

## **EXCELLENT METALLURGICAL RESULTS – LOW COST, SCALABLE MINERAL PROCESSING AT APOLLO HILL**

Saturn Metals has recently completed scaled up metallurgical test work via column leaching to demonstrate the potential for a bulk tonnage gold mining and mineral processing at Apollo Hill. **The Company is pleased to announce excellent gold recovery results which highlight the deposit's amenability to simple low-cost mineral processing via heap leach.**

Many of the world's large scale gold mining operations employ low cost heap leach processing and this method accounts for approximately 46% of global gold production<sup>(a)</sup>. The latest results support Saturn's view that Apollo Hill has the potential to join this group.

### **HIGHLIGHTS – Upto 85% Recovery in Heap Leach Tests**

#### **Excellent Recovery at Targeted Commercial Fresh Rock Crush Sizes**

- An Apollo Hill composite column sample (grading 0.51 g/t Au) derived from diamond drillcore gave an **excellent recovery of 74.5%** using high pressure grinding roll (HPGR) crushing to 8mm P100. This recovery figure compares positively to a global average heap leach recovery figure of 65%<sup>(a)</sup>.
- Results from the 6mm P100 conventional stage crushed column sample (grading 0.60g/t Au and thus corresponding well to the expected LOM average grade of 0.60g/t Au) gave an **impressive 84% recovery**.

#### **First Rate Recovery of Lower Grades - A Pathway to Economies of Scale**

- **A strong recovery of 85% was obtained** at a ~8 mm P100 average HPGR crush size at the deposit's lower grade range (0.27g/t Au).
- Importantly, this result, which is now validated at laboratory and column scale, indicates **gold recovery is viable from material which would normally be considered marginal in the absence of a low unit cost processing solution. This validates Saturn's use of lower cut off grades to improve economics** through greater resource utilisation, yielding lower waste to ore stripping ratios and subsequent application of lower cost bulk mining scenarios and big selective mining units to capture and efficiently process Apollo Hill's nuggety gold distribution.

#### **Validation of the Mineral Resource Upgrade**

- The recovery figures validate and potentially offer room for improvement on the 73% recovery figure used to estimate the 1.47Moz<sup>1</sup> Mineral Resource Whittle Shell in May, earlier this year.

#### **Efficient and Timely Extraction of Gold - Quick Leach Kinetics**

- Testwork showed that HPGR crushing significantly improved column leach Au extraction kinetics with approximately **80% of the ultimate extraction achieved within only 21 days** of the entire testwork duration around 100 days.

#### **Successful Scale Up of Testwork bodes well for Full Scale Heap Leach Recovery**

- This successful scale up from laboratory intermittent bottle roll tests (see ASX Announcement 29 March 2022) to larger column leach tests bodes well for future larger production scenarios and Saturn's Pre-Feasibility Study economics.

#### **Representative sample with low variability – positive for mineral processing**

- Importantly – test work is representative of Apollo Hill's major material types, geographies, and rock types – at conceptual 'Life of Mine' grade ranges.

#### **Positive development for Apollo Hill Studies**

The metallurgical test work results and the outcomes of a preliminary mineral process engineering cost study<sup>(b)</sup>, will be utilised to derive important input information for open pit optimisation studies which form part of the ongoing Apollo Hill Scoping and Pre-Feasibility Study process.

1. Details of the Mineral Resource which currently stands at 76.6 Mt @ 0.6 g/t Au for 1,469,000 oz Au and a breakdown by category are presented in Table 1a (page 3 of this document) along with the associated Competent Persons statement and details of the ASX announcement that this information was originally published in.

(a) & (b): See References Table, page 4.

Saturn Metals Limited (ASX:STN) (“Saturn”, “the Company”) is pleased to announce significant results from metallurgical test work on samples of mineralised material collected from diamond core drilling at the Apollo Hill deposit within its 100%-owned Apollo Hill Gold Project, 60km south-east of Leonora in the Western Australian Goldfields.

This test work is a key part of the Company’s ongoing strategy to grow and progress the Apollo Hill Mineral Resource, which was last upgraded a few months ago to 1.47Moz<sup>1</sup> (2 May 2022). Results, as outlined in the ‘Highlights’ section of this report, demonstrate the clear potential to achieve lower processing costs through simpler and scalable treatment options. Lower unit operating costs and strong recovery at lower grades (interpreted as easy digestion of the finer grained gold thought more typical in this grade range) leads to lower cut off grades which allows for the processing of additional mineralised material, improving strip ratios and offering more efficient mining processes and economies of scale.

Appendix 1 provides relevant summary data for the Column Leach tests completed by Bureau Veritas in Perth using project site water.

In addition to the ‘Highlights’ on page 1, test work also showed:

### **Process Optimisation**

- Test work was also completed for duplicate samples using conventional tertiary crushing to the same 8mm P100 size. Results from this test work showed that the **HPGR crushing route provides a significant 14%-16% upgrade in recovery from conventional tertiary crushing** at the 8mm P100 crush size on identical sub-samples. Lowgrade (0.24g/t Au ) conventional stage crushed column recovery reported a respectable 69% recovery and near resource grade (0.69g/t Au) conventional stage crushed column recovery reported a still positive 60% recovery (all data listed in Appendix 1). Importantly, results from the 6mm P100 conventional stage crushed column sample (grading 0.60g/t Au) **gave an impressive 84% recovery**. The high recovery figure for this test and the substantial improvements for the HPGR tests illustrate the importance of leach feed particle size distribution on gold liberation and subsequent cyanidation performance. A tradeoff study is planned based on the reported testwork results to assess gold recovery, capital cost and operating cost of various potential crushing routes as Saturn moves forward with its studies.

### **Low Reagent Use**

- Cyanide consumption was very low throughout the HPGR focussed testwork at an average of only 0.79kg/t. Lime addition was minimal at an average rate of only 0.15 kg/t. These numbers highlight the clean nature of the tested material types and site water and the potential for low reagent usage (lower cost base). Trade-off studies will also be completed on optimising reagents additions versus gold recovery in future evaluations.

### **Strong Percolation after Favourable Agglomeration Results**

- Efficient percolation results on various rock types across the scaled up HPGR testwork showed an efficient average rate of 10,994 L/m<sup>2</sup>/hr percolation (slump 4.3%), as compared to an industry acceptable rate of 10,000 L/m<sup>2</sup>/hr, and where full-scale requirements can be substantially lower again. An average cement addition rate of 3kg/t was utilised for agglomeration with site water to reach the encouraging percolation characteristics. Good percolation results coupled with low agglomeration cement requirements bode well for heap leaching techniques.

The Company utilises the professional services of independent metallurgical consultant Mr. Gary Jobson of Macromet to assist with its test work and planning schedules.

Saturn Managing Director Ian Bamborough said: *“These excellent results from a comprehensive Apollo Hill sample set, provide a decisive weight of evidence for the application of simple cost-effective mineral processing scenarios at lower cut off grades.*

*The successful scale up of results from previous laboratory bottle rolls to more production representative column leaching is an important step for the development of Apollo Hill and it gives us a great deal of confidence to progress our studies towards production.*

*The metallurgy of Apollo Hill is a great differentiator as it gives the opportunity for the Company to shift the magnitude of the deposit’s development. It gives Apollo Hill strong mineral processing and capital optionality and arguably an economic head start”.*

This announcement has been approved for release by the Saturn Metals Limited Board of Directors.



**IAN BAMBOROUGH**  
Managing Director

**For further information please contact:**

**Ian Bamborough**  
Managing Director  
Saturn Metals Limited  
+61 (0)8 6234 1114  
info@saturnmetals.com.au

### **Competent Persons Statement – Resource:**

<sup>1</sup> The information for the Mineral Resource included in this report is extracted from the report entitled (Apollo Hill Gold Resource Upgraded To 1.47Moz) created on 2 May 2022 and is available to view on the Saturn Metals Limited website. Saturn Metals Limited confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and, in the case of estimates of Mineral Resources or Ore Reserves, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. Saturn Metals Ltd confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

**Table 1 (a). May 2022 Mineral Resource Statement; 0.23 g/t Au cut-off by oxidation domain within a 1.2 revenue factor pit shell to represent reasonable prospects for eventual economic extraction.**

Lower Cut-off Grade Au g/t	Oxidation state	Measured			Indicated			Inferred			MII Total		
		Tonnes (Mtonnes)	Au (g/t)	Au Metal (KOzs)	Tonnes (Mtonnes)	Au (g/t)	Au Metal (KOzs)	Tonnes (Mtonnes)	Au (g/t)	Au Metal (KOzs)	Tonnes (Mtonnes)	Au (g/t)	Au Metal (KOzs)
0.23	Oxide	0	0	0	1.08	0.54	19	0.75	0.61	15	1.8	0.57	34
	Transitional	0	0	0	8.3	0.58	155	3.1	0.61	61	11	0.59	216
	Fresh	0	0	0	31	0.58	586	32	0.62	634	63	0.60	1,220
	Total	0	0	0	41	0.58	760	35	0.62	710	76	0.60	1,469

The model is reported above the 2022 nominal RF1.2 pit optimization shell (AH8A\_2 MII HL) for RPEEE and 0.23 g/t Au lower cut-off grade for all material types. There is no known depletion by mining within the model area. Estimation is by LMIK for Apollo Hill ZONECODE=100 and 300 while Ra ZONECODE=200 and Tefnut (ZONECODE=400, 402) were estimated using ROK due to limited data. Grade field AU\_FIN1. The model currently assumes a 5mE x 12.5mN x 5mRL SMU for selective open pit mining. Selectivity may vary with changed mining and processing scenarios. The final models are SMU models and incorporate internal dilution to the scale of the SMU. The models do not account for mining related edge dilution and ore loss. These parameters should be considered during the mining study as being dependent on grade control, equipment and mining configurations including drilling and blasting. Classification is according to JORC Code Mineral Resource categories. Totals may vary due to rounded figures.

### **Competent Persons Statement – Exploration:**

The information in this report that relates to exploration targets, exploration and metallurgical results is based on information compiled by Ian Bamborough, a Competent Person who is a Member of The Australian Institute of Geoscientists. Ian Bamborough is a fulltime employee and Director of the Company, in addition to being a shareholder in the Company. Ian Bamborough 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'. Ian Bamborough consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

<sup>a</sup> This document contains exploration results and historic exploration results as originally reported in fuller context in Saturn Metals Limited ASX Announcements, Quarterly Reports and Prospectus - as published on the Company's website. Saturn Metals Limited confirms that it is not aware of any new information or data that materially affects the information on results noted. Announcement dates referred to include but are not limited to: 29/03/2022

## References:

### & Sources

- (a) Sorting through the Heap, Source: – Canadian Mining Journal, Web Article, 1 September 2020 on Costmine Publication *2020 Gold Heap Leach Cost Estimating Guide*, available at [www.costmine.com](http://www.costmine.com); “The average grade at 275 of these projects and operations ranged from 0.11 to 6.91 g/t gold, with an average of 0.7 g/t gold”.
- (b) CPC Engineering, Perth. Preliminary Mineral Process Engineering Cost Study - 23 March-2022.

# Appendix 1:

## Data and Results

### KEY AND SUMMARY FOR CHARTS

**ROM HPGR (Column 5)** Run of Mine Column, High Pressure Grinding Roll 8mm P100 Crush Size; 0.50g/t Au Head Grade – 74.5% Final Recovery

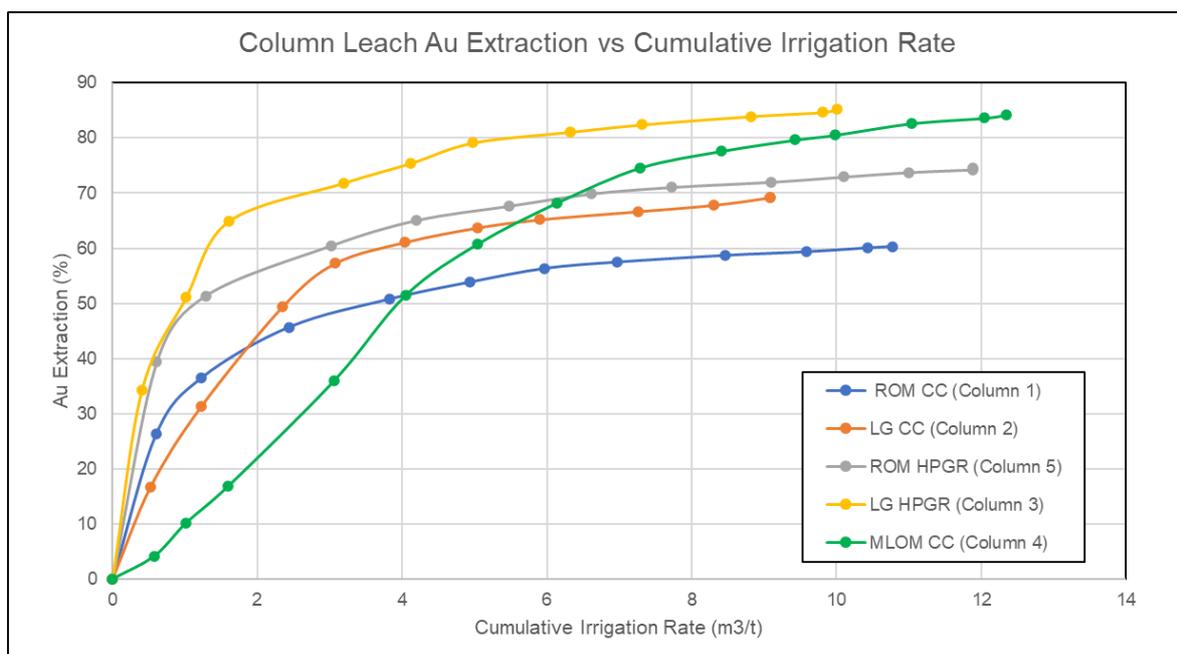
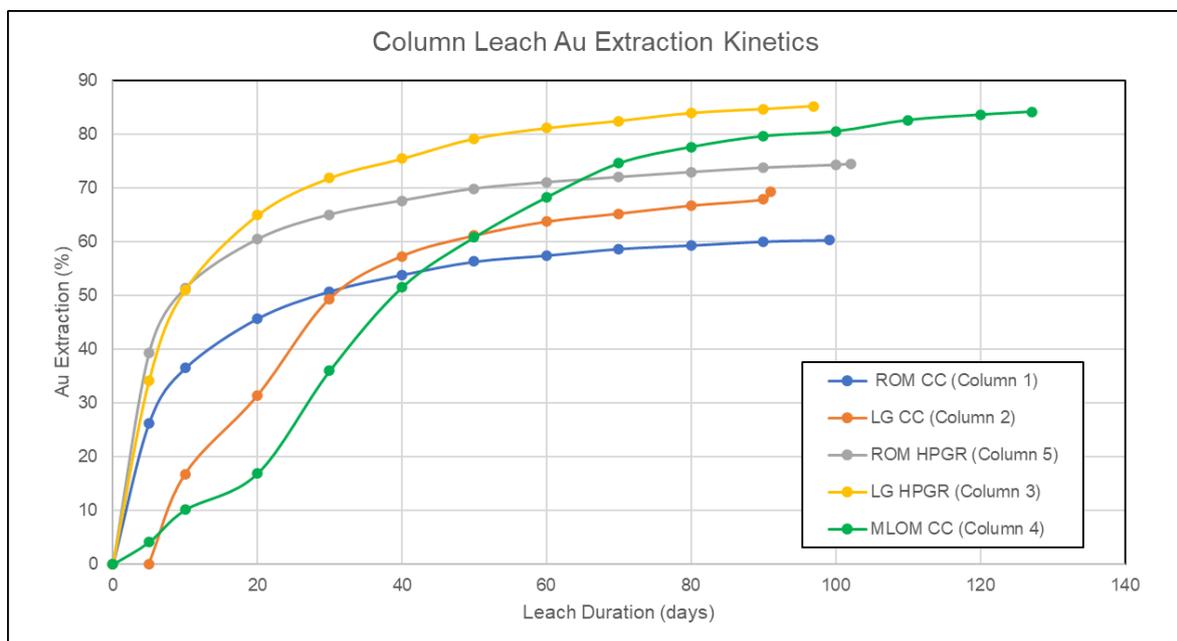
**LG HPGR (Column 3)** Low Grade Column, High Pressure Grinding Roll 8mm P100 Crush Size; 0.27g/t Au Head Grade – 85.2% Final Recovery

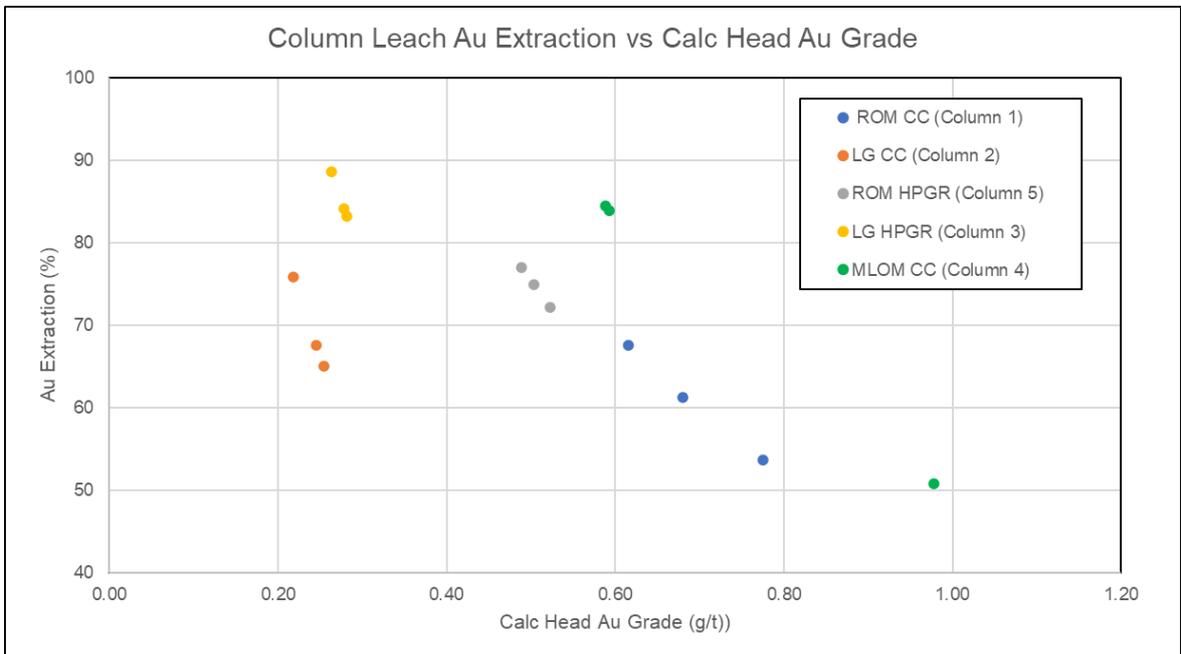
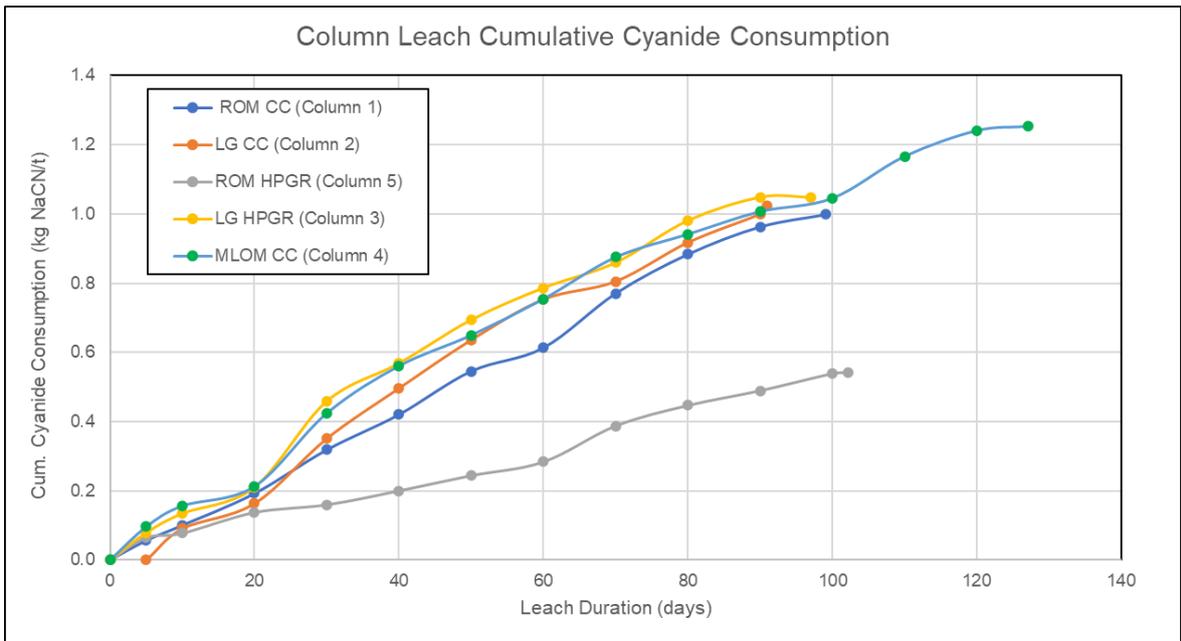
**MLOM CC (Column 4)** Life of Mine Column, Conventional Tertiary Crush 6mm P100 Crush Size; 0.59g/t Au Head Grade – 84.2% Final Recovery

**ROM CC (Column 1)** Run of Mine Column, Conventional Tertiary Crush 8mm P100 Crush Size; 0.69g/t Au Head Grade – 60.3% Final Recovery

**LG CC (Column 2)** Low Grade Column, Conventional Tertiary Crush 8mm P100 Crush Size; 0.24g/t Au Head Grade – 69.2% Final Recovery

\*Residual Average grades calculated by multiple Photon Assay, Size by Size Fire Assay and Screen Fire Assays





## Appendix 2:

### Saturn Metals Project Areas

Apollo Hill (29.15°S and 121.68°E) is located approximately 60km south-east of Leonora in the heart of WA's goldfields region (Figure 1). The deposit and the Apollo Hill project are 100% owned by Saturn and are surrounded by good infrastructure and several significant gold deposits. The Apollo Hill Project has the potential to become a large tonnage, simple metallurgy, low strip open pit mining operation.

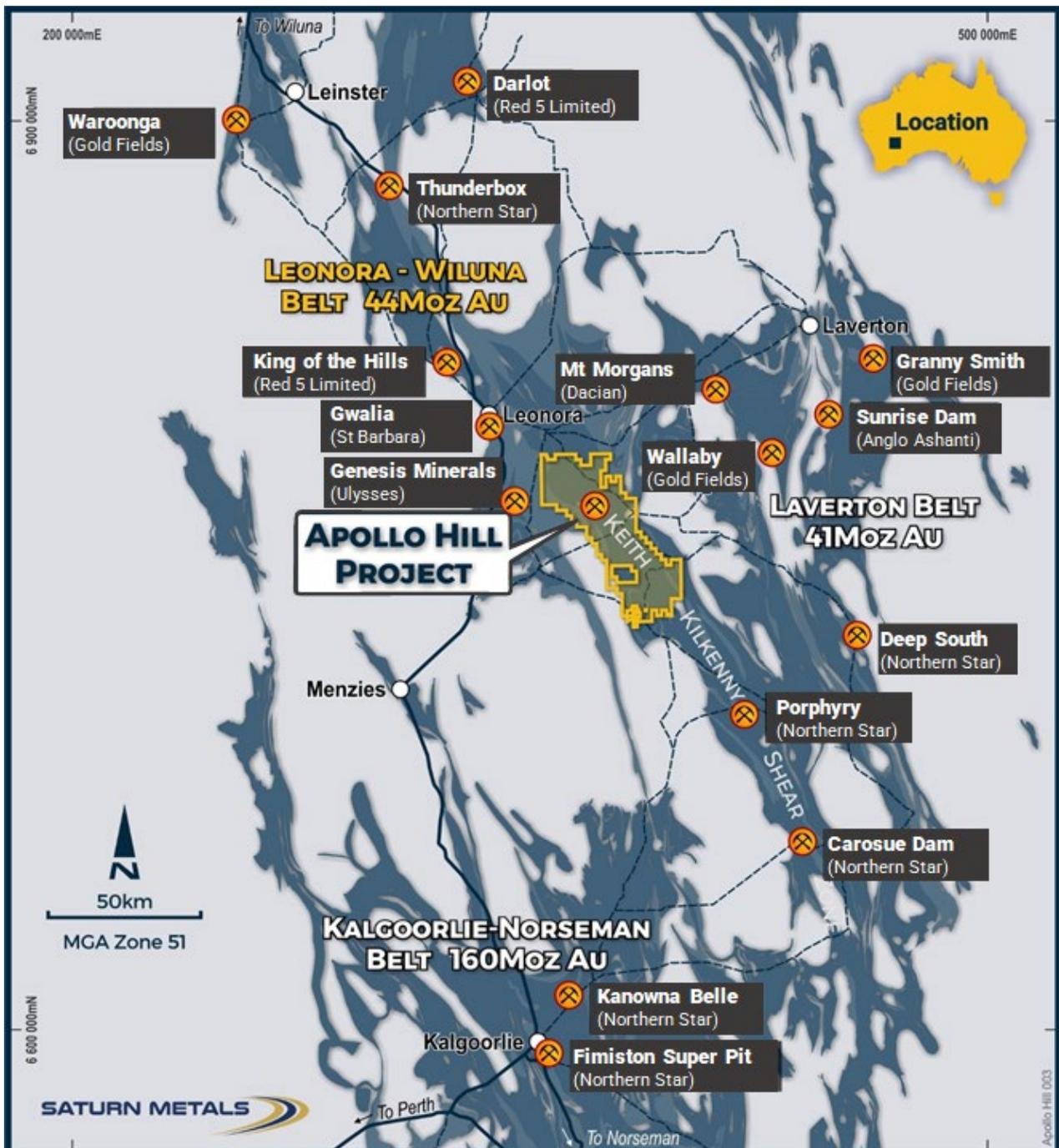


Figure 1 – Apollo Hill location, Saturn Metals' tenements and surrounding gold deposits, gold endowment and infrastructure.

In addition, Saturn has a second quality gold exploration project in Australia. The Company has an option to earn an 85% joint venture interest in the West Wyalong Project (Figure 2), which represents a high-grade vein opportunity on the highly gold prospective Gilmore suture within the famous Lachlan Fold belt of NSW.

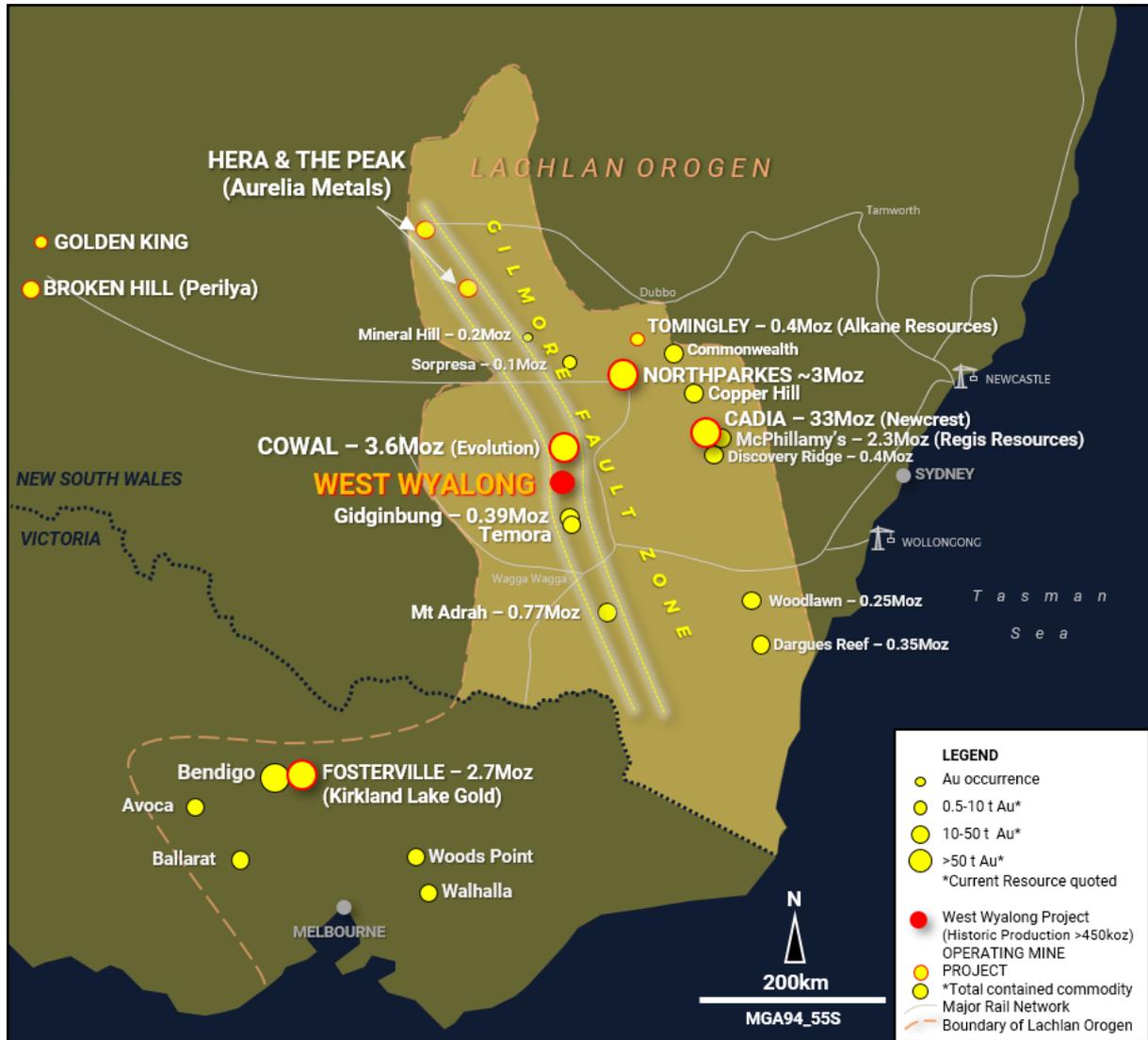


Figure 2 – Regional setting and location of the West Wyalong Gold Project in relation to other gold projects in New South Wales and Victoria (map taken from Saturn ASX announcement on 28 April 2020 where full references are provided).

## Appendix 3:

### JORC Code, 2012 Edition – Table 1 – Apollo Hill Exploration Area

#### Section 1 Sampling Techniques and Data

(Criteria in this section apply to the Apollo Hill, Apollo Hill Hanging-wall and Ra and Tefnut exploration areas all succeeding sections).

Table II Extract of JORC Code 2012 Table 1

Criteria	JORC Code Explanation	Commentary
Sampling techniques	<p>Nature and quality of sampling (e.g. cut channels, random chips, or specific specialized industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.</p> <p>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</p> <p>Aspects of the determination of mineralization that are Material to the Public Report.</p> <p>In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1m samples from which 3 kg was pulverized 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 mineralization types (e.g. submarine nodules) may warrant disclosure of detailed information.</p>	<p>Measures taken to ensure the representivity of RC sampling include close supervision by geologists, use of appropriate sub-sampling methods, routine cleaning of splitters and cyclones, and RC rigs with sufficient capacity to provide generally dry, reasonable recovery samples. Information available to demonstrate sample representivity includes RC sample weights, sample recovery, sample consistency, field duplicates, standards and blanks.</p> <p>RC holes were sampled over 1 m intervals using a cone-splitter mounted to the RC drill rig. RC samples were analyzed ALS in both Kalgoorlie and Perth and SGS in Kalgoorlie. At the laboratories, the samples were oven dried and crushed to 90% passing 2 mm, and pulverized to 95% passing 106 microns, with analysis by 50 g fire assay.</p> <p>RC samples were generally taken at 1 m interval but if composited were composited to 4 m to produce a 3 kg representative sample to be submitted to the laboratory. If the 4 m composite sample was anomalous (Au&gt;0.16 g/t), the original 1 m samples were retrieved and submitted to the laboratory. In general, the expected mineralized zones are all sampled using 1 m intervals.</p> <p>Diamond core was drilled PQ, HQ3 and NQ2 dependent on weathering profile and ground conditions. Where sampled, the core was cut in half using a Corewise diamond saw at the ALS laboratory in Perth, where both half and full core were submitted for analysis.</p> <p>Half and full core samples were taken with a diamond saw, generally on 1 m intervals, dependent on geological boundaries where appropriate (lengths ranging from a minimum 0.3 m to a maximum of 1.2 m). Whole core samples were taken within the zones of mineralization to account for coarse grained nature of the gold.</p> <p>Sampling was undertaken using STN sampling and QAQC procedures in line with industry best practice, which includes the submission of standards, blanks and duplicates at regular intervals within each submission, for RC and Diamond samples.</p> <p>Collection of metallurgical samples from RC samples was undertaken by compositing into appropriate and representative geological, grade range and weathering characteristics across Apollo Hill's geography. Samples were collected from plastic bags and mixed at appropriate weights by grade to achieve the desired sample composition. All samples were riffle split and thoroughly mixed in the field prior to transport to Bureau Veritas in Perth.</p> <p>Collection of metallurgical samples from Diamond drilling was undertaken by compositing of hole core into appropriate and representative geological, grade range and weathering characteristics across Apollo Hill's geography. Diamond core was either composited on site or in some instances at after to transport to Bureau Veritas in Perth.</p>
Drilling techniques	<p>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.).</p>	<p>Reverse Circulation (RC) drilling used either a 4.5 inch or 5.5 inch face-sampling bit.</p> <p>Diamond core was PQ, HQ3 of NQ2 diameter core. All RC and diamond drillholes were surveyed by Gyro, at least every 30 m down hole.</p> <p>All core was oriented using a Reflex orientation tool, which was recorded at the drill site, and all core pieced back together and orientated at the STN core yard at Apollo Hill.</p> <p>For the purpose of this announcement metallurgical samples were collected from largely whole core diamond samples (drilling as described above).</p>

Criteria	JORC Code Explanation	Commentary
Drill sample recovery	<p>Method of recording and assessing core and chip sample recoveries and results assessed.</p> <p>Measures taken to maximise sample recovery and ensure representative nature of the samples.</p> <p>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</p>	<p>RC sample recovery was visually estimated by volume for each 1 m bulk sample bag and recorded digitally in the sample database. Very little variation was observed.</p> <p>Measures taken to maximize recovery for RC drilling included use of face sampling bits and drilling rigs of sufficient capacity to provide generally dry, high recovery samples. RC sample weights indicate an average recovery of 85% to 95% and were dry.</p> <p>The cone splitter was regularly cleaned with compressed air at the completion of each rod.</p> <p>The RC Drilling was completed using auxiliary compressors and boosters to keep the hole dry and ensure the sample was lifted to the sampling equipment as efficiently as possible. The cyclone and cone splitter were kept dry and clean, with the cyclone cleaned after each drillhole and the splitter cleaned after each rod to minimize down-hole or cross-hole contamination. The 3 kg calico bag samples representing 1 m were taken directly from the cyclone and packaged for freight to Kalgoorlie. The calico represents both fine and coarse material from the drill rig.</p> <p>Diamond core recovery was measured and recorded for each drill run. The core was physically measured by tape and recorded for each run. Core recovery was recorded as percentage recovered. All data was loaded into the STN database.</p> <p>Diamond drilling utilized drilling additives and muds to ensure the hole was conditioned to maximize recoveries and sample quality.</p> <p>There was no observable relationship between recovery and grade, or preferential bias between hole-types observed at this stage.</p> <p>There was no significant loss of core reported in the mineralized parts of the diamond drillholes to date.</p> <p>For metallurgical sampling - whole samples were taken across the fines to coarse material size.</p>
Logging	<p>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.</p> <p>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</p> <p>The total length and percentage of the relevant intersections logged.</p>	<p>Drillholes were geologically logged by industry standard methods, including depth, colour, lithology, alteration, sulphide and visible gold mineralization and weathering.</p> <p>RC Chip trays and Diamond Core trays were photographed.</p> <p>The logging is qualitative in nature and of sufficient detail to support the current interpretation.</p>
Sub-sampling techniques and sample preparation	<p>If core, whether cut or sawn and whether quarter, half or all core taken.</p> <p>If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.</p> <p>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</p> <p>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</p> <p>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.</p> <p>Whether sample sizes are appropriate to the grain size of the material being sampled.</p>	<p>RC holes were sampled over 1 m intervals by cone-splitting. RC sampling was closely supervised by field geologists and included appropriate sampling methods, routine cleaning of splitters and cyclones, and rigs with sufficient capacity to provide generally dry, high recovery RC samples. Sample quality monitoring included weighing RC samples and field duplicates.</p> <p>Whole core was sent for assay in logged mineralized zones. Half core was submitted in unmineralized surrounding country rock.</p> <p>Assay samples were crushed to 90% passing 2 mm, and pulverized to 95% passing 75 microns, with fire assay of 50 g sub-samples. Assay quality monitoring included reference standards and inter-laboratory checks assays.</p> <p>Duplicate samples were collected every 20 samples, and certified reference material and blank material was inserted every 40 samples.</p> <p>The project is at an early stage of evaluation and the suitability of sub-sampling methods and sub- sample sizes for all sampling groups has not been comprehensively established. The available data suggests that sampling procedures provide sufficiently representative sub-samples for the current interpretation.</p> <p>For the Metallurgical program discussed in this report, approximately 600m of NQ, HQ and PQ core was composited by weathering profile, geology ore grade from largely hwjhole core samples to maximise the weight of material available for testing and composites were further riffle split down to appropriate sizes for test work – 5kg, 10kg, 15kg, 20kg, 50kg as required.</p>

Criteria	JORC Code Explanation	Commentary
Quality of assay data and laboratory tests	<p>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</p> <p>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.</p> <p>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.</p>	<p>Sampling included field duplicates, blind reference standards, field blanks and inter-laboratory checks to confirm assay precision and accuracy with sufficient confidence for the current results, at a rate of 5%.</p> <p>Samples were submitted to ALS in Kalgoorlie and Perth, Nagrom in Perth, and SGS in Kalgoorlie where they were prepared, processed and analyzed via 50 g charge fire assay.</p> <p>Metallurgical samples were submitted to Bureau Veritas in Perth for assay by Bulk Leach Extractable Gold, screen fire assay, fire assay and Head and Tail Assay verification by fire assay, size by size fire assay, and screen fire assay. Check Photon assays were completed by MinAnalytical in Perth – part of the ALS group.</p>
Verification of sampling and assaying	<p>The verification of significant intersections by either independent or alternative company personnel.</p> <p>The use of twinned holes.</p> <p>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</p> <p>Discuss any adjustment to assay data.</p>	<p>No independent geologists were engaged to verify results. STN project geologists were supervised by the company's Exploration Manager. No adjustments were made to any assays of data.</p> <p>Logs were recorded by field geologists on hard copy sampling sheets which were entered into spreadsheets for merging into a central SQL database.</p> <p>Laboratory assay files were merged directly into the database. The project geologists routinely validate data when loading into the database.</p> <p>The Consultant validated data prior to interpretation and if required asked for check processes to be undertaken.</p>
Location of data points	<p>Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</p> <p>Specification of the grid system used.</p> <p>Quality and adequacy of topographic control.</p>	<p>Collars are initially surveyed by hand-held GPS, utilizing GDA94, Zone 51.</p> <p>Final drillhole collars are all surveyed by DGPS by ABIMS &amp; Goldfield Surveyors.</p> <p>All RC and diamond holes were down-hole surveyed using a gyroscopic survey tool.</p> <p>A topographic triangulation was generated from drillhole collar surveys and the close-spaced (50 m) aeromagnetic data.</p>
Data spacing and distribution	<p>Data spacing for reporting of Exploration Results.</p> <p>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.</p> <p>Whether sample compositing has been applied.</p>	<p>Apollo Hill mineralization has been tested by generally 30 m spaced traverses of south- westerly inclined drillholes towards 225°. Across strike spacing is variable. Material within approximately 50 m of surface has been generally tested by 2 m to 30 m spaced holes, with deeper drilling ranging from locally 20 m to greater than 6 m spacing.</p> <p>The data spacing is sufficient to establish geological and grade continuity.</p> <p>With respect to metallurgical sampling; composites were taken across five distinct geographical areas, five different rock types and three weathering horizons and are thought representative of the greater Apollo Hill gold deposit.</p>
Orientation of data in relation to geological structure	<p>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</p> <p>If the relationship between the drilling orientation and the orientation of key mineralized structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</p>	<p>Mineralized zones dip at an average of around 30° to 60° towards the northeast. Detailed orientations of all short-scale mineralized features have not yet been confidently established. The majority of the drillholes were inclined at around 60° to the southwest.</p>
Sample security	<p>The measures taken to ensure sample security.</p>	<p>Apollo Hill is in an isolated area, with little access by the general public. STN's field and core sampling was supervised by STN geologists and bureau veritas laboratory staff. Sub-samples selected for assaying were collected from core trays into in suitably labelled drums or bags.. These samples were delivered to the metallurgy laboratory by independent couriers, STN employees or contractors.</p> <p>Results of field duplicates, blanks and reference material, and the general consistency of results between sampling phases provide confidence in the general reliability of the drilling data.</p>
Audits or reviews	<p>The results of any audits or reviews of sampling techniques and data.</p>	<p>The Competent Person independently reviewed STN sample quality information and database validity. These reviews included consistency checks within and between database tables and comparison of assay entries with original source records for STN's drilling. These reviews showed no material discrepancies. The Competent Person considers that the Apollo Hill drilling data has been sufficiently verified to provide an adequate basis for the current reporting of exploration results.</p>

Criteria	JORC Code Explanation	Commentary
		The Competent Person has independently reviewed the Metallurgical data and notes no material errors, misrepresentations or discrepancies. The Competent Person considers that the Apollo Hill Metallurgical data as represented in this report has been sufficiently verified to provide an adequate basis for the current reporting of metallurgical results.

## Section 2 Reporting of Exploration Results

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

Criteria	JORC Code Explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings. The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	The Apollo Hill Project lies within Exploration License E39/1198, M31/486 and M39/296. These tenements are wholly owned by Saturn Metals Limited. These tenements, along with certain other tenure, are the subject of a 5% gross over-riding royalty (payable to HHM) on Apollo Hill gold production exceeding 1 Moz. M39/296 is the subject of a \$1/t royalty (payable to a group of parties) on any production. The tenements are in good standing and no known impediments exist.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	Aircore, RC and diamond drilling by previous tenement holders provides around 44% of the estimation dataset. The data is primarily from RC and diamond drilling by Battle Mountain, Apex Minerals, Fimiston Mining, Hampton Hill, Homestake, MPI and Peel Mining.  This metallurgical test work follows on from previous test work completed by Peel Mining, the former owner of the Project. The findings of the work are broadly consistent with Peel Mining's findings.
Geology	Deposit type, geological setting and style of mineralization.	The Apollo Hill project comprises two deposits/trends: the main Apollo Hill deposit in the northwest of the project area, and the smaller Ra-Tefnut Deposits in the south. Gold mineralization is associated with quartz veins and carbonate-pyrite alteration along a steeply north-east dipping contact between felsic rocks to the west, and mafic dominated rocks to the east. The combined mineralized zones extend over a strike length of approximately 2.4 km and have been intersected by drilling to approximately 350 m vertical depth. The depth of complete oxidation averages around 4 m with depth to fresh rock averaging around 21 m.
Drillhole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drillholes: easting and northing of the drillhole collar elevation or RL (Reduced Level – elevation above sea level in metres) of the drillhole collar dip and azimuth of the hole down hole length and interception depth hole length If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	Any relevant information material to the understanding of exploration results has been included within the body of the announcement or as appendices. No information has been excluded.
Data aggregation methods	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated. Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low-grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail. The assumptions used for any reporting of metal equivalent values should be clearly stated.	For exploration data, no top-cuts have been applied. All reported RC and diamond drill assay results have been length weighted (arithmetic length weighting). No metal equivalent values are used for reporting exploration results.

Criteria	JORC Code Explanation	Commentary
Relationship between mineralization widths and intercept lengths	<p>These relationships are particularly important in the reporting of Exploration Results.</p> <p>If the geometry of the mineralization with respect to the drillhole angle is known, its nature should be reported.</p> <p>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').</p>	<p>All drillhole intercepts are measured in downhole meters, with true widths estimated to be about 60% of the down-hole width.</p> <p>The orientation of the drilling has the potential introduce some sampling bias (positive or negative).</p>
Diagrams	<p>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 drillhole collar locations and appropriate sectional views.</p>	<p>Refer to Figures and Tables within the body of the text and in Appendix 1.</p>
Balanced reporting	<p>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.</p>	<p>For any exploration results, all results are reported, no lower cut-off or top-cuts have been applied.</p> <p>All summary metallurgical data is represented in Tables and Graphs in Appendix 1.</p>
Other substantive exploration data	<p>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.</p>	<p>There is no other substantive exploration data.</p>
Further work	<p>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</p> <p>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</p>	<p>Although not yet planned by STN in detail, it is anticipated that further work will include infill and step out drilling. This work will be designed to improve confidence in and test potential extensions to the current resource estimates.</p> <p>Further metallurgical work is discussed in the main body of the report but will also include additional/repeat column leach testwork on other minor material types within the Apollo Hill Mineral Resource. Larger scale metallurgical testwork including large diameter columns and trial heap leach pads are being considered.</p>