

# Elevated Rare Earth Oxides Returned from Downhole Rock Chips

# HIGHLIGHTS

- Drillhole targeting elevated nickel geochemical results has intercepted apatite rich "chlorite apatite hornblende rocks"<sup>1</sup> at Tambellup East (now called the "Disruptor Prospect")
  - Allanite within rock chip TAM008-RC-B contained 20.3% TREO's<sup>2</sup> (La/Ce/Pr/Nd)<sup>1</sup>
  - Bottom of hole (40m) rock chips returned elevated TREO's (TAM008/TB050)
    - 626ppm TREO TAM008-RC-B
    - 589ppm TREO TAM008-RC-A
    - 29.4% average Magnet Rare Earth Oxides (MREO)<sup>3</sup>
  - Elevated apatite content is characteristic of carbonatites
  - Potential for both hard rock and clay hosted REE mineralisation
- The "Disruptor Prospect" elevated to a priority target for immediate drilling
- Additional 182.2 km<sup>2</sup> of tenure under application overlying 12km of prospective dyke intercepted in the recent drilling program
- Multiple parallel dykes within Pinnacle's Tambellup East project area
- Pinnacle's Great Southern Project(s) flanked by Chalice Mining (ASX:CHN) and Fortescue Metals Group (ASX:FMG)

Pinnacle Minerals Ltd (ASX: **PIM**) ("**Pinnacle**", the "**Company**") is pleased to announce that rock chips returning elevated rare earth oxides were intercepted in the bottom of Hole TAM008 / TB050 during the recently completed Tambellup East drilling campaign.

TAM008 was drilled to test historical elevated nickel geochemical results<sup>4</sup>. The rock chip(s) (Figure 2) were categorised by respected Mineralogist Dr. Roger Townend<sup>1</sup> as an apatite rich "chlorite apatite hornblende rock" (Table 3) with the level of apatite in the rock being characteristic of carbonatites. It is noted that there are examples of carbonatites, e.g., Tapir in Brazil, where carbonate (calcite) forms only 3% of the complex and 80% is pyroxenite. The latter usually contains > 5% apatite.

Four rock chips from the bottom (40m) of hole TAM008, sent for multi-element assay returned a maximum value of **626.3ppm TREO**, which given the geochemistry of the rock and the overlaying clay regolith opens the potential for both hard rock and clay hosted rare earth deposits.

Based upon these outstanding results the board has approved an immediate follow up, targeted reverse circulation (RC) drilling program to further test the Disruptor Prospect (Figure 1). POW's have been applied for and are awaiting approval.

#### Pinnacle Minerals Managing Director, Nic Matich, commented:

Having only scratched the surface of this unique prospect, the team at Pinnacle is excited about returning to conduct follow up drilling to thoroughly test for mineralisation at depth with the aim defining zones more enriched with rare earth oxides and testing the extent of any clay hosted REE mineralisation.

**Pinnacle Minerals Ltd** ACN: 655 033 677 ASX: **PIM**  **Issued Capital** 36,375,200 Shares

36,375,200 Shares 29,937,634 Options

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#### Directors

WILLIAM WITHAM – Non-Executive Chairman NIC MATICH – Managing Director LINCOLN LIU – Non-Executive Director STEPHEN ROSS – Non-Executive Director



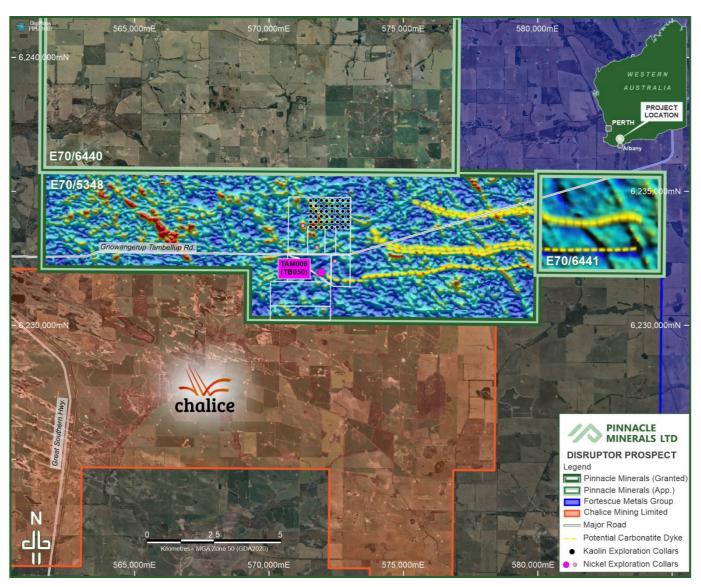


Figure 1: Disruptor Prospect highlighting potential carbonatite dyke and parallel structures within the project area

The Company has strategically applied for an additional 182.2km<sup>2</sup> of tenure (Figure 3) located to the north and east, along trend from the dyke intersected during the drilling program. The entire project area contains numerous east/west trending dykes which are structurally and geologically similar to those with-in the "Disruptor Prospect" (Figure 1).

The clays intercepted during the program are being shipped to Katanning. A review of the chip trays has resulted in several holes being selected for initial meter-bymeter assays for rare earth elements (REE's).



Figure 2: Example of potential carbonatite (TAM008-RC-B)



#### **The Disruptor Prospect**

The "Disruptor Prospect" ("Prospect") is 12.5km east of Tambellup and 120km North from the Deepwater Port of Albany. Located on freehold land, the prospect is readily accessible all year round via the sealed Gnowangerup-Tambellup Rd.

Prior to being sent for assay, rock chip TAM008-RC-B was sent to Diamantina Laboratories for mineralogical assessment by Dr. Roger Townend with the rock chip being identified as a **"chlorite apatite hornblende rock"** with characteristics of a carbonatite. It is noted that there are examples of carbonatites, e.g., Tapir in Brazil, where carbonate (calcite) forms only 3% of the complex and 80% is pyroxenite. The latter usually contains > 5% apatite.

The prospect lies on the intersection of an East/West trending dyke and a large NE/SW trending transtensional fault zone. The potential carbonatite was intersected 40m from surface on what is interpreted to be the East/West trending dyke. The overlying clay regolith has the potential to host rare earth element (REE) mineralisation from the weathering of the basement material which contains allanite, a mineral extremely rich in rare earth elements. Scanning Electron Microscope (SEM) and Energy Dispersive Spectroscopy results highlight the allanite in rock chip TAM008-RC-B contains **20.3% TREO's** (Table 2).

Four rock chips intercepted in the bottom of hole TAM008 were analysed at Lab West for 64 elements, including rare earth elements which are presented in Table 1. The average "magnet rare earth oxides" ( $Pr_6O_{11}$ ,  $Nd_2O_3$ ,  $Tb_4O_7$ ,  $Dy_2O_3$ ) ratio of these four rock chips is **29.4%** which compares favourably to peers.

Follow up targeted RC drilling has been approved by the board and the market will be kept updated as this exciting prospect is developed further.

OXIDES - PPM	TAM008-RC-A	TAM008-RC-B	TAM008-RC-C	TAM008-RC-D
CeO <sub>2</sub>	187.95	223.57	183.03	195.32
Dy <sub>2</sub> O <sub>3</sub>	15.38	12.85	13.77	14.58
Er <sub>2</sub> O <sub>3</sub>	6.48	5.34	5.85	6.13
Eu <sub>2</sub> O <sub>3</sub>	7.03	6.51	6.26	6.45
Gd <sub>2</sub> O <sub>3</sub>	24.67	21.78	22.48	23.17
Ho <sub>2</sub> O <sub>3</sub>	2.67	2.20	2.36	2.49
La <sub>2</sub> O <sub>3</sub>	73.77	93.82	70.84	71.19
Lu <sub>2</sub> O <sub>3</sub>	0.53	0.43	0.47	0.52
Nd <sub>2</sub> O <sub>3</sub>	130.64	132.97	120.14	121.31
Pr <sub>6</sub> O <sub>11</sub>	29.00	31.29	27.43	27.79
Sm <sub>2</sub> O <sub>3</sub>	29.34	27.37	27.02	27.83
Tb4O7	3.20	2.76	2.89	3.05
Tm <sub>2</sub> O <sub>3</sub>	0.78	0.63	0.70	0.75
Y <sub>2</sub> O <sub>3</sub>	73.15	61.46	66.42	69.46
Yb <sub>2</sub> O <sub>3</sub>	4.07	3.31	3.63	3.95
MREO %	30.3%	28.7%	29.7%	29.0%
TREO - PPM	588.6	626.3	553.3	574.0

#### Table 1: TREO assay results from rock chips A-D (half sections) – Magnet Rare Earth Oxides Highlighted



Table 2: SEM/EDS analysis	s - TAM008-RC-B
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Weight - %	Hornblende	Apatite	Allanite	Chlorite
Na <sub>2</sub> O	2.1	-	-	-
MgO	14.4	-	1.0	23.0
Al <sub>2</sub> O <sub>3</sub>	13.8	-	19.6	19.6
SiO <sub>2</sub>	39.4	-	29.1	31.7
K <sub>2</sub> O	1.4	-	-	-
CaO	13.2	60.0	16	-
P <sub>2</sub> O <sub>5</sub>	-	36.2	-	-
TiO <sub>2</sub>	3.0	-	14	-
FeO	13.8	-	-	25.6
Cl	0.2	1	-	-
SrO	-	0.35	-	-
F	-	2.3	-	-
La <sub>2</sub> O <sub>3</sub>	-	-	6.3	-
Ce <sub>2</sub> O <sub>3</sub>	-	-	10.5	-
Pr <sub>2</sub> O <sub>3</sub>	-	-	0.8	-
Nd <sub>2</sub> O <sub>3</sub>	-	-	2.7	-
TREO %	-	-	29.4%	-

### Table 3: Rock chip TAM008-RC-B classification

Mineral	ТАМ008-RC-B
Hornblende	Dominant
Apatite	Minor
Chlorite/Titanite	Minor
Epidote	Accessory
Titanite / Titanium Oxide	Accessory
Allanite	Trace
Zircon	Trace



#### **Great Southern Project(s) Expansion**

Having potentially redefined the geological interpretation of the region, Pinnacle strategically applied for an additional 182.2km<sup>2</sup> of tenure in the region (Figure 2). Pinnacles' extensive tenement package now totals 664km<sup>2</sup> over the highly prospective suture zone between the Yilgarn Craton and the Albany Fraser Oregon which is being actively explored by Chalice Mining Ltd (ASX:CHN) and Fortescue Metals Group Ltd (ASX:FMG).

Pinnacle now has under application and holds a commanding tenement package in what could potentially be a newly defined REE "province".

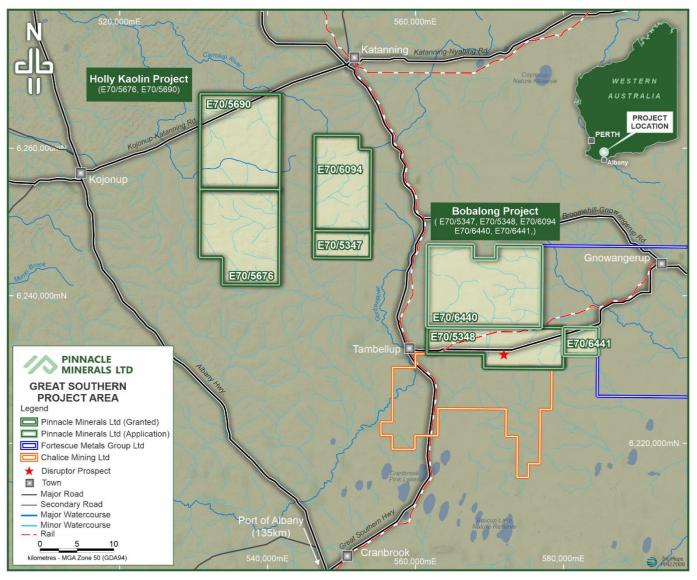


Figure 3: Pinnacle Minerals - Great Southern Project(s)



#### **Tambellup East Drilling Program**

The Company has finalised the Tambellup East drilling program having completed 53 holes for a total of 1,144m (Figure 4). The program was conducted across a large 1.8km<sup>2</sup> area that has several bright white "kaolin" dams. In addition to targeting shallow kaolinite mineralisation, several elevated nickel geochemical results previously identified by Falcon Minerals in 2008 were drill tested.

Kaolinitic clay was intercepted in numerous holes, Figure 5 is an example from collar TB008 / TAM0045). The pending review of the mineralisation will guide further work targeting kaolin on the project.

The basement was reached on all holes, ensuring that assays of the lower saprolite and saprock could be taken. All but one drill hole intersected granite basement material with TB050 / TAM008 intersecting a potential carbonatite at 40m (bottom of hole) where historical elevated nickel geochemical soil results were being tested. The Aircore (AC) rig was not able to penetrate the basement rock and a reverse circulation (RC) rig is to be utilised in the upcoming drilling campaign to test the exciting "Disruptor Prospect".

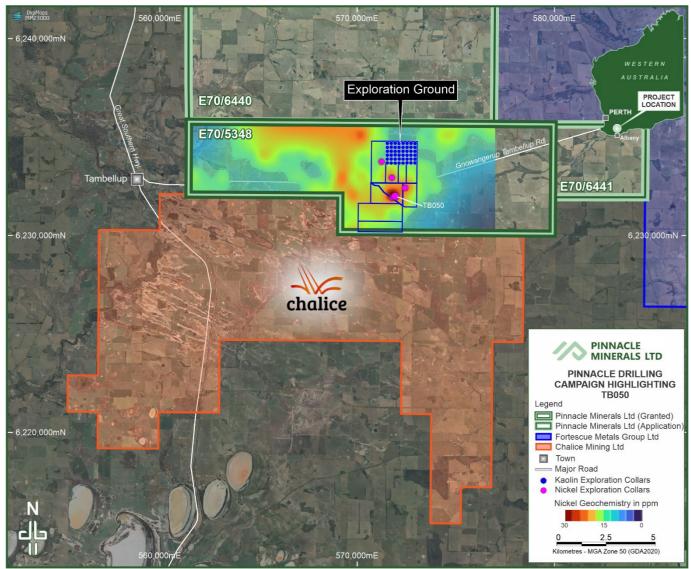
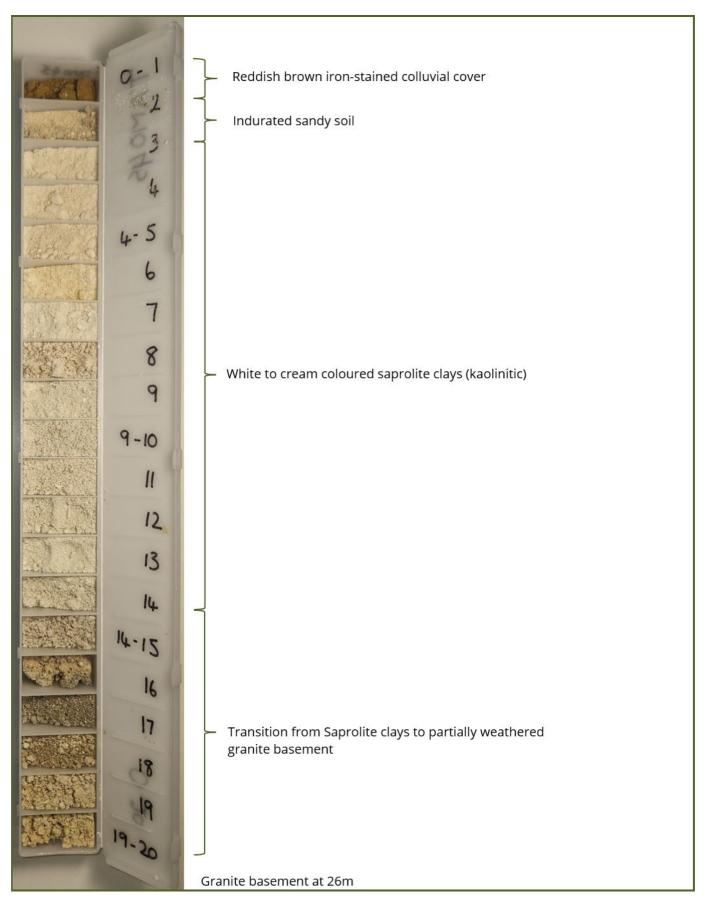


Figure 4: Tambellup East Drilling Campaign (2023)









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 minerals company focused on delivering shareholder value via the systematic exploration and development of its portfolio of kaolin, halloysite, battery metals and Heavy Mineral Sands prospective projects in Western Australia and South Australia. The Company is focused on delineating resources at its 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 recently granted Latham and Tammin projects are adjacent to Chalice Mining Ltd (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.

#### References

1 – Diamantina Laboratories Report Reference 24677, Dr Roger Townend

2 – Total Rare Earths Oxides (TREO) is the sum of the oxides of the light rare earth elements lanthanum (la), cerium (Ce), praseodymium (Pr), neodymium (Nd), and samarium (Sm) and the heavy rare earth elements europium (Eu), gadolinium (Gd), terbium (Tb), dysprosium (Dy), holmium (Ho), erbium (Er), thulium (Tm), ytterbium (Yb), lutetium (Lu), and yttrium (Y).

2 – Magnet Rare Earths Oxides (MREO) is the sum of the oxides of praseodymium (Pr), neodymium (Nd), terbium (Tb), and dysprosium (Dy)

3 – Pinnacle Minerals ASX Announcement 17th March 2023



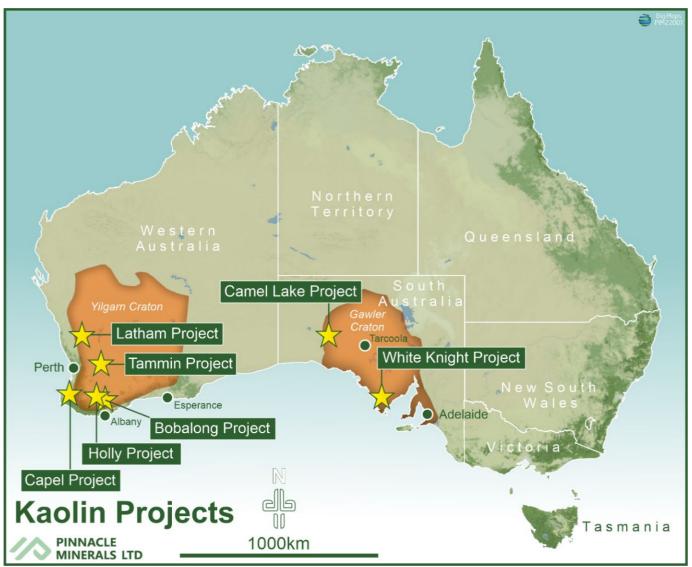


Figure 6: Pinnacle Minerals Projects' Location Map



#### **Appendix 1 Collar Summary**

Hole ID	Easting	Northing	RL	EOH	Din	AZI
	(GDA2020 Zone 50)	(GDA2020 Zone 50)	(m)	(m)	Dip	AZI
TB001	571536.1	6234666	305.8	14	-90	360
TB002	571734.8	6234669	307.8	34	-90	360
TB003	571936	6234671	309.6	27	-90	360
TB004	572133.2	6234661	311.1	21	-90	360
TB005	572337.5	6234670	309.1	15	-90	360
TB006	572534.4	6234667	305.8	28	-90	360
TB007	572737.4	6234667	301.6	33	-90	360
TB008	572935.5	6234659	297.8	26	-90	360
TB009	571539.8	6234462	306.5	17	-90	360
TB010	571738.6	6234470	308.5	13	-90	360
TB011	571934.6	6234461	310.9	18	-90	360
TB012	572130.6	6234463	311.4	18	-90	360
TB013	572332.2	6234462	310.1	19	-90	360
TB014	572535	6234465	305.5	18	-90	360
TB015	572733.7	6234467	301.0	14	-90	360
TB016	572934.1	6234461	296.6	16	-90	360
TB017	571539.7	6234263	305.6	19	-90	360
TB018	571733.9	6234262	308.1	13	-90	360
TB019	571932.3	6234260	307.1	20	-90	360
TB020	572126.2	6234260	306.5	19	-90	360
TB021	572332.8	6234265	306.2	10	-90	360
TB022	572532.1	6234263	303.0	23	-90	360
TB023	572733	6234263	299.2	27	-90	360
TB024	572934.8	6234260	295.8	16	-90	360
TB025	571538.8	6234064	304.3	22	-90	360
TB026	571732.4	6234064	306.0	15	-90	360
TB027	571935.3	6234076	304.3	14	-90	360
TB028	572134.3	6234065	302.0	12	-90	360
TB029	572333.8	6234064	301.7	19	-90	360
TB030	572534.1	6234063	298.3	22	-90	360
TB031	572732.3	6234065	295.3	30	-90	360
TB032	572933.9	6234063	293.5	21	-90	360
TB033	571533.6	6233866	301.3	37	-90	360
TB034	571733.9	6233865	302.6	28	-90	360
TB035	571933	6233860	300.5	6	-90	360
TB036	572141	6233867	299.0	19	-90	360
TB037	572335.2	6233865	298.0	25	-90	360
TB038	572536.9	6233863	295.5	17	-90	360
TB039	572732	6233865	292.9	34	-90	360
TB040	572935.6	6233864	291.9	16	-90	360
TB041	571532.4	6233671	297.7	18	-90	360
TB042	571732.9	6233663	297.3	23	-90	360
TB043	571937.2	6233661	297.2	14	-90	360
TB044	572131	6233662	296.3	22	-90	360



Hole ID	Easting (GDA2020 Zone 50)	Northing (GDA2020 Zone 50)	RL (m)	EOH (m)	Dip	AZI
TB045	572331	6233662	294.4	29	-90	360
TB046	572534.4	6233675	292.5	26	-90	360
TB047	572731.1	6233672	291.4	25	-90	360
TB048	572933	6233670	291.0	12	-90	360
TB049	571771.8	6232916	286.0	29	-90	360
TB050	571937	6231979	280.1	41	-90	360
TB051	572437.9	6232398	282.6	40	-90	360
TB052	571248.7	6233728	297.2	12	-90	360
TB053	571796.4	6231894	279.5	38	-90	360



#### **Appendix 2 JORC Tables**

#### Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <li>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.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>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.</li> </ul>	<ul> <li>Aircore drilling was used to obtain samples for analysis at 1m intervals</li> <li>Each sample was homogenized within the sample bag by rotating the sample bag</li> <li>The aircore drill samples have an average range between 6 kg and 9 kg</li> <li>Meter by meter ~2kg samples taken using a small scoop</li> <li>Chip trays were used to store meter by meter samples</li> </ul>
Drilling techniques	<ul> <li>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.).</li> </ul>	<ul> <li>Aircore drilling with inner tubes for sample return was used</li> <li>Aircore is considered a standard industry technique for kaolin mineralisation. Aircore drilling is a form of reverse circulation drilling where the sample is collected at the face and returned inside the inner tube</li> <li>Aircore drill rods used were 3 m long</li> <li>NQ diameter (76mm) drill bits and rods were used</li> <li>All drill holes were vertical</li> </ul>
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>	<ul> <li>A sampling foot was utilised to ensure sample transferred direct to plastic container.</li> <li>Samples were not weighed.</li> <li>At the end of each drill rod, the drill string is cleaned by blowing down with air/water to remove any clay and silt potentially built up in the sample hose</li> <li>At the end of each hole the cyclone is inspected for material build up and cleanliness (for potential</li> </ul>



Criteria	JORC Code explanation	Commentary
		<ul> <li>contamination)</li> <li>The twin-tube aircore drilling technique is known to provide high quality samples from the face of the drill hole</li> <li>Kaolin is a bulk commodity so minimal variation is expected on meter-by-meter basis of sampling</li> </ul>
Logging	<ul> <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> <li>The aircore samples were each qualitatively logged using a field laptop (Toughbook) and entered into a custom program in excel</li> <li>The aircore samples were logged for lithology, colour, grainsize, sorting, estimated quartz%, and any relevant comments</li> <li>Every drill hole was logged in full, with detailed logging based on a small sample of sample taken from the split sample to improve representivity</li> <li>Logging is undertaken with reference to a Drilling Guideline with codes prescribed and guidance on description to ensure consistent and systematic data collection</li> </ul>
Sub-sampling techniques and sample preparation	<ul> <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 sub-sampling 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> <li>Samples were taken dry and moist. When wet the hole was terminated as quality became poor</li> <li>Sample method is appropriate for Kaolin which has minimal variation on a meter-by-meter basis</li> <li>Field Duplicates were taken every 50 samples to provide precision of sampling method. Method was a second scoop sample of the bulk meter sample</li> <li>The AC drill sample collected at the source was split down to 1.5 to 2.5 kg using a small</li> </ul>



Criteria	JORC Code explanation	Commen	tary	
		<ul> <li>picke mate</li> <li>The s is contechn</li> <li>The s deem captu based of the consu staff</li> <li>Field samp</li> </ul>	dual rock chip d from the full rial ample size and sidered an ap ique for kaolir ample sizes we red suitable to rre kaolin chard d on industry e geologists inv ultation with la duplicates of t les were comp ency of 1 per 5	meter of d process propriate reliably acteristics, xperience volved and boratory he
Quality of assay data and laboratory tests	<ul> <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>	was o elem been oxide the ir TREO + Nd Gd2O Ho2O Yb2O	<ul> <li>Rare earth element analysis was originally reported in elemental form but have been converted to relevant oxide concentrations as per the industry standard: TREO = La<sub>2</sub>O<sub>3</sub> + CeO<sub>2</sub> + Pr<sub>6</sub>O + Nd<sub>2</sub>O<sub>3</sub> + Sm<sub>2</sub>O<sub>3</sub> + Eu<sub>2</sub>O<sub>3</sub> + Gd<sub>2</sub>O<sub>3</sub> + Tb<sub>4</sub>O<sub>7</sub> + Dy<sub>2</sub>O<sub>3</sub> + HO<sub>2</sub>O<sub>3</sub> + Er<sub>2</sub>O<sub>3</sub> + Tm<sub>2</sub>O<sub>3</sub> + Yb<sub>2</sub>O<sub>3</sub> + Yb<sub>2</sub>O<sub>3</sub></li> </ul>	
		Element	<u>CF</u> (multiplier)	<u>Oxide</u>
		La	1.1728	$La_2O_3$
		Ce	1.2284	CeO <sub>2</sub>
		Pr	1.2082	Pr <sub>6</sub> O <sub>11</sub>
		Nd	1.1664	Nd <sub>2</sub> O <sub>3</sub>
		Sm	1.1596	Sm <sub>2</sub> O <sub>3</sub>
		Eu	1.1579	Eu <sub>2</sub> O <sub>3</sub>
		Gd	1.1526	Gd <sub>2</sub> O <sub>3</sub>
		Tb	1.1762	Tb4O7
		Dy	1.1477	Dy <sub>2</sub> O <sub>3</sub>
		Но	1.1455	Ho <sub>2</sub> O <sub>3</sub>
		Er	1.1435	Er <sub>2</sub> O <sub>3</sub>
		Tm	1.1421	Tm <sub>2</sub> O <sub>3</sub>
		Yb	1.1387	Yb <sub>2</sub> O <sub>3</sub>



Criteria	iteria JORC Code explanation			ary	
			Lu	1.1371	Lu <sub>2</sub> O <sub>3</sub>
			Y	1.2699	Y <sub>2</sub> O <sub>3</sub>
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	•	Comp The Co period labora proces A proces Valida is und errors Stand Mater check batch within that th The fie has be Micros Data v includ overla end of 'Lithol files, c numb errors No ad the pr	tion using ma lertaken to ide or questiona ard Certified l ial sample res ed from each to ensure the to ensure the tolerance (<2 nere is no bias eld and labora en updated i soft Access da validation crite ed to check for pping sample f hole match l logy', 'Sample duplicate sam ers and other justments are imary assay of	son makes eve sample tory data iss balance entify entry ble data Reference sults are sample ey are 2SD) and s or drift atory data nto a atabase eria are or e intervals, between ', 'Survey' ple common e made to lata
Location of data points	<ul> <li>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.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>		used t of the The ha accura horizo Follow the dr profes all the coord The da and co	dheld GPS wa co identify the drill holes in andheld GPS acy of +/- 5-10 ontal ving the comp illing program ssional survey drill hole coll inates was un atum used is cordinates are M zone 50	positions the field. has an m in the letion of n, a pickup of ar idertaken GDA2020
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>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.</li> <li>Whether sample compositing has been applied.</li> </ul>	•	200 m north- This s suppo develo	lanned drill de east-west by south pacing is desi orting the pote opment of Mil irce Estimatio	200 m gned for ential neral



Criteria	JORC Code explanation	Commentary
		<ul> <li>that the ensuing results of drilling and assaying will support the development of a Mineral Resource estimate</li> <li>Each aircore drill sample is a single 1, m sample of material intersected down the hole</li> <li>No compositing has been applied</li> </ul>
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>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.</li> </ul>	<ul> <li>Drill holes were vertical because the nature of the mineralisation is relatively horizontal</li> <li>1m meter samples is sufficient to define Kaolin zones</li> <li>The orientation of the drilling is considered appropriate for testing the lateral and vertical extent of mineralisation</li> </ul>
Sample security	The measures taken to ensure sample security.	<ul> <li>Aircore samples remained in the custody of Company representatives until they were trucked to Perth using an independent contractor or samples were transported by Company representatives</li> <li>The samples were transported to Perth and delivered directly to the laboratory along with a sample manifest for checking of samples</li> <li>The laboratory inspected the packages and did not report tampering of the samples</li> </ul>
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	<ul> <li>No independent audits or reviews of sampling techniques and data has been conducted.</li> <li>Internal reviews were undertaken</li> </ul>



## 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	<ul> <li>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.</li> <li>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.</li> </ul>	<ul> <li>The planned / completed drilling lies within the granted exploration licences.</li> <li>At the time of reporting all tenure was secure and any administrative costs or fees were fully paid up.</li> </ul>
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	There has been no prior exploration drilling conducted in the tenement
Geology	Deposit type, geological setting and style of mineralisation.	• Kaolin mineralisation is a function of weathering of granite. It is unclear at this stage if the kaolin is a transported or in-situ
Drill hole Information	<ul> <li>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:         <ul> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level - elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>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.</li> </ul>	<ul> <li>All significant drill results and drill hole collar locations have been identified in Appendices 2 and 3 respectively of this report.</li> <li>No relevant material data has been excluded from this report.</li> </ul>
Data aggregation methods	<ul> <li>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.</li> <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>	<ul> <li>There are no data aggregation methods applied</li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul> <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 down hole lengths are reported, there should be a clear statement to this effect (e.g., 'down hole length, true width not known').</li> </ul>	<ul> <li>All drill holes are vertical and perpendicular to the dip and strike of mineralisation and therefore all interceptions are approximately true thickness.</li> <li>Drill holes are inferred to intersect the</li> </ul>



Criteria	JORC Code explanation	Commentary
		<ul> <li>mineralisation</li> <li>approximately</li> <li>perpendicularly.</li> <li>The deposit style is flat- lying and so the vertical holes are assumed to intersect the true width of any mineralisation.</li> </ul>
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.	• Figures and plans are displayed in the main text of the Release
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.	<ul> <li>Kaolin intercepts are considered true width</li> <li>TREO reporting is representative as the rock chips were chosen randomly</li> </ul>
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.	<ul> <li>All information has been provided as available</li> <li>Granite basement was intercepted in all holes other than identified in this report</li> </ul>
Further work	<ul> <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> <li>Further drilling work to target potential carbonatite and kaolinite mineralisation is recommended.</li> <li>Exploration by geophysical analysis and drilling is planned on other parts of the tenement.</li> <li>Refer to the main body of the release for further information regarding diagrams</li> </ul>