

For Immediate Release



22 April 2020

**NQ Minerals Plc**  
(the "Company" or "NQ Minerals")

**Nickel resource significantly expanded in Tasmania to support PFS**

**Highlights:**

- Updated Mineral Resource Estimate has been issued by Snowden Mining Industry Consultants Pty Ltd ("Snowden") for the Barnes Hill Nickel Project to include lower grade Ni material. The new expanded resource has increased substantially to 25Mt @ 0.6% Nickel ("Ni") and 0.05% Cobalt ("Co") on a 0.25% Ni cut-off grade.
- Metallurgical testwork has supported an updated flowsheet that will serve as the base case in the current Pre-Feasibility Study ("PFS"). A metallurgical simulation model of the mass and energy balances of the central processing circuits has been completed to allow appropriate sizing of plant equipment and to support subsequent design work.
- The updated flowsheet includes three stage leaching that utilises the full laterite profile. Low grade material is also upgraded through screening to be used in the third neutralization stage.
- A residue filtration section has also been added that will allow for dry stacking of laterite waste back into the original pit. This removes the need for a tailings dam at the nickel mine.

London listed NQ Minerals Plc (AQUIS: NQMI) (OTCQB: NQMLF), the base and precious metals producer at the Hellyer Gold Mine ("Hellyer") in Tasmania Australia, is pleased to announce progress on the flowsheet being developed for the Barnes Hill nickel and cobalt project. NQ Minerals is funding this development work through its investment in Tasmania Energy Metals Pty Ltd ("TEM"). Following further metallurgical testwork and initial engineering works, an updated flowsheet has been developed for the PFS. This updated flowsheet enables utilisation of lower grade feed for neutralisation of the process solutions after Ni and Co extraction. Accordingly, an updated Mineral Resource estimate for the Barnes Hill, Scotts Hill and Mount Vulcan deposits has been released covering all types of potential feed material.

**David Lenigas, Chairman of NQ Minerals, commented:**

***"The completion of this testwork and commencement of engineering sees the Barnes Hill project starting to take on physical shape. The lower cut-off Mineral Resource estimates for Barnes Hill, Scotts Hill and Mt Vulcan provides support for our long-term plans for the Beaconsfield region, and this larger tonnage of 25 million tonnes, versus 14 million tonnes previously reported, could supply a plant of the planned scale for well over 20 years. Our close proximity to the deep-water port at Bell Bay in Tasmania also suggests opportunities to import and blend in high-grade ore to boost feed grades and extend the life of the Barnes Hill mine even further.***

***We are actively examining the ability to achieve further enhance economics by planning this downstream development to take advantage of our plans for the adjacent Beaconsfield Gold site. We expect to make an announcement on the final plant location in the near term. We are already speaking to off-takers and battery industry players and believe there is strong support for this development.”***

### **Testwork to Establish the PFS Flowsheet**

Metallurgical testwork has supported an updated flowsheet that will serve as the basis for the current PFS. A metallurgical simulation model, providing a detailed understanding of the mass and energy balances across the central processing operations has now been completed. It was designed using the well-respected METSIM software. The outputs of this model will allow appropriate sizing of plant equipment and support subsequent design work. The METSIM model, alongside other cost inputs, will also allow estimation of a new ore reserve (replacing the ore reserve issued by Snowden in 2010) for the Barnes Hill North and South deposits. The ore reserve will include pit design and the delivery of a mining schedule covering the initial years of planned operations.

The updated flowsheet includes three stage leaching that allows utilization of the full laterite profile including limonite, transitional, saprolite and saprock material. Blends of higher grade material will feed the initial two leaching stages. In addition, a screened fraction of low grade material is used in the third neutralization stage.

This updated flowsheet is based on laboratory testwork completed over recent months. For the testwork, TEM selected a purposive sample of intersections from the 2019 air-core drilling. The samples were checked for representativeness against the Barnes Hill resource. Following this, 90 drilled intersections were sent to the Beijing General Research Institute of Mining & Metallurgy (“BGRIMM”), a well-established Chinese laboratory with expertise in multi-stage leaching. These samples totally 518.5kg. The testwork applied sequential sulphuric acid leaching with varied blends of feed. In the first stage a blend of limonite/transitional/saprolite was processed with a high dosage of acid at a leaching temperature of 95degC. This was followed by a further stage of leaching of saprolite/saprock feed in an autoclave, where no additional acid was added but the temperature was raised to 160degC. A screened large-sized fraction from the saprock domain was then used for a neutralisation stage. This was ground and used in a tertiary leach to commence neutralisation, with no additional acid added. Results supported the ability to achieve overall Nickel and Cobalt extraction of over 90% across all three leaching stages with an acid consumption of 509kg/t feed. In accordance with the current plant design, this acid will be entirely supplied by utilising waste streams from the roasting of Hellyer’s gold and silver-bearing pyrite concentrate, which will separately produce gold/silver doré bars and copper/zinc intermediates. Testwork also included beneficiation testwork, including dry and wet screening, magnetic separation and gravity upgrading. As expected, wet screening produced strong results, particularly for saprock material. This was then built into the testwork, with a screened fraction of saprock providing a high-Mg neutralisation feed stock.

### **Further Development Progress**

In addition to examining leaching, some initial filtration testwork has been performed. On the basis of those first-pass results, which are consistent with experiences at other comparable nickel laterite

projects, an updated filtration section has also been added to the plant design that will allow for dry stacking of laterite waste back into the original pit. This removes the need for a tailings dam at the nickel mine.

The improved flowsheet further enhances the project's green credentials, with ore-based neutralisation reducing the CO<sub>2</sub> footprint and dry stacking enabling the refilled mining pit to be rehabilitated to close to its original form. The project already benefits from its Tasmania location where it will be able to be supplied by 100% renewable hydroelectric and wind power. NQ Minerals believes that these advantages make the Barnes Hill project environmentally attractive relative to peer projects. This is expected to be increasingly important in the Electric Vehicle supply chain where cradle-to-grave emissions assessment is becoming more prominent. NQ Minerals is in initial discussions with battery industry players regarding the future development of the project.

### **Expanded Mineral Resource Estimate for Scotts Hill & Mt Vulcan**

The Barnes Hill Project is composed of four resources, all located within 2km of each other. Mining lease 1872P/M hosts the Barnes Hill North and South deposits, while Scotts Hill and Mt Vulcan ("Scotts/Vulcan") occur primarily within exploration license EL2/2017 which is adjacent to the liming lease. All licenses are 100% owned by TEM.

On the basis of work done so far, an updated Mineral Resource Estimate has been issued by Snowden Mining Industry Consultants Pty Ltd for the Barnes Hill Nickel Project to include the lower grade Ni material. The expanded resource now totals 25Mt @ 0.6% Ni and 0.05% Co at a 0.25% Ni cut-off (indicated and inferred) as shown in Table 1 below. This complements the 0.5% Ni cut-off Mineral Resource estimate released on 25 November 2019. That previously announced resource (with a higher Ni cut-off) will still provide the main supply into the first two stages of leaching. Snowden found the revised lower cut-off grade to be reasonable assuming a standard open-pit mining approach with low-to-moderate selectivity and that it is commensurate with the cut-off grade used at similar deposits where beneficiation through screening is applicable.

**Table 1: Barnes Hill Project Mineral Resource Estimates 2020**

**Scotts Hill & Mt Vulcan (“SV”) Mineral Resource Estimate at a 0.25% Ni cut-off**

Domain	Class	Tonnes (kt)	Ni %	Co %	MgO %	Fe <sub>2</sub> O <sub>3</sub> %	SiO <sub>2</sub> %
Transitional	Inferred	2,311	0.53	0.09	3.5	44.3	28.4
Saprolite	Inferred	3,222	0.74	0.05	12.0	29.6	39.0
Saprock	Inferred	7,309	0.49	0.02	27.2	15.3	42.5
<b>SV Total</b>	<b>Inferred</b>	<b>12,842</b>	<b>0.56</b>	<b>0.04</b>	<b>19.1</b>	<b>24.1</b>	<b>39.1</b>

**Barnes Hill (“BH”) North & South Mineral Resource Estimate at a 0.25% Ni cut-off**

Domain	Class	Tonnes (kt)	Ni %	Co %	MgO %	Fe <sub>2</sub> O <sub>3</sub> %	SiO <sub>2</sub> %
Limonite	Indicated	1,874	0.37	0.11	1.3	53.3	16.3
Limonite	Inferred	242	0.40	0.07	1.9	45.5	26.2
<b>Limonite Total</b>	<b>Indicated &amp; Inferred</b>	<b>2,117</b>	<b>0.38</b>	<b>0.10</b>	<b>1.4</b>	<b>52.4</b>	<b>17.4</b>
Transitional	Indicated	444	0.53	0.08	3.4	39.8	29.2
Transitional	Inferred	10	0.67	0.12	4.0	48.2	25.4
<b>Transitional Total</b>	<b>Indicated &amp; Inferred</b>	<b>454</b>	<b>0.54</b>	<b>0.08</b>	<b>3.4</b>	<b>40.0</b>	<b>29.1</b>
Saprolite	Indicated	4,663	0.77	0.05	11.5	27.1	39.0
Saprolite	Inferred	817	0.61	0.05	12.7	24.8	43.3
<b>Saprolite Total</b>	<b>Indicated &amp; Inferred</b>	<b>5,480</b>	<b>0.75</b>	<b>0.05</b>	<b>11.7</b>	<b>26.8</b>	<b>39.6</b>
Saprock	Indicated	2,559	0.57	0.02	27.9	12.8	41.9
Saprock	Inferred	1,315	0.47	0.02	25.0	14.7	42.9
<b>Saprock Total</b>	<b>Indicated &amp; Inferred</b>	<b>3,874</b>	<b>0.53</b>	<b>0.02</b>	<b>26.9</b>	<b>13.4</b>	<b>42.2</b>
All Domains	Indicated	9,540	0.63	0.06	13.5	29.0	34.9
All Domains	Inferred	2,384	0.51	0.04	18.4	21.4	41.3
<b>BH Total</b>	<b>Indicated &amp; Inferred</b>	<b>11,925</b>	<b>0.60</b>	<b>0.05</b>	<b>14.5</b>	<b>27.5</b>	<b>36.1</b>

**Barnes Hill Project, BH & SV Total Mineral Resource Estimates at a 0.25% Ni cut-off**

Domain	Class	Tonnes (kt)	Ni %	Co %	MgO %	Fe <sub>2</sub> O <sub>3</sub> %	SiO <sub>2</sub> %
<b>All Domains Project Total</b>	<b>Indicated &amp; Inferred</b>	<b>24,767</b>	<b>0.58</b>	<b>0.05</b>	<b>16.89</b>	<b>25.74</b>	<b>37.66</b>

Notes: 1) Please refer to the end of this section for the Competent Persons statements; 2) the Mineral Resource is reported in accordance with the JORC Code (2012) with required tables included in the appendix; 3) Some rounding related discrepancies may occur in the totals.

The Mineral Resources were estimated using block models, constructed using a parent cell size of 25 mE by 25 mN by 1 mRL for Barnes Hill and 50 mE by 50 mN by 1 mRL for Scotts-Vulcan, constrained within the wireframed domains of the interpreted laterite layers. Grades were estimated using ordinary block kriging for both the Barnes Hill deposit and Scotts-Vulcan. Search ellipses and estimation parameters were based on the results of the variography, along with consideration of the

drill spacing and geometry of the mineralisation. Global average density values were applied to the blocks according to the domain based on density measurements of diamond drill core.

The Barnes Hill and Scotts-Vulcan Mineral Resource estimates have been classified and reported in accordance with the JORC Code (2012). Mineral Resources for the Barnes Hill deposit have been classified as a combination of Indicated and Inferred Resources, while the Scotts-Vulcan resource has been classified as an Inferred Resource. The classification was developed by Snowden based on an assessment of the nature and quality of the drilling, sampling and assaying methods; drill spacing; confidence in the geological interpretation; and results of the model validation. The Mineral Resource is limited to the Limonite, Transitional, Saprolite and Saprock domains, with lower-Ni, higher-Fe domains above the limonite excluded. At Barnes Hill, where drilling is approximately 50 mN by 50 mE or better and the thickness is greater than 2 m, the resource has been classified as an Indicated Resource. Areas that are not supported by a 50 mN by 50 mE drill spacing or are less than 1 m in thickness have been assigned an Inferred classification. At Scotts-Vulcan, blocks within approximately 125 m of a drillhole have been classified as an Inferred Resource, with extrapolation beyond that excluded.

### **About NQ Minerals**

NQ Minerals is an Australian-based mining company which commenced base metal and precious metal production in 2018 at its 100% owned flagship Hellyer Gold Mine in Tasmania. Hellyer has a published JORC compliant Mineral Resource estimated at 9.25 Mt which is host to Gold at 2.57 g/t Au for 764,300 oz Au, Silver at 92 g/t Ag for 27,360,300 oz Ag, Lead at 2.99% Pb for 276,600 tonnes and Zinc at 2.57% Zn for 217,400 tonnes. In addition to these resources, the Hellyer assets include a large mill facility and full supporting infrastructure, including a direct rail line to port. The Company regularly updates the market on Hellyer's operational and financial performance and these updates can be views on NQ's website at [www.ngminerals.com](http://www.ngminerals.com).

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### **Competent Person's Statement – Mineral Resources**

The information in this report that relates to the Barnes Hill, Scotts Hill and Mount Vulcan ("Scotts-Vulcan") Mineral Resource estimate is based on information compiled by Snowden and reviewed by Elizabeth Haren, a Competent Person who is a Member and Chartered Professional of The Australasian Institute of Mining and Metallurgy and a Member of the Australian Institute of Geoscientists. Elizabeth Haren is employed as an associate consultant by Snowden Mining Industry Consultants Pty Ltd and a consultant to Tasmania Energy Metals Pty Ltd. Payment for work completed is not contingent on any particular outcome of the work. Elizabeth Haren 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'. Elizabeth Haren consents to the inclusion in the report of the matters based on her information in the form and context in which it appears.

### **Competent Person's Statement– General**

The information in this report that relates to the Hellyer and Barnes Hill project is based on information (third party consultants) compiled by Roger Jackson, an Executive Director of the Company, who is a 20+ year Member of the Australasian Institute of Mining and Metallurgy (MAusIMM) and a Member of Australian Institute of Company Directors. Mr. Jackson has sufficient experience which is relevant to the style of mineralisation and type of deposits under consideration and to the activity which he is undertaking 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". Mr. Jackson consents to the inclusion of the data contained in relevant resource reports used for this announcement as well as the matters, form and context in which the relevant data appears.

### **For further information, please contact:**

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## Appendix: JORC Code (2012) Tables for both Scotts Hill/Mt Vulcan and Barnes Hill

### Part 1: Scotts Hill & Mt Vulcan Mineral Resource Estimate 2020

JORC Table 1 – Section 1: Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i></li> <li>• <i>Aspects of the determination of mineralisation that are Material to the Public Report.</i></li> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The bulk of the data used for resource estimation is based on the logging and sampling of air-core drilling (approximately 94% of the data).</li> <li>• Air-core drilling from 1997 was sampled at 1 m intervals using a PVC or aluminium scoop to obtain an average weight of 0.7 kg per sample. For the 2019 drilling, an average of 0.38kg was collected by spearing from each drilled metre.</li> <li>• The sample was pulverised and split to 200 g from which a 20 g subsample was taken for x-ray fluorescence (XRF) and loss on ignition (LOI) analysis.</li> <li>• Diamond drilling was sampled at 1 m intervals with occasional smaller length samples taken where appropriate due to mineralisation boundaries.</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <li>• <i>Drill type (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).</i></li> </ul>	<ul style="list-style-type: none"> <li>• A total of 67 drillholes totalling 816 m have been drilled at the Scotts-Vulcan deposit, comprising 62 air-core drillholes (50 mm diameter) and five PQ triple tube diamond drillholes.</li> </ul>
Drill sample recovery	<ul style="list-style-type: none"> <li>• <i>Method of recording and assessing core and chip sample recoveries and results assessed.</i></li> <li>• <i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i></li> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Diamond drillholes were completed using triple tube to enhance core recoveries. Core recovery was recorded throughout drillholes with core recovery typically exceeding 90%.</li> <li>• Recovery of air-core drill samples was generally reasonable based on a visual assessment, with relatively few damp or wet samples. Samples with “poor” recovery were not assayed and recorded as “No Sample”.</li> <li>• Recovered drill sample weights were recorded for a total of 90 samples from the 2019 Tasmania Energy Metals Pty Ltd (TEM) air-core drilling program. Analysis of the wet sample weights (including the weight of the speared laboratory fraction) indicates an average whole bag sample weight of approximately 6.1 kg was attained from each drilled metre, with a total of 3 samples (of 90), or 3.3% of the dataset, with sample weights below 1 kg on a wet basis.</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>There is no relationship between sample recovery and grade as far as Snowden Mining Industry Consultants Pty Ltd (Snowden) is aware.</li> </ul>
Logging	<ul style="list-style-type: none"> <li>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.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>Air-core drillholes were logged at 1 m intervals with chip trays of each metre collected as a geological record and photos taken of all chip trays.</li> <li>Diamond drillholes were logged over geological intervals ranging from centimetres to several metres. Core photos were taken of each tray throughout the hole.</li> <li>Where logging exists, all intervals were logged. Logging includes the interval colour and rock type/laterite horizon.</li> </ul>
Subsampling techniques and sample preparation	<ul style="list-style-type: none"> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all subsampling stages to maximise representivity of samples.</li> <li>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.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul style="list-style-type: none"> <li>For diamond drillholes, all core was cut in half using a diamond core saw and 1 m half-core samples submitted for assay. PQ diamond drillhole samples weighed more than 5 kg and up to 10 kg in fresher rock samples.</li> <li>Air-core drillholes were tube sampled with a separate sample taken for each metre. Duplicate samples and standard samples were also submitted as a quality control measure.</li> <li>Field split duplicates and standards were initially submitted at the rate of approximately 1:50. No blanks were submitted. No coarse split or blind resubmissions have been completed.</li> <li>Whilst the average sample size for the 1997 air-core drilling is somewhat small, it is considered reasonable given the nature of the drilling, grain size and grade variability. The samples collected for the 2019 drilling are considered to be too small and larger samples are required to reduce the sampling error and improve precision and representivity.</li> </ul>
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>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.</li> <li>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</li> </ul>	<ul style="list-style-type: none"> <li>All samples were submitted to the ALS Laboratory in Brisbane for assay by lithium borate fusion XRF (laboratory method ME-XRF12), with LOI at 1,000°C by thermo gravimetric analysis (TGA). Of these, three potential fibrous sample were redirected on to ALS Perth to have the same method applied with additional safety protocols in place.</li> <li>Samples were logged and tracked via the laboratory's internal LIMS system.</li> <li>Laboratory sample preparation involved: <ul style="list-style-type: none"> <li>Any samples that did not air-dry overnight were oven dried at a maximum of 120°C</li> <li>Entire sample initially crushed to 90% passing 2 mm and split using a riffle splitter</li> <li>A sample split of up to 1 kg was pulverised to 95% passing 106 µm</li> <li>0.66 g subsample was analysed by fused bead XRF with a lower detection limit 0.005% Ni and 0.001% Co.</li> </ul> </li> <li>QAQC procedures implemented by Proto Resources &amp; Investments Ltd (Proto) for the 1997 drilling included the submission of certified standards, duplicate samples and pulp duplicates.</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>• TEM inserted certified reference materials (CRMs) and field duplicates into the sample batches from the 2019 drilling. Of the 325 samples submitted for the 2019 drilling, 26 quality control samples were included, comprising 15 CRMs and 11 field duplicates, equating to an insertion rate of approximately 1:20 for the CRMs and 1:30 for the duplicates. Results of the CRMs shows that reasonable analytical accuracy has been achieved and field duplicates show a reasonable level of precision.</li> <li>• Additionally, a batch of 36 sample pulps from the 2019 drilling was submitted to the SGS laboratory in Perth for check assaying. Three check assays from SGS show significantly different nickel results compared to the original sample and are suspected to have been incorrectly labelled.</li> <li>• ALS and SGS included standards within sample batches as part of the internal laboratory QAQC.</li> </ul>
Verification of sampling and assaying	<ul style="list-style-type: none"> <li>• <i>The verification of significant intersections by either independent or alternative company personnel.</i></li> <li>• <i>The use of twinned holes.</i></li> <li>• <i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></li> <li>• <i>Discuss any adjustment to assay data.</i></li> </ul>	<ul style="list-style-type: none"> <li>• As part of the 2010 Barnes Hill resource estimate, Snowden verified laboratory assay certificates against the supplied database with no discrepancies identified.</li> <li>• A total of five diamond drillholes twinned existing air-core drillholes to confirm grade and provided mineralised material for bulk density testwork.</li> <li>• Geological logging was completed on paper, transferred to Microsoft Excel spreadsheets and geological logging codes validated.</li> <li>• Due to the different generations of assays, where required, element assays were converted to oxides (e.g. % Fe to % Fe<sub>2</sub>O<sub>3</sub>). No other adjustments have been made to the assay data.</li> </ul>
Location of data points	<ul style="list-style-type: none"> <li>• <i>Accuracy and quality of surveys used to locate drillholes (collar and downhole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</i></li> <li>• <i>Specification of the grid system used.</i></li> <li>• <i>Quality and adequacy of topographic control.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The coordinate system used for the 2019 drilling is MGA Zone 55 projection based on the GDA94 datum. Historical data (i.e. 1997 drilling) was reportedly collected using the AGD66 datum; however, this was apparently later converted to GDA94 by Proto/Allegiance. Investigations by TEM revealed that there is significant uncertainty regarding the coordinate system that was used and the reliability of the transformed coordinates. Based on a historical map provided by TEM, Snowden and TEM were able to ascertain that the coordinates of the historical data recorded in the database were likely based on the AGD66 system. As such, a transformation was applied by Snowden using the world coordinate transform algorithm in Datamine Studio RM software from AGD66 to MGA94 Zone 55. The resulting, transformed coordinates were verified by TEM as being visually correct. The transform shifts the historical collar locations approximately 212.6 m horizontally to the northeast.</li> <li>• The collars of the 2019 drilling at Scotts-Vulcan were surveyed by a contract surveyor using RTK global positioning system (GPS) with a horizontal accuracy of ±10 mm and a vertical accuracy of ±15 mm.</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>The survey method and accuracy of the 1997 drilling is unknown.</li> <li>The vertical (Z) coordinate for the 2019 drilling matched the topographic surface reasonably well; however, Snowden noted a significant difference between the historical collars and the topographic surface of up to 43 m (average 17 m difference). Given the close match of the 2019 drilling to topography, Snowden elected to project the historical collar points onto the topographic surface.</li> <li>A topographic surface was provided by TEM, based on a light detection and ranging (LiDAR)-derived 5 m digital elevation model of the northwest region of Tasmania completed by Geoscience Australia in 2013. The LiDAR has a reported 0.15 m vertical and horizontal accuracy.</li> </ul>
Data spacing and distribution	<ul style="list-style-type: none"> <li><i>Data spacing for reporting of Exploration Results.</i></li> <li><i>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.</i></li> <li><i>Whether sample compositing has been applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>Air-core drillhole spacing across the Scotts-Vulcan resource area is somewhat variable but is based on an approximate 100 mE x 100 mN grid.</li> <li>Five diamond drillholes were completed at various locations across the deposit to gain material for bulk density and to twin existing air core drillholes.</li> <li>Samples were composited to a 1 m interval for resource estimation.</li> </ul>
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> <li><i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i></li> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>Drillholes were drilled vertically, perpendicular to the interpreted mineralisation orientation which is sub-horizontal.</li> </ul>
Sample security	<ul style="list-style-type: none"> <li><i>The measures taken to ensure sample security.</i></li> </ul>	<ul style="list-style-type: none"> <li>No specific measures have been taken to ensure sample security.</li> <li>Snowden does not believe that sample security poses a material risk to the integrity of the assay data used in the Mineral Resource estimate.</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li><i>The results of any audits or reviews of sampling techniques and data.</i></li> </ul>	<ul style="list-style-type: none"> <li>No external review of sampling and drilling procedures has been completed as far as Snowden is aware.</li> </ul>

**JORC Table 1 – Section 2: Reporting of Exploration Results**

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The Scotts-Vulcan deposit straddles granted Exploration Lease EL2/2017 and Mining Lease 1872P/M, although the majority of the resource occurs within EL2/2017.</li> <li>• Tasmania Energy Metals Pty Ltd is the registered holder of 100% of Mining Lease 1872P/M and 100% of EL2/2017.</li> </ul>
Exploration done by other parties	<ul style="list-style-type: none"> <li>• <i>Acknowledgment and appraisal of exploration by other parties.</i></li> </ul>	<ul style="list-style-type: none"> <li>• A number of phases of mapping, drilling and metallurgical testwork have been completed over the nickel/cobalt laterites in the Barnes Hill area, which includes Scotts-Vulcan, by various companies: <ul style="list-style-type: none"> <li>– <b>1955 to 1956, Ben Lomond Mining.</b> Reconnaissance sampling completed to identify nickel-rich clays above serpentinites.</li> <li>– <b>1958, Consolidated Zinc.</b> Enterprise Exploration Company Pty Ltd completed an exploration report in 1958. Initial mapping identified garnierite bearing serpentine in a 4,000 ft x 2,500 ft area. Auger drilling completed on three lines south of Barnes Hill. Holes were 100 ft apart over a distance of 1,400 ft, 1,700 ft and 2,400 ft. Sample recovery was reportedly excellent and all holes except two ended at the bedrock contact. Average grades ranged from 0.4% Ni to 0.96% Ni and thicknesses varied from less than 5–9 ft. Other smaller areas were also identified and an additional six lines of auger drillholes were completed; however, the nickel laterite profile was thinner (4–6 ft) and of lower grade (0.2% Ni).</li> <li>– <b>1965 to 1967, BHP.</b> Regional and detailed mapping was completed. Airborne and ground magnetic surveys, along with geochemical sampling. One diamond core hole drilled at Scotts Hill to 673 ft to investigate magnetic anomaly – intersected magnetite (no sulphide mineralisation). A series of pits were completed on 17 separate lines within the “Chromite Gravels”. BHP concluded the laterites near Andersons Creek were of low grade and not worthy of development.</li> </ul> </li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li data-bbox="874 232 1386 667">– <b>1967 to 1968, King Island Scheelite.</b> 17 diamond drillholes completed. Assay analyses were completed by Minex in Melbourne. Mineralogical study using x-ray diffraction (XRD) completed with nickel bearing phases identified. Identification of different domains laterally (Scotts Hill/Mount Vulcan/Barnes Hill) and throughout the profile (Laterite Zone/Transitional Serpentinite Zone/Bleached Serpentinite Zone/Fresh Zone). Beneficiation tests were also completed (H<sub>2</sub>SO<sub>4</sub> leach tests, size analysis of ore, size analysis of residue of H<sub>2</sub>SO<sub>4</sub> leach, caustic soda recovery, ammonia recovery, Nicaro process) with the Nicaro process achieving 67.7% Ni recovery.</li> <li data-bbox="874 674 1386 965">– <b>1969, King Island Scheelite.</b> Additional 20 diamond drillholes completed. Four ore locations delineated (Scotts Hill, Mount Vulcan, Barnes Hill and Barnes Hill South). Resource estimate of 6.0 Mt at 1.04% Ni and 0.06% Co at a 0.7% Ni cut-off. Analysis for Ni, Co, Cr, Al<sub>2</sub>O<sub>3</sub>, CaO, MgO, SiO<sub>2</sub> and FeO was completed. Analyses were completed by the Launceston Laboratories of the Tasmanian Department of Mines.</li> <li data-bbox="874 972 1386 1028">– <b>1971 to 1972, Allstate Exploration.</b> 15 core holes completed. Trenching also completed.</li> <li data-bbox="874 1034 1386 1113">– <b>1969 to 1981, Northern Chromite.</b> Chromium production on western flank of Barnes Hill. Drilling completed at Rifle Range.</li> <li data-bbox="874 1120 1386 1198">– <b>1988, Placeco Australia.</b> Rock chip samples taken from Barnes Hill, Dans Hill and Mount Vulcan areas.</li> <li data-bbox="874 1205 1386 1507">– <b>1997 to 2000, Allegiance Mining.</b> Completed 549 m of air-core drilling in 51 holes. Drilling contractor was Tas Diamond Driller Pty Ltd. All holes were vertical with 1 m samples. All samples were weighed. Nine holes at Scotts Hill, eight holes Mt Vulcan, 17 holes at Barnes Hill, and 17 holes at Barnes Hill South. Reverse circulation (RC) drilling program of 65 holes totalling 492 m. Updated resource estimated in March 1998.</li> <li data-bbox="874 1514 1386 1776">– <b>2001 to 2005, Jervois Mining.</b> Air-core holes relogged to standardised format. Check assaying was completed on pulps from Allegiance air-core holes S001 to S051. Composite bulk samples for limonite, saprolite and weathered serpentinite lithologies for the Barnes Hill region and the Scotts Hill/Mount Vulcan regions were collected for metallurgical testing. Resource estimate re-done based on lithological domains.</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>– <b>2007 to 2012, Proto.</b> Completion of a high-level review of the Barnes Hill project and drillhole database by Snowden. Air-core drilling program (17 holes for 202 m) completed to validate historical drilling results and to provide samples for metallurgical testwork. Detailed flora and fauna assessment of the resource areas by North Barker Ecosystem Services. Cutting and assaying of some historical diamond core holes held at the MRT Rockstore in Mornington. Metallurgical testwork at HRL Testing in Brisbane. Regional soil sampling program consisting of 429 samples taken along 400 m spaced east-west lines. Aboriginal heritage and European heritage surveys completed. Column leach testwork on further air-core drilling samples from the Barnes Hill deposit. First phase of a resource drilling program at the Barnes Hill deposit which consisted of 75 air-core drillholes (BHA001–075) for 1,080 m was completed in 2008. Second phase of the resource drill-out at Barnes Hill was completed in late 2009 through to early 2010 and consisted of 549 air-core drillholes (BHA076–625) for 4,839 m and 16 diamond drillholes (BHD001–16) for 416 m. In 2010, Norivet Pty Ltd undertook bench scale testwork with samples submitted to the Southern Cross University Environmental Analysis Laboratory (EAL) for cross checking. In 2011, two pilot vat tests were undertaken by Australian Biorefining at Evans Head, New South Wales at a scale of over 1 tonne using samples composed from wide gauge drilling at two pit locations (North and South). Following this in 2012, number of bench scale tests then applied agitated tank leaching at 80degC and with an increased free acid concentration of 150g/L. Results established that 85% recovery of Ni and Co could be achieved with acid consumption of 580-700kg/t ore through an 8-10 hour residence time.</li> </ul>
Geology	<ul style="list-style-type: none"> <li>• <i>Deposit type, geological setting and style of mineralisation.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The Barnes Hill deposits, including Scotts Hill and Mount Vulcan, are interpreted to have formed from the chemical weathering of a serpentinised ultramafic parent rock (Andersons Creek Complex). The ultramafic Andersons Creek Complex is a layered wedge of Cambrian ultramafic stratigraphy consisting mainly of serpentinite, pyroxenite and gabbro. The ultramafic complex around the Barnes Hill region has been altered almost completely to serpentinite prior to the chemical weathering process. The weathered serpentinites have subsequently been altered to clays which are overlain by a ferruginised laterite zone.</li> <li>• The laterite profile identified at Scotts-Vulcan is similar to Barnes Hill and comprises: <ul style="list-style-type: none"> <li>– A surficial pisolitic soil horizon</li> <li>– Fe-rich laterised hard-cap zone (in places)</li> <li>– Laterite zone</li> <li>– Limonite zone</li> </ul> </li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>– Saprolite zone</li> <li>– Saprock zone</li> <li>– Bedrock/serpentine.</li> <li>• At Scotts-Vulcan, the upper ferruginous portion of the profile is not as well developed as at Barnes Hill and is less continuous.</li> <li>• The Barnes Hill ultramafic rocks (Andersons Creek Complex) are bounded by quartzites to the east and claystones and slates to the west. Permian conglomerates overlie the ultramafic complex to the north and south. The quartzites are of Cambrian age and were intruded by the ultramafic rocks in the Cambrian. The ultramafics were subsequently altered to serpentinites. In turn the serpentinites were intruded by granitic rocks in the Devonian period. The belt of serpentine occupies a topographic low and is surrounded to the west and north by rugged hills.</li> <li>• The weathering history at Barnes Hill has not been suitable for the co-precipitation of soluble silica and nickel. Consequently, the hydrous nickel silicate garnierite, which is typically present in other nickel laterite deposits, is not prevalent at Barnes Hill. Serpentine and chlorite are the main nickel bearing species.</li> </ul>
Drillhole information	<ul style="list-style-type: none"> <li>• <i>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drillholes:</i> <ul style="list-style-type: none"> <li>– easting and northing of the drillhole collar</li> <li>– elevation or RL (Reduced Level – elevation above sea level in metres) of the drillhole collar</li> <li>– dip and azimuth of the hole</li> <li>– downhole length and interception depth</li> <li>– hole length.</li> </ul> </li> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• No exploration results being reported.</li> <li>• A diagram showing the location of drillhole collars is included in the accompanying release.</li> </ul>
Data aggregation methods	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>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.</i></li> <li>• <i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i></li> </ul>	<ul style="list-style-type: none"> <li>• No exploration results being reported.</li> </ul>

Criteria	JORC Code explanation	Commentary
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> <li>• <i>These relationships are particularly important in the reporting of Exploration Results.</i></li> <li>• <i>If the geometry of the mineralisation with respect to the drillhole angle is known, its nature should be reported.</i></li> <li>• <i>If it is not known and only the downhole lengths are reported, there should be a clear statement to this effect (e.g. 'downhole length, true width not known').</i></li> </ul>	<ul style="list-style-type: none"> <li>• No exploration results being reported.</li> <li>• Drillholes were drilled vertically – perpendicular to the interpreted orebody orientation.</li> <li>• The true width of mineralisation is not considered to be materially different from the drillhole intercepts for vertical drilling.</li> </ul>
Diagrams	<ul style="list-style-type: none"> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• No exploration results being reported.</li> </ul>
Balanced reporting	<ul style="list-style-type: none"> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• No exploration results being reported.</li> </ul>
Other substantive exploration data	<ul style="list-style-type: none"> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• No exploration results being reported.</li> </ul>
Further work	<ul style="list-style-type: none"> <li>• <i>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></li> <li>• <i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Further drilling is planned as part of ongoing feasibility programs. This will target areas where historical work, including sampling by BHP and drilling by King Island Scheelite, reported anomalous nickel values. In particular, exploration around and north of Simmonds Hill is proposed.</li> <li>• Additional bulk density measurements using different methods are planned to validate existing bulk density measurements.</li> </ul>

JORC Table 1 – Section 3: Estimation and Reporting of Mineral Resources

Criteria	JORC Code explanation	Commentary
Database integrity	<ul style="list-style-type: none"> <li>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.</li> <li>Data validation procedures used.</li> </ul>	<ul style="list-style-type: none"> <li>Selected checks by Snowden of drillhole data against original assay certificates were completed with no errors identified.</li> <li>Geological logging completed on paper, transferred to Microsoft Excel spreadsheets and geological logging codes validated.</li> <li>Drillhole database backed up on a regular basis.</li> <li>Statistical checks completed to ensure all assays fall within acceptable limits.</li> <li>Checks on overlapping or duplicate intervals completed.</li> <li>Checks were completed on all samples which fell below analytical detection limits to ensure samples were assigned zero grades in resource estimation.</li> <li>Holes SD121, SD121A, SD122 and SD123 were excluded from the resource modelling as these holes have identical collar coordinates to other drillholes.</li> </ul>
Site visits	<ul style="list-style-type: none"> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	<ul style="list-style-type: none"> <li>Due to the lack of outcropping geology and as no drilling is currently taking place, Snowden does not believe that a site visit is warranted at this stage; however, a site visit is anticipated when drilling recommences.</li> </ul>
Geological interpretation	<ul style="list-style-type: none"> <li>Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.</li> <li>Nature of the data used and of any assumptions made.</li> <li>The effect, if any, of alternative interpretations on Mineral Resource estimation.</li> <li>The use of geology in guiding and controlling Mineral Resource estimation.</li> <li>The factors affecting continuity both of grade and geology.</li> </ul>	<ul style="list-style-type: none"> <li>Snowden believes the local geology is well understood as a result of work undertaken by Proto and other companies working in the region. The Scotts-Vulcan nickel laterites have developed from the weathering of an ultramafic host rock sequence.</li> <li>The geological interpretation of the laterite horizons was developed based on the profile interpreted in 2010 for the nearby Barnes Hill deposit and used in the 2010 Barnes Hill resource model. At Scotts-Vulcan however, the upper ferruginous portion of the profile is not as well developed as at Barnes Hill and is less continuous, especially given the current drill spacing. Consequently, the pisolite, hard-cap, laterite and limonite zones were combined into a single "laterite" domain, which Snowden believes is reasonable given the somewhat gradational nature of the internal boundaries.</li> <li>Surfaces of the laterite horizons were interpreted based on a combination of geochemistry (mainly Ni, MgO and Fe<sub>2</sub>O<sub>3</sub>) and the geological logging. Each surface was treated as a hard boundary for resource modelling.</li> <li>Geological interpretation in this region has been limited to the extent of current drilling.</li> <li>Alternative interpretations of the mineralisation are unlikely to significantly change the overall volume of the mineralised zone in terms of the reported classified resources.</li> </ul>

Criteria	JORC Code explanation	Commentary
Dimensions	<ul style="list-style-type: none"> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>The deposit has an extent of approximately 1.6 km north-south x 0.9 km east-west.</li> <li>The main and thickest regions of the deposit are centred around Scotts Hill and Mount Vulcan and extend approximately 500 m north-south x 500 m east-west.</li> <li>Nickel mineralisation within the limonite zone is overlain in most part by ferruginised lateritic waste material which may be up to 15 m thick in places.</li> </ul>
Estimation and modelling techniques	<ul style="list-style-type: none"> <li><i>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.</i></li> <li><i>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</i></li> <li><i>The assumptions made regarding recovery of by-products.</i></li> <li><i>Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).</i></li> <li><i>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</i></li> <li><i>Any assumptions behind modelling of selective mining units.</i></li> <li><i>Any assumptions about correlation between variables.</i></li> <li><i>Description of how the geological interpretation was used to control the resource estimates.</i></li> <li><i>Discussion of basis for using or not using grade cutting or capping.</i></li> <li><i>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</i></li> </ul>	<ul style="list-style-type: none"> <li>Ordinary kriging estimation (parent cell estimation) technique for Ni, Co, MgO, MnO, Al<sub>2</sub>O<sub>3</sub>, Fe<sub>2</sub>O<sub>3</sub> and SiO<sub>2</sub>.</li> <li>Sample selection honoured geological domains which were developed considering the vertical chemical and geological trends of the profile. Five domains developed: combined Limonite-Laterite Domain, Transitional Domain, Saprolite Domain, Saprock Domain and Bedrock Domain.</li> <li>Statistical analysis by domain completed. Top cuts were applied to Co (0.35% Co) and MgO (8% MgO) within the Limonite-Laterite Domain to control sporadic extreme values during estimation. No other top cuts were applied.</li> <li>Variography completed for Ni, Co, MgO, MnO, Al<sub>2</sub>O<sub>3</sub>, Fe<sub>2</sub>O<sub>3</sub> and SiO<sub>2</sub>. Due to the low number of samples for individual domains, variograms were modelled within a combined Transitional-Saprolite-Saprock Domain and applied to all domains.</li> <li>Validation of block estimates included visual and statistical checks, both global and local. Checks were completed against original and de-clustered drillhole composites. The validations show that while smoothed, the block estimates reproduce the trends observed in the drillhole data.</li> </ul>
Moisture	<ul style="list-style-type: none"> <li><i>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</i></li> </ul>	<ul style="list-style-type: none"> <li>All tonnages have been estimated as dry tonnages.</li> </ul>

Criteria	JORC Code explanation	Commentary
Cut-off parameters	<ul style="list-style-type: none"> <li><i>The basis of the adopted cut-off grade(s) or quality parameters applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>Resources have been reported within domain boundaries above a 0.25% Ni cut-off. The cut-off grade of 0.25% Ni is based on beneficiation testwork that shows the ability to upgrade lower grade ore through screening methods and is commensurate with the cut-off grade used at similar deposits where such screening is applicable. The testwork shows that lower grade portion of the deposit can be upgraded and then serve as suitable feed for hydrometallurgical processing. Snowden believes that the cut-off grade is reasonable assuming a standard open-pit mining approach with low-to-moderate selectivity. The amenability to open-pit mining was separately established by a pit optimisation undertaken in 2010, albeit at a higher cut-off grade with a higher stripping ratio.</li> </ul>
Mining factors or assumptions	<ul style="list-style-type: none"> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>It is assumed that the deposit will be mined using conventional drill and blast open cut mining methods with low-to-moderate selectivity.</li> </ul>
Metallurgical factors or assumptions	<ul style="list-style-type: none"> <li><i>The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects 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.</i></li> </ul>	<ul style="list-style-type: none"> <li>During 2019 TEM performed initial testwork on samples from Scotts Hill and Mt Vulcan. The aim of the program was to confirm that Scotts-Vulcan ore would perform similarly to Barnes Hill ore which had been previously tested (as noted below), and also to test improved operating conditions. The testwork applied sequential leaching with varied blends of feed ore exposed to conditions suited for these particular combinations of limonitic and saprolitic ore. 60 tests were performed. Results supported the ability to achieve overall Ni and Cobalt extraction of 90% with an acid consumption of 509kg/t ore across the three leaching stages. Testwork also applied dry and wet screening to all the ore domains. Upgrading was shown to be effective, particularly for ore sampled from the saprolite and saprock domains with a significant increase in Ni through rejection of the coarser fractions.</li> <li>Metallurgical testwork has also been conducted on the Barnes Hill deposit, which is located approx. 3 km south of Scotts-Vulcan, since 1968, with the last testwork completed in 2012. The testwork was conducted on composite samples from diamond core along with bulk samples from trenches. Various acid leaching tests were performed, at both atmospheric temperatures and higher temperatures of up to 260°C, along with different acid concentrations and residence times. Nickel recoveries of greater than 80% were achieved, with cobalt recoveries above 80% also achieved.</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>• Snowden believes that, given the similar geology of the Scotts-Vulcan deposit to Barnes Hill, it can be reasonably assumed that similar recoveries should be able to be achieved at both project sites.</li> </ul>
Environmental factors or assumptions	<ul style="list-style-type: none"> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• It is assumed that no environmental factors exist that could prohibit any potential mining development at the Scotts-Vulcan deposit.</li> </ul>
Bulk density	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vughs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.</i></li> <li>• <i>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Bulk density was determined for a total of 244 density samples by the water immersion technique (Archimedes principle) on 20–30 cm samples of PQ diamond core from the nearby Barnes Hill deposit.</li> <li>• Default density values were assigned to each domain based on the Barnes Hill measurements: Limonite-Laterite Domain (1.5 g/cm<sup>3</sup>), Transitional Domain (1.40 g/cm<sup>3</sup>), Saprolite Domain (1.3 g/cm<sup>3</sup>), Saprock Domain (2.2 g/cm<sup>3</sup>) and Bedrock Domain (2.4 g/cm<sup>3</sup>).</li> </ul>
Classification	<ul style="list-style-type: none"> <li>• <i>The basis for the classification of the Mineral Resources into varying confidence categories.</i></li> <li>• <i>Whether appropriate account has been taken of all relevant factors (i.e. 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).</i></li> <li>• <i>Whether the result appropriately reflects the Competent Person's view of the deposit.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Classification is based on a number of considerations: <ul style="list-style-type: none"> <li>– Nature and quality of the drilling and sampling methods.</li> <li>– Drill spacing.</li> <li>– Uncertainty in the collar coordinates of historical holes due to grid transformations. Resurveying of historical collars is required to verify the transformations applied.</li> <li>– Confidence in the understanding of the underlying geological and grade continuity.</li> <li>– Analysis of the QAQC data.</li> <li>– Confidence in the estimate of the mineralised volume.</li> <li>– The results of the model validation.</li> <li>– Quantity of bulk density data.</li> </ul> </li> <li>• The resource classification scheme adopted by Snowden for the Scotts-Vulcan Mineral Resource estimate is outlined as follows: <ul style="list-style-type: none"> <li>– Where blocks are located within approximately 125 m of a drillhole, the Transitional (Domain 45), Saprolite (50) and Saprock (55) domains were classified as Inferred Resources.</li> </ul> </li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>– Blocks within the Transitional (Domain 45), Saprolite (50) and Saprock (55) domains greater than approximately 125 m from a drillhole, remain unclassified and do not form part of the Mineral Resource.</li> <li>– The Bedrock (60) and Laterite-Limonite (40) domains remain unclassified and do not form part of the Mineral Resource.</li> <li>• Extrapolation horizontally beyond the drilling is limited to approximately 125 m.</li> <li>• The Mineral Resource classification appropriately reflects the view of the Competent Person.</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li>• <i>The results of any audits or reviews of Mineral Resource estimates.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Snowden is not aware of any independent reviews of the Mineral Resource estimate.</li> <li>• Snowden’s internal review process ensures all work meets quality standards.</li> </ul>
Discussion of relative accuracy/confidence	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>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.</i></li> <li>• <i>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The Mineral Resource has been validated both globally and locally against the input composite data.</li> <li>• Given the relatively sparse drilling within the Inferred Resource, estimates are considered to be globally accurate. Closer spaced drilling is required to improve the local confidence of the block estimates.</li> <li>• There is no operating mine at the Barnes Hill project, including Scotts-Vulcan, and as such, no production data is available.</li> </ul>

## Part 2: Barnes Hill Mineral Resource Estimate 2020

JORC Table 1 – Section 1: Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i></li> <li>• <i>Aspects of the determination of mineralisation that are Material to the Public Report.</i></li> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The bulk of the data used for the Barnes Hill resource estimate is based on the logging and sampling of air core drilling (approximately 97% of the data).</li> <li>• Air core drilling was sampled at 1 m intervals using a PVC or aluminium scoop to obtain an average weight of 0.7 kg per sample. The sample was pulverised and split to 200 g from which a 20 g sub-sample was taken for XRF and LOI analysis.</li> <li>• Diamond drilling was sampled at 1 m intervals with occasional smaller length samples taken where appropriate due to mineralisation boundaries.</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <li>• <i>Drill type (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).</i></li> </ul>	<ul style="list-style-type: none"> <li>• A total of 716 drill holes totalling 7,114 m have been drilled at the Barnes Hill deposit, comprising 694 air core drill holes (50 mm diameter) and 23 PQ triple tube diamond drill holes. All 716 drill holes were used for geological interpretation and resource estimation.</li> </ul>
Drill sample recovery	<ul style="list-style-type: none"> <li>• <i>Method of recording and assessing core and chip sample recoveries and results assessed.</i></li> <li>• <i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i></li> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Diamond drill holes were completed using triple tube to enhance core recoveries. Core recovery was recorded throughout drill holes with core recovery typically exceeding 90%.</li> <li>• Recovery of air core drill samples was generally reasonable based on a visual assessment, with relatively few damp or wet samples. Samples with "poor" recovery were not assayed and recorded as "No Sample". A total of 28 samples did not have enough sample for analysis.</li> <li>• Sample weights were recorded for a total of 4,611 samples from the 2008-2010 air core drilling programs. Analysis of the dry sample weights indicates an average sample weight of approximately 0.7 kg was attained, with a total of 699 samples, or 15.2% of the dataset, with sample weights below 0.5 kg.</li> </ul>

Criteria	JORC Code explanation	Commentary
Logging	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i></li> <li>• <i>The total length and percentage of the relevant intersections logged.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Air core drill holes were logged at 1 m intervals with chip trays of each metre collected as a geological record and photos taken of all chip trays.</li> <li>• Diamond drill holes were logged over geological intervals ranging from centimetres to several metres. Core photos were taken of each tray throughout the hole.</li> <li>• 4,627 data-lines of logging were produced for the 2010 MRE for all drill holes. Not all data has logging records.</li> <li>• Logging codes have not been standardised.</li> </ul>
Subsampling techniques and sample preparation	<ul style="list-style-type: none"> <li>• <i>If core, whether cut or sawn and whether quarter, half or all core taken.</i></li> <li>• <i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i></li> <li>• <i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i></li> <li>• <i>Quality control procedures adopted for all subsampling stages to maximise representivity of samples.</i></li> <li>• <i>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.</i></li> <li>• <i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i></li> </ul>	<ul style="list-style-type: none"> <li>• For diamond drill holes all core was cut in half using a diamond core saw and 1 m half core samples submitted for assay. PQ diamond drill hole samples weighed more than 5 kg and up to 10 kg in fresher rock samples.</li> <li>• Air core drill holes were tube sampled with a separate sample taken for each metre. Duplicate samples and standard samples were also submitted as a quality control measure.</li> <li>• Field split duplicates and standards were initially submitted at the rate of approximately 1:50. No blanks were submitted. No coarse split or blind resubmissions have been completed.</li> <li>• Whilst the average sample size for the air core drilling is somewhat small, it is considered reasonable given the nature of the drilling, grain size and grade variability.</li> </ul>
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> <li>• <i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i></li> <li>• <i>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.</i></li> <li>• <i>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</i></li> </ul>	<ul style="list-style-type: none"> <li>• All samples were submitted to the ALS Laboratory in Adelaide for assay by lithium borate fusion X-Ray Fluorescence (XRF; lab method ME-XRF12), with LOI at 1,000°C by thermogravimetric analysis (TGA).</li> <li>• Samples were logged and tracked via the laboratory's internal LIMS system.</li> <li>• Laboratory sample preparation involved: <ul style="list-style-type: none"> <li>– Any samples that didn't air dry overnight were oven dried at a maximum of 120°C</li> <li>– Entire sample initially crushed to 90% passing 2 mm</li> <li>– Sample split using a riffle splitter</li> <li>– A sample split of up to 1 kg was pulverised to 95% passing 106 µm</li> <li>– A 0.66 g sub-sample was analysed by fused bead XRF with a lower detection limit of 0.005% Ni and 0.001% Co.</li> </ul> </li> <li>• QAQC procedures implemented by Proto included the submission of certified standards, duplicate samples and pulp duplicates.</li> <li>• ALS laboratory included internal standards within sample batches and was also involved in round robin testing with other laboratories.</li> </ul>

Criteria	JORC Code explanation	Commentary
Verification of sampling and assaying	<ul style="list-style-type: none"> <li>• <i>The verification of significant intersections by either independent or alternative company personnel.</i></li> <li>• <i>The use of twinned holes.</i></li> <li>• <i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></li> <li>• <i>Discuss any adjustment to assay data.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Snowden verified laboratory assay certificates against the supplied database with no discrepancies identified.</li> <li>• A total of 16 diamond drill holes (BHD001 – BHD016) twinned existing air core drill holes to confirm grade and provided mineralised material for bulk density testwork.</li> <li>• Geological logging was completed on paper, transferred to Excel spreadsheets and geological logging codes validated.</li> <li>• No adjustments have been made to the assay data.</li> </ul>
Location of data points	<ul style="list-style-type: none"> <li>• <i>Accuracy and quality of surveys used to locate drill holes (collar and downhole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</i></li> <li>• <i>Specification of the grid system used.</i></li> <li>• <i>Quality and adequacy of topographic control.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Drill hole collars were surveyed by handheld GPS. Due to discrepancies between the drill hole collar elevations and the topographic surface, the drill hole collars were projected to the topographic surface as it is considered to have greater accuracy.</li> <li>• All drill holes were drilled vertically</li> <li>• Topographic surface was determined by an Airborne Laser Scanning (LiDAR) survey completed by Photomapping Services of Melbourne, Victoria. LiDAR survey has a quoted accuracy of 0.15 m. Supplied contours were on a 1 m elevation spacing.</li> </ul>
Data spacing and distribution	<ul style="list-style-type: none"> <li>• <i>Data spacing for reporting of Exploration Results.</i></li> <li>• <i>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.</i></li> <li>• <i>Whether sample compositing has been applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Air core drill hole spacing across the Barnes Hill resource area has been completed predominantly on a 50 mN x 50 mE staggered grid pattern. A 50 mN by 50 mE drilling pattern has been shown to give a robust grade estimate into 25 mN by 25 mE by 1.0 m blocks and is considered adequate to support a Measured Resource classification for mineralised material greater than 2.0 m thick. However, a 50 mN x 50 mE staggered drilling pattern does not accurately define the true variability of thickness and consequently tonnage estimates are subject to additional uncertainty. An Indicated classification has therefore been applied.</li> <li>• Diamond drill holes were completed at various locations across the deposit to gain material for bulk density and to twin existing air core drill holes.</li> <li>• In addition, two traverses consisting of 151 holes of 10 m closely spaced air core drill holes were completed in the northern resource area to test grade and width variability.</li> <li>• Sampling was completed consistently to a 1 m length. Compositing was not required to obtain an equal sample support.</li> </ul>
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> <li>• <i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i></li> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Drill holes were drilled vertically, perpendicular to the interpreted ore body orientation.</li> <li>• A tight spaced (10 m) drilling program was completed along a north-south and an east-west line, traversing the main portion of the deposit, to assess thickness and grade variation on a local scale.</li> </ul>

Criteria	JORC Code explanation	Commentary
Sample security	<ul style="list-style-type: none"> <li data-bbox="352 232 751 293">• <i>The measures taken to ensure sample security.</i></li> </ul>	<ul style="list-style-type: none"> <li data-bbox="853 232 1362 293">• No specific measures have been taken to ensure sample security.</li> <li data-bbox="853 300 1362 398">• Snowden does not believe that sample security poses a material risk to the integrity of the assay data used in the Mineral Resource estimate.</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li data-bbox="352 405 751 465">• <i>The results of any audits or reviews of sampling techniques and data.</i></li> </ul>	<ul style="list-style-type: none"> <li data-bbox="853 405 1385 497">• No external review of sampling and drilling procedures has been completed as far as Snowden is aware.</li> </ul>

JORC Table 1 – Section 2: Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The Barnes Hill deposit occurs within Mining Lease 1872P/M.</li> <li>• Tasmania Energy Metals Pty Ltd is the registered holder of 100% of Mining Lease 1872P/M.</li> </ul>
Exploration done by other parties	<ul style="list-style-type: none"> <li>• <i>Acknowledgment and appraisal of exploration by other parties.</i></li> </ul>	<ul style="list-style-type: none"> <li>• A number of phases of mapping, drilling and metallurgical testwork have been completed over the nickel/cobalt laterites in the Barnes Hill area by various companies: <ul style="list-style-type: none"> <li>– <b>1955 to 1956, Ben Lomond Mining.</b> Reconnaissance sampling completed to identify Ni-rich clays above serpentinites.</li> <li>– <b>1958, Consolidated Zinc.</b> Enterprise Exploration Company Pty Ltd completed an exploration report in 1958. Initial mapping identified garnierite bearing serpentine in a 4,000 ft by 2,500 ft area. Auger drilling completed on 3 lines south of Barnes Hill. Holes were 100 ft apart over a distance of 1,400 ft, 1,700 ft and 2,400 ft. Sample recovery was reportedly excellent and all holes except 2 ended at the bedrock contact. Average grades ranged from 0.4% Ni to 0.96% Ni and thicknesses varied from less than 5 ft to 9 ft. Other smaller areas were also identified, and an additional 6 lines of auger drill holes were completed, however the nickel laterite profile was thinner (4 to 6 ft) and of lower grade (0.2% Ni).</li> <li>– <b>1965 to 1967, BHP.</b> Regional and detailed mapping was completed. Airborne and ground magnetic surveys, along with geochemical sampling. One diamond core hole drilled at Scotts Hill to 673 ft to investigate magnetic anomaly - intersected magnetite (no sulphide mineralisation). A series of pits were completed on 17 separate lines within the 'Chromite Gravels'. BHP concluded the laterites near Andersons Creek were of low grade and not worthy of development.</li> </ul> </li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li data-bbox="887 237 1401 712">– <b>1967 to 1968, King Island Scheelite.</b> 17 diamond drill holes completed. Assay analyses were completed by Minex in Melbourne. Mineralogical study using XRD completed with nickel bearing phases identified. Identification of different domains laterally (Scotts Hill / Mount Vulcan / Barnes Hill) and throughout the profile (Laterite Zone / Transitional Serpentinite Zone / Bleached Serpentinite Zone / Fresh Zone). Beneficiation tests were also completed (H<sub>2</sub>SO<sub>4</sub> leach tests, size analysis of ore, size analysis of residue of H<sub>2</sub>SO<sub>4</sub> leach, caustic soda recovery, ammonia recovery, Nicaro process) with the Nicaro process achieving 67.7% Ni recovery.</li> <li data-bbox="887 723 1401 1037">– <b>1969, King Island Scheelite.</b> Additional 20 diamond drill holes completed. Four ore locations delineated (Scotts Hill, Mount Vulcan, Barnes Hill and Barnes Hill south). Resource estimate of 6.0 Mt at 1.04% Ni and 0.06% Co at a 0.7% Ni cut-off. Analysis for Ni, Co, Cr, Al<sub>2</sub>O<sub>3</sub>, CaO, MgO, SiO<sub>2</sub> and FeO was completed. Analyses were completed by the Launceston Laboratories of the Tasmanian Department of Mines.</li> </ul>
		<ul style="list-style-type: none"> <li data-bbox="887 1048 1401 1104">– <b>1971 to 1972, Allstate Exploration.</b> 15 core holes completed. Trenching also completed.</li> <li data-bbox="887 1115 1401 1216">– <b>1969 to 1981, Northern Chromite.</b> Chromium production on western flank of Barnes Hill. Drilling completed at Rifle Range.</li> <li data-bbox="887 1227 1401 1305">– <b>1988, Placeco Australia.</b> Rock chip samples taken from Barnes Hill, Dans Hill and Mt Vulcan areas.</li> <li data-bbox="887 1317 1401 1597">– <b>1997 to 2000, Allegiance Mining.</b> Completed 549 m of air core drilling in 51 holes. Drilling contractor was Tas Diamond Driller Pty Ltd. All holes were vertical with 1 m samples. All samples were weighed. 9 holes at Scotts Hill, 8 holes Mt Vulcan, 17 holes at Barnes Hill, and 17 holes at Barnes Hill South. RC drilling program of 65 holes totalling 492 m. Updated resource estimated in March 1998</li> <li data-bbox="887 1608 1401 1895">– <b>2001 to 2005, Jervois Mining.</b> Air core holes relogged to standardised format. Check assaying was completed on pulps from Allegiance air core holes S001 to S051. Composite bulk samples for limonite, saprolite and weathered serpentinite lithologies for the Barnes Hill region and the Scotts Hill / Mount Vulcan regions were collected for metallurgical testing. Resource estimate re-done based on lithological domains.</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>- <b>2007 to 2012, Proto.</b> Completion of a high-level review of the Barnes Hill Project and drill hole database by Snowden Mining Industry Consultants. Air core drilling program (17 holes for 202 m) completed to validate historic drilling results and to provide samples for metallurgical testwork. Detailed flora and fauna assessment of the resource areas by North Barker Ecosystem Services. Cutting and assaying of some historic diamond core holes held at the MRT Rockstore in Mornington. Metallurgical testwork at HRL Testing in Brisbane. Regional soil sampling program consisting of 429 samples taken along 400 m spaced east-west lines. Aboriginal heritage and European heritage surveys completed. Column leach testwork on further air core drilling samples from the Barnes Hill deposit. First phase of a resource drilling program at the Barnes Hill deposit which consisted of 75 air core drill holes (BHA001 — 075) for 1,080 m was completed in 2008. Second phase of the resource drill-out at Barnes Hill was completed in late 2009 through to early 2010 and consisted of 549 air core drill holes (BHA076 - 625) for 4,839 m and 16 diamond drill holes (BHD001 - 16) for 416 m. In 2010, Norivet Pty Ltd undertook bench scale testwork with samples submitted to the Southern Cross University Environmental Analysis Laboratory (EAL) for cross checking. In 2011, two pilot vat tests were undertaken by Australian Biorefining at Evans Head, New South Wales at a scale of over 1 tonne using samples composed from wide gauge drilling at two pit locations (North and South). Following this in 2012, number of bench scale tests then applied agitated tank leaching at 80degC and with an increased free acid concentration of 150g/L. Results established that 85% recovery of Ni and Co could be achieved with acid consumption of 580-700kg/t ore through an 8-10 hour residence time.</li> </ul>
Geology	<ul style="list-style-type: none"> <li>• <i>Deposit type, geological setting and style of mineralisation.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The Barnes Hill deposit is interpreted to have formed from the chemical weathering of a serpentinised ultramafic parent rock (the Andersons Creek Complex). The Andersons Creek Complex is a layered wedge of Cambrian ultramafic stratigraphy consisting mainly of serpentinite, pyroxenite and gabbro. The ultramafic complex around the Barnes Hill region has been altered almost completely to serpentinite prior to the chemical weathering process. The weathered serpentinites have subsequently been altered to clays which are overlain by a ferruginised laterite zone.</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>• The laterite profile identified at Barnes Hill comprises: <ul style="list-style-type: none"> <li>– A surficial pisolitic soil horizon</li> <li>– Fe-rich laterised hardcap zone (in places)</li> <li>– Laterite zone</li> <li>– Limonite zone</li> <li>– Saprolite zone</li> <li>– Saprock zone</li> <li>– Bedrock / serpentinite</li> </ul> </li> <li>• The Barnes Hill ultramafic rocks (Andersons Creek Complex) are bounded by quartzites to the east and claystones and slates to the west. Permian conglomerates overlie the ultramafic complex to the north and south. The quartzites are of Cambrian age and were intruded by the ultramafic rocks in the Cambrian. The ultramafics were subsequently altered to serpentinites. In turn the serpentinites were intruded by granitic rocks in the Devonian period. The belt of serpentine occupies a topographic low and is surrounded to the west and north by rugged hills.</li> <li>• The weathering history at Barnes Hill has not been suitable for the co-precipitation of soluble silica and nickel. Consequently, the hydrous nickel silicate garnierite, which is typically present in other nickel laterite deposits, is not prevalent at Barnes Hill. Serpentine and chlorite are the main nickel bearing species.</li> </ul>
Drill hole information	<ul style="list-style-type: none"> <li>• <i>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:</i> <ul style="list-style-type: none"> <li>– <i>easting and northing of the drill hole collar</i></li> <li>– <i>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</i></li> <li>– <i>dip and azimuth of the hole</i></li> <li>– <i>downhole length and interception depth</i></li> <li>– <i>hole length.</i></li> </ul> </li> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• No exploration results being reported.</li> <li>• A diagram showing the location of drill hole collars is available on request.</li> </ul>
Data aggregation methods	<ul style="list-style-type: none"> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• No exploration results being reported.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>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.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the downhole lengths are reported, there should be a clear statement to this effect (e.g. 'downhole length, true width not known').</li> </ul>	<ul style="list-style-type: none"> <li>No exploration results being reported.</li> <li>Drill holes were drilled vertically - perpendicular to the interpreted ore body orientation.</li> <li>The true width of mineralisation is not considered to be materially different from the drill hole intercepts for vertical drilling.</li> </ul>
Diagrams	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>No exploration results being reported.</li> </ul>
Balanced reporting	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>No exploration results being reported.</li> </ul>
Other substantive exploration data	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>No exploration results being reported.</li> </ul>
Further work	<ul style="list-style-type: none"> <li>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul style="list-style-type: none"> <li>Further drilling is planned as part of ongoing feasibility programs. This will target areas were historical work including sampling by BHP and drilling by King Island Scheelite reported anomalous nickel values. In particular, areas around and north of Simmonds Hill will be explored.</li> <li>Additional bulk density measurement is planned. This would use different methods to those used previously and would seek to enhance the reliability of existing bulk density measurements.</li> </ul>

JORC Table 1 – Section 3: Estimation and Reporting of Mineral Resources

Criteria	JORC Code explanation	Commentary
Database integrity	<ul style="list-style-type: none"> <li>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.</li> <li>Data validation procedures used.</li> </ul>	<ul style="list-style-type: none"> <li>Selected checks by Snowden of drill hole data against original assay certificates were completed with no errors identified.</li> <li>Geological logging completed on paper, transferred to Excel spreadsheets and geological logging codes validated.</li> <li>Statistical checks completed to ensure all assays fall within acceptable limits.</li> <li>Checks on overlapping or duplicate Intervals completed.</li> <li>Checks were completed on all samples which fell below analytical detection limits to ensure samples were assigned zero grades in resource estimation.</li> </ul>
Site visits	<ul style="list-style-type: none"> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	<ul style="list-style-type: none"> <li>Due to the lack of outcropping geology and as no drilling is currently taking place, Snowden does not believe that a site visit is warranted at this stage; however, a site visit is anticipated when drilling recommences.</li> </ul>
Geological interpretation	<ul style="list-style-type: none"> <li>Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.</li> <li>Nature of the data used and of any assumptions made.</li> <li>The effect, if any, of alternative interpretations on Mineral Resource estimation.</li> <li>The use of geology in guiding and controlling Mineral Resource estimation.</li> <li>The factors affecting continuity both of grade and geology.</li> </ul>	<ul style="list-style-type: none"> <li>Snowden believes that the local geology is well understood as a result of work undertaken by Proto and other companies working in the region.</li> <li>The Barnes Hill nickel laterite has developed from the weathering of an ultramafic host rock sequence. The boundaries of the deposit have been interpreted from drilling which has intersected unmineralised sandstone and siltstones to the east, west and south of the deposit. The northern boundary to the deposit has yet to be defined from drilling.</li> <li>Surfaces of the laterite horizons were interpreted based on a combination of geochemistry (mainly MgO, Fe<sub>2</sub>O<sub>3</sub> and Ni) and the geological logging. Each surface was treated as a hard boundary for resource modelling.</li> <li>Alternative interpretations of the mineralisation are unlikely to significantly change the overall volume of the mineralised zone in terms of the reported classified resources.</li> </ul>
Dimensions	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>The deposit has an extent of approximately 2 km north-south by 1 km east-west.</li> <li>The main and thickest region of the deposit is centred around Barnes Hill and is approximately 400 m north-south by 800 m east-west. This area is characterised by a distinct limonite zone (average thickness ~3.5 m) underlain by a saprolite zone (~4.0 m).</li> <li>The area to the south of Barnes Hill is thinner and consists primarily of saprolite material ~2.0 m to 3.0 m).</li> <li>Ni mineralisation within the limonite zone is overlain in most part by ferruginised lateritic waste material (~2.0 m to 5.0 m).</li> </ul>

Criteria	JORC Code explanation	Commentary
Estimation and modelling techniques	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</i></li> <li>• <i>The assumptions made regarding recovery of by-products.</i></li> <li>• <i>Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).</i></li> <li>• <i>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</i></li> <li>• <i>Any assumptions behind modelling of selective mining units.</i></li> <li>• <i>Any assumptions about correlation between variables.</i></li> <li>• <i>Description of how the geological interpretation was used to control the resource estimates.</i></li> <li>• <i>Discussion of basis for using or not using grade cutting or capping.</i></li> <li>• <i>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Ordinary kriging estimation (parent cell estimation) technique for Ni, Co, MgO, Fe<sub>2</sub>O<sub>3</sub> and SiO<sub>2</sub>.</li> <li>• Sample selection honoured geological domains which were developed considering the vertical chemical and geological trends of the profile. Seven (7) domains developed: Pisolite / Hardcap domain, Laterite domain, Limonite domain, Transitional Domain, Saprolite Domain, Saprock Domain and Bedrock Domain.</li> <li>• Statistical analysis by domain completed. No outlier / extreme values identified and as such, no upper or lower cuts were applied to the datasets.</li> <li>• Variography for Ni and Co completed for the Limonite and Saprolite domains. Isotropic variogram model developed which was applied to all elements for all domains.</li> <li>• Validation of block estimates included visual and statistical checks , both global and local.</li> <li>• Checks were completed against original and declustered drill hole / composite dataset.</li> </ul>
Moisture	<ul style="list-style-type: none"> <li>• <i>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</i></li> </ul>	<ul style="list-style-type: none"> <li>• All tonnages have been estimated as dry tonnages.</li> </ul>
Cut-off parameters	<ul style="list-style-type: none"> <li>• <i>The basis of the adopted cut-off grade(s) or quality parameters applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Limonite domain has been interpreted based on a 0.2% Ni threshold. Overlying lower grade lateritic material has been considered waste. Assessment of probability plots and histograms supports the selection of this value as a natural threshold between waste and mineralised material.</li> </ul>

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		<ul style="list-style-type: none"> <li>Resources have been reported within domain boundaries above a 0.25% Ni cut-off. The cut-off grade of 0.25% Ni is based on beneficiation testwork that shows the ability to upgrade lower grade ore through screening methods, and is commensurate with the cut-off grade used at similar deposits where such screening is applicable. The testwork shows that lower grade portion of the deposit can be upgraded and then serve as suitable feed for hydrometallurgical processing. Snowden believes that the cut-off grade is reasonable assuming a standard open-pit mining approach with low-to-moderate selectivity. The amenability to open-pit mining was separately established by a pit optimisation undertaken in 2010, albeit at a higher cut-off grade with a higher stripping ratio.</li> </ul>
Mining factors or assumptions	<ul style="list-style-type: none"> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>It is assumed that the deposit will be mined using conventional drill and blast open cut mining methods with low to moderate selectivity.</li> </ul>
Metallurgical factors or assumptions	<ul style="list-style-type: none"> <li><i>The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects 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.</i></li> </ul>	<ul style="list-style-type: none"> <li>Three periods of metallurgical testwork have been undertaken on Barnes Hill during 1968 to 1969, 1997 to 2000, 2000 to 2002 and 2007 to 2012.</li> <li>The 2002 testwork reported Ni recoveries of 80% or greater for saprolite material. The testwork between 2007 to 2012 raised Ni and Co recoveries to 85%, with higher extractions achieved under more aggressive testing conditions. Screening testwork undertaken by Australian Biorefining for Proto Resources showed that low grade ore could be upgraded through screening. This provides support for reasonable prospects of eventual economic extraction.</li> <li>Further testwork on the nearby Scotts Hill and Mt Vulcan deposits was undertaken in 2019 and 2020, which supports similar Ni and Co recoveries. 60 tests were performed and supported the ability to achieve overall Ni and Cobalt extractions of 90%. That testwork also performed screening and showed the ability to upgrade ore through wet screening, with particularly strong results for the saprock domain. Snowden believes that, given the similar geology of the Scotts-Vulcan deposit to Barnes Hill, it can be reasonably assumed that similar recoveries should be able to be achieved at both project sites.</li> </ul>

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Environmental factors or assumptions	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>It is assumed that no environmental factors exist that could prohibit any potential mining development at the Barnes Hill deposit.</li> </ul>
Bulk density	<ul style="list-style-type: none"> <li>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.</li> <li>The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vughs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.</li> <li>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</li> </ul>	<ul style="list-style-type: none"> <li>Bulk density was determined for a total of 244 density samples by the water immersion technique (Archimedes principle) on 20 cm to 30 cm samples of PQ diamond core.</li> <li>Default density values were assigned to each domain: Pisolite / Hardcap Domain (1.75 g/cm<sup>3</sup>), Laterite domain (1.70 g/cm<sup>3</sup>), Limonite domain (1.5 g/cm<sup>3</sup>), Transitional domain (1.40 g/cm<sup>3</sup>), Saprolite domain (1.3 g/cm<sup>3</sup>), Saprock domain (2.2 g/cm<sup>3</sup>) and Bedrock domain (2.4 g/cm<sup>3</sup>).</li> </ul>
Classification	<ul style="list-style-type: none"> <li>The basis for the classification of the Mineral Resources into varying confidence categories.</li> <li>Whether appropriate account has been taken of all relevant factors (i.e. 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).</li> <li>Whether the result appropriately reflects the Competent Person's view of the deposit.</li> </ul>	<ul style="list-style-type: none"> <li>Classification was based on a number of considerations: <ul style="list-style-type: none"> <li>Reliability of the drilling, sampling and assaying.</li> <li>Geostatistical measures associated with estimated block grades (e.g. regression slope, kriging variance).</li> <li>Number of composites and number of drill hole used in estimation.</li> <li>Domain thickness and variability.</li> <li>Results of a conditional simulation study of the saprolite thickness.</li> <li>Amount and reliability of the density data.</li> </ul> </li> <li>Mineral Resources have been classified as a combination of Indicated and Inferred Resources based on the following criteria: <ul style="list-style-type: none"> <li>The Mineral Resource has been limited to the Limonite, Transitional, Saprolite and Saprock domains.</li> <li>Where drilling is 50 mN by 50 mE or better and the thickness is greater than 2 m, the resource has been classified as an Indicated Resource.</li> <li>Areas that are not supported by a 50 mN by 50 mE drill spacing or are less than 1 m in thickness have been assigned an Inferred classification.</li> </ul> </li> <li>The Mineral Resource classification appropriately reflects the view of the competent Person.</li> </ul>

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Audits or reviews	<ul style="list-style-type: none"> <li>The results of any audits or reviews of Mineral Resource estimates.</li> </ul>	<ul style="list-style-type: none"> <li>Snowden is not aware of any independent reviews of the Mineral Resource estimate.</li> <li>Snowden's internal review process ensures all work meets quality standards.</li> </ul>
Discussion of relative accuracy/ confidence	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</li> </ul>	<ul style="list-style-type: none"> <li>The Mineral Resource has been validated both globally and locally against the input composite data.</li> <li>Sequential Gaussian simulation (SGS) of the saprolite thickness was completed by Snowden in 2010 to assess risk associated with the tonnage estimate. For a panel size of 100 m x 100 m (equates to an approximate quarterly production rate of 55Kt) an average thickness variation of <math>\pm 24\%</math> is estimated at a 90% confidence level. This equates to a thickness range of <math>\pm 1.2</math> m from the mean thickness of 4.9 m (i.e. 3.7 m to 6.1 m). For a 200 m x 200 m panel, the thickness variation is reduced to approximately 15%, or <math>\pm 0.75</math> m.</li> <li>Simulation of Ni and Co grades has not been completed at this stage.</li> <li>Given the sparser drilling within the Inferred Resource areas, these estimates are considered to be globally accurate. Closer spaced drilling is required to improve the local confidence of the block estimates in these areas.</li> <li>There is no operating mine at Barnes Hill and as such, no production data is available.</li> </ul>