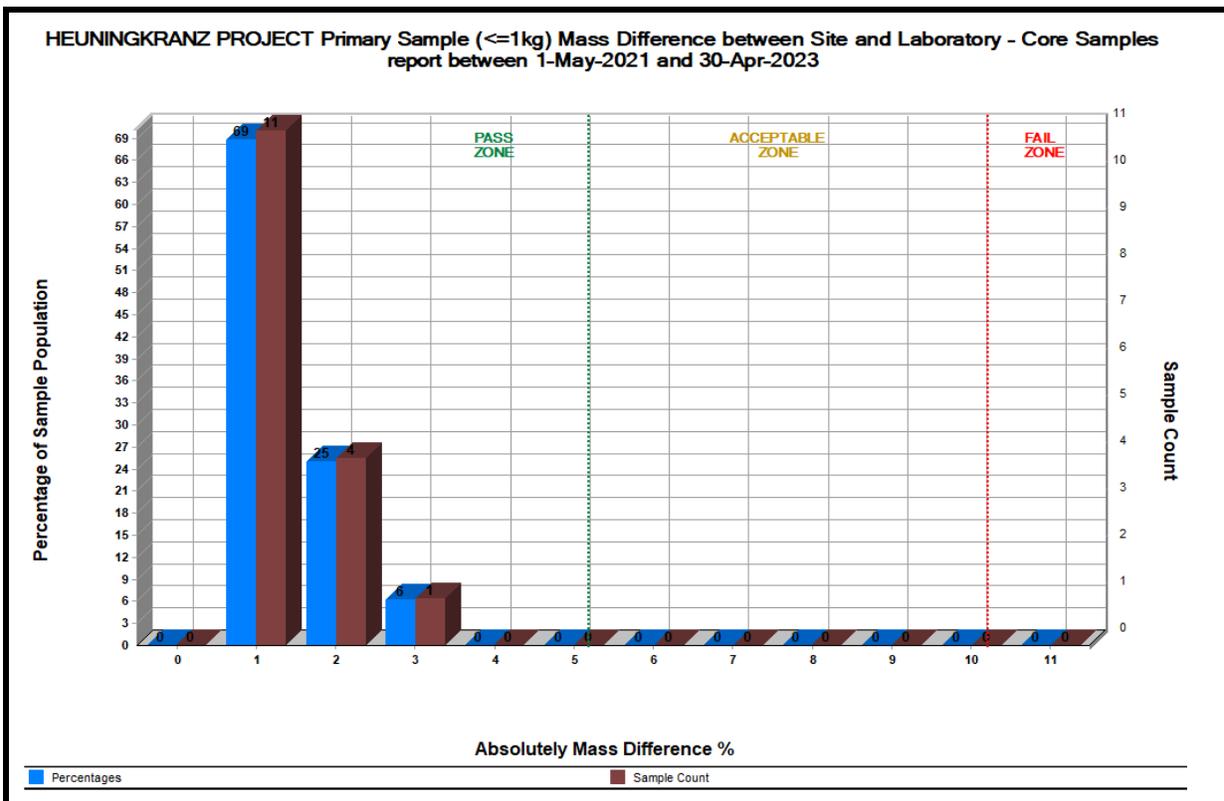
Samples are weighed using a scale after it is bagged, tagged, and dispatched on acQuire. The scale is positioned on a level surface to ensure accurate reading, before weighing the scale accuracy will be tested with three different calibrated weights where each calibrated weight is weighed individually and recorded in the scale weight check registry.

The sample weights will then be imported into the acQuire database and the Starlims® interface where comparison between the laboratory's and site's masses will be done for any discrepancies.

The sample bags are then placed in drums and transported via truck to the analytical laboratory.

Figure 9 is a summary of the sample mass differences for core and percussion samples comparing the mass of the primary samples that weighs 1kg or less as measured on site before they are dispatched with the mass of the same samples as they are weighed by the primary laboratory after receipt.

Core



Percussion

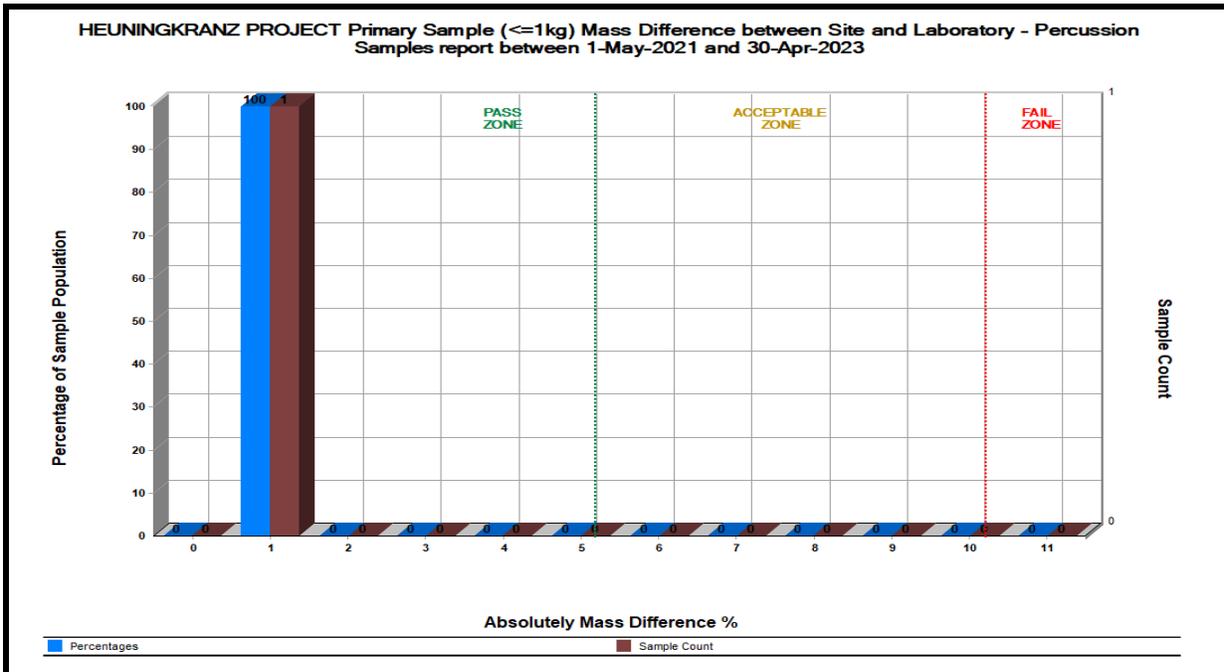
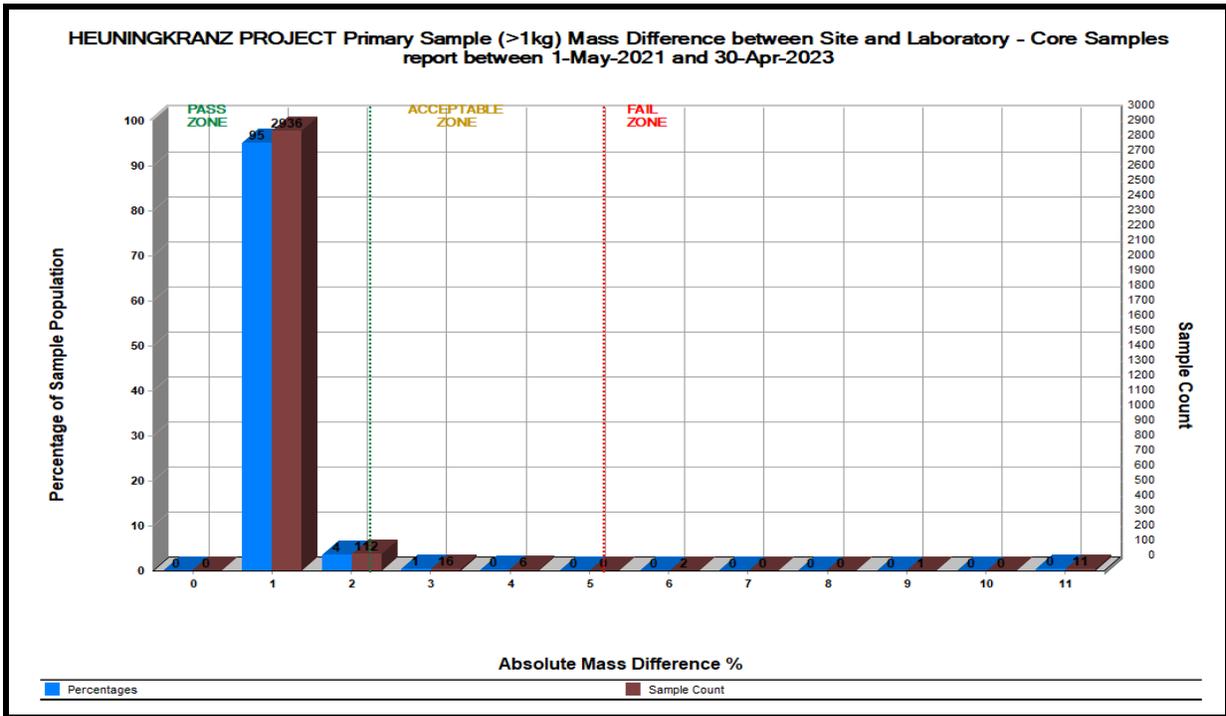


Figure 9: Primary Sample Mass Differences (Site versus Laboratory) for Core and Percussion samples with mass $\leq 1.0\text{kg}$ as weighed at site

For the reporting period all the samples with a mass less or equal to 1kg pass the mass difference validation indicating that no sample swaps took place and both site and lab are adhering to the standards.

Figure 10: is a summary of the sample mass differences for core and percussion samples, comparing the mass of the primary samples that weighs more than 1kg on site before they are dispatched with the mass of the same samples as they are weighed by the primary laboratory after receipt.

Core



Percussion

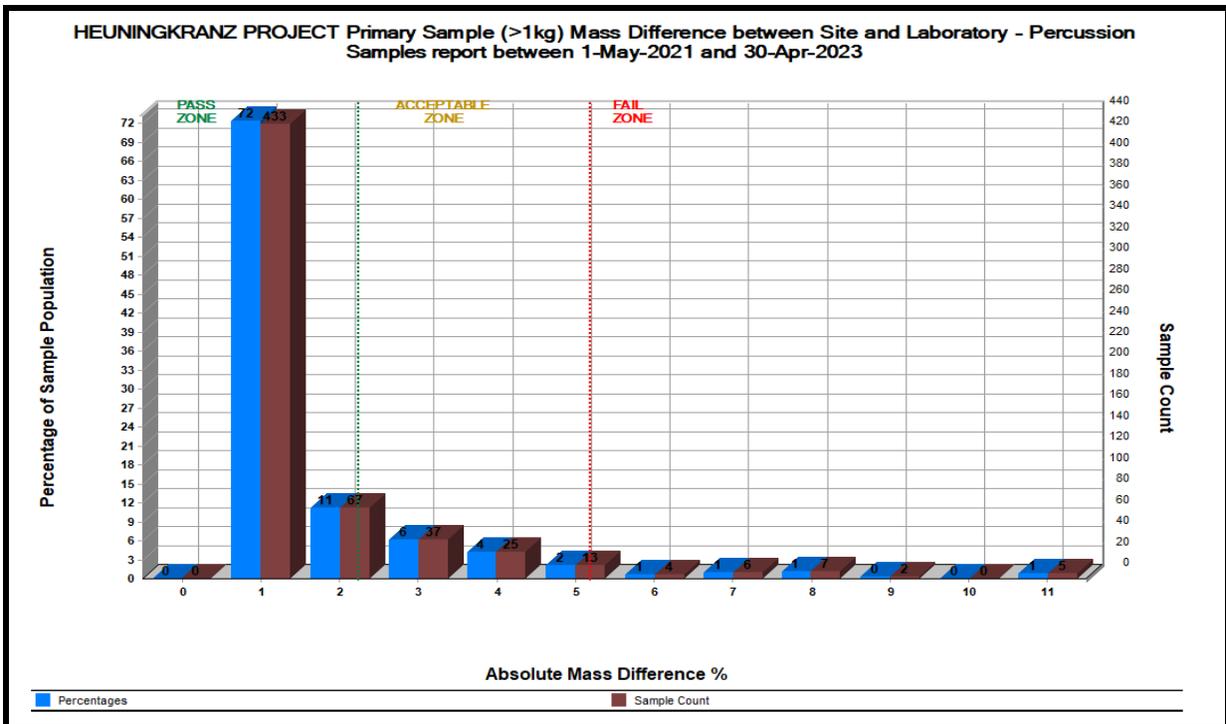


Figure 10: Primary Sample Mass Differences (Site versus Laboratory) for Percussion samples with mass > 1.0kg as weighed at site.

It is noted that 4% of the percussion samples and 0.4% of the core samples had mass differences which exceeds the maximum 5% absolute mass difference limits.

These samples were part of the batches:

('SIBEXP0003481','SIBEXP0003482','SIBEXP0003484','SIBEXP0003485','SIBEXP0003488','SIBEXP0003489','SIBEXP0003490','SIBEXP0003491','SIBEXP0003494','SIBEXP0003495','SIBEXP0003497','SIBEXP0003339','SIBEXP0003342','SIBEXP0003344','SIBEXP0003345','SIBEXP0003381','SIBEXP0003386','SIBEXP0003388','SIBEXP0003391','SIBEXP0003400','SIBEXP0003411','SIBEXP0003426','SIBEXP0003430')

An investigation into the differences revealed that in most cases the scale was not in a controlled(enclosed) environment, wind played a factor. Secondly manual writing by the technicians and a plastic destructing on the number screen also brought some discrepancies. The corrective actions taken were that with exploration moving to site Demaneng, the scale will be in a controlled environment also the automated scale previously used by Sishen will also be used for Northern cape exploration.

5.2 Sample Dispatching

During sample dispatching precise procedures are implemented to ensure sample integrity is maintained from the primary dispatching site which is the Heuningkrantz/Demaneng coreshed to ATS Laboratory following the below steps:

Sample batches are packed into drums with each drum clearly marked with the BatchIDs of the sample batches it contains.

As each batch is packed into drums, the individual samples are checked on the external dispatch advice to ensure that each sample of the batch is accounted for.

Prior to the dispatch, a second check is done to verify that the samples on the drums are the correct samples represented on the external dispatch advice. The external dispatch advices are signed off by the core shed supervisor and spot checked by geologists.

The external dispatch advice lists of the dispatched batches are placed in an envelope and sent with the truck driver to the analytical laboratory.

Upon receipt of the samples, ATS sends a list of the sample batches which they received to corroborate that they received all the dispatched batches.

6 SAMPLE PREPARATION

6.1 Overview

The minimum requirements for sample preparation prescribed by Kumba Iron Ore Geosciences are illustrated in **Figure 11** by means of a process flow.

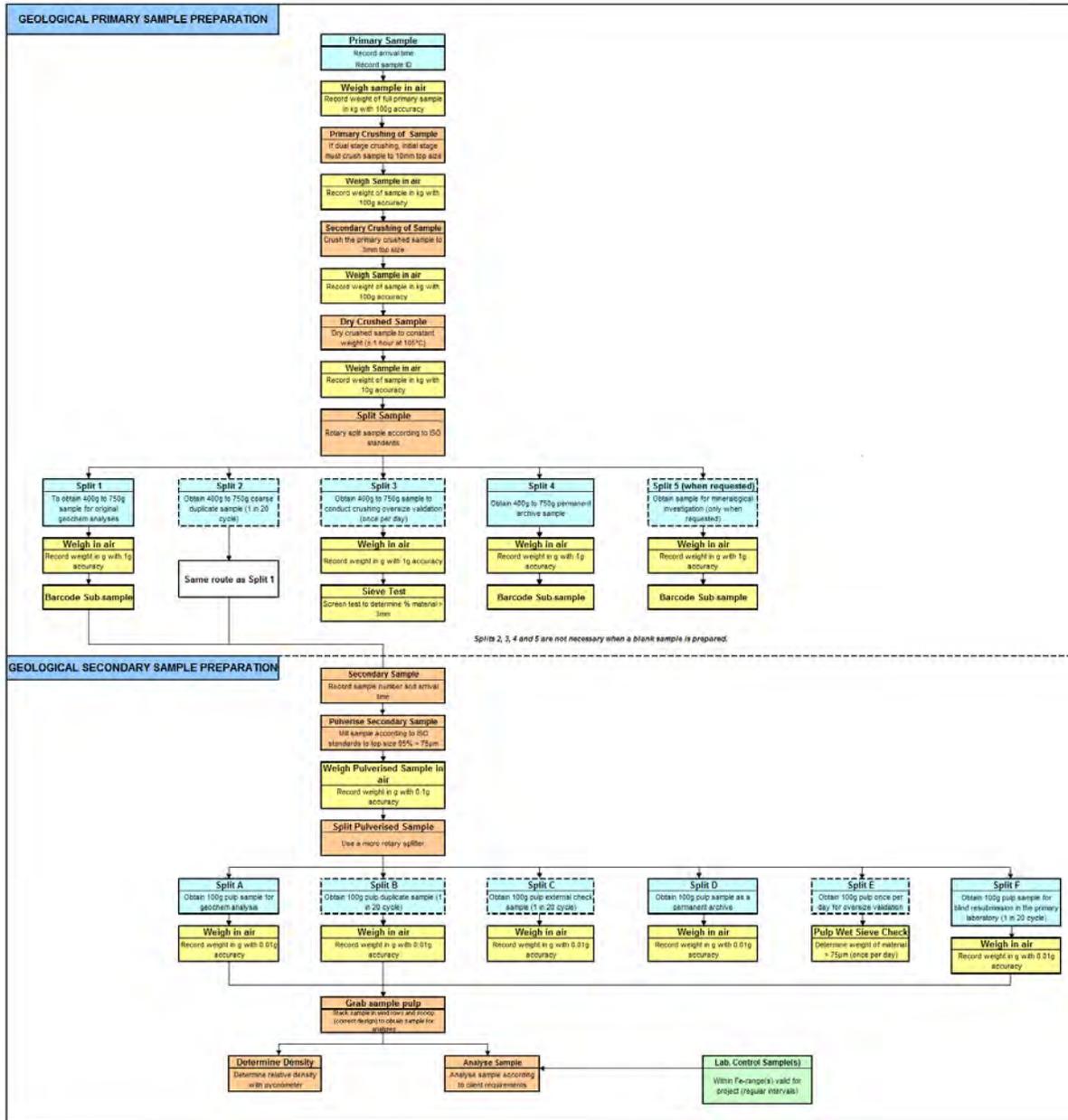


Figure 11: Diagram demonstrating Kumba Geosciences prescribed minimum standard sample preparation process flow.

The ANGLO AMERICAN TECHNICAL SOLUTIONS Division of Anglo Operations Limited CHEMISTRY LABORATORY (Co. reg no: 1921/006730/07) is accredited by the South African National Accreditation System (SANAS) under the Facility Accreditation Number: T0051 for the preparation of samples to a homogenous pulp for iron ore, this accreditation has been reassessed and is currently valid until 30 April 2026.

The sample preparation process followed by the Anglo Technical Solutions Iron Ore Laboratory (ATS) for the reporting period is detailed below:

6.1.1 Sample Receipt

- Samples are received with an accompanying Dispatch Advice from the Client.
- Samples are sorted and checked against the Dispatch Advice for any discrepancies (extra, missing or miss labelled samples).
- All discrepancies are reported to the Client and work on the batch will only commence once queries are resolved.
- The Date Received and the number of samples received are recorded.
- A project is opened in Starlims®, with Client's order number and samples are logged in as batches as indicated on the Dispatch Advice. Each batch automatically receives a sequential, unique batch (folder) and order number (lab sample number).
- Batch Reports are printed and sequenced according to batch number.

6.1.2 Sample Drying

- The samples are transferred from the sample bags to pan(s).
- The pan and sample catch weights are recorded into Starlims®.
- Each pan containing the sample is then placed onto an oven trolley.
- Samples are dried for a minimum of 18 hours at 105°C ($\pm 5^\circ\text{C}$).
- Samples are randomly checked every 2hrs to see if samples are dry.
- Once dry, the oven trolley is removed and allowed to cool.
- Once cooled, the dry catch weights are recorded.
- Dry mass is calculated and the worksheet containing these masses are printed and attached to the batch report

6.1.3 Crushing

- Samples are crushed to an optimal of T95 <3mm and minimum of T90 <3mm using a Boyd Crusher.
- The crusher is vacuumed and cleaned between every sample.
- Samples are weighed after crushing to determine the mass loss. Mass loss should not exceed 5%.

6.1.4 Dry Screening

- Adherence to optimal of T95 <3mm and minimum of T90 <3mm crusher product is performed randomly at a rate of 1 per batch of 22 samples.
- If product does not adhere to specifications, the samples are re-crushed.
- Screens are vacuum cleaned and wiped with a damp cloth.

6.1.5 Coarse Splitting

- Samples that weigh >8kg undergo two stages of rotary splitting (10 cup splitter), rest of samples only 1 stage.
- 10 cup rotary sample dividers with 5L, 10L, 20L and 30L capacity available.
- Once splitting is completed (Stage 1 and Stage 2 where applicable), all splits are weighed into the Starlims®. The split is calculated to determine the split equalisation.
- For stage 2 splitting, once the weights have been recorded in Starlims®, the system indicates which split portions are to be combined to ensure that between 400g to 800g of material is available for the milling process (analytical split). Rest of the splits, i.e. coarse duplicate and coarse archive are created as per client instruction.
- When 2 stages of splitting are done; the remainder of the first stage splits are placed in individually labelled ziplock plastic bags within a bigger plastic bag.
- The coarse archive is placed in a glass jar (1L), labelled and returned to client.
- Maximum mass difference for combined splits to original mass is 5% (optimum is 2%).
- Rotary splitter components are cleaned between every sample by vacuum cleaning and then blowing with compressed air.

6.1.6 Milling

- The samples are milled for 5 to 7 minutes in an 800cc mill pot (low-chrome).
- Mill pots are washed with water between every sample.
- Samples are weighed after milling (into Starlims®) to determine the mass loss. Mass loss should not exceed 5%.

6.1.7 Micro Splitting

- Milled samples are subjected to 10 cup micro rotary splitting.
- Once splitting is completed, all the splits are weighed into Starlims®
- The split are calculated to determine the split equalisation check. Combination of splits (e.g. 1-6, 2-7, 3-8, 4-9, 5-10) are determined and used as follows:
 - o P1 - Chemical Analysis (labelled 100ml plastic jar)
 - o P2 - Pulp Dup (labelled Ziploc plastic bag)
 - o P3 - Archive (labelled Ziploc plastic bag)
 - o P4 - External (labelled Ziploc plastic bag)
 - o P5 -Oversize Check (labelled Ziploc plastic bag)
 - o The pulp samples are put into a Ziploc bag with the rest of the entire sample - The bag with all the samples are closed with cable ties and stored

6.1.8 Wet Screening

- Adherence to optimal of T95 <75µm and minimum of T90 <75µm mill product is performed randomly at a rate of 1 per batch of 22 samples.
- If product does not adhere to specifications, the samples are re-crushed.
- Screens are cleaned in an ultrasonic bath

6.2 Heterogeneity Testing

Correct sub-sampling practices are of vital importance to the mining industry as key business decisions are made on the basis of samples in the value chain. Geology plays a relevant role in pre- and post-investment stages.

The understanding of natural variability is essential for geological modelling, geometallurgical modelling, mine planning, as well as grade and process control. Improper sampling practices obstruct this objective and introduce variable components, which can cause economic losses. A good approach to accomplish this understanding is the application of heterogeneity testing.

The Sampling Theory allows us to calculate the sampling error or variance at each stage of the process from the initial sampling through to the final analytical aliquot based on material heterogeneity. Knowing the variance at each stage makes it possible to calculate an overall sampling precision or overall sampling variance to determine if a procedure meets the requirements of the client and best practices.

The objective of applying the theory of sampling to a sample preparation protocol is to minimise the variance of the fundamental error of sampling.

In practice there are many different techniques for the determination of heterogeneity, some of which require detailed mineralogical investigations to determine such factors as the “liberation factor” and “mineralogical factor”, etc. However, a simplified version of the mathematics and practical procedures for the estimation of the value of the heterogeneity is available and readily applicable (e.g. the 50g fragment exercise of Pitard 1993).

The constitutional heterogeneity is determined on one coarse fraction size (+6.3mm) and from this fraction the sampling constant is determined. The sampling constant, independent of fraction size, is then used to determine the variance of the fundamental error at each of the required fractions, i.e.:

$$\sigma^2(\text{FE}) = \text{IHL}/\text{MS} = (\text{f.g.c.l.d}^3)/\text{MS} \dots\dots\dots (1)$$

or

$$\sigma^2(\text{FE}) = \text{K.d}^x / \text{Ms} = \text{f.g.c.l.d}^3/\text{Ms} \dots\dots\dots (2)$$

where

| | |
|-----------------------|---|
| $\sigma^2(\text{FE})$ | is the variance of the fundamental error |
| IHL | is the constitutional heterogeneity. |
| d | is the nominal top size of the particles (taken here as 1.05cm) |
| Ms | is the mass of the sample. |
| f | is the shape factor. |
| g | is the granulometric factor. |
| c | is the mineralogical factor. |
| l | is the liberation factor. |
| K | is the sampling constant ($\text{K}=\text{f.g.c.l}$) |
| x | is an integer to which the nominal fraction size is raised to. |

Pitard (2004) recommends the value of 2.5 (rather than 3) for the value of x given the absence of knowledge of the liberation factor.

In a heterogeneity test, the variance of the fundamental error is determined for a given particle size and mass. From equation (1) the sampling constant “K” is determined. The sampling constant “K” is equal to the product of f , g , c and l , themselves difficult to determine in practice. Once the sampling constant “K” has been determined, this can then be re-applied using equation (2) to determine the variance of the fundamental error “ $\sigma^2(\text{FE})$ ” for different sample masses and nominal top fractions.

The application of heterogeneity testing is used to help minimise Pierre Gy’s fundamental sampling error and to study the impact of other sampling errors. Heterogeneity testing is used and recommended for the optimization of sampling protocols. The level or sample mass to which the sample should be split prior to further size reduction, can only be stipulated once the results of the heterogeneity test have been completed. It provides a very good definition of the value of the constant “K”. The idea is to estimate the variance of the fundamental error with an experiment.

The heterogeneity of a banded iron formation sample (considered to be the most heterogenic lithology that may be part of the run-of-mine stream) taken at Heuningkranz Project was determined for all critical grades and an evaluation of the current on-site sample preparation protocols has been done using the results of the contaminant grade that performed worst during heterogeneity testing i.e. $\%K_2O$, in order to determine if it complies with best practices.

The manual sample preparation protocol followed by the Anglo Technical Solutions Iron Ore Laboratory was also evaluated using the heterogeneity K_2O test results of the Sishen banded iron formation sample. The sampling protocol followed appears to be more than adequate to achieve representative sample mass and sample size reduction(**Figure 12**)

| Nomogram Data | | | | | |
|---------------------------------|-----------|----------|--------------------------------|----------------|----------|
| Sample Preparation Protocol | Size [cm] | Mass [g] | Standardised Relative Variance | Rel. Std. Dev. | Position |
| Original sample mass | 1.0000 | 4,380 | 0.00327055 | 5.72% | A |
| Crush -3mm | 0.3000 | 4,380 | 0.00016122 | 1.27% | B |
| Divide 10 way | 0.3000 | 438 | 0.00161222 | 4.02% | C |
| Pulverise | 0.0075 | 438 | 0.00000016 | 0.04% | D |
| final mass for chem | 0.0075 | 1 | 0.00006978 | 0.84% | E |
| Incremental variance | | | 0.005 | | |
| Alpha= | | | 2.50 | | |
| K= Product (% K ₂ O) | | | 14.325 | | |
| % Maximum Stage Error | | | 5.72% | | |
| % Fundamental Error | | | 7.15% | | |
| % Over All Potocol Error | | | 10.11% | | |

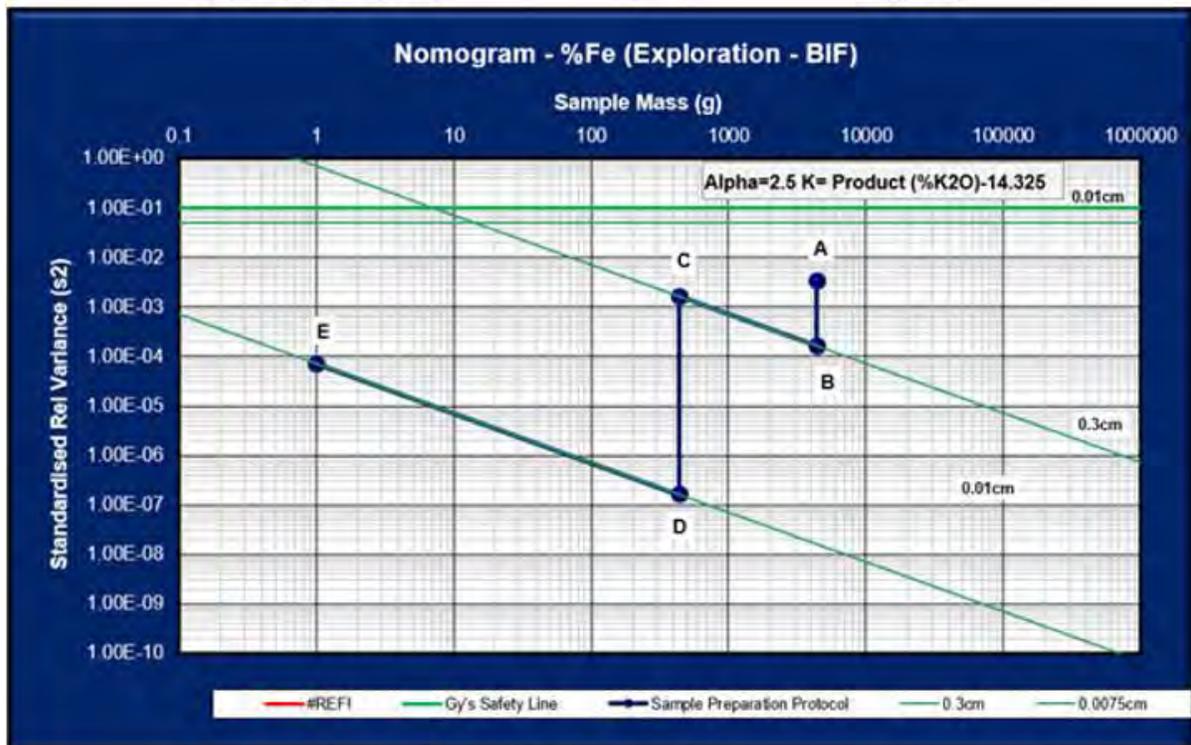


Figure 12: Nomogram for Heuningkranz Project BQ Core 36.44 mm based on the “K” Constant for K₂O – Anglo Technical Solutions Sample Preparation (primary sample excluded)

6.3 Coarse Sub-sampling

Kumba considers the following as proper quality control measures to ensure acceptable coarse sub-sampling practices:

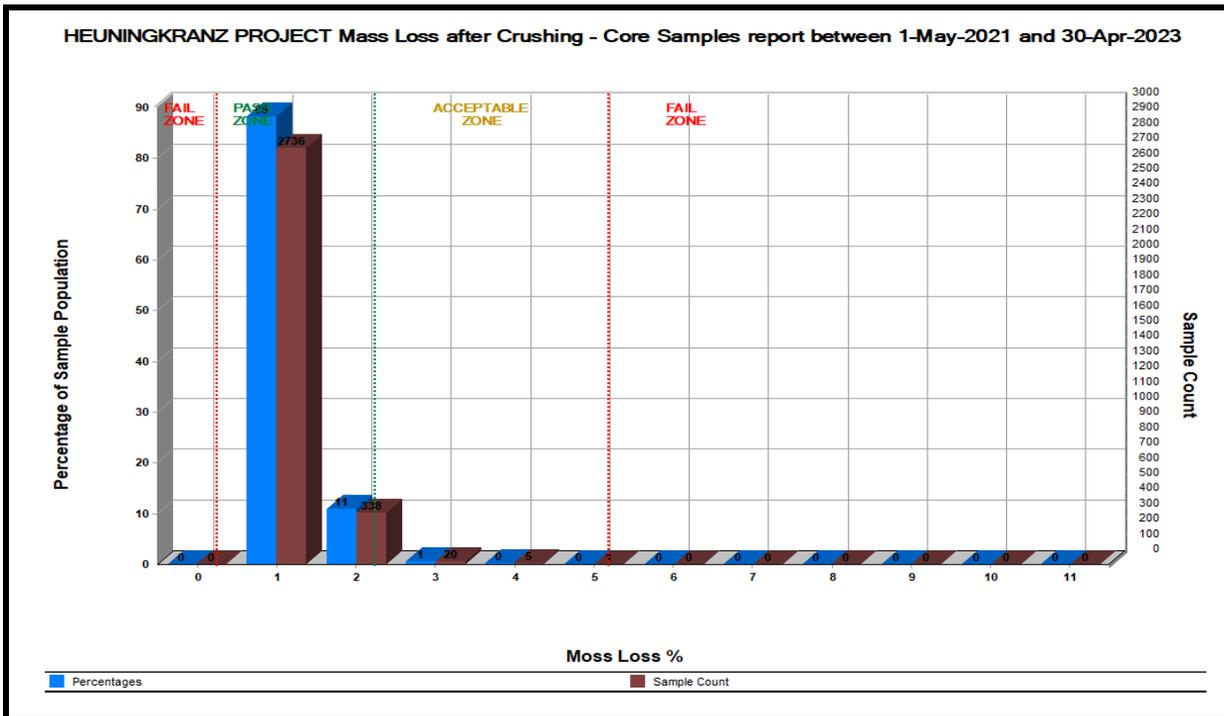
Criteria:

- The mass loss after primary crushing should preferably be $\leq 2\%$ and never $> 5\%$;
- The primary dried sample must be crushed to an optimal T95 $< 3\text{mm}$ and minimum T90 $< 3\text{mm}$ top size, preferably using a crusher such as a Boyd Crusher;
- The mass of the actual coarse sub-sample obtained after splitting must compare (preferably not differ more than 2% and never more than 5%) with the weight of the crushed sample divided by the number of splits to be performed and
- At least 90% of the coarse duplicate pair population taken over the reporting period must fall inside the coarse duplicate/twin pass range of 0% to 10% Absolute Relative Difference (ARD) for %Fe and %SiO₂ and have an ARD $\leq 20\%$ for %K₂O, %Al₂O₃ and %P (half these limits apply for MPRD).

6.3.1 Mass loss after crushing.

From **Figure 13** it is clear that the mass loss after crushing of the primary samples is well within the 5% limit.

Core



Percussion

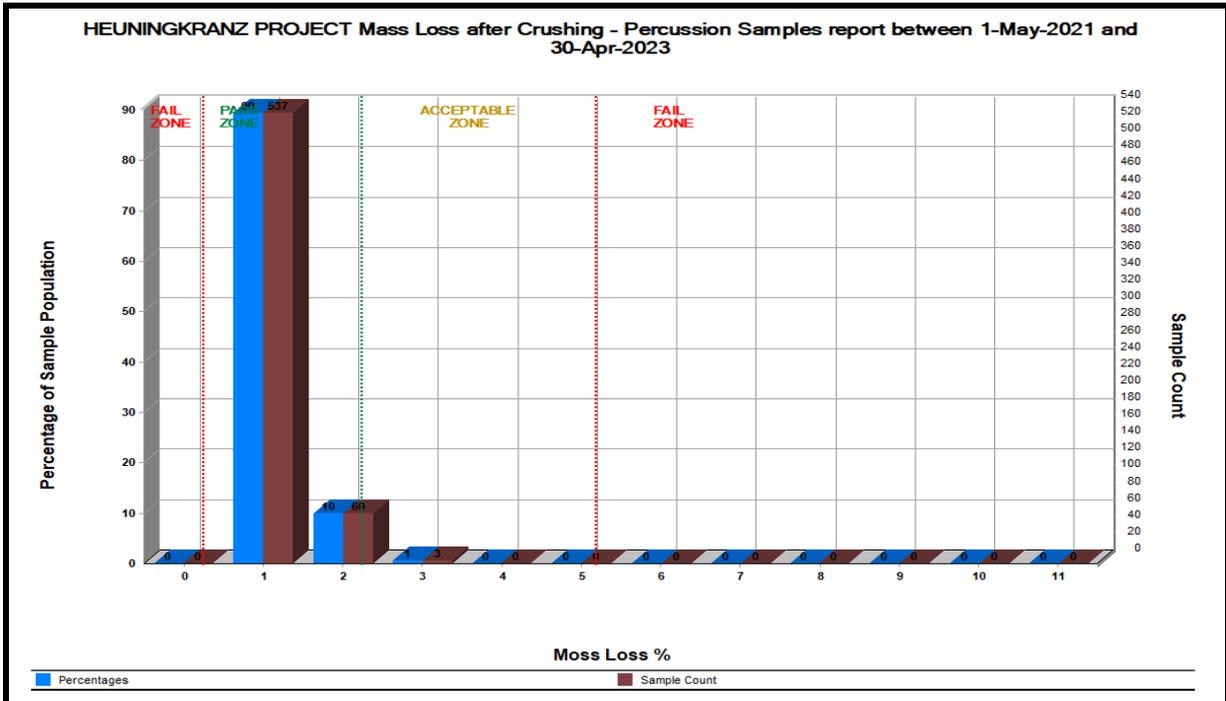
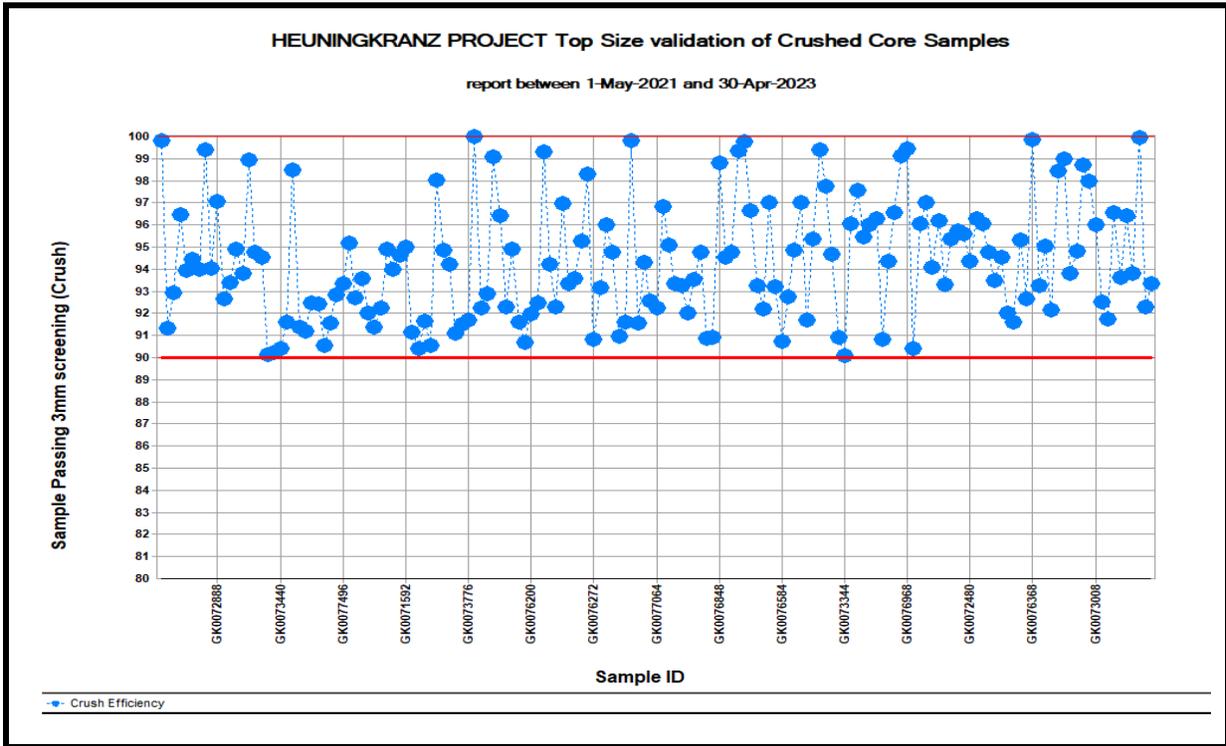


Figure 13: Heuningkranz Project sample mass after crushing to 3 mm top size (expressed as percentage of original mass of primary sample as received and dried)

6.3.2 Top size after sample crushing

The sieve test results (Figure 14) show that all material checked passes the 90% minus 3mm material top size limit prescribed by KIO.

Core



Percussion

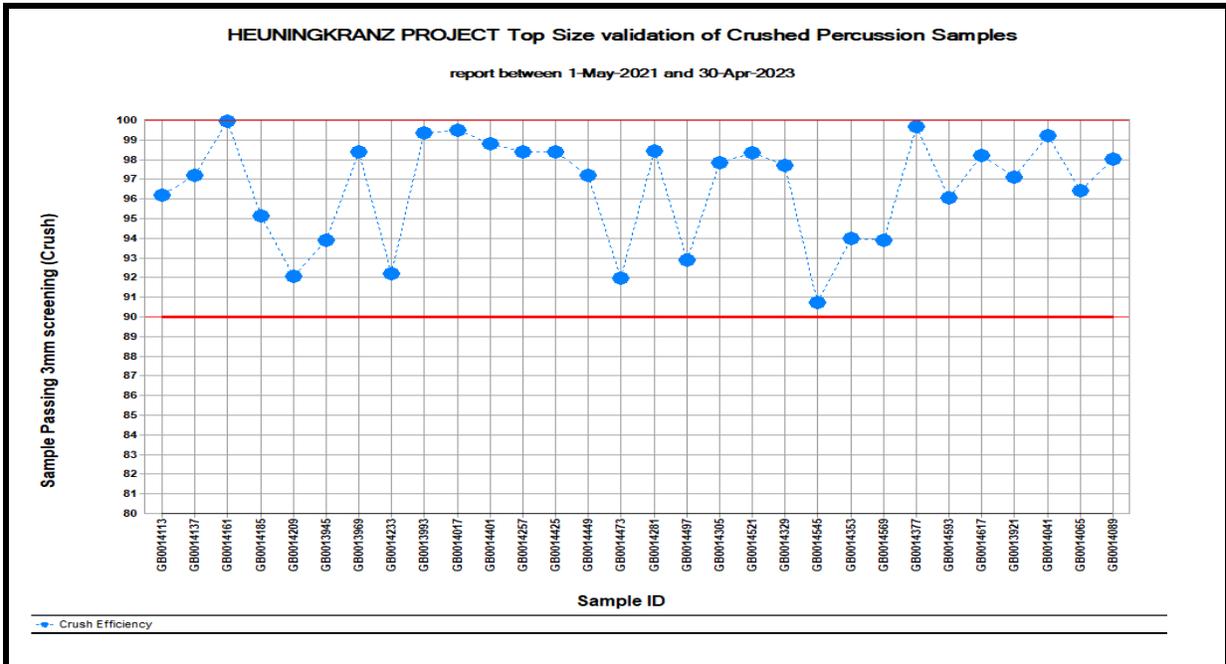
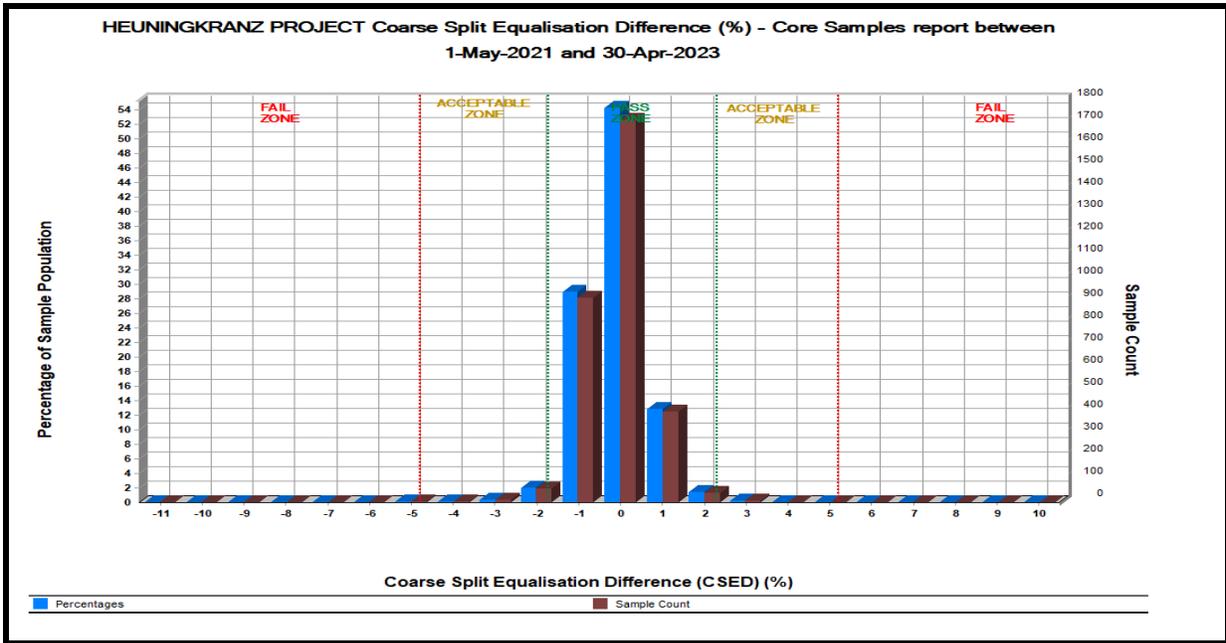


Figure 14: Validation of Heuningkranz Project coarse sample top size (percentage passing 3mm sieve during dry screening)

6.3.3 Equalised coarse splitting

The majority of the coarse sample splits lies within the preferred 2% limit, and no split are outside the 5% limits as prescribed by Kumba Geosciences **Figure 15**

Core



Percussion

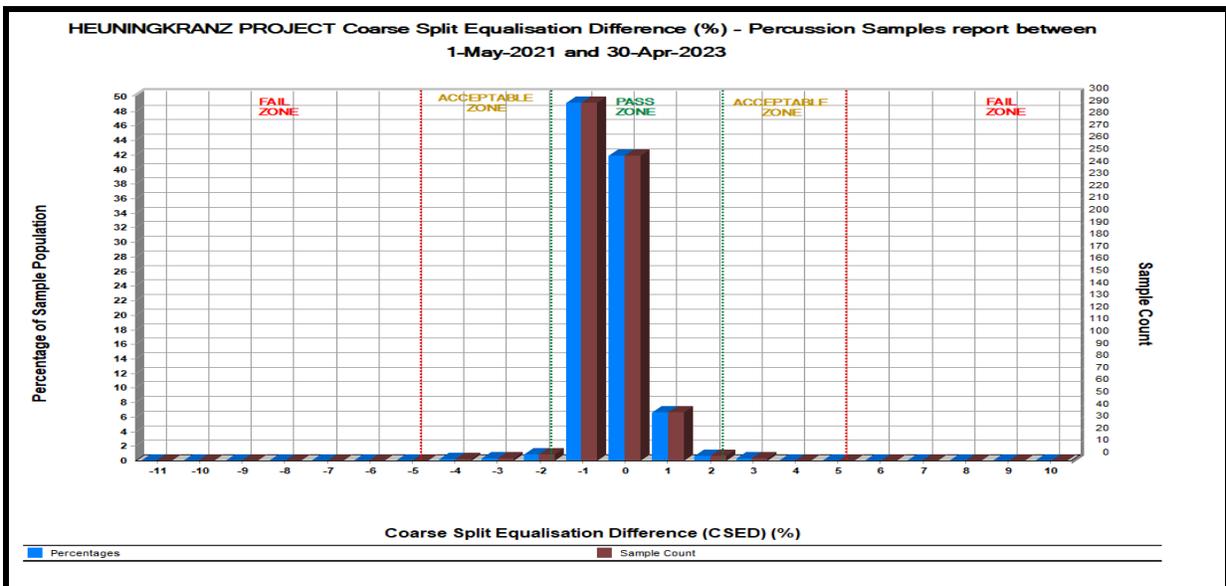


Figure 15: Heuningkranz Project Geology Sample Coarse Split Equalisation Percentage $\{[\text{coarse sub-sample mass} / (\text{total crushed sample mass} / \text{number of splits})] \times 100\}$

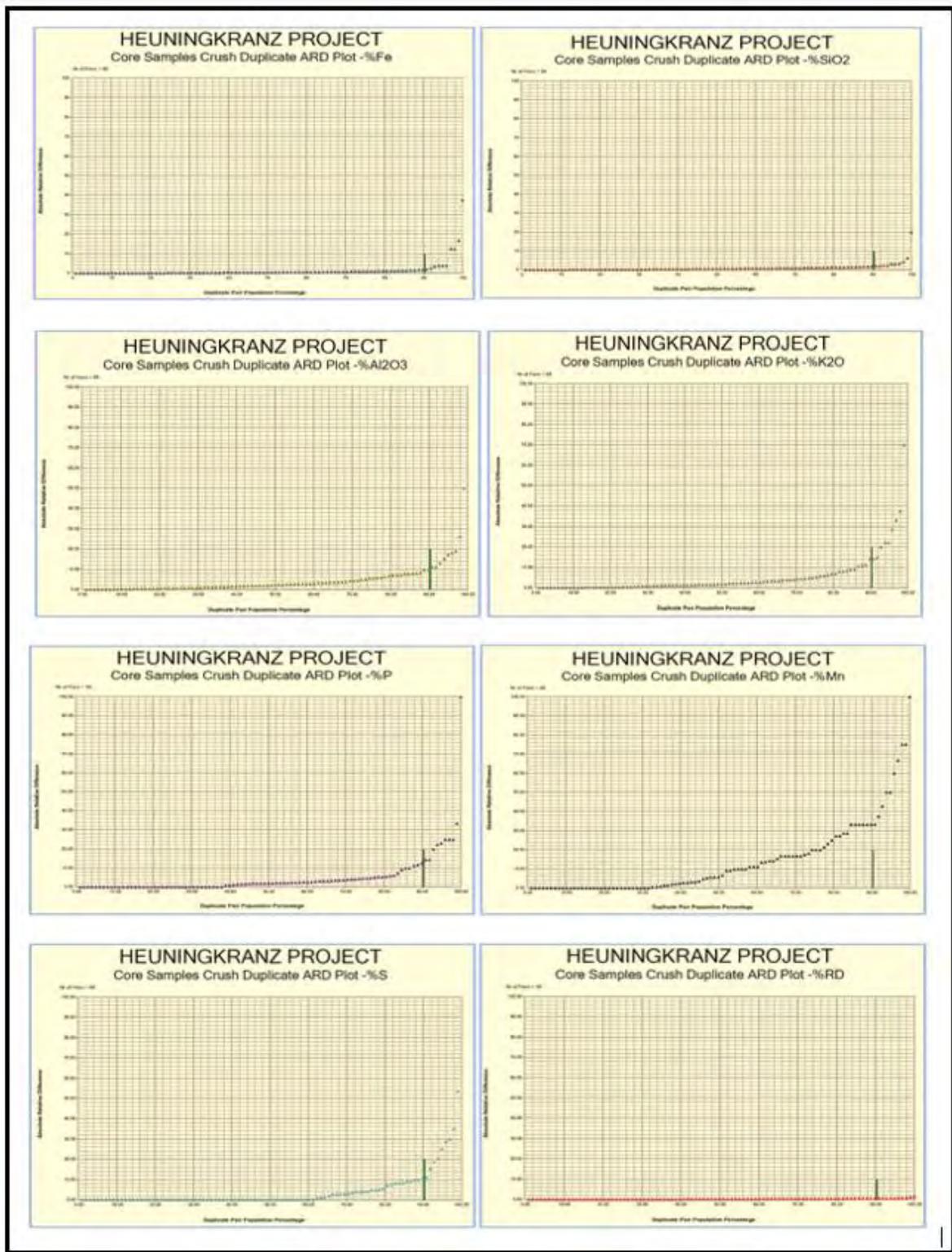
6.3.4 Blind coarse duplicates

6.3.5 Core Coarse Duplicate ARD Plots

The coarse duplicate criteria set out in the KIO QA/QC protocol requires that at least 90% of the coarse duplicate pair population plot within a maximum ARD OF 10% for %Fe, %SiO₂ and 20% for %Al₂O₃, %K₂O, %P, %Mn, %S and %RD.

Due to detection limits having changed between 2021-2022 and 2022-2023, two plots were produced.

As demonstrated in **Figure 16** For 2021-2022 the core coarse duplicate ARD plots indicate that the duplicate pair population for %Fe, %SiO₂, %Al₂O₃, %K₂O, %P, %S and %RD comply with the requirements while %Mn failed. Whilst 2022-2023 demonstrates that all the duplicate pair population pass the requirements except for %S.



2022-2023

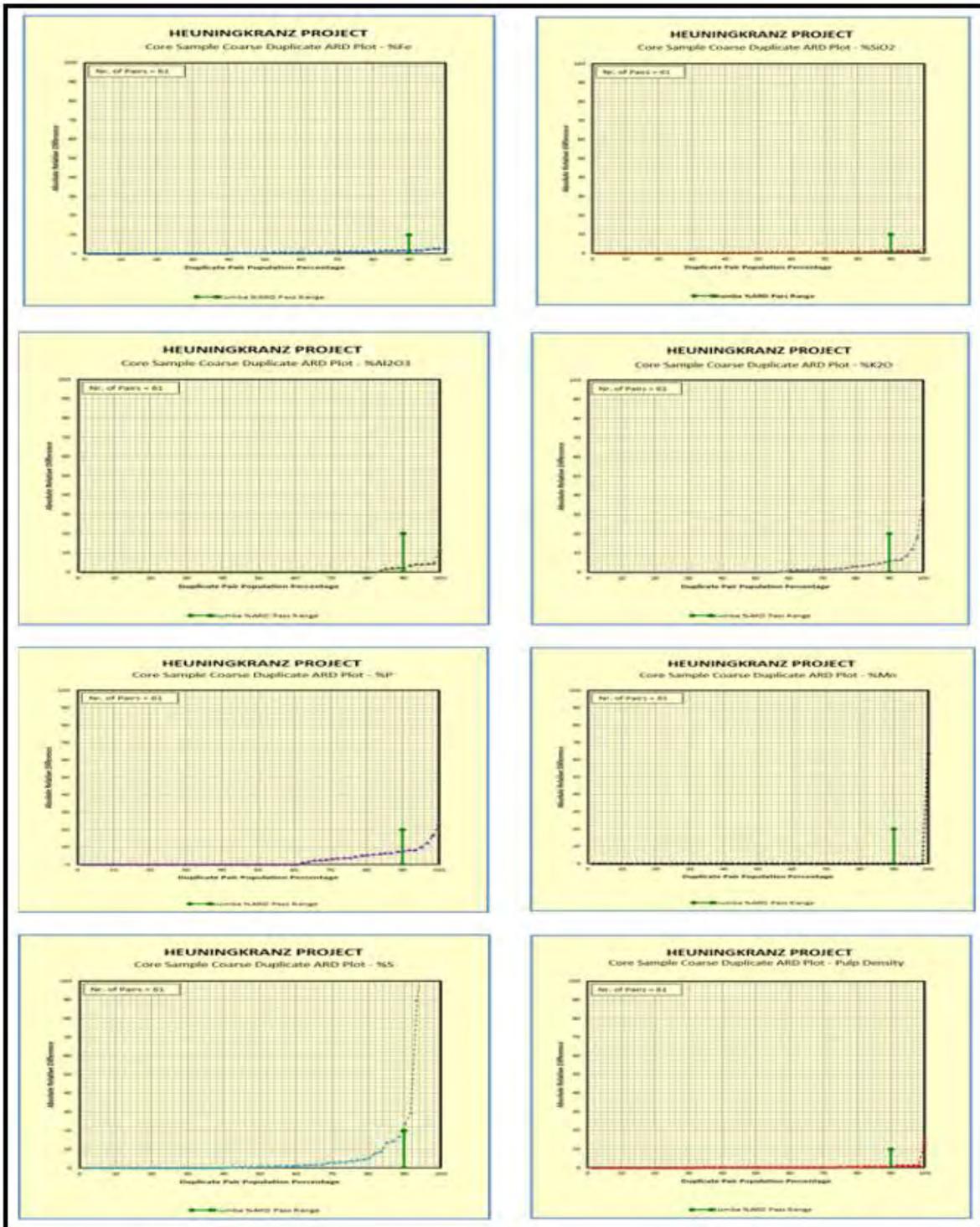


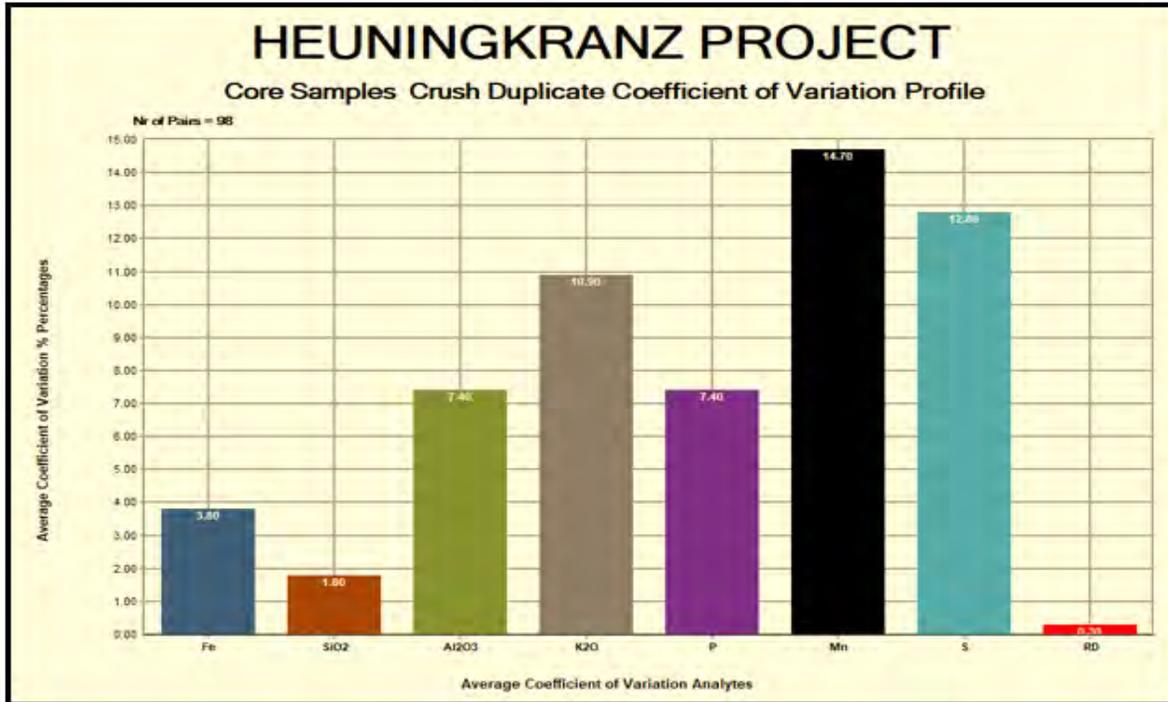
Figure 16: ARD Coarse Duplicate Plots for Heuningkranz core samples

6.3.6 Core Coarse Duplicate Average Coefficient of Variation Plot

Figure 17 indicates the core sample coarse duplicate sample precision per analyte for the reporting period. For 2021-2022 %RD demonstrated the lowest variance whilst %Mn showed the highest variance.

2022-2023 then demonstrated that %SiO₂ exhibits the lowest variance with %S exhibiting the highest.

2021-2022



2022-2023

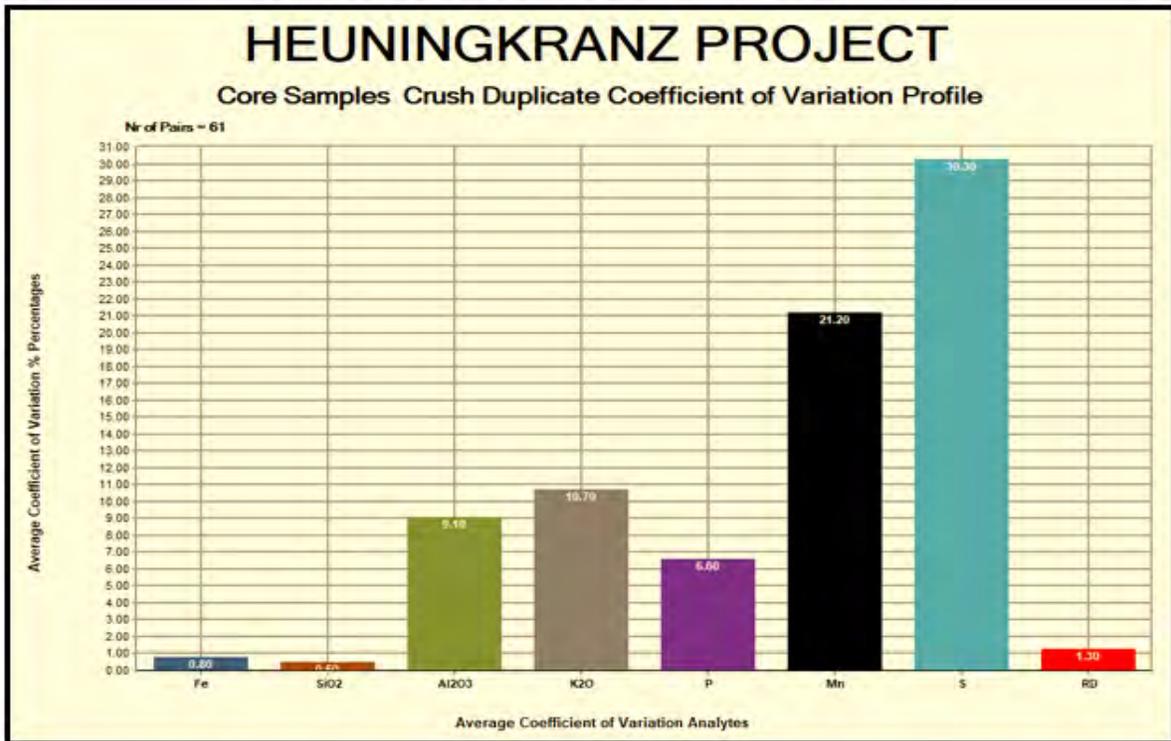


Figure 17: Core Sample Coarse Duplicate Average Coefficient of Variation Plot for Primary Analytes

6.3.7 Percussion samples

6.3.8 Percussion Coarse Duplicate ARD Plots

There were no percussion samples reported in the period 2021-2022, ARD plots included in this report only represent 2022-2023.

All the blind coarse sub-sample duplicate pair results received in the reporting period passed the Kumba Geosciences Absolute Relative Difference criteria except for %S – **Figure 18**.

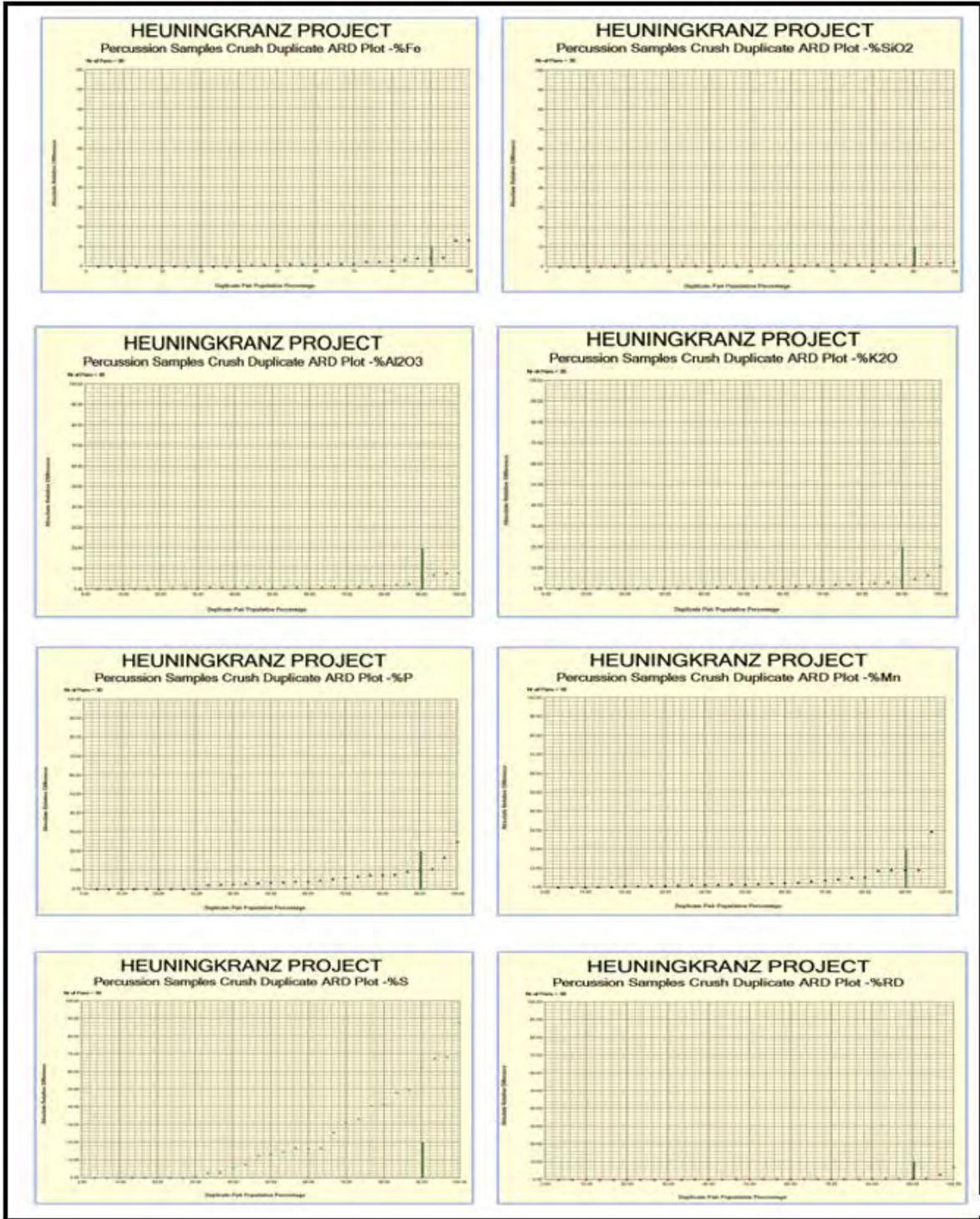


Figure 18: ARD Coarse Duplicate Plots for Heuningkranz percussion samples

6.3.9 Percussion Coarse Duplicate Average Coefficient of Variation Plot

Figure 19 indicates the percussion sample coarse duplicate sample precision per analyte for the reporting period. %SiO₂ exhibits the lowest variance whilst the highest variance is observed in %S.

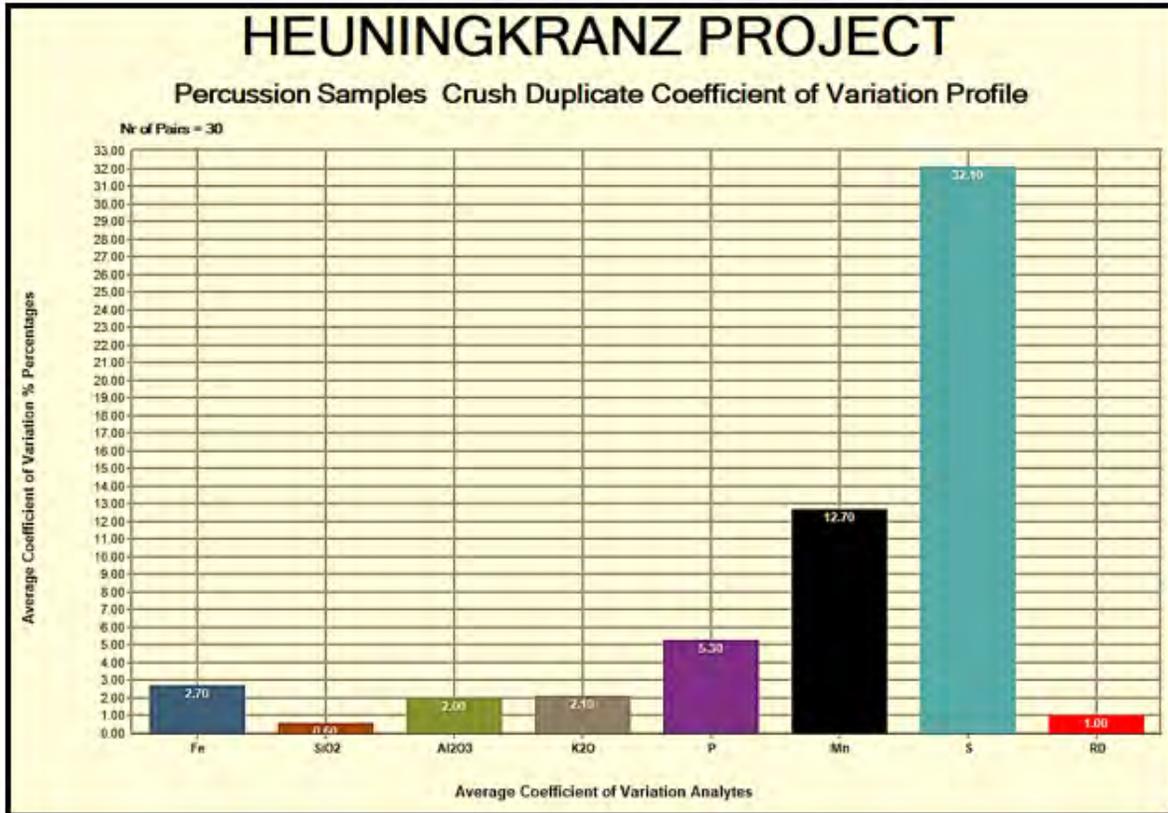


Figure 19: Percussion Sample Coarse Duplicate Average Coefficient of Variation Plot for Primary Analytes

6.4 Pulp Sub-sampling

Kumba Geosciences considers the following as proper quality control measures to ensure acceptable pulp sub-sampling practices:

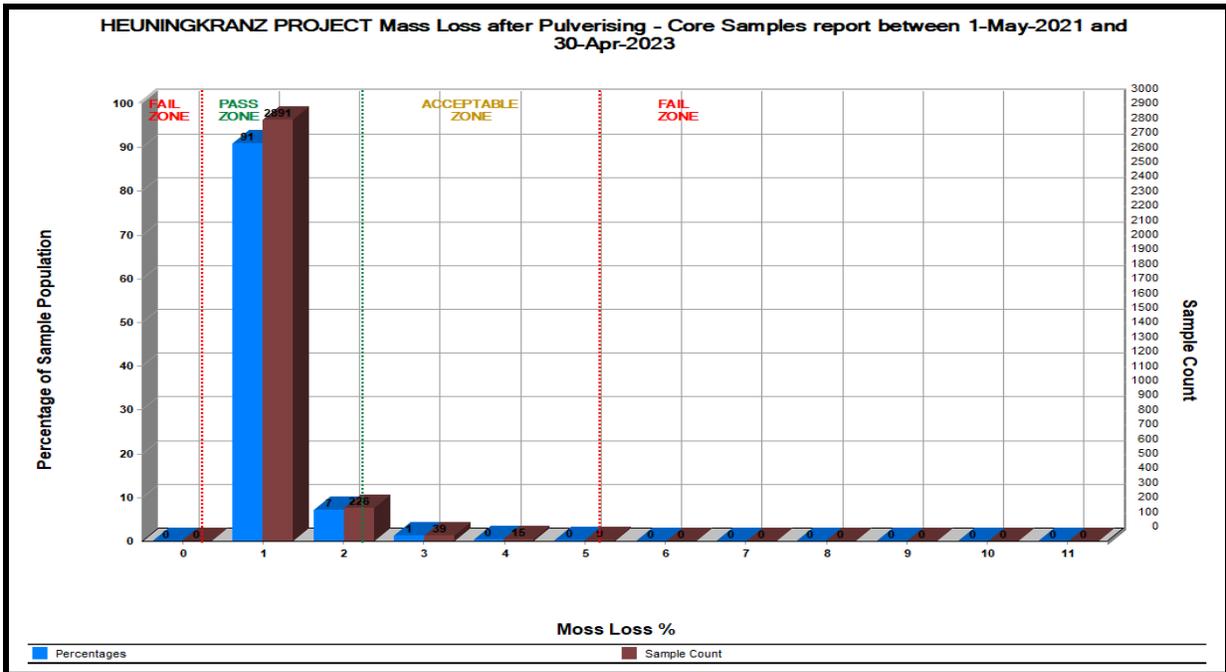
Criteria:

- The mass loss after pulverization should preferably be $\leq 2\%$ and never $> 5\%$;
- The crushed sub-sample must be pulverized to an optimal T95 $< 75\mu\text{m}$ and minimum T90 $< 75\mu\text{m}$ top size, preferably using an LM2 or similar mill (with 2000cc capacity).
- The mass of the actual pulp sub-sample obtained after splitting must compare (preferably not differ more than 2% and never more than 5%) with the weight of the pulverized sample divided by the number of splits to be performed; and
- at least 90% of the pulp duplicate pair population taken over the reporting period must fall inside the pulp duplicate/twin pass range of 0% to 5% Absolute Relative Difference (ARD) for %Fe and %SiO₂ and have an ARD $\leq 10\%$ for %K₂O, %Al₂O₃ and %P (half these limits apply for MPRD).

6.4.1 *Mass loss after pulverisation*

From **Figure 20** all mass loss during pulverization is within the maximum allowed 5% limit and that most of the mass loss is within the preferred 2% limit.

Core



Percussion

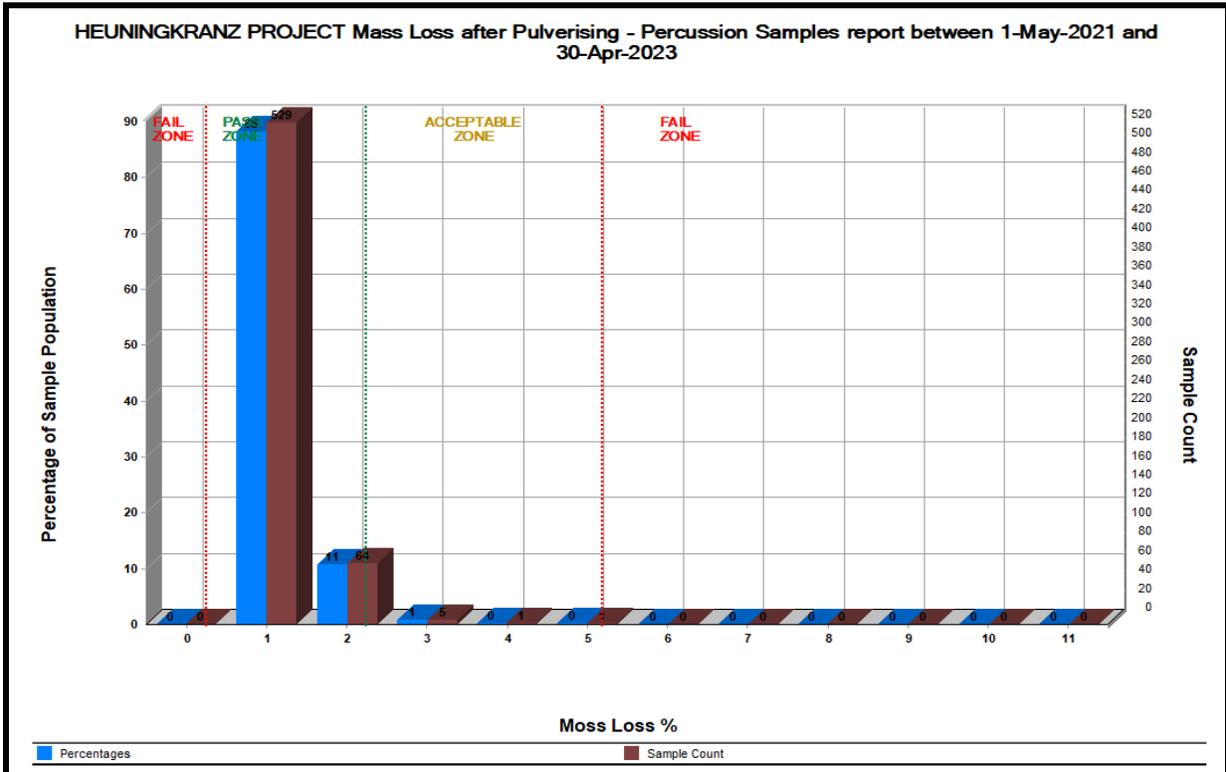
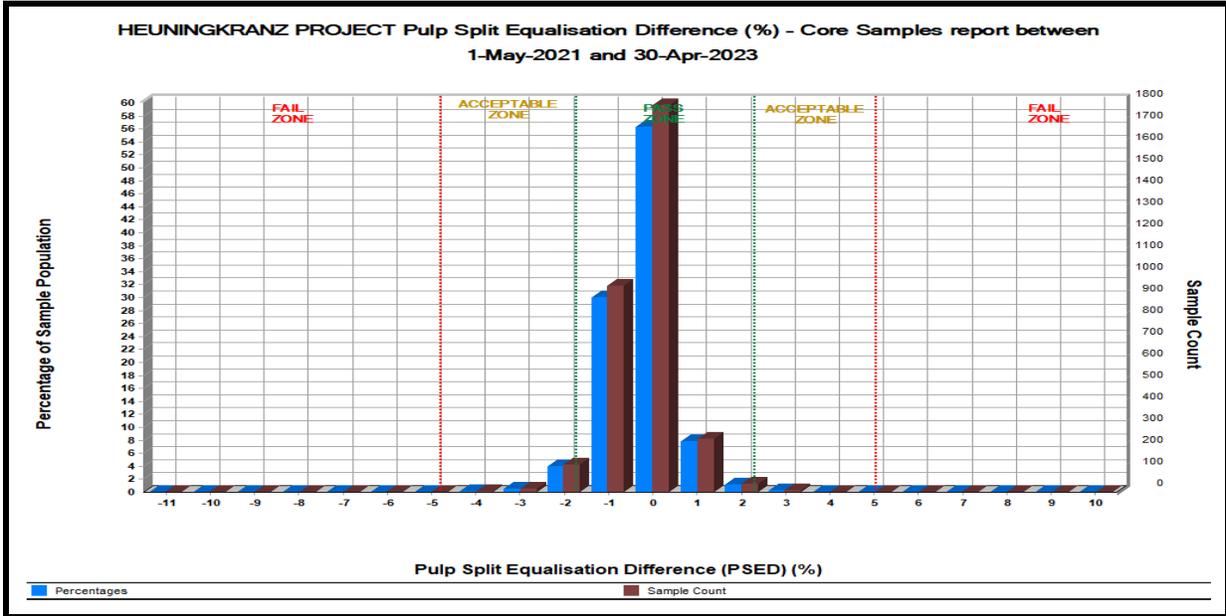


Figure 20: Heuningkranz Project sample mass after pulverization to 75µm top size (expressed as percentage of original mass of primary sample as received and dried)

6.4.3 Equalised pulp splitting

From **Figure 22** it is evident that majority of the pulp sample splits for core and percussion samples are within the 2% KIO preferred limit, none of the splits are outside the maximum allowable 5% range.

Core



Percussion

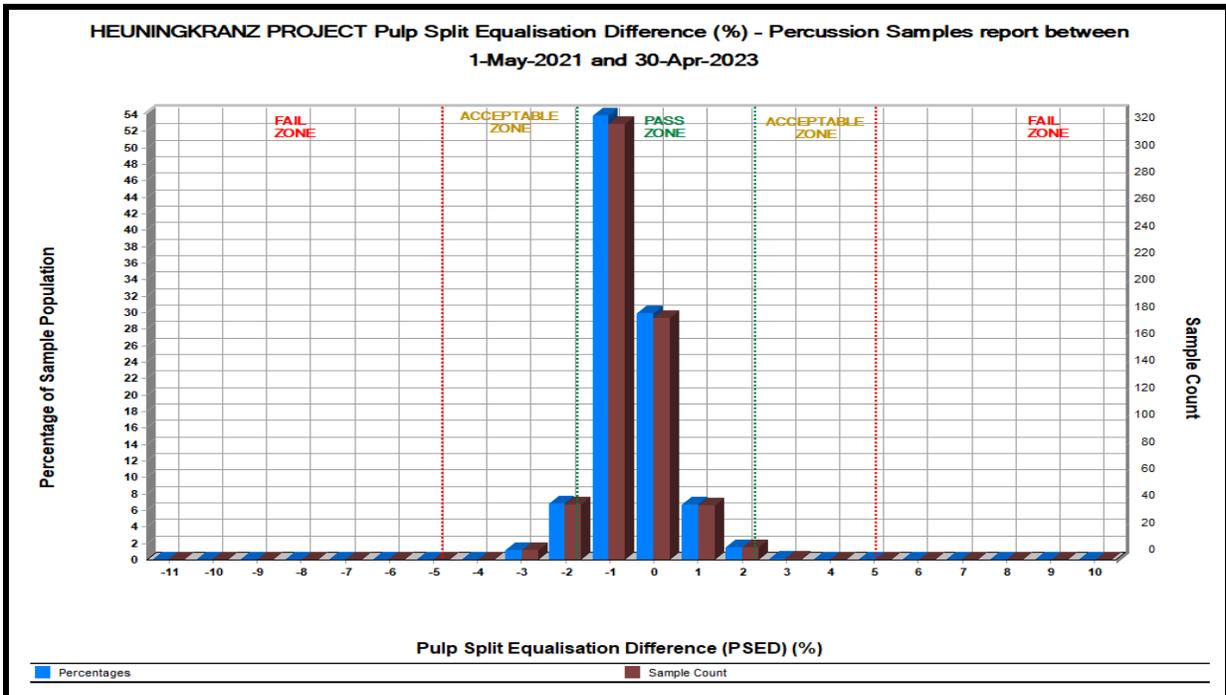


Figure 22: Pulp split equalisation validation for Heuningkranz Project (mass comparison of split with original mass of pulverized sample divided by number of splits)

6.4.4 Blind Pulp Duplicates

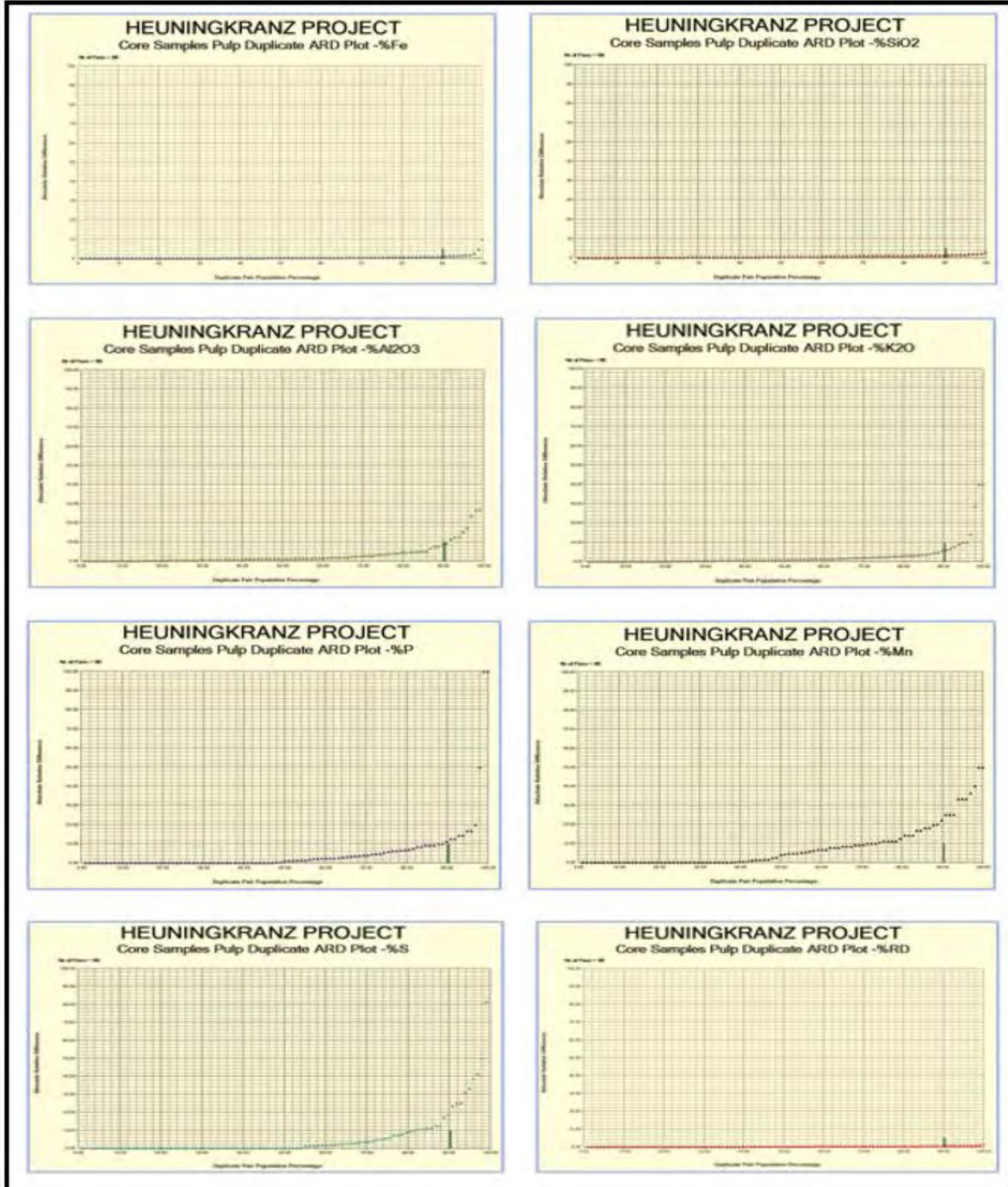
6.4.5 Core Sample Duplicate ARD Plot

The pulp duplicate criteria set out in the KIO QA/QC protocol requires that atleast 90% of the coarse pulp pair population plot within a maximum ARD OF 5% for %Fe, %SiO₂ and 10% for %Al₂O₃, %K₂O, %P, %Mn, %S and %RD.

Due to detection limits having changed between 2021-2022 and 2022-2023, two plots were produced.

As demonstrated in in **Figure 23**. For 2021-2022 the core pulp duplicate ARD plots indicate that the duplicate pair population for %Fe, %SiO₂, %K₂O, %Al₂O₃, %P and %RD comply with the requirements while %Mn and %S failed. Whilst 2022-2023 demonstrated a failure in %S.

2021-2022



2022-2023

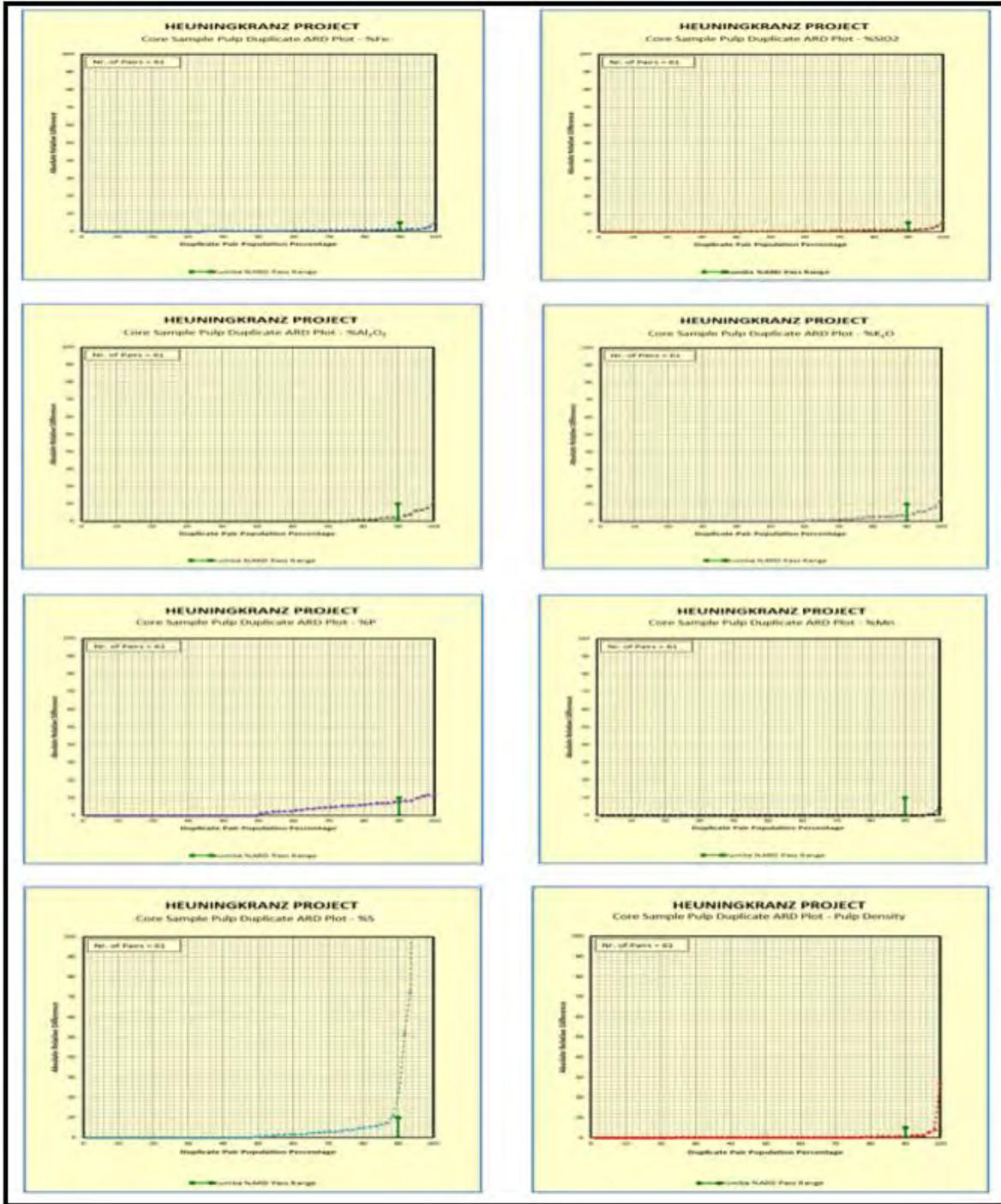
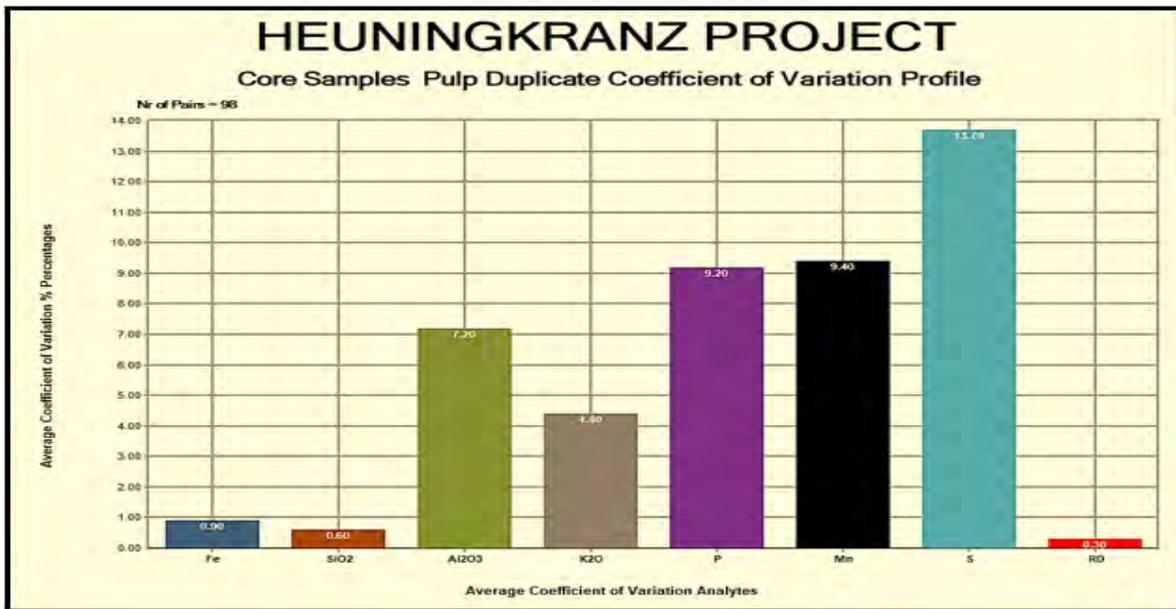


Figure 23: ARD Pulp Duplicate Plot for Heuningkranz Project core samples

6.4.6 Core Sample Pulp Duplicate Average Coefficient of Variation Plot

Figure 24 indicates the core sample pulp duplicate sample precision per analyte for the reporting period. High variance is displayed for S whilst RD shows the lowest variance for 2021-2022. 2022-2023 then demonstrated a high variance for S with Fe having the lowest variance.

2021-2022



2022-2023

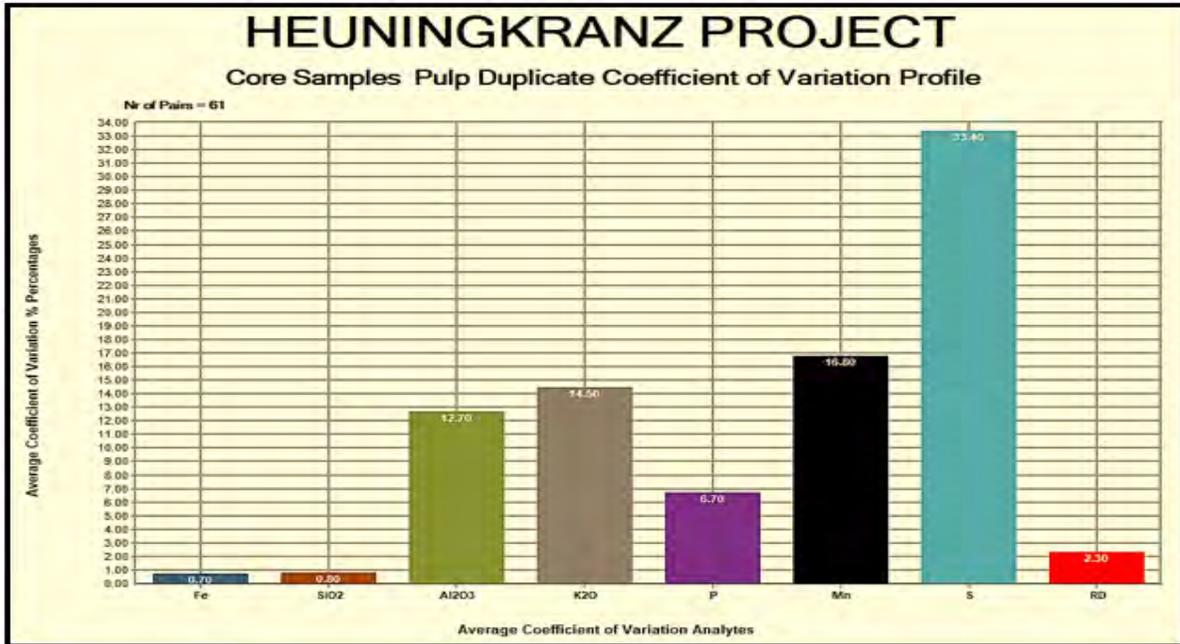


Figure 24: Core Sample Pulp Duplicate Average Coefficient of Variation Plot for Primary Analytes

6.4.7 Percussion samples

6.4.8 Percussion Sample Duplicate ARD Plot

There were no percussion samples reported in the period 2021-2022, ARD plots included in this report only represent 2022-2023.

All the percussion sample pulp sub-sample duplicate pair results received in the reporting period passed the Kumba Geosciences Absolute Relative Difference criteria except for %S-

Figure 25.

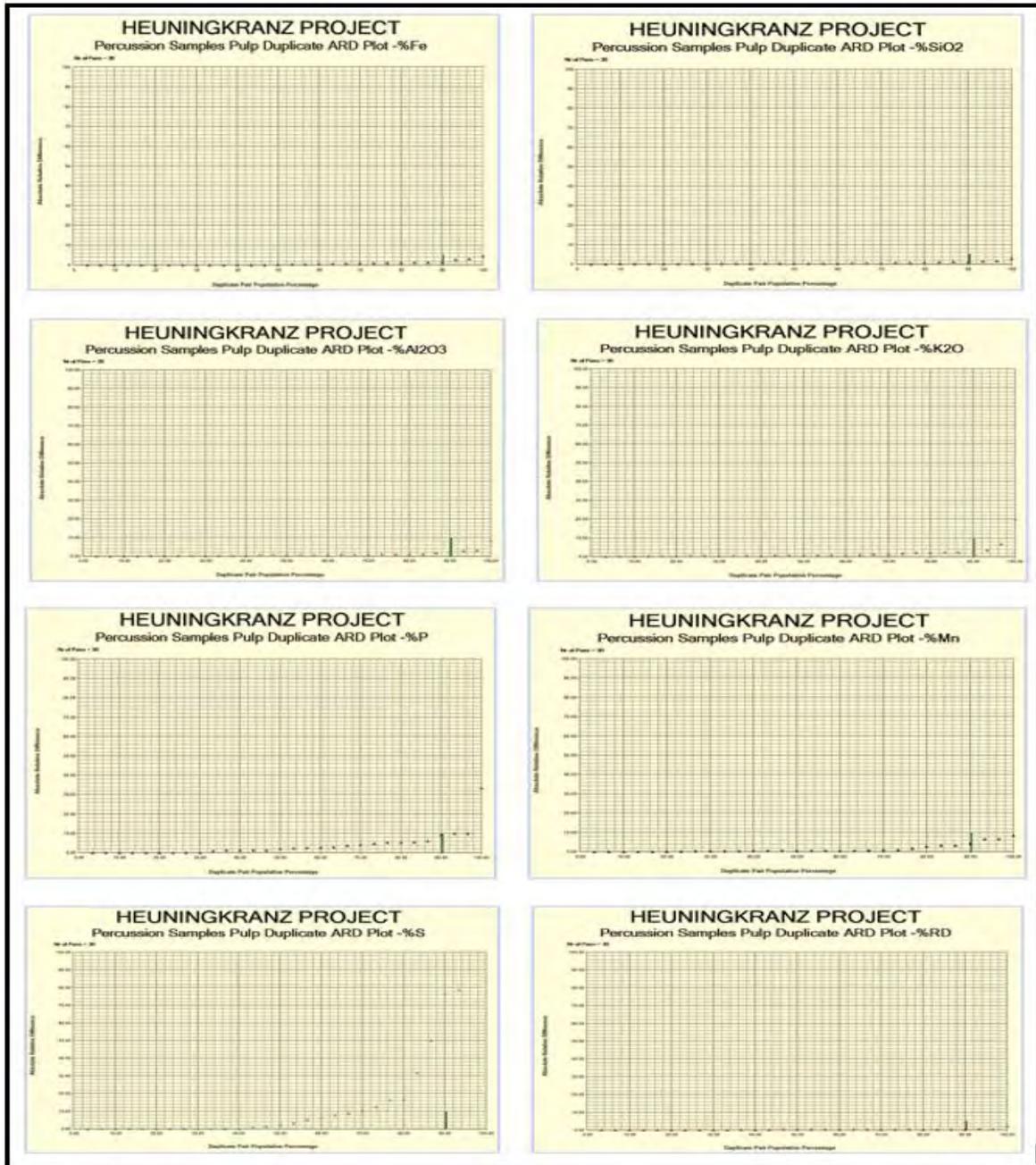


Figure 25: ARD Pulp Duplicate Plot for Heuningkranz Percussion samples

6.4.9 Percussion Sample Pulp Duplicate Average Coefficient of Variation Plot

Figure 26 indicates the Percussion sample pulp duplicate sample precision per analyte for the reporting period. %S has the highest variance whilst RD shows the lowest variance.

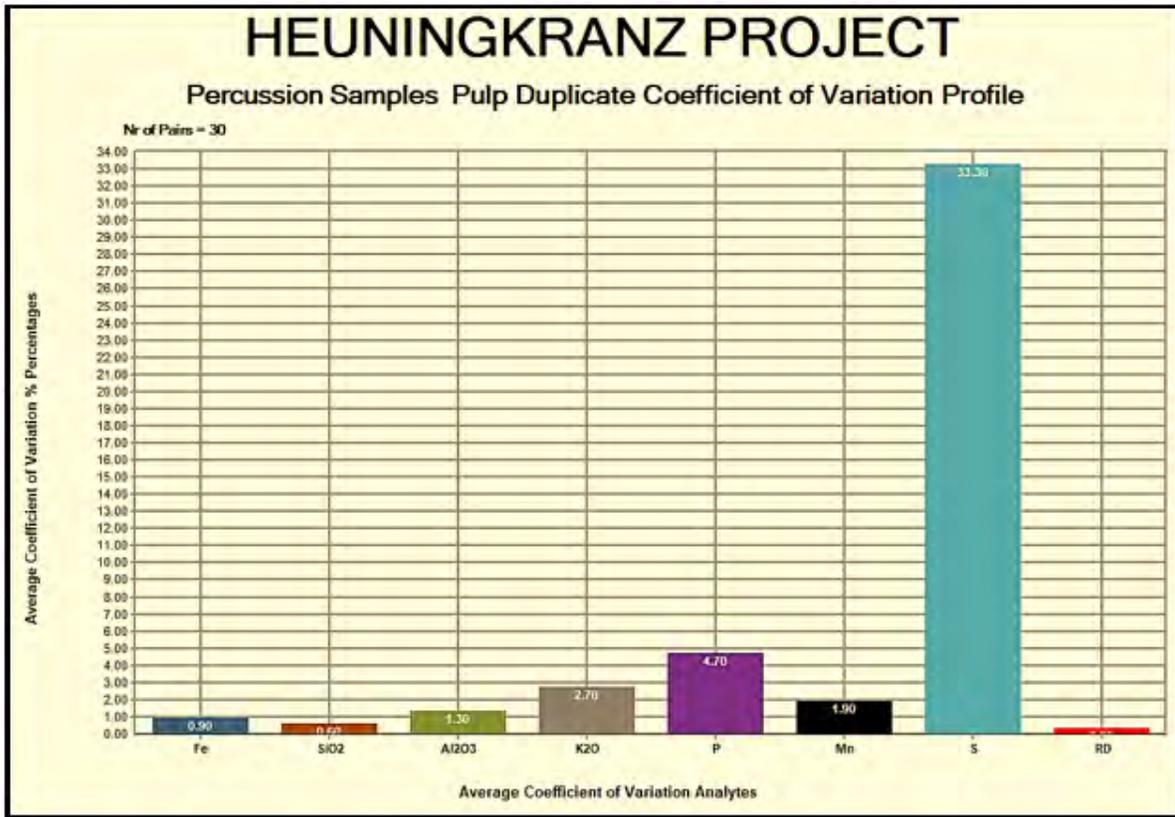


Figure 26: Percussion Sample Pulp Duplicate Average Coefficient of Variation Plot for Primary Analytes

7.1 Primary Laboratory

Sishen Iron Ore Company has contracted (by means of a signed service level agreement) the ANGLO AMERICAN TECHNICAL SOLUTIONS Division of Anglo Operations Limited CHEMISTRY LABORATORY (Co. reg no: 1921/0067130/06) at address:

8 Schonland Street
Theta
Johannesburg
2025

to prepare and analyse all geological samples, used for Mineral Resource estimation purposes unless the laboratory capacity does not allow for it.

7.1.1 Accreditation

The ATS Chemistry Laboratory is accredited in accordance with the recognised International Standard ISO/IEC 17025:2005 by the South African National Accreditation System (SANAS) under the Facility Accreditation Number T0051 (valid until 30 April 2026) for:

- The preparation of iron ore samples to a homogenous pulp.
- The analyses of ferrous Iron by potentiometric titration for solid samples.
- Al_2O_3 , BaO, CaO, Fe, K_2O , MgO, Mn, Na_2O , P, SiO_2 and TiO_2 by X-Ray FS Fusion
- Carbon and Sulphur by combustion

7.1.2 Analytical Methods

A Kumba Geosciences exploration borehole pulp sub sample underwent the following analytical testing as a minimum standard at the ATS facility for the reporting period:

- A sub-sample is ignited at 1000°C in a Thermo Gravimetric Analyser (TGA) to determine the (LOI);
- A fixed mass of the ignited material is combined with a lithium borate flux. The flux and sample mixture (ratio of 1:9) is placed in crucibles (95% Pt - 5% Au) are placed in a Katanax K2 electrical fluxer. The flux and sample mixture is fused at a temperature of 1100°C for 15 minutes. The resulting melt is swirled during fusion to ensure mixing and dissolution and is then cast into 40mm diameter moulds to anneal and cool.

- The prepared fused bead is measured on a calibrated Wave-Length Dispersive X-ray Fluorescence Spectrometer (WD-XRF) to determine Fe, SiO₂, Al₂O₃, K₂O, P, Mn, CaO, MgO, TiO₂, Na₂O, V₂O₅, BaO and PbO. Total oxides are calculated.
- Sulphur is determined on the -75µm fraction by combustion and infrared measurements of sulphur using LECO or ELTRA instrumentation.
- Gas pycnometer pulp densities.

7.2 Assay Accuracy and Precision

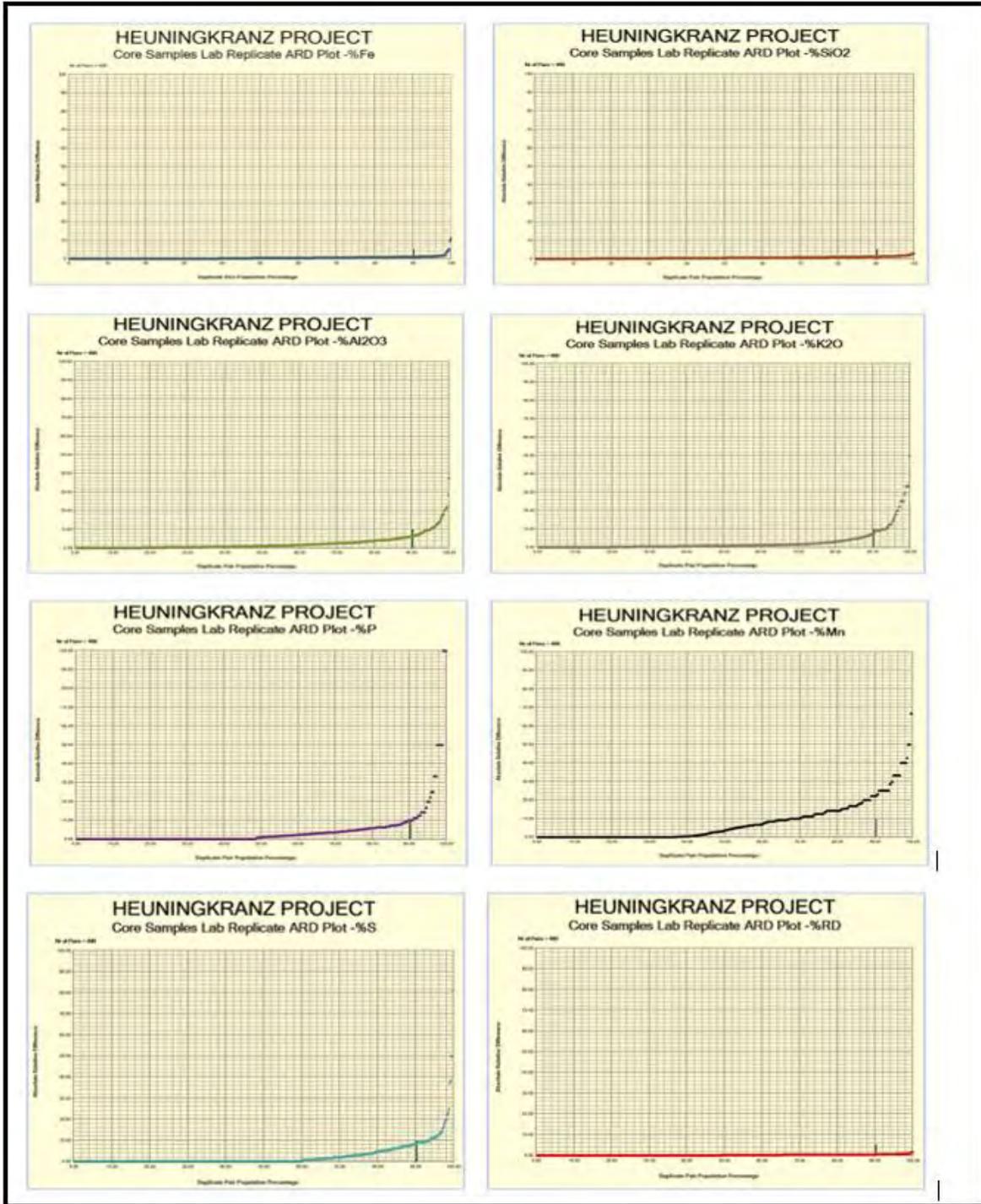
7.2.1 Pulp replicate results

It is expected of the primary laboratory to conduct at least one pulp replicate analyses for each batch submitted by Kumba Iron Ore Geosciences.

The Kumba Iron Ore required criterium when evaluating pulp replicate results is:

- At least 90% of the pulp replicate pair population taken over the reporting period must fall inside the pulp replicate pass range of 0% to 5% Absolute Relative Difference (ARD) for %Fe and %SiO₂ and have an ARD ≤ 10% for %K₂O, %Al₂O₃ and %P.

All of the pulp replicate results produced by ATS for Heuningkranz Project for the reporting period have been assembled to produce the Absolute Relative Difference (ARD) Plots for the critical grade parameters (**Figure 27**). For 2021-2022 the Anglo Technical Solutions Laboratory passes the Kumba pulp replicate criterium for all the critical grade parameters except for %Mn whilst for 2022-2023 all elements comply with the requirements. The performance of the laboratory demonstrates good performance with overall core sample pulp replicate pass rate for the reporting period being 100%.



2022-2023

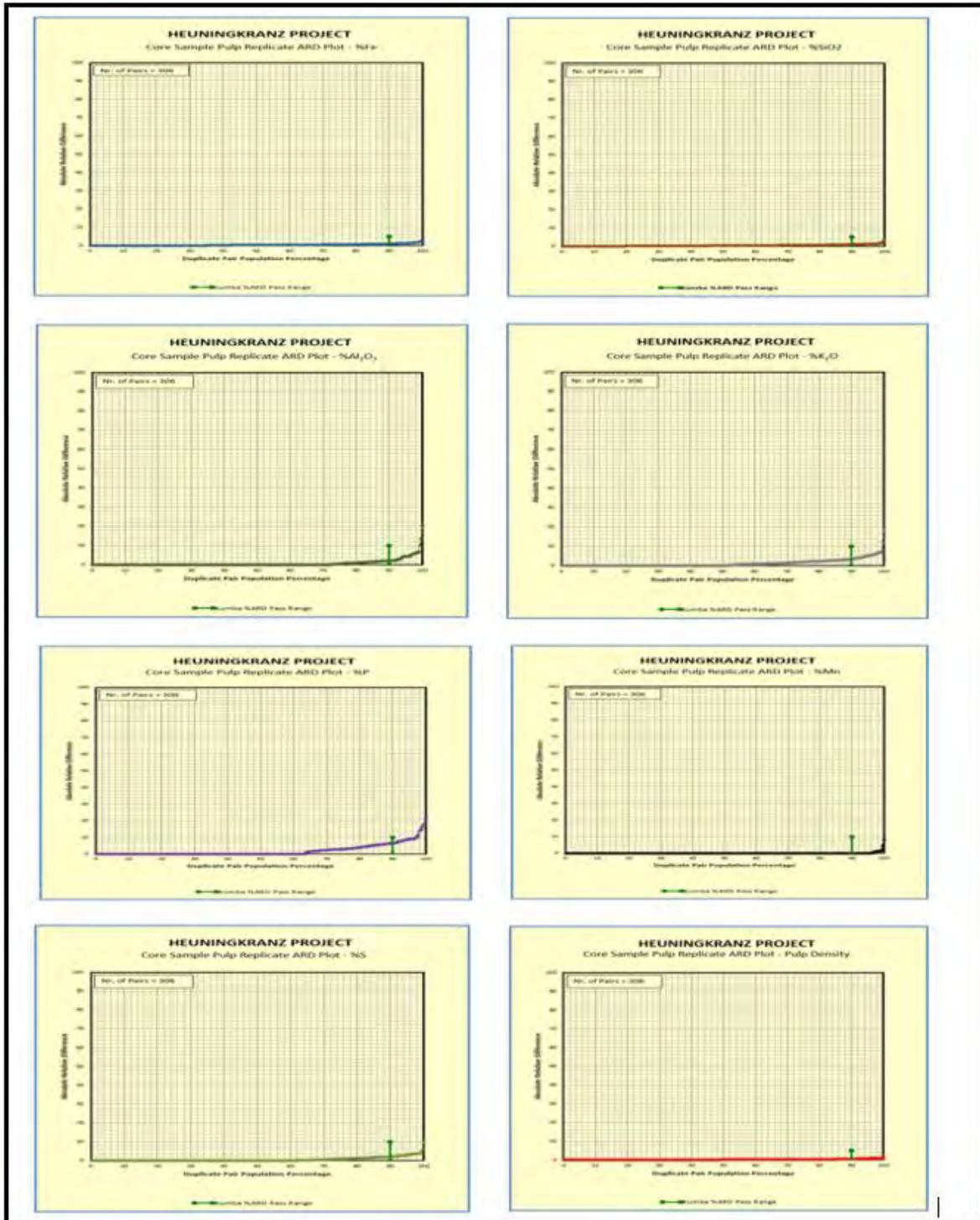


Figure 27: Anglo Technical Solutions Laboratory (ATS) Pulp Replicate ARD Plots – All Samples

7.2.2 Control Sample (CRM) Results

SS11 (AMIS0598) and SS10 (AMIS0597) are CRMs prepared and certified by AMIS.

The Kumba Iron Ore QA/QC criterion requires the assayed CRM values for %Fe, %SiO₂, %Al₂O₃, %K₂O and %P to plot within the control limits (**Table 4**) for the batch to pass. Batches failing to plot within the control limits will be failed and are to be re-analyzed by the laboratory at their expense.

Table 4: Heuningkranz Project CRM Blind Control Limits (highly confidential)

| CRM ID | %Fe | | | %SiO ₂ | | | %Al ₂ O ₃ | | | %K ₂ O | | | %P | | | %Mn | | | %S | | |
|--------|--------|--------|--------|-------------------|--------|--------|---------------------------------|-------|-------|-------------------|-------|-------|-------|-------|-------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Mean | Lower | Upper | Mean | Lower | Upper | Mean | Lower | Upper | Mean | Lower | Upper | Mean | Lower | Upper | Mean | Lower | Upper | Mean | Lower | Upper |
| SS11 | 51.750 | 51.390 | 52.110 | 20.710 | 20.201 | 21.219 | 2.870 | 2.776 | 2.965 | 0.470 | 0.447 | 0.494 | 0.054 | 0.051 | 0.056 | Not Cert. |
| SS10 | 59.660 | 59.345 | 59.975 | 9.740 | 9.602 | 9.878 | 2.860 | 2.723 | 2.991 | 0.286 | 0.272 | 0.300 | 0.067 | 0.064 | 0.069 | Not Cert. |

The primary laboratory assay accuracies (proximity to the mean) and precision (consistency around the mean) are demonstrated per CRM in the control charts that follow. The x-axis of all the control charts indicates the batch numbers which are in chronological order (oldest on left and most recent on right).

7.2.3 CRM SS11 – Core Samples

The ATS Chemistry Laboratory analytical accuracy and precision measured against SS11(AMIS0598) is displayed in **Figure 28**.

No error was reported against CRM SS11 for core samples. %Fe shows a slight positive bias while %SiO₂ and %K₂O show a negative but acceptable bias, this is the case as the previous reporting period 2021.

%Al₂O₃ started with a slight negative acceptable bias and improved over the period. %P has a more negative but acceptable bias with lower accuracy but better precision.

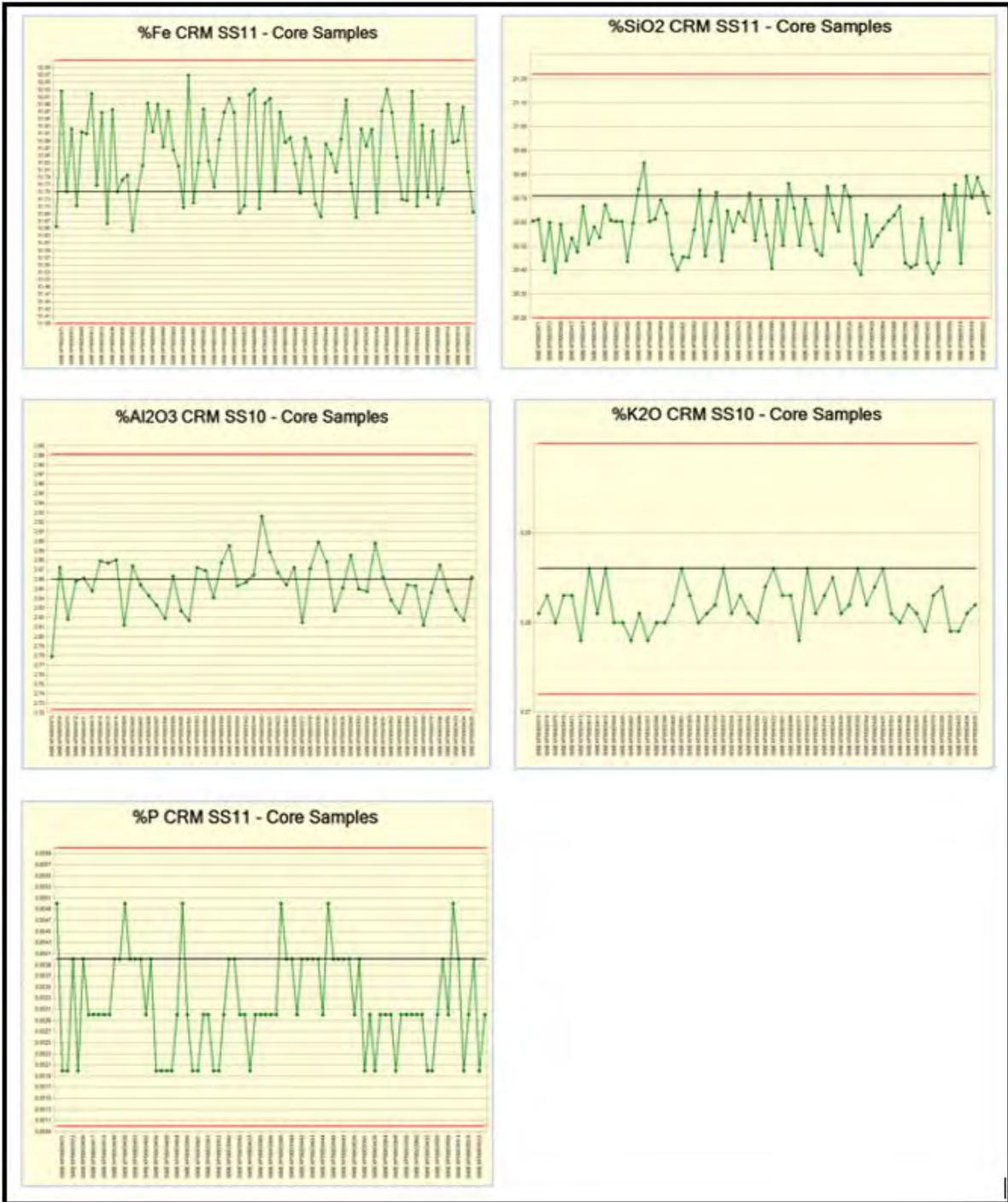


Figure 28: Control Charts of SS11 CRM as applied at Heuningkranz Project

7.2.4 CRM SS10 – Core Samples

ATS Laboratory analytical accuracy and precision measured against CRM SS10(AMIS0597) is displayed in **Figure 29**.

No error was reported against CRM SS10 for both core samples.

For core samples %Fe started with a positive bias and across the reporting period it evened out while %P and %K₂O show a negative but acceptable bias. %Al₂O₃ has a good accuracy over the reporting period.

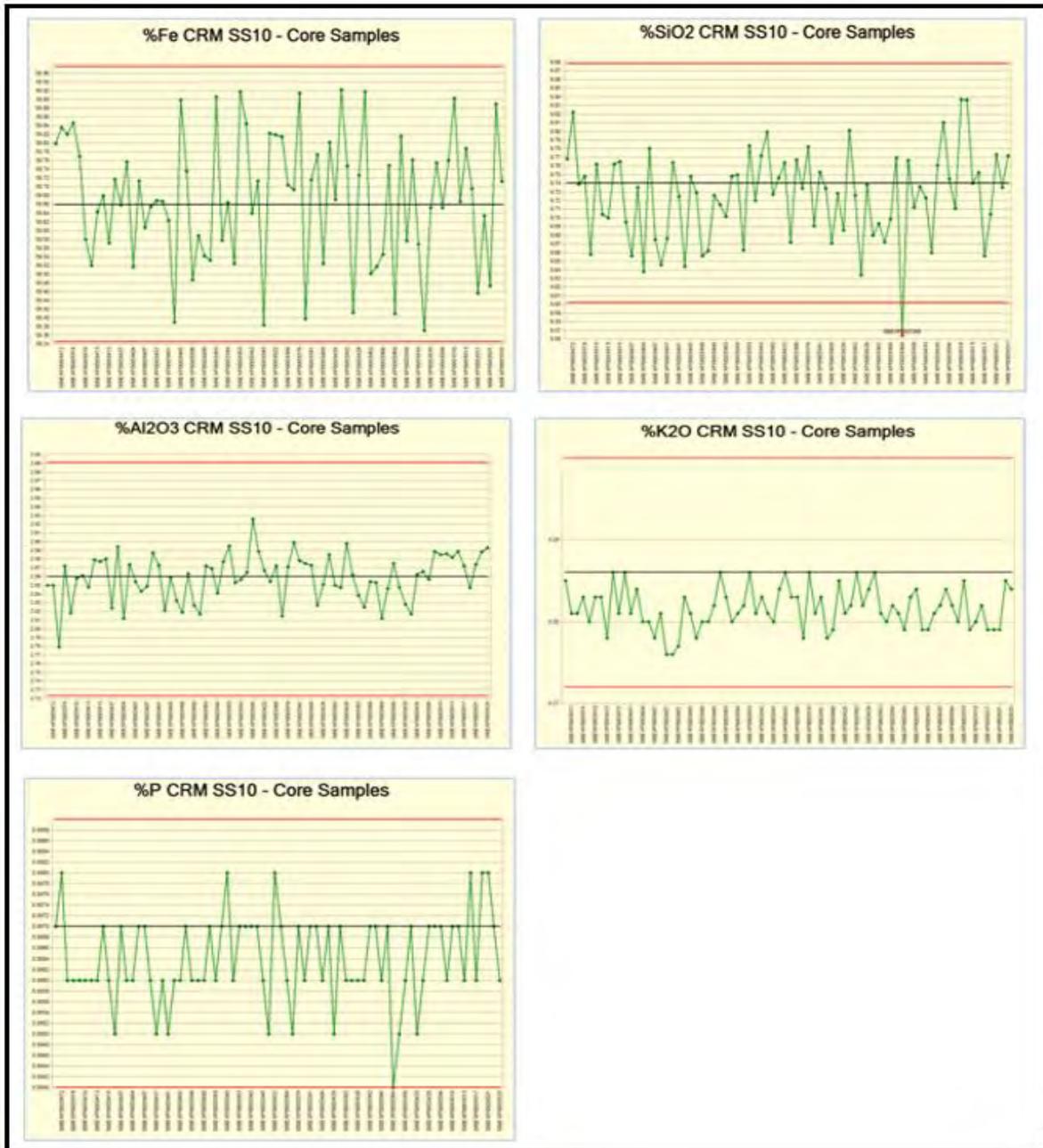


Figure 29: Control Charts of SS10 CRM as applied at Heuningkranz Project

7.2.5 External Check Assays

External check assays were analysed by the Bureau Veritas (BV) Laboratory in Perth, Australia. BV was contracted via the ATS Laboratory (one-stop service agreement) as a secondary laboratory, on a <75µm rotary split of the original sample.

BV reports results directly to ATS. Results are uploaded into Starlims® and the final test result reports for the relevant batches containing primary and secondary analysis are then reported to Kumba Iron Ore.

BV is Nata Accredited for Iron Ores and a member of the ISO MN-002-02 Chemical Analysis Committee and AQIS registered.

Loss on Ignition (LOI) is determined in fully programmable Thermo gravimetric systems in which temperature ramp rates, hold times and atmosphere are fully controllable. LOI can be reported at a number of temperatures from 105°C to 1000°C. TGA can be analysed at other temperatures if requested.

Sample material is fused with 12:22 Lithium Borate flux. For customers that specifically select to have their samples analysed for Na, like Kumba Iron Ore the sample material is fused with 12:22 Lithium Borate flux containing 5% LiNO₃.

BV experiences considerable problems with this particular flux and only use it as a last resort. The LiNO₃ flux variant needs to be dried constantly and is stored in an oven at elevated temperature to prevent moisture pickup. The flux is removed from the oven and weighed out while it is still warm. Even so, the LiNO₃ mixture flux gets noticeably tacky on transfer, weighing and mixing. The sample is weighed and a catch weight is taken. The same is done for the flux. For this method 0.66g of sample is weighed with 7g of flux.

For the normal fusions this is done at 1050°C for 12 minutes. For the oxidant flux/es there has to be an oxidation step at 650°C first before fusion in the normal fusion circuit. This is only implemented on 1 of the 6 fusion systems which indicates the apportioned workload between the standard fusions and those done with an oxidant.

The XRF measurement is purely impressive. The laboratory has 6 simultaneous PANalytical MagiX Fast instruments and 6 sequential PANalytical MagiX Pro instruments. In terms of the calibration, the lab uses Influence Coefficients (theoretical alphas).

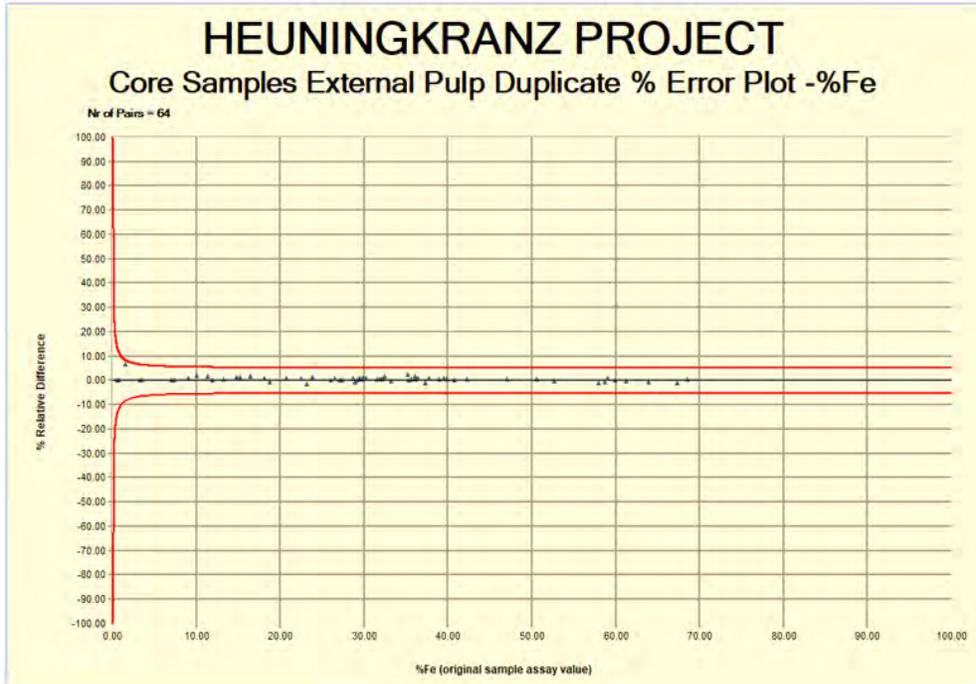
For the purpose of this report the external check assays (primary versus secondary laboratory pulp duplicate pairs) of the various Kumba sites have been lumped to get an overall idea of the ATS Laboratory performance for the reporting period.

Percentage Error Plots (**Figure 30** to **Figure 37**) are considered the best vehicle by Kumba to evaluate the primary laboratory (ATS) when using external pulp check duplicate assay data.

Kumba Geosciences prefers to not have more than 2% of the pulp replicate check assays fail, and remedial actions must be implemented if more than 5% of the external check assays fail.

7.2.6 Primary versus Umpire Laboratory %Fe Error Plots

2021-2022



2022-2023

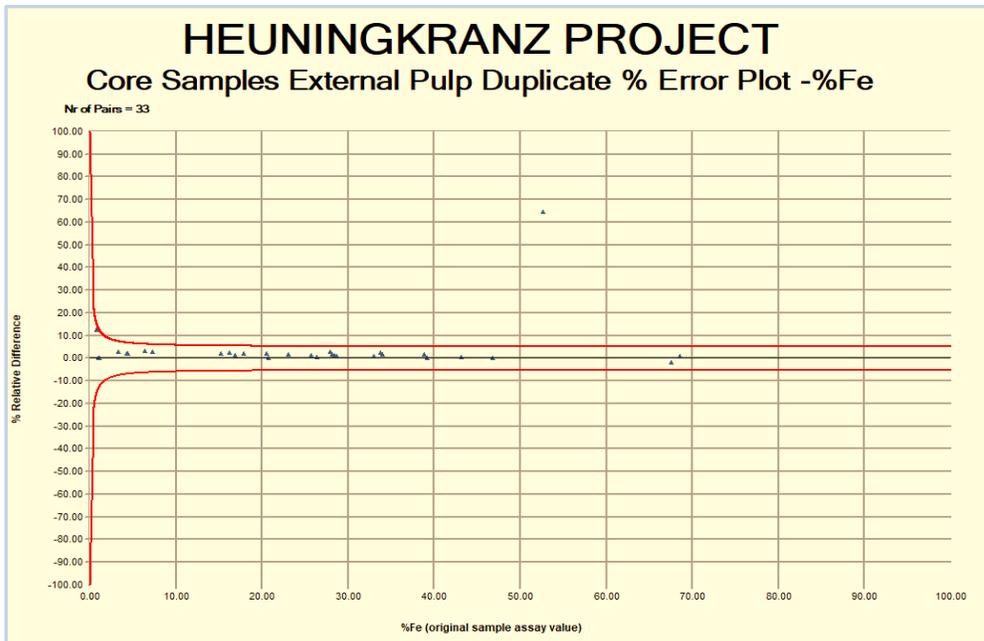
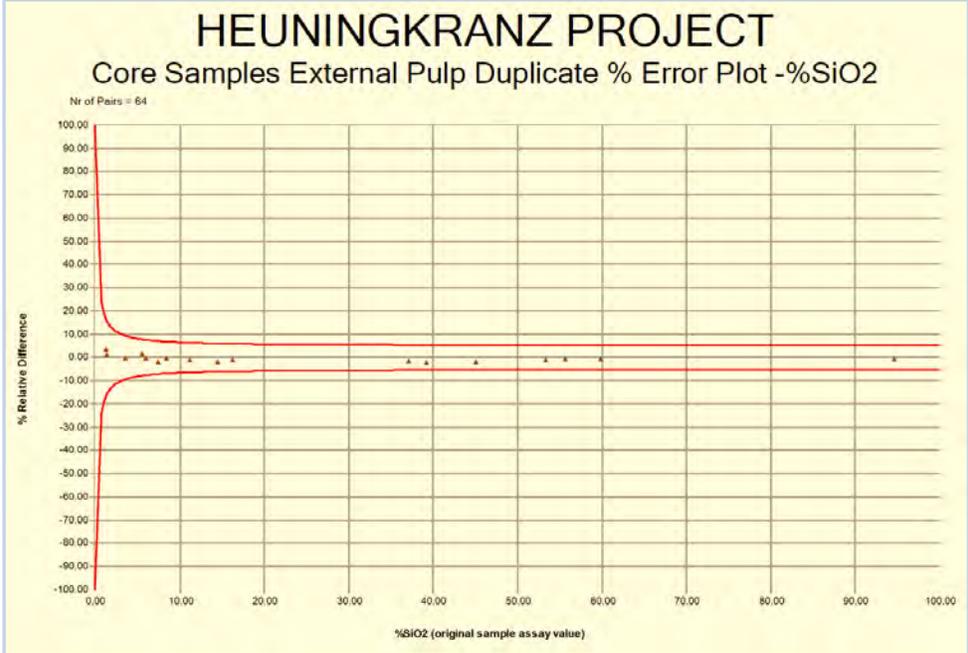


Figure 30: Percentage Error Plot for %Fe pulp replicate pairs (ATS Primary versus BV Umpire)

ALS compared to the BV Laboratory compares well for %Fe(Figure 30). The number of external duplicate pairs that failed the Kumba Fe relative difference error limits for 2021-2022 is 1 out of 64 and for 2022-2023 is 2 out of 33(6%)

7.2.7 Primary versus Umpire Laboratory %SiO₂ Error Plots

2021-2022



2022-2023

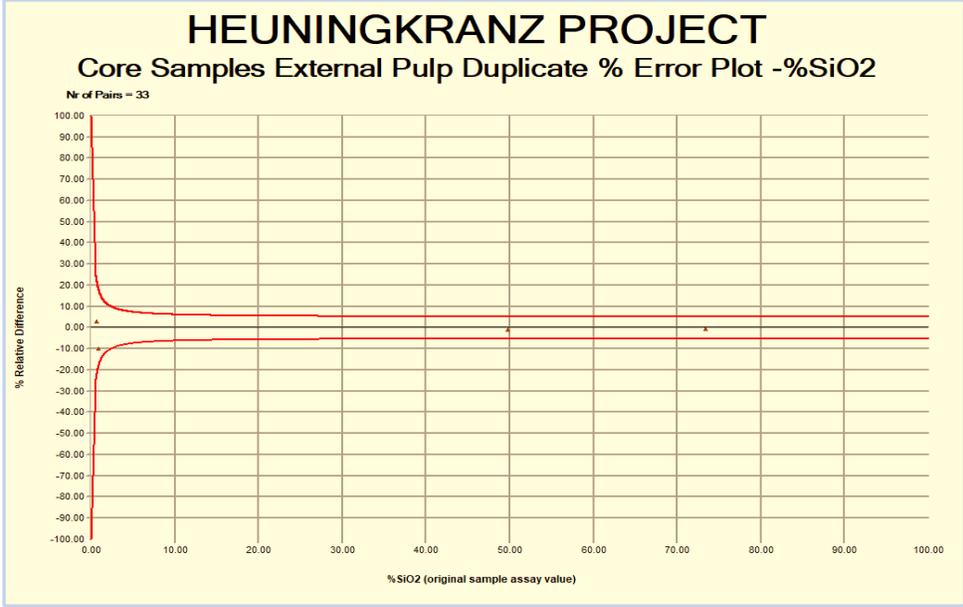
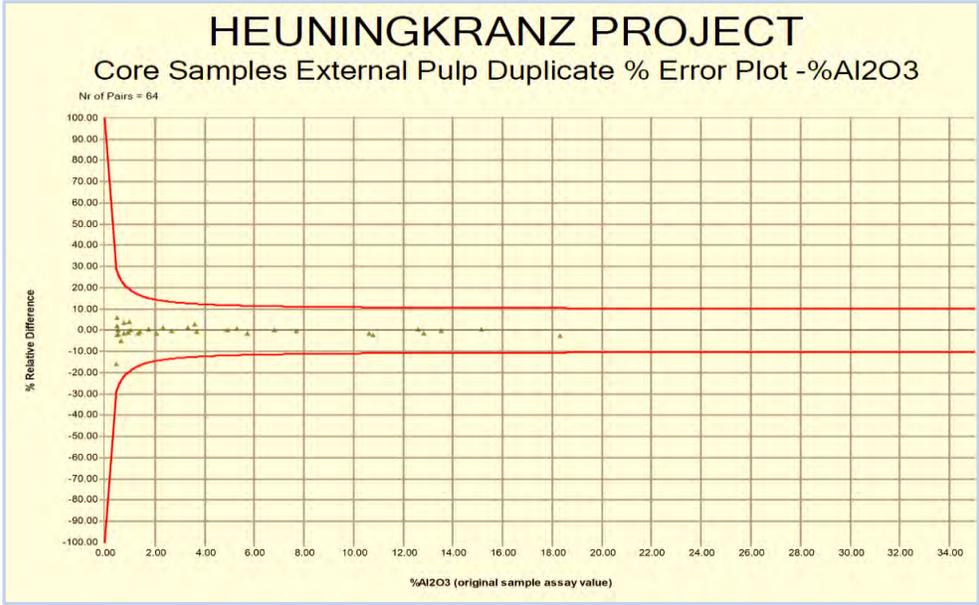


Figure 31: Percentage Error Plot for %SiO₂ pulp replicate pairs (ATS Primary versus BV Umpire)

Figure 31 does confirm a slight negative bias in SiO₂ for 2021-2022. The number of pulp sample pairs that failed the Kumba error limits is 3 out of 64 (4.7%) for 2021-2022 and 1 out of 33 for 2022-2023.

7.2.8 Primary versus Umpire Laboratory %Al₂O₃ Error Plots

7.2.9 2021-2022



2022-2023

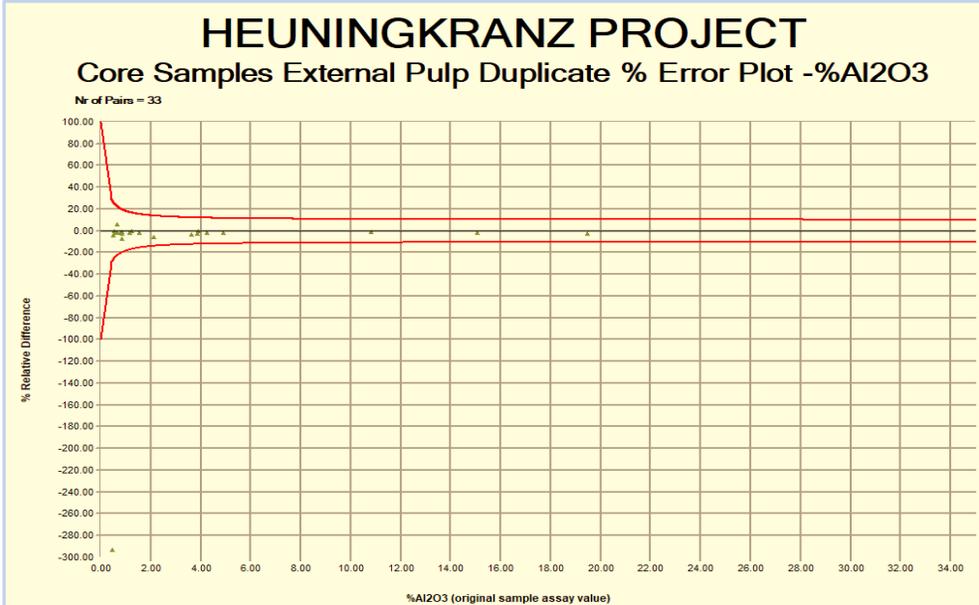
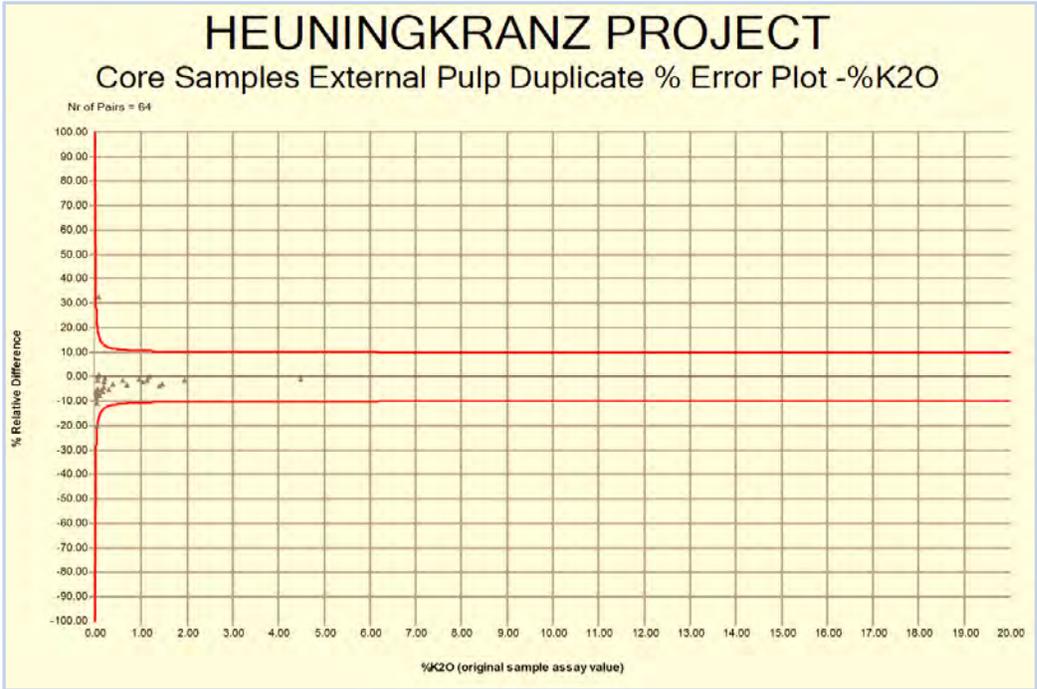


Figure 32: Percentage Error Plot for %Al₂O₃ pulp replicate pairs (ATS Primary versus BV Umpire)

The ATS Laboratory Al_2O_3 results compare well with the BV Laboratory results although they do show a slight negative bias towards the end **Figure 32**. For 2021-2022 no failure occurred and for 2022-2023 1 of 33(3%) failed.

7.2.10 Primary versus Umpire Laboratory %K₂O Error Plots

2021-2022



2022-2023

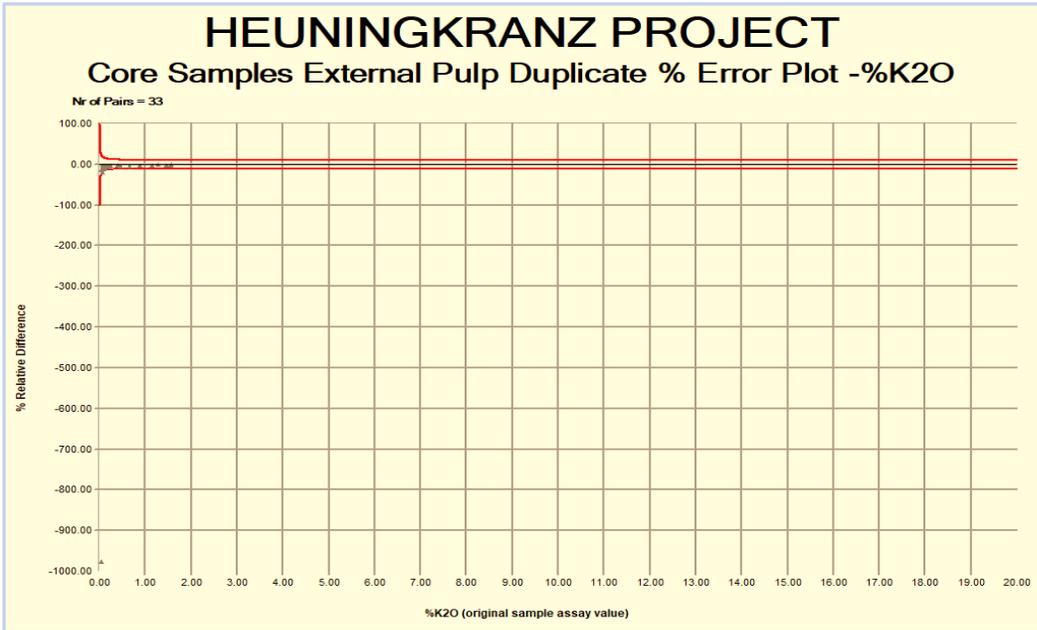
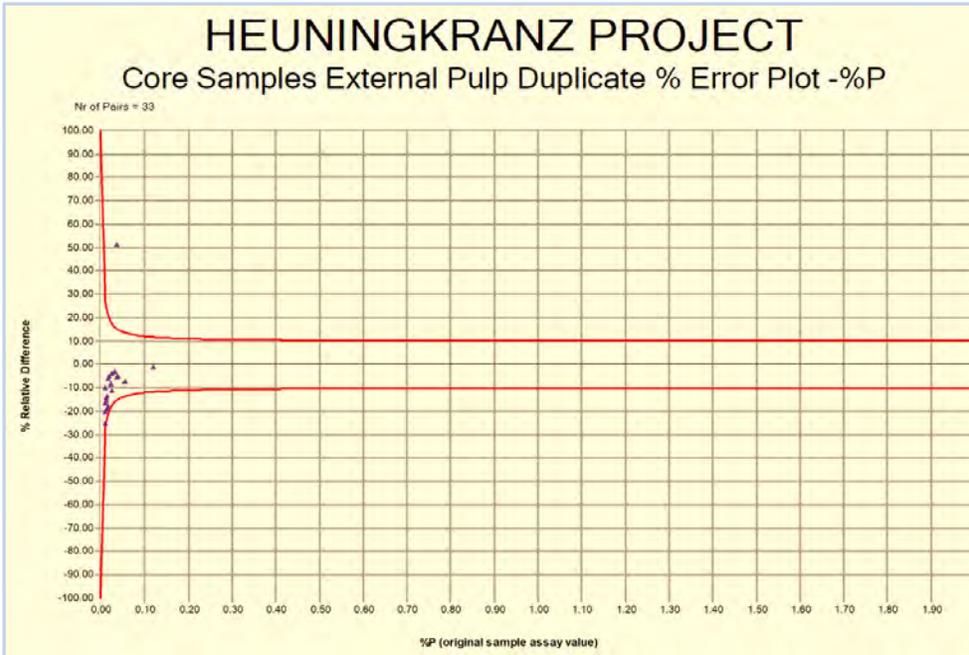


Figure 33: Percentage Error Plot for %K₂O pulp replicate pairs (ATS Primary versus BV Umpire)

The number of K₂O external duplicate pairs plotting outside the Kumba % Relative Difference limits for 2021-2022 is 1 out of 64 (1,64%) and for 2022-2023 its 2 out of 33. The two lab compare well with a negative bias. **Figure 33**

7.2.11 Primary versus Umpire Laboratory %P Error Plots

2021-2022



2022-2023

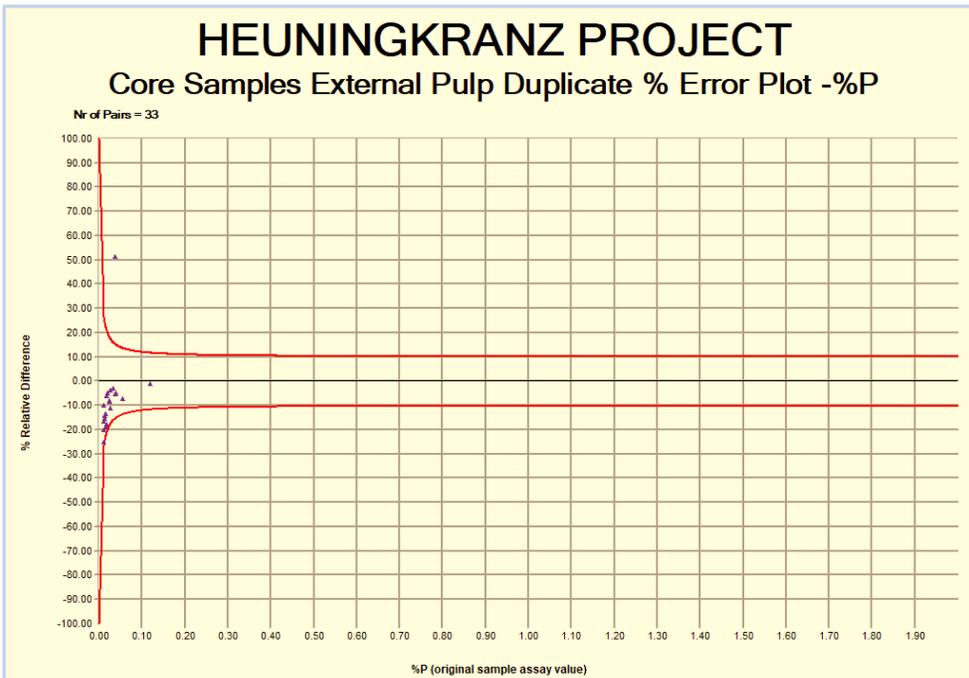
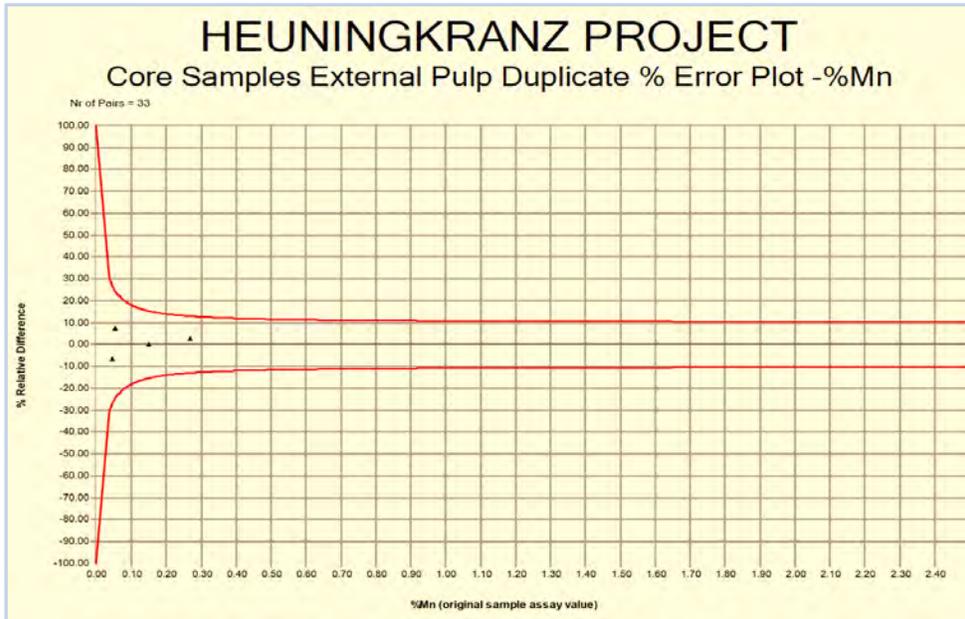


Figure 34: Percentage Error Plot for %P pulp replicate pairs (ATS Primary versus BV Umpire)

Figure 34 shows that there is a fairly evident significant negative bias present. The number of P pair duplicates plotting outside the Kumba % Relative Difference limits is 6 out of 33 (18%) for 2021-2022 and 2022-2023 has 5 out of 33.

7.2.12 Primary versus Umpire Laboratory %Mn Error Plots

2021-2022



2022-2023

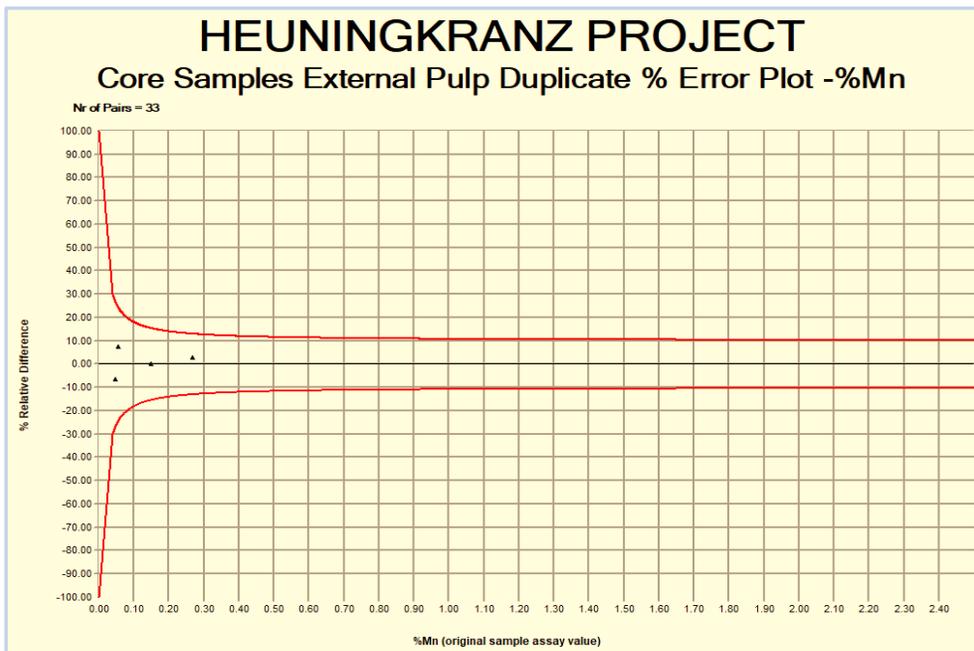
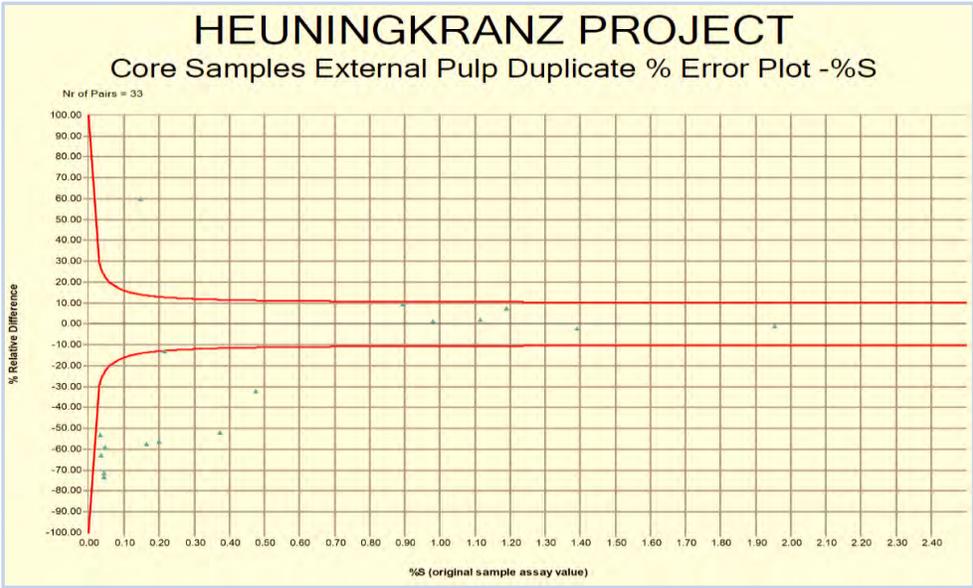


Figure 35: Percentage Error Plot for %Mn pulp replicate pairs (ATS Primary versus BV Umpire)

Figure 35 demonstrate that The ATS Laboratory Mn results compare well with the BV Laboratory results none of the Mn pair duplicates plot outside the Kumba % Relative Difference limits for both 2021-2022 and 2022-2023. At the beginning accuracy was low but drastically improved.

7.2.13 Primary versus Umpire Laboratory %S Error Plots

2021-2022



2022-2023

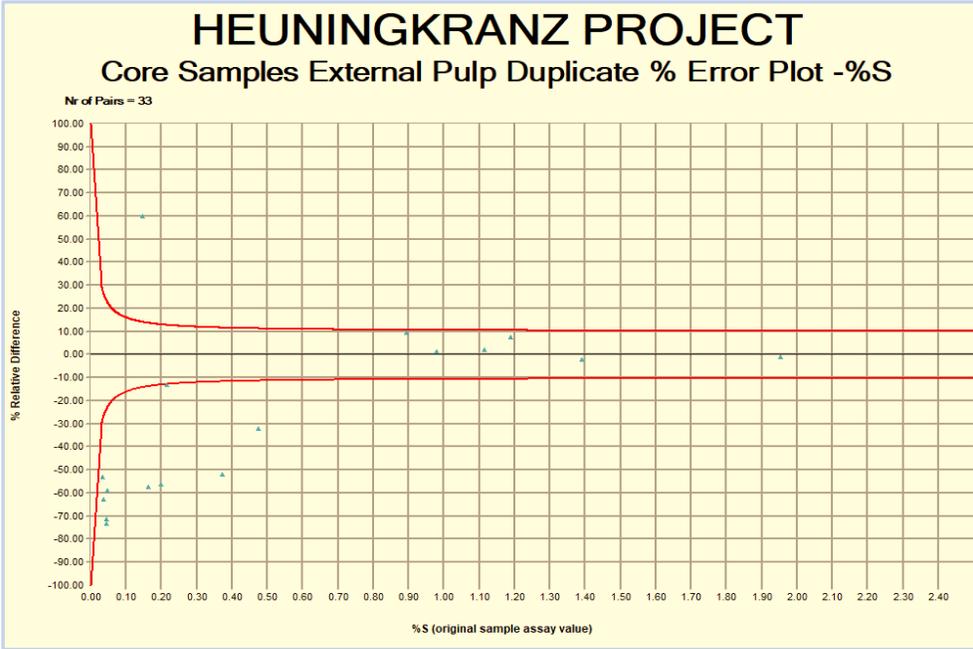
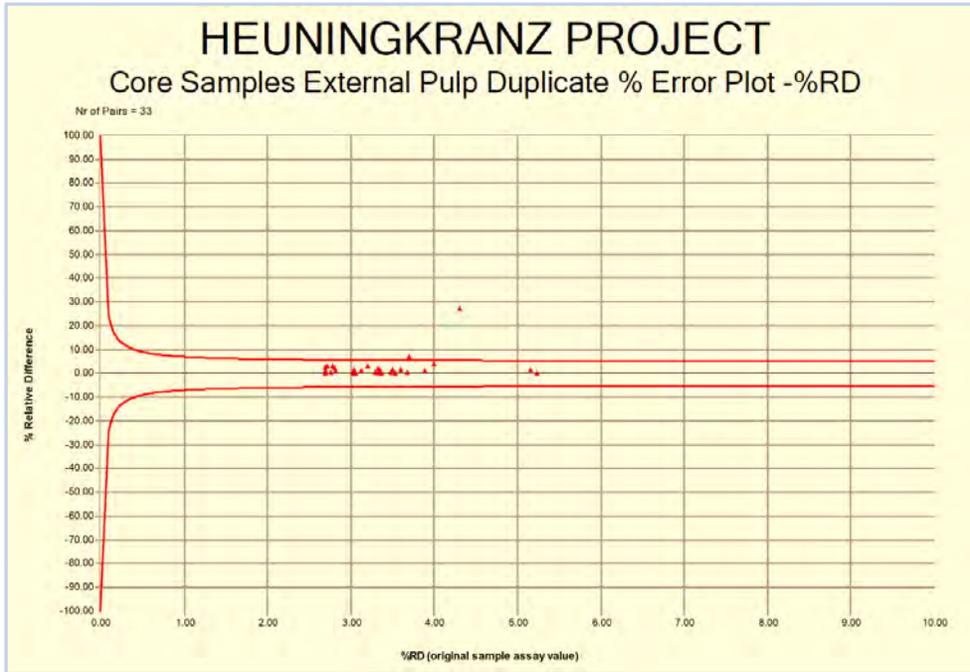


Figure 36: Percentage Error Plot for %S pulp replicate pairs (ATS Primary versus BV Umpire)

Figure 36 shows that S pair duplicates plot outside the Kumba % Relative Difference limits with 12 out of 33(36%) for 2021-2022 and 13 out of 33 for 2022-2023 this is fairly high.

7.2.14 Primary versus Umpire Laboratory %RD Error Plots

2021-2022



2022-2023

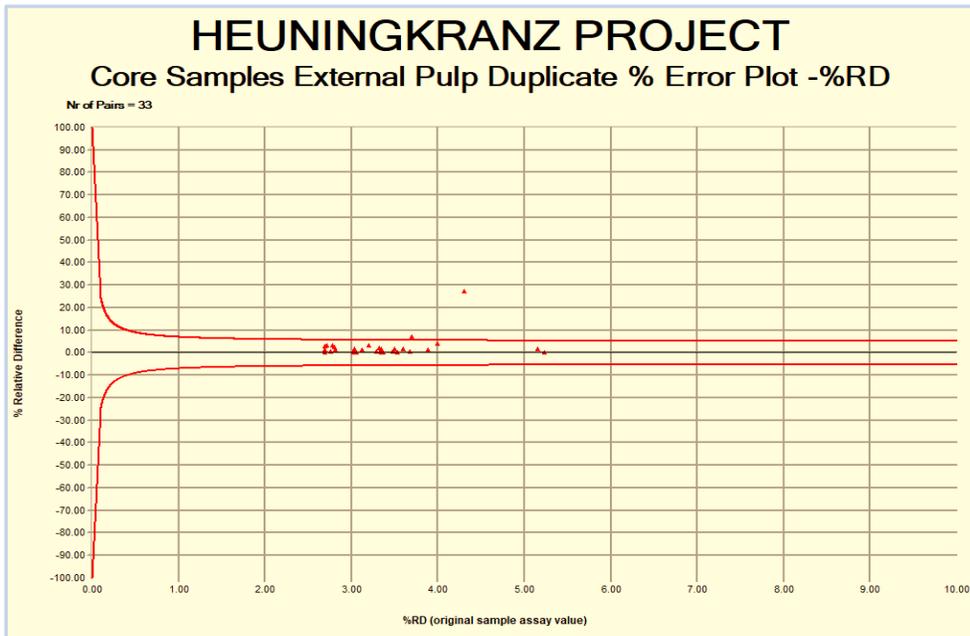


Figure 37: Percentage Error Plot for %S pulp replicate pairs (ATS Primary versus BV Umpire)

Figure 37 The number of RD pair duplicates plotting outside the Kumba % Relative Difference limits is 8 out of 33 (18%) for 2021-2022 and 6 out of 33 for 2022-2023.

7.3 Relative Density

At current and historically, Heuningkranz Project has applied relative densities (RD's) derived from coarse sample mini-dense tests (before 2010) and pulp sample pycnometer instrumentation tests (2010 onwards). It is not the ideal method to approximate in-situ bulk density (since sample porosity is destroyed) and it is generally believed that this may result in a slight over-estimation of Mineral Resources whereas a bulk density (that better considers pores and fissures etc in the case of core samples) should be more representative.

Kumba Iron Ore Geosciences has launched an investigation in 2018 to find an alternative test method for density to better approximate in-situ bulk density. This is on-going.

Heuningkranz Project's RD's were measured using a pycnometer instrument at ATS into which pulp sub-samples were inserted during the period of reporting.

These RDs are used directly for Mineral Resource estimation(**Figure 38 to Figure 41**). It has minimum and maximum limits set at each RD interval, and RD's falling outside these limits are queried with the primary Laboratory.

%Fe vs RD for Heuningkranz Hematite illustrated 1 sample as an outlier and Shale having a number of samples plotting outside as illustrated in **Figure 38 and Figure 41**.

Figure 39, Figure 40, for BIF and conglomerate exhibit the expected polynomial trend with no outliers.

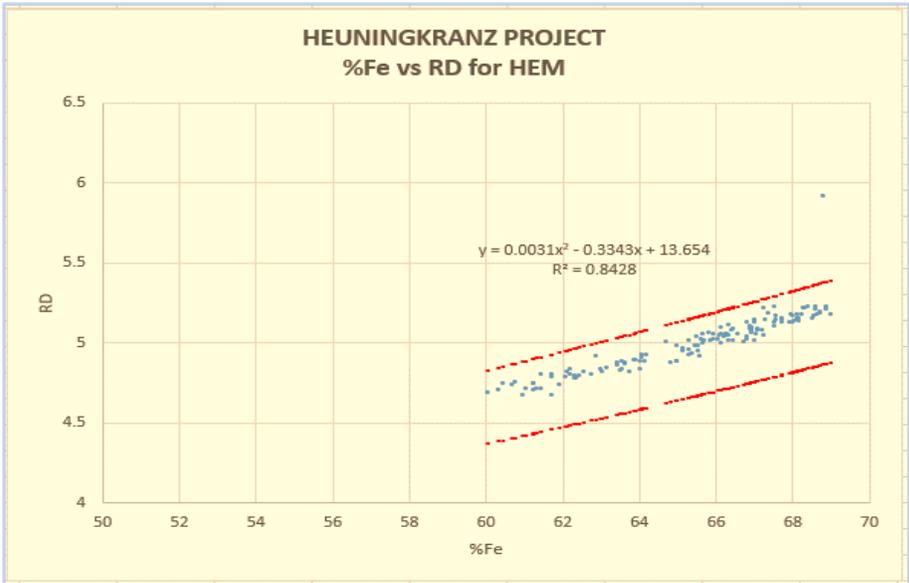


Figure 38: Polynomial algorithm defining %Fe-RD relationship for Heuningkranz Project Hematite samples

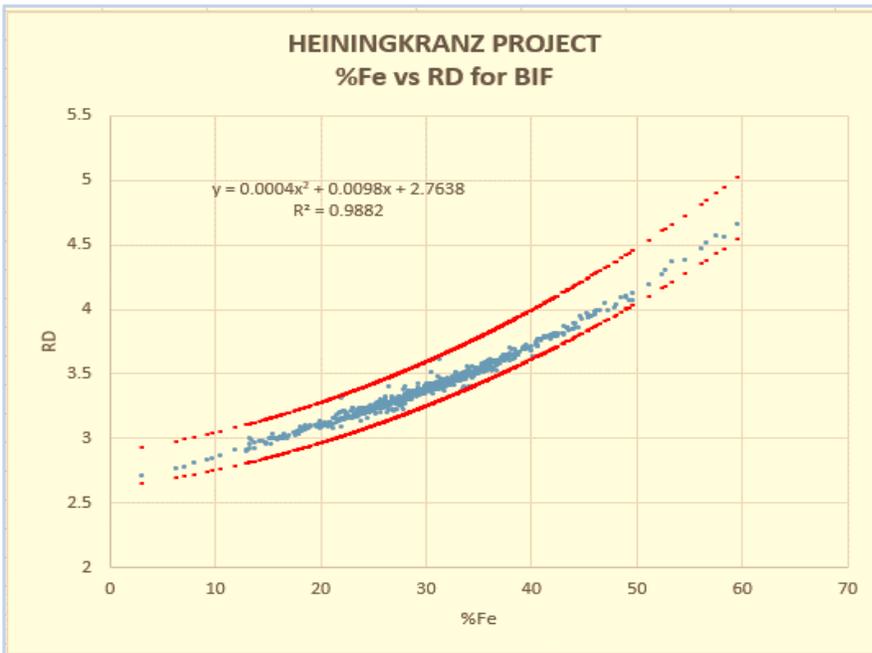


Figure 39: Polynomial algorithm defining %Fe-RD relationship for Heuningkranz Project BIF samples.

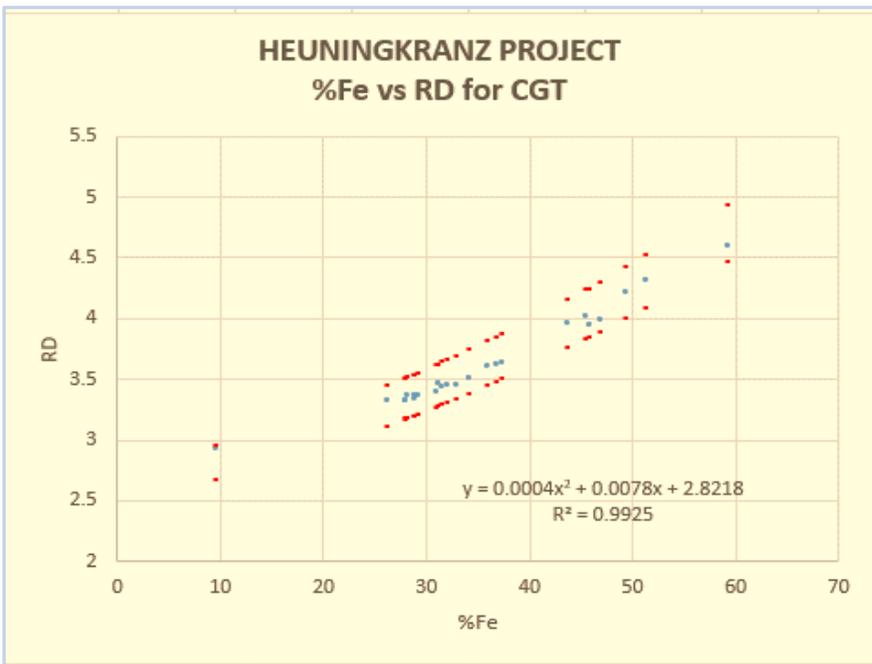


Figure 40: Polynomial algorithm defining %Fe-RD relationship for Heuningkranz Project Conglomerate samples.

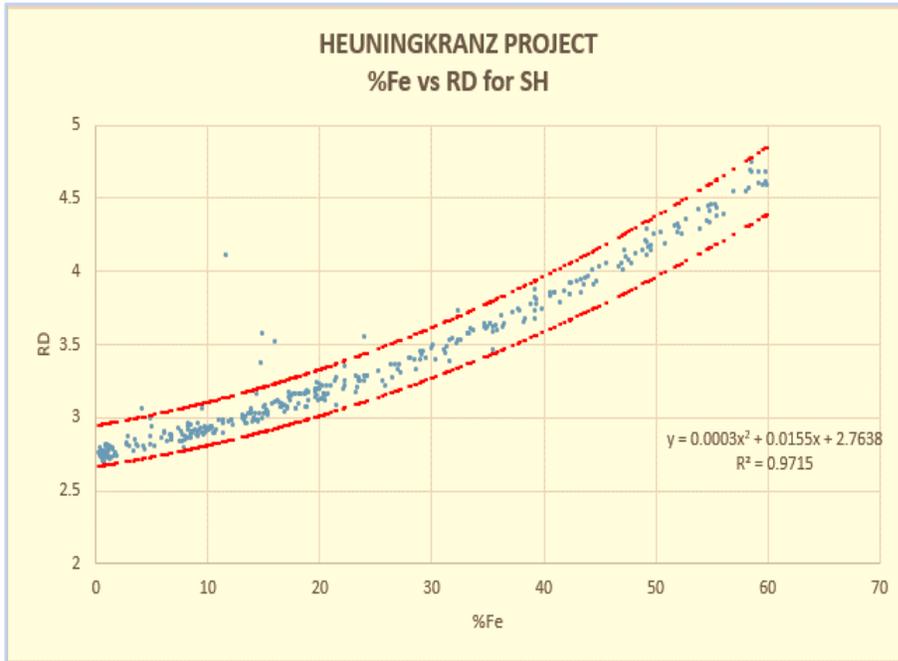


Figure 41: Polynomial algorithm defining %Fe-RD relationship for Heuningkranz Project Shale samples

8 DEVIATIONS IDENTIFIED BY QA/QC VALIDATION

8.1 Progress with Priority 1 findings identified during the previous reporting period

During the previous reporting period (2021) core external check assay pulp duplicate population pass rate was very low with a 58% pass rate, there has been an improvement in this reporting period with 2021-2022 having a pass rate of 84.38% and 2022-2023 with a pass rate of 78.79% even though its still doesn't comply with the Kumba criteria.

8.2 Summary of Priority 1, 2 and 3 findings for the current reporting period

Priority 1

The external checks failure rate continues in this reporting period with 84.38% for 2021-2022 and 78.79% for 2022-2023 which is below the acceptable limits. ATS Laboratory has been informed of the results and an investigation will be implemented. There has been a great improvement from the previous reporting period which had a 58% pass rate.

Priority 2: Poor Material Recovery

Poor material recoveries are a problem during this reporting period not passing the criteria set in the protocol.

These low recoveries need to be investigated to determine whether they are associated with the nature of orebody.

A core master has also been appointed to ensure quality of core.

Priority 3: Mass differences between Site and Lab for samples >1.0kg

Sample mass difference indicated a slight problem for samples >1.0kg with a mass difference which exceeds the maximum 5% absolute mass difference limits.

Weighing from enclosed environment and using an automatic (capture as you weigh) scale will be implemented at site Demaneng, this should improve the mass capture process.

The person at Heuningkranz Project, designated to take responsibility for exploration related QA/QC governance, Charl Gous, has reviewed and endorsed this QA/QC report and deems the geological grade information gathered during the period of reporting representative for Mineral Resource estimation purposes.

Charl Gous
Specialist Exploration Geologist, Greenfields Exploration

Date

Comments:

Addendum B

2025

Kolomela Mine

Mineral Resource

CP Appointment Letter

INTERNAL

Mr. V Combrink
Sishen Iron Ore Company (Pty) Ltd
21 Main Street
Postmasburg
8420
Republic of South Africa

15 July 2025

Venter Combrink
Specialist Modelling Resource Geologist
Direct line: +27 (0)79 890 9610
e-mail: venter.combrink@angloamerican.com

APPOINTMENT AS COMPETENT PERSON FOR THE KOLOMELA MINE MINERAL RESOURCES – 2025 CYCLE

In accordance with the Anglo American plc R&R Reporting Policy and the SAMREC Code (2016 edition), Kumba Iron Ore nominates **Venter Combrink** (Specialist Modelling Resource Geologist) to prepare reports and sign off as the Competent Person on the **2025 Mineral Resource** for

Kolomela Mine

By signature to this letter, Venter Combrink confirms that he has read and understands his responsibilities as per:

1. The SAMREC Code (2016 edition)
2. Anglo American Group Policy for Reporting of Ore Reserves and Mineral Resources and the supporting Requirements Document (AA_RD_22-25 - Version 15 [2024]).

Venter is a registered professional scientist of the South African Council for Natural Scientific Professions (SACNASP) which has an enforceable disciplinary process.

Venter has **22 years** of experience relative to the style of mineralisation, type of deposit and mineral resource estimation for which he accepts responsibility as Competent Person. An abridged CV, presenting qualifications, experience and proof of current professional organisation affiliation is attached to support this appointment. Venter Combrink consents to this information being used to confirm eligibility to act as a Competent Person.

Venter will satisfy himself that all relevant activities that will be undertaken in the preparation of the estimates are acceptable and ensure that the constituent parts of the Competent Person Report on Mineral Resources will be signed off by all contributors. He must defend the 2025 Mineral Resource estimates for Kolomela Mine in a forum of his peers before it can be used for public reporting.

This appointment will commence on the date of signature of this letter, and is valid for the current reporting cycle unless otherwise advised by Kumba Iron Ore.

A member of Anglo American plc group**Kumba Iron Ore Limited**

144 Oxford Road, Rosebank, Melrose, 2196. Postnet Suite 153, Private Bag X31, Saxonwold, 2132, South Africa. T +27 (0) 12 683 7000.

Incorporated in South Africa. Registration Number: 2005/015852/06

Directors: ND Zikalala (CEO)**; BA Mazarura (CFO) (Zimbabwean)**; MS Bomela*, TP Goodlace (British/South African)*; A Jeawon*, MA Jenkins*, NB Langa-Royds*, TM Mkhwanazi***; SS Ntsaluba*, MJ Tsele***; MTS Walker (British)***

*Independent Non-Executive Director, **Executive Director, ***Non-Executive Director

Company Secretary: F Patel

Venter is responsible for entering all required Mineral Resource information into the relevant Kumba Iron Ore templates and Anglo American Resource Disclosure system, to use this information for the compilation of the 2025 Kolomela Mine Mineral Resource Statement by 31 October 2025 in preparation for the public reporting of Kolomela Mine's 2025 Mineral Resources.

Signed on behalf of the Kumba Executive:

Gerrie Nortje
Executive Head, Technical and Strategy
Kumba Iron Ore

Signed in Acceptance:

Venter Combrink

Venter Combrink
Registering Body: SACNASP
Number: 400053/08
Membership Expiry Date: 31 March 2026

15 July 2026

Date

ABRIDGED CV VENTER COMBRINK

PERSONAL DETAILS

| | |
|------------------------------|--|
| E-MAIL ADDRESS | venter.combrink@angloamerican.com |
| TELEPHONE NUMBER | +27 (0)798909610 |
| BUSINESS UNIT COMPANY | Kolomela Mine, Kumba Iron Ore |
| JOB TITLE | Specialist Modelling Resource Geology |
| LANGUAGE CAPABILITY | 1st Language (Afrikaans: Home) 2nd Language (English: Fluent) |

PROFESSIONAL ASSOCIATION

| | |
|----------------------------------|--|
| PROFESSIONAL ORGANISATION | The South African Council for Natural Scientific Professions |
| MEMBERSHIP STATUS | Registered Member |
| MEMBERSHIP NUMBER | 400053/08 |

RELEVANT QUALIFICATIONS

| QUALIFICATION | INSTITUTION | YEAR |
|---------------------|-------------|------|
| B.Sc Geology (Hons) | U.O.F.S. | 1992 |
| | | |
| | | |
| | | |

WORK HISTORY

| YEAR | | LOCATION | WORK/FUNCTION | COMMODITY |
|--------|--------|--|---------------------------------------|-----------|
| From | To | | | |
| Jan-93 | Jan-94 | Exploration office,Thabazimbi,Limpopo | Exploration Geologist | Hematite |
| Jan-94 | Jan-95 | Underground Mine,Thabazimbi,Limpopo | Production Geologist | Coal |
| Jan-95 | Jan-01 | Production Geologist: Leeuwpan,Delmas, Mpumalanga | Production Geologist | Hematite |
| Jan-01 | Jan-08 | Production Geologist: Buffelshoek West pit | Production Geologist | Hematite |
| Jan-08 | Jan-16 | Appointed as Senior Resource Geologist, Thabazimbi | Resource & Production Geology Manager | Hematite |
| Jan-16 | Jan-17 | Contracted as Exploration Geologist, Northern Cape | Exploration Geologist | Hematite |
| Jan-17 | Aug-18 | Resource Geologist ,Kolomela Mine | Resource Geologist | Hematite |
| Aug-18 | Aug-22 | System Specialist (Resource Geologist), Corporate Office | Resource Geologist | Hematite |
| Aug-22 | Jul-25 | Specialist Modelling Resource Geology | Specialist Modelling | Hematite |
| | | | | |

RELEVANT TRAINING COURSES

| YEAR | COURSE |
|------|--|
| 2007 | First Line Management |
| 2009 | Middle Line Management |
| 2010 | Safety Risk Management Process A3 level |
| 2008 | Datamine Geological Software |
| 2012 | acquire Database Management |
| 2010 | Introduction to Lump Ore Beneficiation |
| 2019 | Leapfrog 3D geological modeling software |
| 2020 | Leapfrog Masterclass (TECT, Dr Ian Basson) |
| 2020 | QAQC Prof Minnet |
| | |
| | |
| | |

HOME ADDRESS

| | |
|--------------------|---------------------|
| STREET | 9 Louw Steyn street |
| SUBURB | |
| CITY | Postmasburg |
| POSTAL CODE | 8420 |

| | |
|-------------------|-------------|
| UPDATED BY | JV Combrink |
| DATE | 15/07/2025 |

**PROOF OF PROFESSIONAL AFFILIATION
VENTER COMBRINK**



herewith certifies that

Jan Venter Combrink

Registration Number: 400053/08

is a registered scientist

in terms of section 20(3) of the Natural Scientific Professions Act, 2003
(Act 27 of 2003)

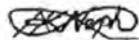
in the following field(s) of practice (Schedule 1 of the Act)

Geological Science (Professional Natural Scientist)

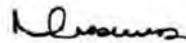
Effective **21 May 2008**

Expires **31 March 2026**





Chairperson



Chief Executive Officer



Addendum C

Surface Right Title Deeds

FEES: R3000,00
EXEMPT C:
EXEMPTION APPROVED: 
SAR EX:
ASS:

15



Prepared by me



C10458/kc

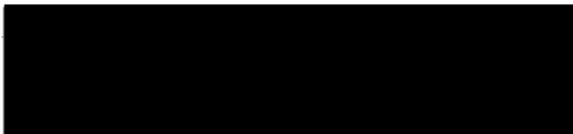
T000003439 / 2012

DEED OF TRANSFER

BE IT HEREBY MADE KNOWN THAT



appeared before me, the Registrar of Deeds at Kimberley, the said appearer, being duly authorised thereto by a power of attorney signed at Kimberley on 30th October 2012 and granted to him by



7

8
2012

And the appearer declared that his principal had on 4 October 2012 truly and legally sold, the undermentioned property by Private Treaty

And that he in his capacity aforesaid, did by these presents, cede and transfer to and on behalf of

SISHEN IRON ORE COMPANY PROPRIETARY LIMITED
Registration Number 2000/011085/07

their successors in title or assigns, in full and free property

1. FARM NUMBER 364, SITUATE IN THE DISTRICT HAY, NORTHERN CAPE PROVINCE

IN EXTENT 2 383, 0861 (TWO THOUSAND THREE HUNDRED AND EIGHTY THREE COMMA ZERO EIGHT SIX ONE) HECTARES

Firstly transferred by Deed of Grant (Hay Quitrents Book 10, Folio 17) with Diagram relating thereto and held by Deed of Transfer Number T7182/1993

- A. Subject to the following conditions created in Deed of Grant (Hay Quitrents Book 10, Folio 17), namely –
- (i) That the Government shall always have the right to make new roads, railways and railways stations, aqueducts, dams and drains, or to conduct telegraphs over the land hereby granted for the benefit of the public, and to establish convenient outspans for the use of travelers, and to enter on the land for the purpose of digging and searching for minerals and precious stones; provided that the Proprietor shall be entitled to be paid such sum of money, in compensation, as three Appraisers, one to be appointed by each side, and a third to be chosen by the two others, before proceeding to act, or any two of them shall award
 - (ii) That the Government shall at all times have the right of resuming the whole or a portion of the land hereby granted, if required for the working of any mine or for other public purposes on payment to the Proprietor of such sum of money in compensation as may be awarded by Appraisers appointed in the manner provided in the preceding condition IV
 - (iii) That the Proprietor shall allow to the public travelling along any of the roads running over the land hereby granted, the right to pass over the graze their loose cattle, horse, sheep and goats, to be extend not exceeding 377,83 metres on each side of any such road and to outspan, graze and water stock upon the land hereby granted.

2. **PORTION 1 OF THE FARM NUMBER 432, SITUATED IN THE DISTRICT HAY, PROVINCE OF THE NORTHERN CAPE IN EXTENT 1043,2560 (ONE THOUSAND AND FORTY THREE COMMA TWO FIVE SIX ZERO) HECTARES**

First transferred by Deed of Transfer number T5242/1895 with diagram relating thereto and held by Deed of Transfer number T 7182/1993

- A. Subject to the following conditions created in Deed of Grant (Hay Quitrents Book 10, Folio 17), as mentioned in Paragraph 1A

J

WHEREFORE the appearer, renouncing all the right and title the said

[REDACTED]

heretofore had to the premises, did, in consequence also acknowledge him to be entirely dispossessed of, and disentitled to, the same; and that, by virtue of these presents, the said

SISHEN IRON ORE COMPANY PROPRIETARY LIMITED
Registration Number 2000/011085/07

their successors in title or assigns, now are and henceforth shall be entitled thereto, conformably to local customs; the State, however, reserving its rights, and finally acknowledging that the purchase price is the amount of [REDACTED]

IN WITNESS WHEREOF I, the said Registrar, together with the appearer, have subscribed to these presents, and have caused the seal of office to be affixed thereto.

THUS DONE AND EXECUTED at the Office of the Registrar of Deeds at Kimberley on

12 DEC 2012

[REDACTED]

Signature of appearer q.q.

In my presence



Registrar of Deeds

7

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