ASX Announcement
6 December 2022

Halloysite Identified from Surface at Tammin Project

HIGHLIGHTS

- **Halloysite nanotubes identified in surface sample from "kaolin dam" at the Tammin Project**
- **Bright white kaolin surface sample TAM001 with ISO brightness of 82.75**
- **Scanning electron microscopy (SEM) analysis undertaken by Microanalysis Australia has identified halloysite in a representative sample from surface sample TAM001**
- **Further analysis underway to identify presence of rare earth elements (REEs)**

Pinnacle Minerals Ltd (ASX: **PIM**) (**Pinnacle**, the **Company**) is pleased to announce that the Company has identified halloysite nanotubes (Figure 1) in the initial surface sample from a "kaolin dam" at the Tammin Project ("**Project**"). The Company is currently undertaking preliminary exploration activities and target generation led by both field observations and geophysics to ensure that once granted, Pinnacle can add value to the Project immediately with a cost-effective and targeted drill campaign.

The Company believes that the presence of halloysite from surface indicates the potential for a halloysite dominant mineralised zone in the vicinity of the sample location, with follow up exploration post granting of tenure and securing surface rights to endeavour to zero in on any such mineralisation.

Halloysite is a rare form of Kaolin formed by hydrothermal adjustment of alumino-silicate minerals, and naturally occurs as nanotubes, the properties of which lend itself to uses in both high-grade porcelain and high-tech applications. For these reasons, halloysite-kaolin attracts a significant premium in the market compared to typical kaolin prices.

Halloysite Nanotube Technology (HNT) is a burgeoning field of study with new applications creating a demand for this rare material, with specialist applications including usage in hydrogen storage, water purification, carbon capture and Li-ion batteries.

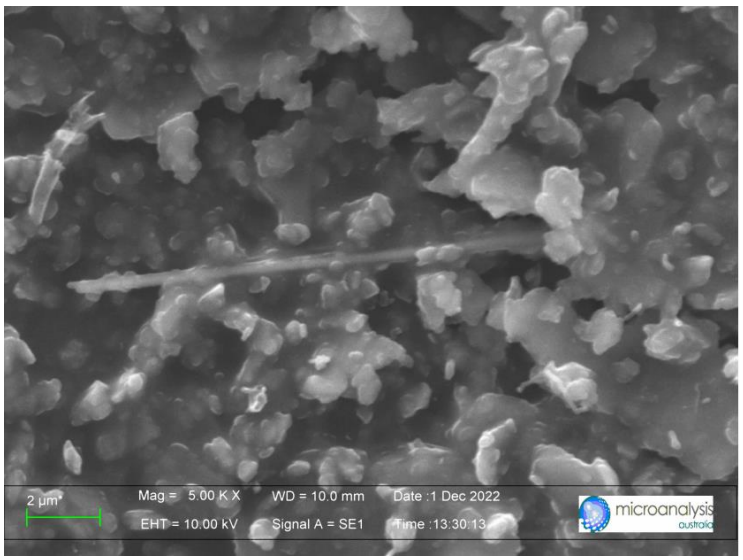

Figure 1: Halloysite nanotube identified in TAM001

> **Pinnacle Minerals Managing Director, Nic Matich, commented:**
>
> **"Identifying halloysite nanotubes in the first surface sample taken from the Tammin Project is a fantastic result for the Company and one which sets the tone for the Project moving forward. Located close to Perth with ready access to infrastructure including both rail and a major highway which run through the Project area, we are eagerly awaiting further assay results from the Project and look forward to updating shareholders".**

The Tammin Project has many logistical advantages over similar kaolin projects being closer to a deep-water port and having both a highway and rail line running through it. Land access agreements are currently being negotiated pending granting of the tenements, with the Company optimistic about achieving a positive outcome for all parties concerned.

Figure 2: TAM001 sampling location

Table 1: ISO brightness results

Sample ID	Easting	Northing	ISO Brightness
TAM001	117.60911459	-31.69802355	82.75

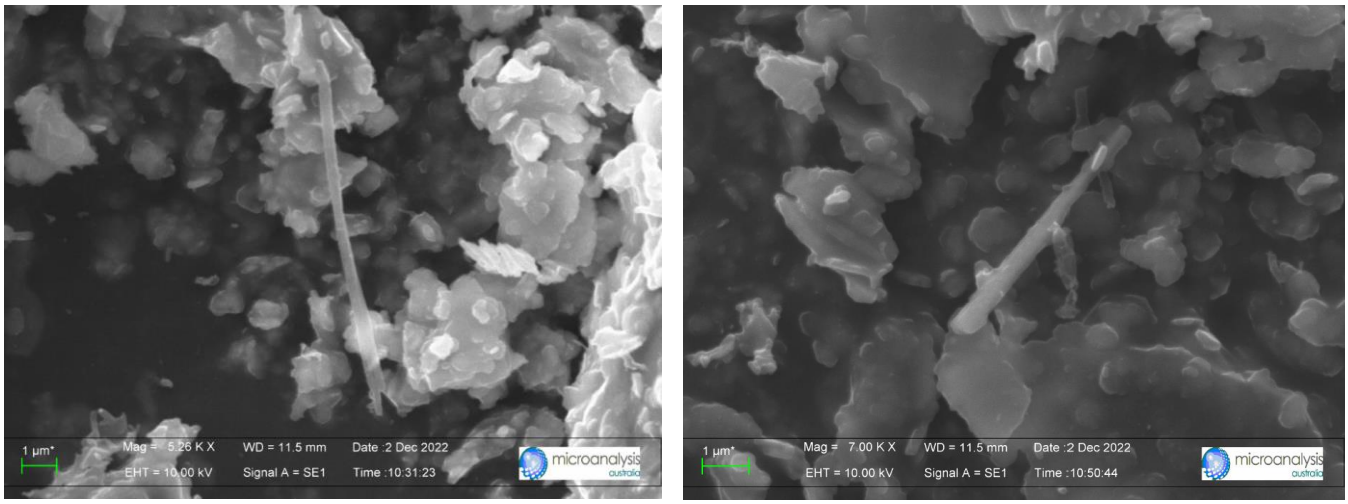

Figure 3: Additional Halloysite nanotubes identified in TAM001

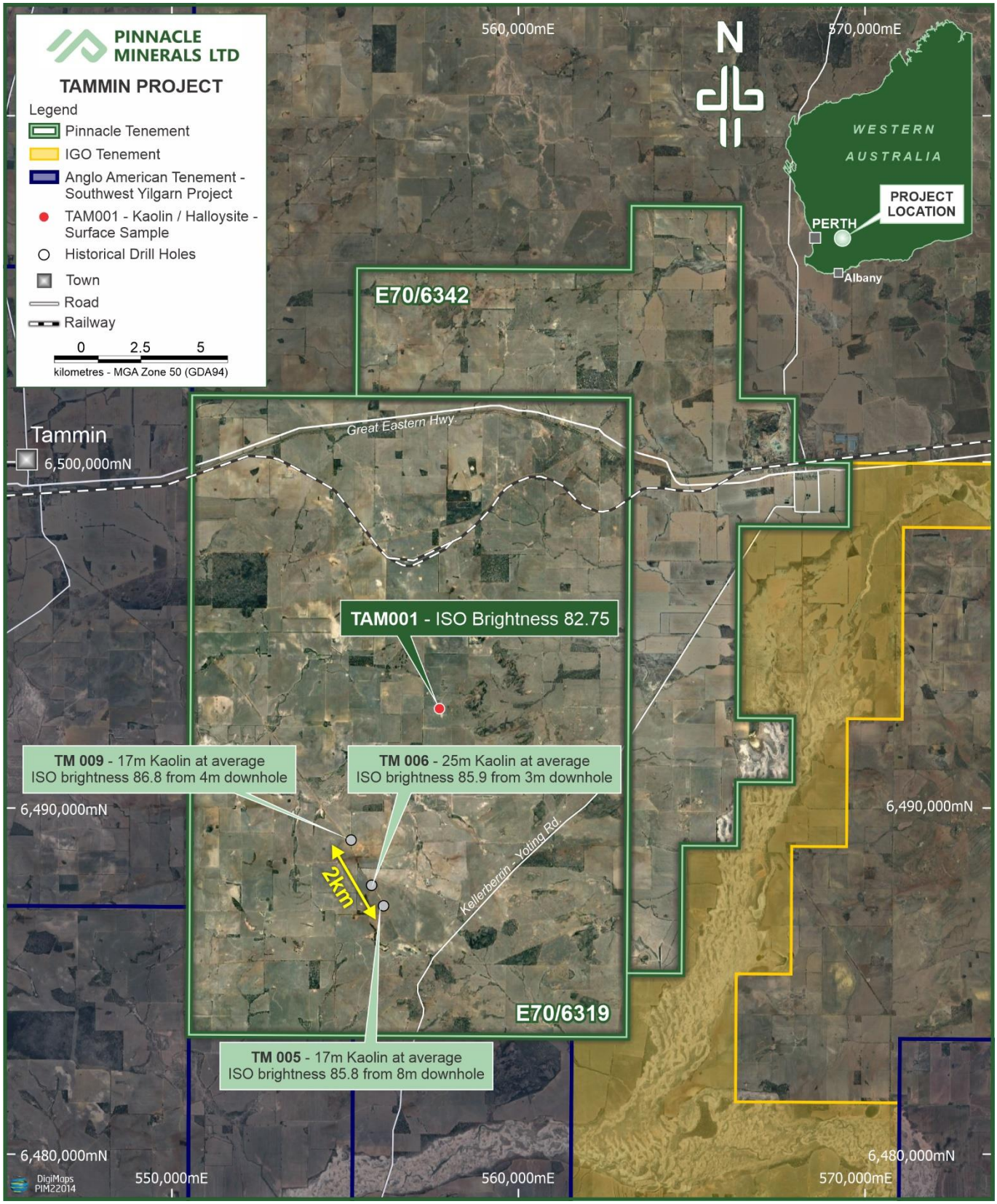

Figure 4: "Southwest" Project Map highlighting the proximity of the project to infrastructure

This announcement has been authorised for release by the Board of Pinnacle Minerals Ltd.

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About Pinnacle Minerals

Pinnacle Minerals Ltd (ASX: PIM) is an ASX listed technology metals company focused on delivering shareholder value via the systematic exploration and development of its portfolio of kaolin, halloysite, magnetite and battery metals prospective projects in Western Australia and South Australia. The Company is focused on delineating resources at its advanced Bobalong and Holly Kaolin Projects in the Great Southern region of Western Australia whilst simultaneously expanding its' project portfolio through targeted acquisition of prospective ground. Drilling and a scoping study have been completed at Bobalong, with results indicating the potential for a high value direct shipping ore (DSO) product. The White Knight and Camel Lake Projects are strategically located adjacent to Andromeda Metals' (ASX: ADN) high-grade kaolin-halloysite discoveries in South Australia. The newly acquired Latham and Tammin projects are adjacent to Chalice Gold Mines (ASX: CHN) Mid-West Project and Anglo Americans' (Lon: AAL) Southwest Yilgarn Exploration Project respectively, which have multi-element exploration potential.

Competent person statement

The information in this announcement that relates to Exploration Targets, Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by William Witham, a Competent Person who is a Member of The Australian Institute of Geoscientists (AIG). William Witham is a director of Pinnacle Minerals Ltd. William Witham 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'. William Witham consents to the inclusion in the presentation of the matters based on his information in the form and context in which it appears

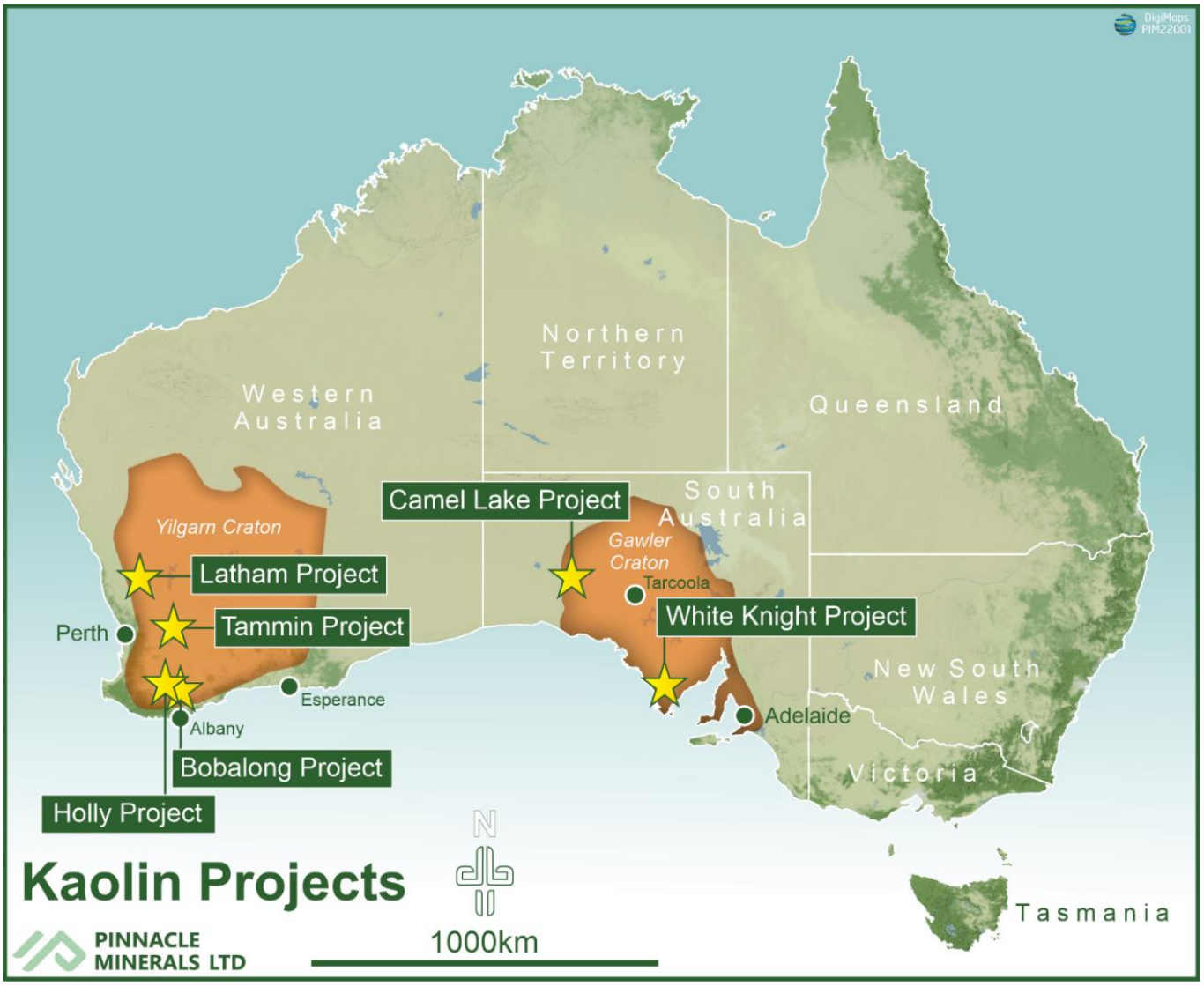

Figure 5: Pinnacle Minerals Projects' Location Map

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PINNACLE MINERALS LTD

JORC Tables

Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (e.g., cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *In cases where 'industry standard' work has been done this would be relatively simple (e.g., 'reverse circulation drilling was used to obtain 1m 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.*	• An approximate 5kg "soil" sample was taken from the side of a man-made dam constructed from in-situ material • The top 10cm of surface material was removed to expose material not effected by windblown debris • The sample was collected in a large plastic bag
Drilling techniques	• *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.).*	• No drilling reported
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• N/A
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	• Brief infield geological comments on soil sample • The descriptions are considered quantitative in nature
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc., and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• A 100g representative sample of raw material was mixed with water multiple time and stirred until the water could be decanted with the ultrafine material • The decanted liquor was then placed in aluminium trays and heated to approximately 70degC for 12 hours. • The dried sample was then placed in a small plastic bag for submission to the laboratory • Sample method is appropriate for Kaolin which has minimal variation across a small distance • ISO BRIGHTNESS - The

Criteria	JORC Code explanation	Commentary
		sample was sieved at 45 µm with the undersize lightly ground in a mortar and pestle, then the sample was packed into a test holder a back pressing kit to provide a flat, blemish free test surface • SEM Analysis – A representative sub-sample was sieved at 45 µm and the undersize dried at 50degC before being placed om top of a double sized carbon tab and carbon coated.
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (e.g., standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e., lack of bias) and precision have been established.*	• ISO Brightness – The instrument (Elrepho 2000 Datacolour) was calibrated against a barium sulphate standard prior to analysis. Two pulsed xenon lamps were used to simulate the D65 standard illuminant and colour data computed by CIE 194 Supplementary Standard Observer (10°). The sample was diffusely illuminated and viewed at an angle of 0°) • SEM – No calibration standards (standardless quant) were used in the EDS detector standardisation prior to analysis
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• Microanalysis personnel were independent and sample protocol was supervised by Sandy Lam
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• Collars were analysed by handheld GPS to ~5m accuracy in XY.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing, and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	• Single sample
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• Surface sample

Criteria	JORC Code explanation	Commentary
Sample security	• *The measures taken to ensure sample security.*	• Samples were under the supervision of Pinnacle MD Nic Matich at all times up until delivery to Microanalysis
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• No independent audits or reviews of sampling techniques and data has been conducted.

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.*	• Tenure covered by Pinnacle Application (E70/6319).
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Previous exploration was undertaken by Swan River Kaolin Pty Ltd on previous tenement E70/2357 in 2004 and 2006 for a total of 41 AC drill holes totalling 958 metres. The campaigns identified thick kaolin intercepts (in excess of 10m) in over 177 holes.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The Kaolin mineralisation is assumed to be a function of weathering of granite

Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:*
	  ○ *easting and northing of the drill hole collar*
	  ○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar*
	  ○ *dip and azimuth of the hole*
	  ○ *down hole length and interception depth*
	  ○ *hole length.*
	• *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*
		• N/A

Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g., cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low-grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• N/A
Relationship between	• *These relationships are particularly important in the reporting of Exploration Results.*	• N/A

Criteria	JORC Code explanation	Commentary
mineralisation widths and intercept lengths	• *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g., 'down hole length, true width not known').*	
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• See table, map, photos and diagrams in this announcement
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• N/A
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• All information has been provided as available
Further work	• *The nature and scale of planned further work (e.g., tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• The Company intends to follow up with auger or AC drilling and metallurgical test work