VHM Limited

ASX Announcement

25 January 2023

VHM Metallurgical Results and Drilling Commencement

Highlights:

- Metallurgical testwork of 1.6 tonne bulk sample sourced from Area 4 confirms:
  - Total Heavy Mineral ("THM") grade of 11.1% in upper mineralised zone of Area 4 (2.8 times higher in THM grade compared to Goschen Project Ore Reserve average THM grade of 4%)
  - Mineralisation is amenable for processing through the flowsheet proposed for the Goschen Project
  - High value zircon and titania products, are consistent with previous Area 1 testwork outcomes
- Drilling to commence at the Cannie and Nowie Prospects, with the initial program targeting 5,700 metres of aircore drilling only 11 km south and 13.5 km north of the Goschen Project respectively

VHM Limited ("VHM" or the "Company"), today announces the results from Area 4 Metallurgical testwork, confirming high THM grades and amenability to the Goschen Project (Areas 1 and 3) processing through the conventional flowsheet. Area 4 is located outside of the Goschen Project footprint and is part of a high grade strandline deposit defined by resource definition drilling in 2018 and 2019. The Company also announces the commencement of drilling at the Cannie and Nowie Prospects.

Area 4 Verification Testwork Conducted by Mineral Technologies

As part of VHM's extensive metallurgical testwork program, 1.6 tonnes of material sourced from four geological domains of interest within Area 4 was characterized by Mineral Technologies and treated though the Goschen Project mineral sands process flowsheet. The material used for the trial comprised drill sample retains generated during the 2019 drilling program (Figure 1). The material from Area 4 is not currently included in the Goschen Project footprint but will serve as a source of future feedstock. The testwork confirms the Area 4 material is amenable to processing through the flowsheet proposed for the Goschen Project and has significantly higher THM grades.

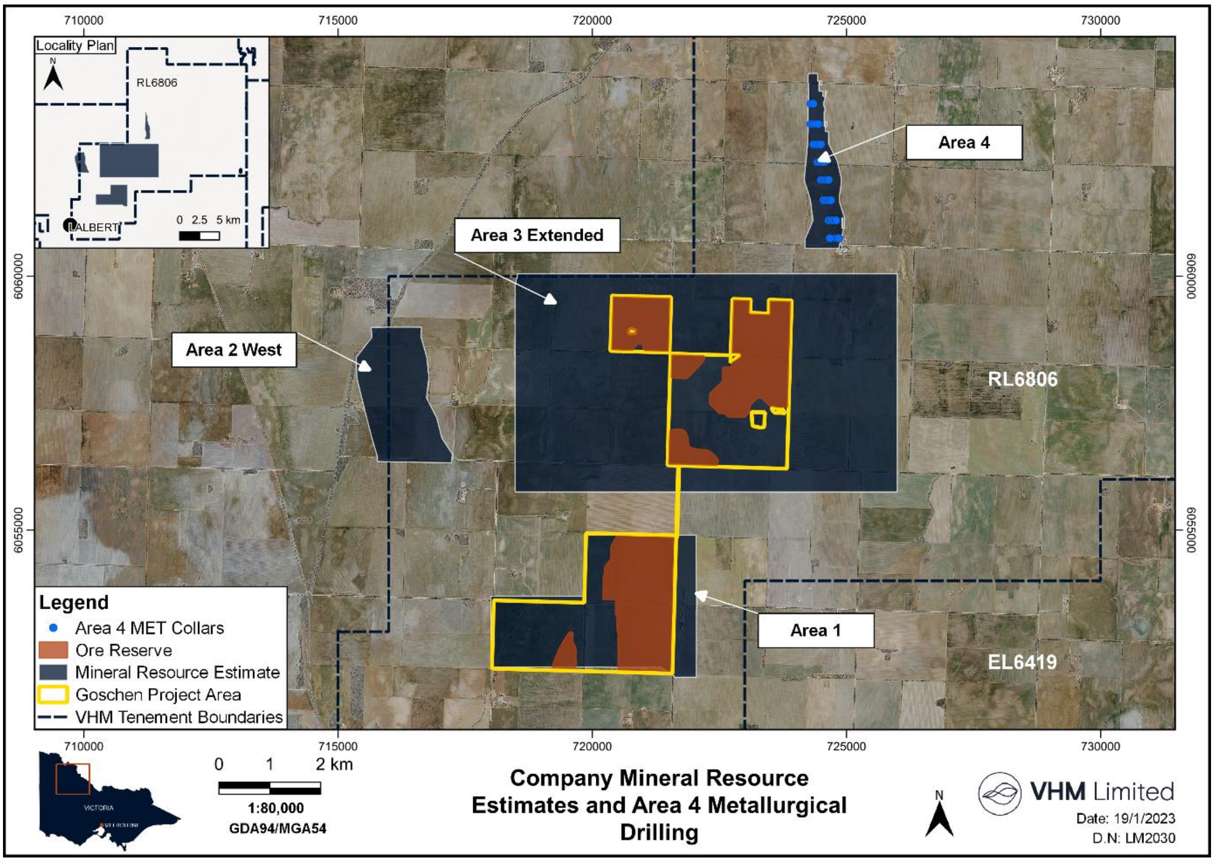
VHM Managing Director, Graham Howard commented: *"The metallurgical testwork results for Area 4 at the Goschen Project show high recoveries of high value heavy minerals, in line with our expectations. Importantly, this work builds on our previous Mineral Resource program and positively supports further work to define high grade feed stock in Area 4.*

"We are also pleased to be commencing our drilling program at the Cannie and Nowie Prospects, both important steps towards demonstrating the scale of the resource base that surrounds our flagship Goschen Project."

The testwork program was designed to assess the metallurgical performance of the material and considered three key aspects:

- Characterization of material sampled from four primary geological zones found within Area 4
- Undertake testwork on 1.6 tonnes of sample of material sourced from Area 4 to assess the broad metallurgical performance of each zone through the Goschen mineral sands process flowsheet
- Assess indicative quality of the resulting mineral sands products

Figure 1: Figure showing the location of Area 4 relative to the other Areas



The full inventory of the sample is included at the end of this announcement with the sample masses received by Mineral Technologies shown in Appendix 1.

Metallurgical Processing and Product Quality

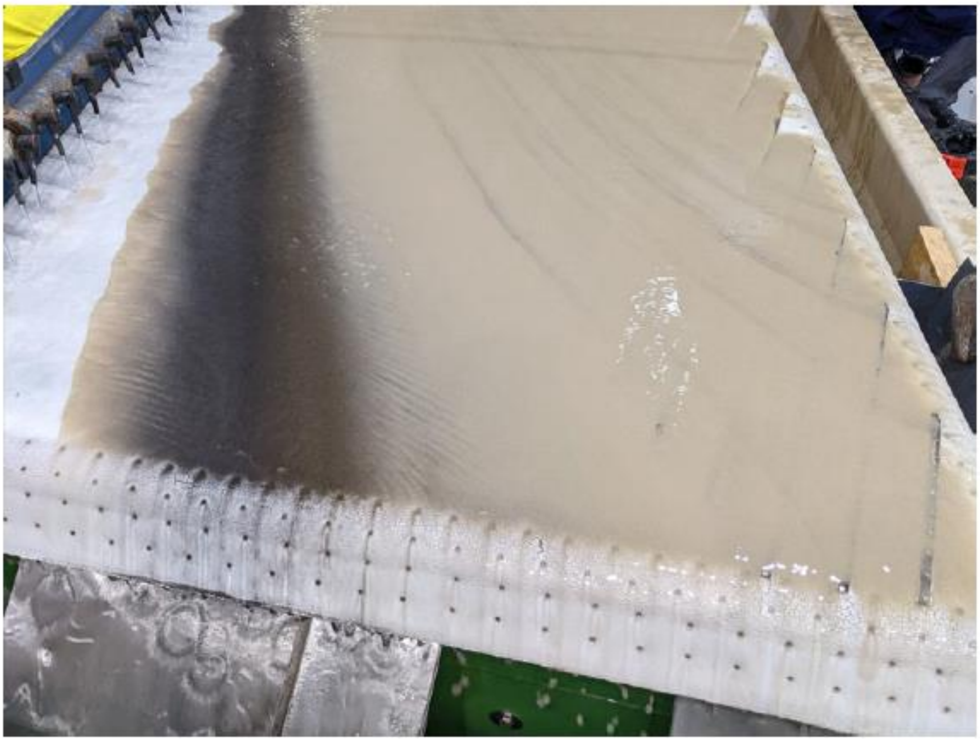
Four samples of material representing four separate geological zones in Area 4 were subjected to a conventional mineral sands processing as follows:

- Processing though the feed preparation stage ("FPP") involving screening and desliming
- Processing through the wet concentration stage ("WCP") using shaking tables and targeting a final heavy mineral ("HM") grade of 90%
- Isolation of final mineral sands products via conventional mineral separation plant ("MSP") processing techniques including attritioning, flotation, magnetic, electrostatic and gravity separation techniques

The testwork demonstrated that material from Area 4 was successfully processed through the Goschen process flowsheet. Losses of recoverable valuable heavy minerals to the slimes was minimal as evidenced by good alignment between the distribution of titania (TiO_2), zircon (ZrO_2) and cerium (CeO_2) to slimes when compared with the characterization results.

High recoveries of high value heavy minerals were observed across the gravity concentration circuit and is consistent with the use of shaking tables. Typical separation observed for Area 4 material on the wet table is illustrated in the photo below (Figure 2) and highlights distinct bands of minerals being separated.

Figure 2: Gravity separation of material over a shaking table at Mineral Technologies



Notes: From left to right; light coloured material includes rare earth minerals and zircon, dark minerals represent titania and trash heavy minerals while the cream coloured material is predominantly low density sand waste product.

The heavy mineral concentrate ("HMC") product generated was subjected to flotation using the reagent regime from the Goschen Project 2019 Area 1 testwork program. The rare earth minerals responded well, reporting to the floatation product with metallurgical behaviour consistent with that observed when processing the Area 1 material.

The testwork was aimed at fast tracking HMC production for downstream evaluation and assessment of indicative product quality. Overall CeO_2, ZrO_2 and TiO_2 recoveries are considered acceptable and further work will be directed at optimising recoveries in future bulk sample trials.

The metallurgical program showed that the material sourced from Area 4 was amenable to processing using conventional mineral sands separation flowsheet and equipment as planned for employment at the Goschen Project.

One of the objectives of the work was to assess the indicative quality of final mineral sand products using material from Area 4. The Area 4 material responded well through the process flowsheet with the results showing that the grade of major elements in the final products were consistent with that of Goschen Project Area 1.

Alumina (Al_2O_3) and silica (SiO_2) containing contaminants were partly recovered to the ilmenite product. Further flotation tests are needed to optimize the operating conditions for maximum rejection of these contaminants. The chromium oxide (Cr_2O_3) content of the ilmenite was reduced confirming successful rejection of the Cr-minerals.

The quality of the leucoxene and Rutile/HiTi products was comparable with Area 1 testwork outcomes.

The quality of the leached zircon produced was comparable with that produced during the feasibility study with levels of TiO_2 and ferric oxide (Fe_2O_3) being well within the specification for premium zircon (Table 1).

Table 1: Final zircon product grades

	Assay (Mass %)		
Component	TiO_2 %	Fe_2O_3 %	Zr (Hf)O_2 %
Area 4 variability	0.10	0.05	66.4
Area 1	0.09	0.05	66.6

Area 4 Metallurgy Outcomes

The metallurgy program defined that the THM grade ranged between 6.4% lower to 40.7% higher in THM grade than estimated in the Area 4 Mineral Resource (Table 2).

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The metallurgical program also confirmed that the THM grade in the upper mineralized zone in Area 4 is 2.8 times higher than the Goschen Project Ore Reserve average grade of 4% THM (see Prospectus). The Company will advance work assessing the economic viability of Area 4 during H1 2023.

Table 2: Area 4 heavy mineral grade metallurgical testwork compared to Area 4 Mineral Resource estimate

	Area 4 metallurgical testwork				Area 4 September 2019 Mineral Resource estimate[1]				Percent difference			
	Zone 2 %	Zone 3 %	Zone 4 %	Zone 5 %	Zone 2 %	Zone 3 %	Zone 4 %	Zone 5 %	Zone 2 %	Zone 3 %	Zone 4 %	Zone 5 %
Total heavy mineral	3.80	13.8	4.55	11.1	2.70	14.8	3.80	10.3	40.7	-6.42	19.8	7.50

Notes:

- *Heavy mineral grade quoted includes both valuable and non-valuable heavy minerals with Zone 3 characterised by a high proportion of non-valuable heavy minerals.*
- *Testwork assay represents THM at 20µm slimes cut, 1mm oversize cut and >2.85SG HLS.*
- *Resource assay represents THM at mix of 20µm /38µm slimes cut, 1mm oversize cut and >2.96 SG HLS.*
- *Percent difference represents difference between the testwork and Resource results as a percentage.*

VHM is continuing with the metallurgical testwork program and expects to report on the results of the bulk REMC and Area 1 verification trials in Q1 2023.

Commencement of Drilling at Cannie and Nowie Prospects

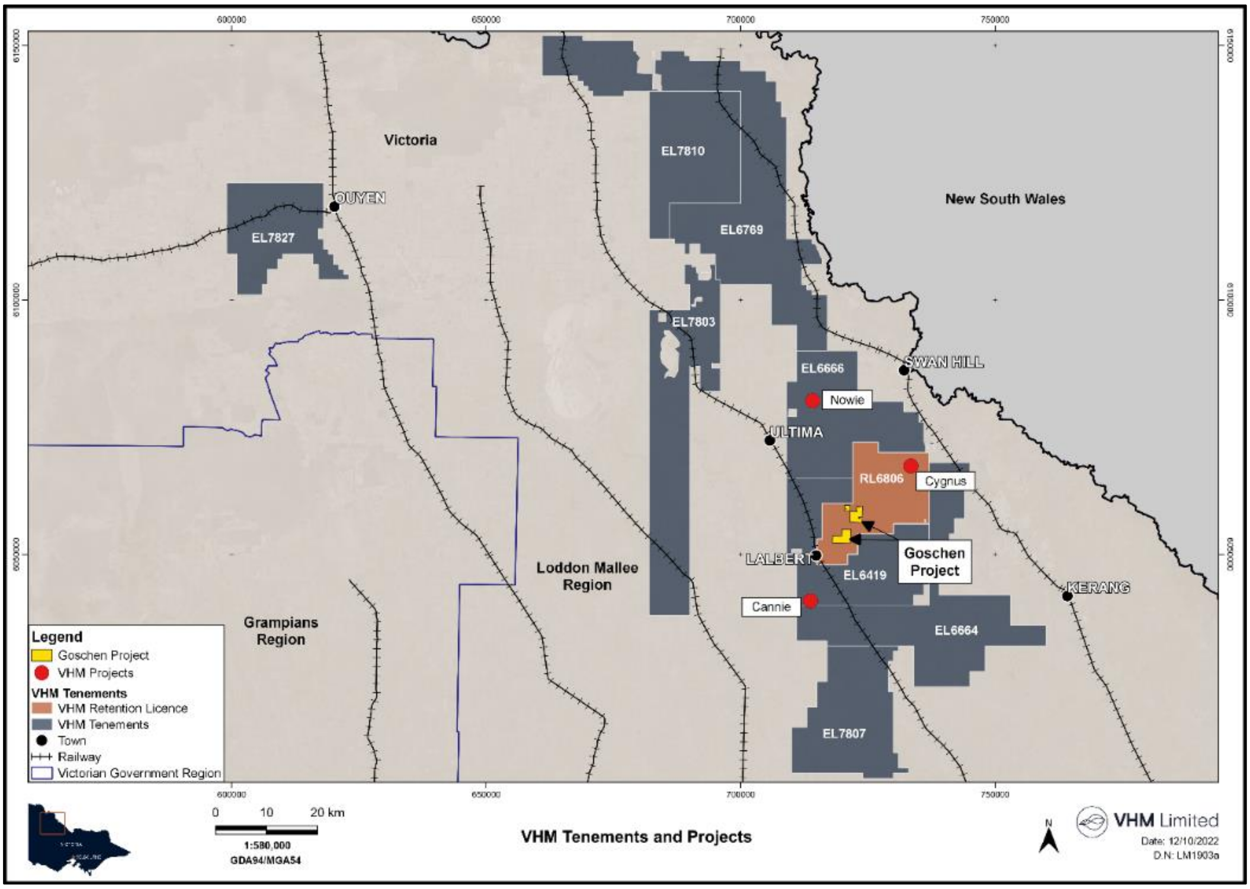
VHM is commencing its drilling programs at Cannie and Nowie to be conducted by Wallis Drilling (see Prospectus[1]). The Cannie Prospect is located approximately 11km south of the Goschen Project in EL6419 and EL6664 9 (Figure 3). The Nowie Prospect is located north of the Goschen Project, approximately 13.5 km in EL 6666.

The planned program comprises up to 120 holes in Cannie and up to 70 holes in Nowie totaling 5,700m of aircore drilling. It is estimated that the program will take approximately 2 months to complete. The drill targets (Figure 4) have been defined from historical drill data and geophysical airborne surveys that the Company undertook in 2021.

The primary objective of the drilling aims to define the extent of mineralisation across the tenement areas, and to support the potential for future maiden Mineral Resource estimates across both the Cannie and Nowie Prospects.

[1] As set out in the Prospectus dated 21 November 2022 as supplemented by the supplementary prospectus dated 5 December 2022, lodged with ASX on 5 January 2023 (Prospectus).

Figure 3: Cannie and Nowie Prospect locations



Cannie and Nowie Prospects

The Cannie and Nowie Prospects have been identified by the Company as exploration target areas comprising both sheet-style and strandline rare earth mineral and zircon – titanium accumulation of heavy minerals.

Previous explorers in the Cannie area include CRA, Murray Basin Titanium, and Corvette Resources. The CRA drilling results from exploration in the early 1990's have been the impetus for the Company's interest in the Cannie area.[2] In 2021, the Company undertook close spaced airborne geophysics which has confirmed geophysical response occurs over the Cannie and Nowie areas. This response coincides with rare earth and zircon – titanium mineralisation intersected in historic exploration. The drilling conducted by CRA in the early 1990's intersected multiple significant THM intersections with high zircon grade extending over a 15 km strike and up to 1.7 km wide.

[2] As set out in the Prospectus dated 21 November 2022 as supplemented by the supplementary prospectus dated 5 December 2022, lodged with ASX on 5 January 2023 (Prospectus).

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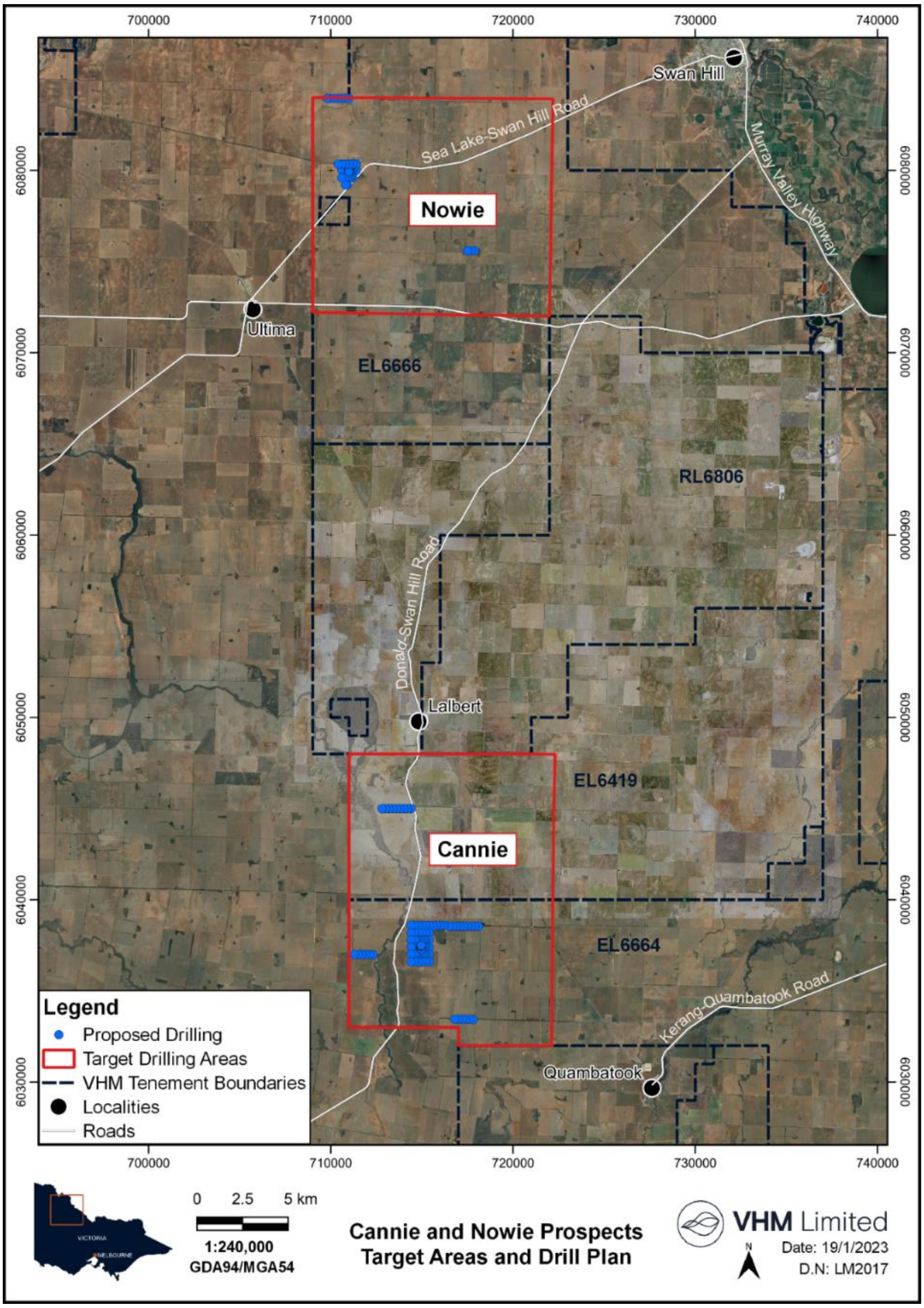
Figure 4: Cannie and Nowie proposed drill targets



Competent Person's Statement

The information in this release that relates to the exploration results, is based on information and supporting documentation compiled by Mr Graham Howard, who is an employee of VHM Limited. Mr Howard is a Competent Person who is a Fellow of Australasian Institute of Mining and Metallurgy and who consents to the inclusion in the report of the matters based on his information in the form and context in which it appears. Graham Howard has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code 2012).

The information in this release that relates to metallurgical testwork is based on information compiled and / or reviewed by Mr Gavin Williams who is a Member of The Australasian Institute of Mining and Metallurgy (AusIMM). Mr Williams is a Principal Consultant at TZ Minerals International, an independent mineral sands consultant retained by VHM, and is not a holder of any equity type in VHM Limited. Mr Williams has sufficient experience relevant to the activity which he is undertaking to be recognised as competent to compile and report such information. Mr Williams consents to the inclusion in the report of the matters based on the information compiled by him, in the form and context in which it appears.

ENDS

This announcement has been approved by the Board of VHM.

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Appendix 1

Sample Characterization

Subsamples from each of the zones were taken for sizing analysis and determination of the heavy mineral content according to the standard Goschen sample characterization method. The results were consistent with expectations and are presented in Table 4 and Table 5.

Table 3: Sample masses

	Zone 2	Zone 3	Zone 4	Zone 5
Bulk dry mass (kg)	195.7	206.2	532.7	526.0

Table 4: Area 4 sample sizing results

	Zone 2 %	Zone 3 %	Zone 4 %	Zone 5 %
Oversize (+1mm)	3.8	4.9	5.1	4.8
Sand	78.7	80.2	76.0	76.3
Slimes (<20 µm)	17.5	14.9	18.9	18.9
	100.0	100.0	100.0	100.0

Table 5: Area 4 sample heavy mineral grade by zone

	Zone 2 %	Zone 3 %	Zone 4 %	Zone 5 %
Heavy mineral grade	3.8	13.8	4.6	11.1

Note: Heavy mineral grade includes both valuable and non-valuable heavy minerals with Zone 3 heavy mineral characterized by elevated levels of tourmaline.

Appendix 2

JORC Code, 2012 Edition – Table 1

Area 4- JORC Table 1 (JORC Code, 2012 Edition)

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections)

Criteria	JORC Code Explanation	Commentary
Sampling techniques	• *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 down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g., submarine nodules) may warrant disclosure of detailed information.*	Aircore drilling was used to obtain samples at 1 m intervals for 2019 drilling. The following information covers the sampling process: • each 1 m sample was homogenized within the bag by manually rotating the sample bag; • a sample of sand, approx. 20 g, is scooped from the sample bag for visual THM% and SLIMES% estimation and logging. The same sample mass is used for every pan sample for visual THM% and SLIMES% estimation; • the standard sized sample is to ensure calibration is maintained for consistency in visual estimation; • a sample ledger is kept at the drill rig for recording sample intervals; • the large 1 m Aircore drill samples were split down to approximately ~1000 to ~2500 g by rotating cone splitter for export to the primary processing laboratory; and • Metallurgy samples for each 1m interval were selected based on Mineral Resource interpretation of Area 4 strandline deposit. Samples were constrained to estimation zones based on geology and mineral assemblage. Four zones identified as zones 5 (top of mineralised sequence),4, 3 (high content of tourmaline minerals) and 2(base of mineralised) • Metallurgy samples of each metallurgical and Mineral Resource estimation zone were combined in steel drums for transport to Mineral Technologies, Gold Coast Queensland. • Description of Area 4 Mineral Resource sampling procedure included in Prospectus.
Drilling techniques	• *Drill type (e.g., core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core*	• Wallis Drilling was the contractor used for the drilling program that supported the Goschen Area 4 Mineral Resource estimate.

Criteria	JORC Code Explanation	Commentary
	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.).	• Aircore drilling with inner tubes for sample return was used. • Aircore is considered a standard industry technique for HMS mineralisation. Aircore drilling is a form of reverse circulation drilling where the sample is collected at the face and returned inside the inner tube. • Aircore drill rods used were 3 m long. • NQ diameter (76 mm) drill bits and rods were used. • All drill holes were vertical.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *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.*	• Drill sample recovery is monitored by recording sample condition from 'dry good' to 'wet poor'. • While initially collaring the hole, limited sample recovery can occur in the initial 0 m to 1 m sample interval owing to sample and air loss into the surrounding loose soil. • The initial 0 m to 1 m sample interval is drilled very slowly in order to achieve optimum sample recovery. • The entire 1 m sample is collected at the drill rig in large, numbered plastic bags for dispatch to the initial split preparation facility. • At the end of each drill rod, the drill string is cleaned by blowing down with air to remove any clay and silt potentially built up in the sample tubes. • The twin-tube aircore drilling technique is known to provide high quality samples from the face of the drill hole (in ideal conditions).
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.* • *The total length and percentage of the relevant intersections logged.*	• The 1 m aircore samples were each qualitatively logged via digital entry into a Microsoft Excel spreadsheet, and later uploaded to the AcQuire database. • The aircore samples were logged for lithology, colour, grainsize, sorting, hardness, sample condition, washability, estimated THM%, estimated SLIMES% and any relevant comments such as slope, vegetation, or cultural activity. • Every drill hole was logged in full. • Logging is undertaken with reference to a Drilling Guideline with codes prescribed and guidance on description to ensure consistent and systematic data collection.

Criteria	JORC Code Explanation	Commentary
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• The 1 m sample interval is rotary split at the drill rig, collected and was stored at the Company's Kerang Warehouse facility prior to dispatch. • The water table depth was noted in all geological logs if intersected whereby sample condition was specified as 'wet poor'. • Field duplicates of the samples were completed at a frequency of 1 per 20 primary samples. • Each metallurgical sample was transferred to calico bags containing 5kg on average of material representing the geological zones. The metallurgical samples were weighed and placed into drums which were sealed before dispatch to Mineral Technologies metallurgical testing facility. • A total of 371 bags of the retained samples representing Zone 2, 3, 4, 5 were submitted for a characterisation testwork program undertaken by Mineral Technologies. • Total mass of material dispatched for testing was 1,586kg (wet) - Zone 2: 209kg - Zone 3: 226kg - Zone 4: 567kg - Zone 5 :584kg
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of*	The wet panning at the drill site provides an estimate of the THM% which is sufficient for the purpose of determining approximate concentrations of THM in the first instance. Bulk samples: • Samples from each zone were blended and processed in batches through the Mineral Technologies facility. • The whole batch was homogenised and processed through a continuous feed preparation plant (FPP) circuit, consisting of a scrubber/trommel, a fine screen and a de-sliming stage. The aim of the circuit was to prepare feed suitable for beneficiation by gravity separation techniques. • Sub-samples of the FPP feed and product including slimes and oversize were retained. • The prepared feed was then processed through a wet concentrator circuit, consisting of a gravity separation using shaking tables and screening.

Criteria	JORC Code Explanation	Commentary
	accuracy (i.e. lack of bias) and precision have been established.	• The aim of the wet circuit was to produce a Heavy Mineral concentrate (HMC) recovering Rare Earth Mineral, Zircon, and high SG Ti-minerals only. • Subsamples of the FPP product representing each Zone were also processed over a single rougher spiral stage to assess metallurgical performance using full size equipment. • Sub-samples of the WCP products were retained. • The HMC was processed through an REMC flotation plant circuit. • The aim of the circuit was to assess the production of a final mixed Rare Earth Mineral Concentrate (REMC) using material sourced from Area 4. • Flotation sink residues from the processing of Zone 2, 3, 4 and 5 were blended together to form a single MSP feed sample for evaluation. • The blended flotation sink was processed through the mineral separation plant flowsheet comprising conventional mineral sands processing techniques; attritioning, flotation, magnetic, gravity and electrostatic separation stages. • Mass yields were not optimised in the laboratory MSP processing as the intent of the work was to assess final product quality from processing of the HMC through the proposed full MSP flowsheet and also due to the limited quantity of sample available for evaluation. • Subsamples at all stages of the flowsheet of the product and waste streams were obtained in order to allow a full mass and chemical balance to be undertaken. Each sub-sample was dried and submitted for chemical analysis by a combination of XRF, and fusion / digest followed by ICP-MS analysis. Mineralogy was determined by QEMSCAN-PMA. • The metallurgical testing facilities and assay laboratories maintain QAQC systems.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.*	• All results are checked by the company's Geology Manager and Principal Metallurgist • The company's Principal Metallurgist made periodic visits to Mineral Technologies Metallurgical Laboratories to observe sample processing practices and procedure.

Criteria	JORC Code Explanation	Commentary
	• *Discuss any adjustment to assay data.*	• Principal metallurgists managed on a weekly basis metallurgical sample program with Mineral Technologies testing facility. • A process of laboratory data validation using mass balance is undertaken to identify entry errors or questionable data.
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• Down hole geophysical surveys were conducted to utilise gamma signatures for ascertaining mineralisation zones within the lithological sequence. • Drill hole collars were surveyed by an independent survey company using industry standard equipment. Three permanent survey marks in the area assisted with the collar pickups, allowing for consistent survey readings across the Project. • The datum used is GDA 94 and coordinates are projected as MGA zone 54. • Topographic surface generated by VHM using the LIDAR survey contours was deemed sufficient for use in Mineral Resource estimation. Drill collar pickups provided by the independent survey company were then checked against the LIDAR surface. Any discrepancies in collar position were projected to the local LIDAR topography. The accuracy of the locations is sufficient for this stage of exploration.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing, and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	• A regular rectangular ~400 m x ~50 m grid spacing is dominant at the Goschen Area 4 Project with two of the nine drilling lines On a ~400 m x~ 25 m spacing. • A drilling program of 116 drill holes was conducted in February 2019 to determine the mineralisation extent of the deposit. • The 400 m x 50 m spaced aircore holes and regular grid are sufficient to provide a good degree of confidence in geological models and grade continuity within the holes at this stage. The 25 m spacing on the two lines further confirms the continuity across strike. • Each aircore drill sample is a single 1 m sample of sand intersected down the hole. • No down whole compositing has been applied to models for values of THM, slime and oversize. • Compositing of samples was undertaken on THM concentrates for mineral assemblage determination. Composite samples were determined by geological domains.

Criteria	JORC Code Explanation	Commentary
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• The aircore drilling was oriented perpendicular to the strike of mineralisation defined by previous drill data information. • The strike of the mineralisation is northwest-south east. • All drill holes were vertical, and the orientation of the mineralisation is relatively horizontal. • The orientation of the drilling is considered appropriate for testing the lateral and vertical extent of mineralisation without any bias.
Sample security	• *The measures taken to ensure sample security.*	• Air core samples were stored at Kerang Warehouse facility. • The samples were then dispatched to Mineral Technologies Queensland facility using Swan Hill Freight agents and delivered to the Mineral Technologies laboratory. • The laboratory inspected the packages and did not report tampering of the samples. • Mineral Technologies metallurgical manager inspected the packages and prepared a sample inventory which was reconciled with the sample dispatch information and sample database.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• Internal reviews were undertaken during the geological interpretation and throughout the modelling process.

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section)

Criteria	JORC Code Explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• The exploration work was completed on tenements that are 100% owned by VHM Exploration in Victoria, Australia. • The drill samples for this Mineral Resource estimate were taken from tenement RL 6806.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Historic exploration work was completed by previous exploration companies including Austiex (1977 - 1978), CRA Exploration (1981 - 1987), Renison Goldfields Consolidated (1980 - 1991), W J Holdings (1998), RZM Group (1999), Basin Minerals (2001), Providence Gold and Minerals (2004 – 2005), and Iluka (2009). • The Company has obtained the hardcopy reports and maps in relation to this information as part of its historical review in preparation for their current work program. • The historic data comprises surface sampling, limited aircore drilling and mapping. • The historic results are not reportable under JORC 2012.
Geology	• *Deposit type, geological setting, and style of mineralisation.*	• The heavy mineral sands at the Goschen Project are a fine-grained deposit hosted within the offshore depositional paleo-environment of the Loxton Parilla Sands. The relatively strong presence of Leucoxene could indicate a reworking process for the deposit or weathering overprint. • The Loxton Parilla Sand is prevalent within the Murray Basin for hosting mineral sand deposits. • The Shepparton Formation clays are positioned above the Loxton Sands and the Bookpurnong Formation consisting of shallow marine clays and marls is positioned below within the lithological sequence.

Criteria	JORC Code Explanation	Commentary

Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:*
	  ◦ *easting and northing of the drill hole collar*
	  ◦ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar*
	  ◦ *dip and azimuth of the hole*
	  ◦ *down hole length and interception depth*
	  ◦ *hole length.*
	• *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*
		• All relevant drill hole data is reported regarding the February 2019 drilling programs in the Prospectus.
		• Hole collars were surveyed by an independent surveyor using industry standard equipment.
		• Holes were drilled vertically.
		• Drill hole depth cross verified with drilling reports and geologist log for each hole.
		• The field and laboratory data were exported into the VHM's AcQuire database.

Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g., cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• No data aggregation methods were utilised, no top cuts were employed, and all cut-off grades have been reported. • Valuable Heavy Mineral (VHM>1%) was used to provide cut-off grade.
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is*	• The nature of the mineralisation is broadly horizontal, thus vertical aircore holes are thought to represent close to true thicknesses of the mineralisation. • Downhole widths are reported.

Criteria	JORC Code Explanation	Commentary
	known, its nature should be reported. • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').*	
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• Plan view and typical cross sections provided in Annexure F of the Prospectus.
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• Metallurgical results are reported by Mineral Technologies and the Company's Principal Metallurgist responsible for metallurgical testwork.
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• The results reported are based on a small scale testwork program using bench scale equipment as proxy for full scale plant. As a result the results are considered indicative and should be validated during a bulk scale testwork program. • Rare earth and zircon minerals contribute the largest proportion of the project revenue. • The XRF technique provides measurements of relative elemental abundances (down to limits of a few parts per million) which when combined with QEMSCAN results allows for a quantifiable basis for determination of mineralogy. The XRF analysis was utilised to apply assay data to the geological model for grade interpretation.
Further work	• *The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling*	• Additional metallurgical testwork is planned to assess hydrometallurgy performance

Criteria	JORC Code Explanation	Commentary
	areas, provided this information is not commercially sensitive.	

Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section)

Criteria	JORC Code Explanation	Commentary
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes. ·* • *Data validation procedures used*	• Exploration data provided by the company to IHC Robbins in the form CSV and Excel files exported from an AcQuire database. • The company provided CSV file for the down hole geophysical data for the 2019 drill program. • Checks of data by visually inspecting on screen (to identify translation of samples), duplicate and twin drilling was visually examined to check the reproducibility of assays. • Database assay values have been subjected to random reconciliation with laboratory certified value is to ensure agreement. • Visual and statistical comparison was undertaken to check the validity of results
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits. ·* • *If no site visits have been undertaken indicate why this is the case.*	• Site visits and reports were completed by both the Manager Geology, Principal Metallurgist and Managing Director.
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation.* • *The use of geology in guiding and controlling Mineral Resource estimation.*	• The geological interpretation was undertaken by IHC Robbins in collaboration with the company's Geology Manager and then validated using all logging and sampling data and observations. • Current data spacing and quality is sufficient to indicate grade continuity. • Interpretation of modelling domains was restricted to the main mineralised envelopes utilising THM, Oversize, slimes, trash mineralogy and geology logging. The interpretation of domains was also aided by the utilisation of down hole gamma signatures produced by the geophysical logging

Criteria	JORC Code Explanation	Commentary
	• *The factors affecting continuity both of grade and geology.*	which assisted with distinguishing domain boundaries. • Sachet logging was also undertaken by the company in relation to specific areas within the Project to provide greater understanding of mineralogical domains (e.g. where it wasn't possible to obtain gamma signatures below the water table due to hole collapse). • The Mineral Resource estimate was controlled by the geological surfaces, and basement surfaces. • There are three main sheet-like horizons of mineralisation within the Project area which are predominantly Zircon – Rutile enriched. These zones; 2, 4 and 5 are geologically continuous across the Project. Zone 3 is geologically continuous but low in Zircon-Rutile and high in tourmaline-kaolinite. All the mineralisation in the upper zones terminates on the eastern contact with the fault. Zones 2, and the basement do not appear to be affected by the fault.
Dimensions	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	• The Mineral Resource field for the Project is approximately 3.5 km in length (at the longest point) and 400 m wide (at the widest point).
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.* • *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* • *The assumptions made regarding recovery of by-products. ·*	• The mineral resource estimate was conducted using CAE mining software (also known as Datamine Studio). Inverse distance weighting techniques were used to interpolate assay grades from drill hole samples into the block model and nearest neighbour techniques were used to interpolate index values and nonnumeric sample identification into the block model. The mostly regular dimensions of the drill grid and the anisotropy of the drilling and sampling grid allowed for the use of inverse distance methodologies as no de-clustering of samples was required. Appropriate and industry standard search ellipses were used to search for data for the interpolation and suitable limitations on the number of samples and the impact of those samples was maintained. An inverse distance weighting power of 3 was used so as not to over smooth the grade interpolations. Hard domain boundaries were used and these were defined by the geological wireframes that were interpreted.

Criteria	JORC Code Explanation	Commentary
	• *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation). ·* • *Criteria JORC Code explanation Commentary* • *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* • *Any assumptions behind modelling of selective mining units.* • *Any assumptions about correlation between variables.* • *Description of how the geological interpretation was used to control the resource estimates.* • *Discussion of basis for using or not using grade cutting or capping.* • *The process of validation, the checking process used, the comparison of model*	• No assumptions were made during the resource estimation as to the recovery of by-products. • Slimes and oversize contents are estimated at the same time as estimating the THM grade. • Further detailed geochemistry is required to ascertain deleterious elements that may affect the marketability of the heavy mineral products. • The average parent cell size used for the interpolation was approximately half the standard drill hole width and quarter the standard drill hole section line spacing. • No assumptions were made regarding the modelling of selective mining units however it is assumed that a form of dry mining will be undertaken and the cell size and the sub cell splitting will allow for an appropriate dry mining preliminary reserve to be prepared. Any other mining methodology will be more than adequately catered for with the parent cell size that was selected for the modelling exercise. • No assumptions were made about correlation between variables. • The Mineral Resource estimates were controlled to an extent by the geological / mineralisation and basement surfaces. • Grade cutting or capping was not used during the interpolation because of the regular nature of sample spacing and the fact that samples were not clustered nor wide spaced to an extent where elevated samples could have a deleterious impact on the resource estimation. • Sample distributions were reviewed, and no extreme outliers were identified either high or low that necessitated any grade cutting or capping. • The sample length of 1 m does result in a degree of grade smoothing also negating the requirement for grade cutting or capping. • Validation of grade interpolations were done visually In CAE Studio (Datamine) software by loading model and drill hole files and annotating and colouring and using filtering to check for the appropriateness of interpolations. • Statistical distributions were prepared for model zones from drill hole and model files to compare the effectiveness of the interpolation. Along strike distributions of section line averages (swath plots) for

Criteria	JORC Code Explanation	Commentary
		drill holes and models were also prepared for comparison purposes.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• Tonnages were estimated an assumed dry basis.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• Cut-off grades for THM were used to prepare the reported resource estimates. These cut-off grades were defined by the Competent Person by utilising multiplying THM by VHM to get an in-ground VHM grade (TVHM). This was used to report the block model on material >1% TVHM. Consideration was taken into account for a modest stripping ratio to ensure that deeply buried material with a very low likelihood of eventual economic extraction was not selected for reporting in the Mineral Resource estimate. • IHC Robbins utilised a value per tonne (VPT) algorithm as an internal process to validate the TVHM cut-off grade for repeatability. • This validation provided a close reconciliation to the 1% TVHM cut-off grade
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	• No specific mining method is assumed other than potentially the use of dry mining methods.
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects*	• Metallurgical assumptions were based on mineral assemblage estimates combined with elemental assays which only allow for preliminary commentary. • Some chemistry in the form of oxides from XRF analysis was available for consideration however

Criteria	JORC Code Explanation	Commentary
	for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	may not bear exact reconciliation with eventual final products
Environmental factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where ·these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.*	• No assumptions have been made regarding possible waste and process residue however disposal of by products such as SLIMES, sand and oversize are normally part of capture and disposal back into the mining void for eventual rehabilitation. This also applies to mineral products recovered and waste products recovered from metallurgical processing of heavy mineral.
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size, and representativeness of the samples.* • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.*	• A bulk density algorithm was prepared using first principles techniques coupled with industry experience that is exclusive to IHC Robbins. We believe the bulk density formula to be conservative and fit for purpose at this level of confidence for the Mineral Resource estimates and based on our experience and we would also recommend that bulk density test work be undertaken going forward. • A bulk density (BD) was applied to the model using a standard linear formula originally described by Baxter (1977). This approach was refined in a practical application by this author using the following first principles calculations to develop a regression formula. This regression formula was then used to calculate the conversion of tonnes from each cell

Criteria	JORC Code Explanation	Commentary
	• *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	volume and from there the calculation of material, THM and SLIMES tonnes. • The bulk density formula is described as: - Bulk Density = (0.009 * HM) + 1.698
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories. ·* • *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity, and distribution of the data). ·* • *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• The resource classification for the Area 4 Goschen deposits was based on the following criteria: drill hole spacing, geological and grade continuity, variography of primary assay grades and the distribution of bulk samples. • The classification of the Indicated Mineral Resources was supported by all the supporting criteria as noted above. • As a Competent Person, Greg Jones considers that the result appropriately reflects a reasonable view of the deposit categorisation.
Audits or reviews.	• *The results of any audits or reviews of Mineral Resource estimates*	• The Mineral Resource estimate was reviewed and recorded in the ITAR (Prospectus).
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.*	• Local (nearest neighbour) estimates were undertaken as a preliminary evaluation process. The overall grade interpolation for this method was a fair comparison with inverse distance weighting methodology. • Validation of the model vs drill hole grades by observation, swathe plot and population distribution analysis were favourable. • The statement refers to global estimates for the entire known extent of the Area 4 Goschen deposits. • No production data is available for comparison with the Area 4 Goschen deposits.

Criteria	JORC Code Explanation	Commentary
	• *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	