# Andromeda

Great White Kaolin Project Eyre Peninsula, South Australia Nov 12, 2021

ASX:ADN andromet.com.au



An emerging industrial minerals producer with numerous potential value chains

# **Corporate overview**

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# Andromeda



# **Acquisition of Minotaur**

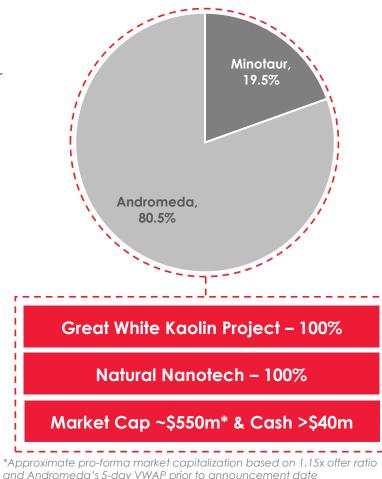
Transaction Summary

Andromeda and Minotaur to combine and create a leading Australian industrial minerals and technology company

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#### Andromeda Pro-Forma Ownership



- Andromeda to acquire Minotaur via an unanimously recommended off-market, all scrip takeover
- Andromeda to become a leading Australian kaolin / halloysite and technology company by consolidating 100% ownership of Great White and Natural Nanotech
- Accretive transaction for Andromeda, increasing Andromeda shareholders' effective equity
  interest in Great White and Natural Nanotech
- Andromeda offering 1.15 new Andromeda shares for every 1 Minotaur share held Minotaur shareholders will hold ~19.5% of the enlarged Andromeda
- Minotaur shareholders retain exposure to the upside of Great White and Natural Nanotech and receive shares in Breakaway Resources (demerger of Minotaur's existing copper and gold assets)
- Full details of the offer will be outlined in Andromeda's Bidder's Statement

# Acquisition of Minotaur

Key Benefits for Andromeda and Minotaur Shareholders



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- Accretive Transaction Increases Andromeda shareholders' effective equity interest in Great White and Natural Nanotech and provides Minotaur shareholders with an attractive premium and continued exposure
- Benefits of Great White and Natural Nanotech Ownership Consolidation
  - Simplifies ownership structure and streamlines management, providing Andromeda with full development optionality ahead of DFS completion, financing and construction
  - Enhances project finance and development alternatives, optimising the funding and development of Great White
  - Increases Andromeda's scale, market relevance and trading liquidity
- Financial Strength All scrip acquisition allows Andromeda to preserve its strong balance sheet (~\$46 million in cash at 30 September 2021), creating a strong platform to progress Great White as well as Andromeda's other potential high value initiatives including concrete, HPA and cosmetics

Provides an enhanced investment proposition for existing and new shareholders with potential for a market re-rating of Andromeda's share price post completion

### Andromeda's core assets



All in South

**Australia** 

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### **KAOLIN and HALLOYSITE-KAOLIN**



Great White JV (75% ADN:25% MEP) Mount Hope 100% Eyre Kaolin 100%

### >100Mt of JORC Resources1,2,3,4

#### Legacy Project Assets

- Alford Copper JV SA
- Wudinna Gold JV SA
- Drummond Gold Project QLD

### Natural Nanotech (50:50 JV)

- 1. ASX 23 December 2019, "Significant increase in Mineral Resource for the Poochera Kaolin Project".
- 2. ASX 29 September 2020, "New mineral resource estimate for Hammerhead Halloysite-Kaolin Deposit".
- 3. ASX 11 August 2020, "New Mineral Resource for the Mount Hope Kaolin project"
- 4. "The Company is not aware of any new information or data that materially affects the information in the relevant market announcements. All material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed."

### **Great White Kaolin Project**

Primary project focus – Halloysite-Kaolin

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### Primary Project Focus – Halloysite-Kaolin

- Operations scheduled to start in 2022
- Legally Binding Offtakes underpinning the business
- Current demand exceeding initial planned production
- Located close to essential infrastructure
- New high-value concrete industry opportunity
- De-risked High Purity Alumina (HPA) project with potential combined Rare Earth Element (REE) opportunity
- Multiple Nanotechnology opportunities

### Binding off-takes in place

Initial business already underwritten

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### Ceramic Product (Great White CRM<sup>™</sup>) Fired Brightness Off The Scale

 Binding Offtake signed for 5,000t/pa with Japanese customer @ A\$700/t

### Paint Product (Great White PRM™) World Class Performance

- Binding Offtake signed for 70,000t/pa with Chinese customer
- Price fixed for three years and higher than A\$700/t



### New concrete application

Halloysite rheology modifier (HRM™) in construction products

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### **Potential Benefits**

- Carbon footprint reductions
- Cost reductions
- Performance improvements
- Handling improvements
- Safety improvements •

### **Next Steps**

- Resource being defined
- Bulk sample testing
- Commercial agreements
- Additional applications •





Commercial testing and bulk sampling in progress

Australian Concrete Industry

Standard Passed



Only 1kg in 3 tonnes of concrete required



Huge potential high-value market with true global reach

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### Halloysite & Nanotechnology

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- Most researched clay mineral in the world
- Use only constrained by supply shortage
- The Natural Nanotech is spending >\$1M/pa on R&D leading to commercialisation

- Great White halloysite-kaolin is working at 40% purity
- Bulk sample being processed targeting >80% purity
- Market price for this refined mineral is approx. \$5000/t
- Second stage cosmetic product approval testing in progress



Carbon Dioxide Capture/Storage & Conversion to Fuels





Batteries & Super-Capacitors



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Water Purification

Patent Filed

#### Natural Nanotech (NNT) R&D in Progress

Patent Filed







Drugs





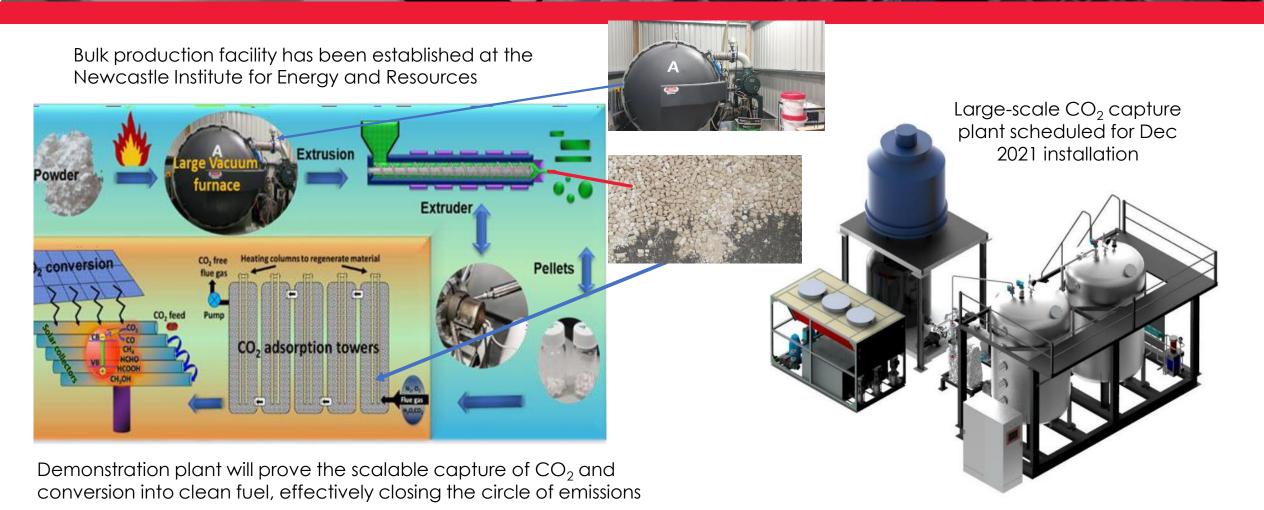
Hydrogen Storage and Transport

Remediation of Contaminated Soils



# Pilot Plant to Demonstrate Carbon Capture & Conversion Commerciality

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Our Aim: Demonstrate Direct Air Capture or Flue Gas Capture achievable at or below A\$20/t CO<sub>2</sub>

### High purity alumina project

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- High Purity Alumina (HPA) is recognised as a key component in the Lithium-Ion Battery supply chain
- Annual demand is set up to quadruple between
  2020 and 2028 causing a significant shortfall in supply
- Current 4N purity (99.99%) HPA pricing is approx. US \$24,000/t and 5N purity (99.999%) up to US\$50,000/t
- HPA is also used extensively in LED lights and Smartphone Glass



- Andromeda has proven premium quality kaolin feed for HPA production
- Very high end 4N purity repeatedly achieved with only one stage of purification
- MoU signed with Advanced Energy Minerals for exclusivity to their technology in Australia and New Zealand
- AEM has the only globally operating commercial facility capable of producing HPA from kaolin
- AEM is currently designing a UK plant with support from the UK government
- Andromeda has engaged a world class international team of metallurgists to develop process optimisations
- Potential to include REE processing

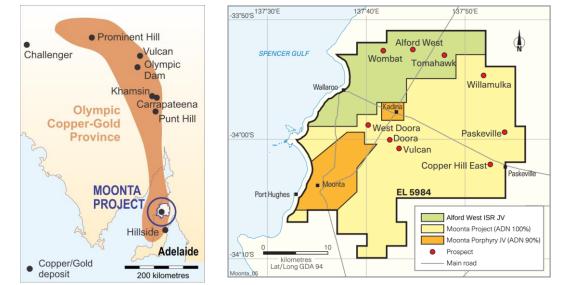
### Alford Copper Project In Situ Recovery (ISR)

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• Environmental Copper JV with EMR<sup>1</sup> sole funding \$4 million to earn 51%<sup>2</sup>

- Defined Resource of 66.1 Mt @ 0.17% copper containing 114kt of copper (Mining Plus<sup>3</sup>)
- Additional Exploration Target of 158-190Mt @ 0.18 0.23% copper defined <sup>4\*</sup>



- The Moonta Project is located at the southern end of Olympic Copper-Gold Province which hosts the giant Olympic Dam iron oxide copper gold deposit and the world class IOCG deposits
- The tenement captures the historical "Copper Triangle" mining district which in the 1870s became the largest producer of copper in the British Empire

1.EMR is a subsidiary of EnviroCopper Ltd.

- 2. Andromeda ADN announcement dated 19 December 2018 "Joint Venture to progress In-Situ Recovery of Copper at Moonta"
- 3. Thor THR ASX announcement dated 15 August 2019 "Substantial Mineral Resource Estimate Moonta Copper"
- 4. Thor THR ASX announcement dated 6 March 2019 "Strategic Development Australian Copper Interests"



- Enviro Copper have advanced considerable research on the potential for ISR copper recovery at its nearby Kapunda Project
- Initial lab test work undertaken by Enviro Copper at Alford suggests favourable conditions for ISR
- ISR progress at Alford is anticipated to accelerate
  over the next 12 months
- Enviro Copper is considering potential for listing, Andromeda and Enviro Copper are in early discussions regarding (potential consolidation of Andromeda's copper assets) or (consolidation transaction that may be beneficial to shareholders of both entities)

Exploration Targets are conceptual in nature and there has been insufficient exploration to define a Mineral Resource under the JORC Code and it is uncertain if further exploration will result in the determination of a Mineral Resource.

### What's next?

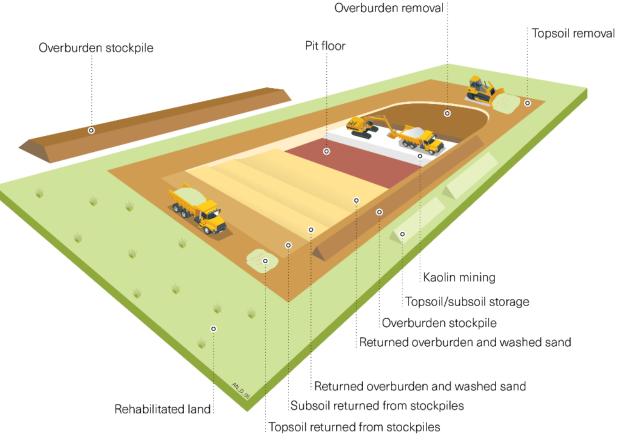
What's on the horizon for Andromeda



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First Commercial Products anticipated to Market by late 2022

- Complete Minotaur acquisition
- Sell the Phase 1 processing plant capacity 100% out
- Release Definitive Feasibility Study
- Complete Bankable Feasibility Study and Secure debt funding
- Mining Approval
- High Purity Halloysite resource and/or purification
- Concrete product commercial agreement
- Additional Resources
- Nanotechnology commercialisation
- High Purity Alumina feasibility studies
- DSO opportunity



# Key takeaways





### Thank you

# Andromeda

#### James Marsh

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### **STATEMENTS**

#### **Cautionary Statements**

The preliminary feasibility study (Pre-Feasibility Study, PFS) referred to in this announcement has been undertaken to study a range of options to produce high-quality halloysite-kaolin product from the Kaolin Resource at Poochera in South Australia in order to provide Andromeda Metals with a basis for more detailed Definitive Feasibilities Studies for the Project. It is a technical and economic study to identify preferred mining, processing and infrastructure requirements but it has not finalised these. The PFS work has advanced assessments of environmental and socio-economic impacts and requirements, but these are also not finalised. The estimation of ore reserves has been done.

The Production Target referred to in this announcement is based on this PFS and supported mainly by Measured and Indicated Resources and only minor Inferred Resources. Andromeda Metals has concluded that it has reasonable grounds for disclosing a Production Target, however there is no certainty that the Production Target or the economic assessment will be realised.

The PFS is based on the material assumptions outlined elsewhere in this announcement. These include assumptions about the availability of funding. While Andromeda Metals considers all of the material assumptions to be based on reasonable grounds, there is no certainty that they will prove to be correct or that the range of outcomes indicated by the PFS will be achieved.

To achieve the range of outcomes indicated in the PFS, funding in the order of A\$28M, inclusive of working capital, is likely be required. Investors should note that there is no certainty that Andromeda Metals will be able to raise that amount of funding when needed. It is also possible that such funding may only be available on terms that may be dilutive to or otherwise affect the value of Andromeda Metals' existing shares. It is also possible that Andromeda Metals could pursue other 'value realisation' strategies to provide alternative funding options.

Given the uncertainties involved, investors should not make any investment decisions based solely on the results of the PFS. This announcement includes forward looking statements. For further information on forward looking statements please refer to the end of this release.

#### Forward Looking Statements

Some of the statements contained in this report are forward looking statements. Forward looking statements, include, but are not limited to, statements concerning estimates of tonnages, expected costs, statements relating to the continued advancement of Andromeda's projects and other statements that are not historical facts. When used in this report, and on other published information of Andromeda, the words such as 'aim', 'could', 'estimate', 'expect', 'intend', 'may', 'potential', 'should' and similar expressions are forward looking statements. Although Andromeda believes that its expectations reflected in the forward-looking statements are reasonable, such statements involve risks and uncertainties and no assurance can be given that actual results will be consistent with these forward-looking statements.

Various factors could cause actual results to differ from these forward-looking statements include the potential that Andromeda's project may experience technical, geological, metallurgical and mechanical problems, changes in market prices and other risks not anticipated by Andromeda. Andromeda is pleased to report this summary of the Study in a fair and balanced way and believes that it has a reasonable basis for making the forward-looking statements in this announcement, including with respect to any mining of mineralised material, modifying factors, production targets and operating cost estimates.

This announcement has been compiled by Andromeda from the information provided by the various contributors. All financial assumptions and estimates are quoted in Australian Dollars ('A\$' or 'AUD') only, unless indicated otherwise heading.

#### **Competent Person's Statements**

Information in this announcement has been compiled by Mr. James Marsh a member of The Australasian Institute of Mining and Metallurgy (AusIMM). Mr. Marsh is an employee of Andromeda Metals Limited who holds shares and options in the company and has sufficient experience, which is relevant to the style of mineralisation, type of deposits and their ore recovery under consideration and to the activity being undertaking to qualify as Competent Persons under the 2012 Edition of the 'Australasian Code for reporting of Exploration Results, Mineral Resources and Ore Reserves' (JORC Code). This includes Mr. Marsh attaining over 30 years of experience in kaolin processing and applications. Mr. Marsh consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.

#### JORC Resource Reference Tables 1

Table of Resources – Clay <45µm

|  |                       | MEASURED RESOURCE |       |           |            |        | INDICATED RESOURCE |           |            |        | INFERR | ED RESOURC | E          | TOTAL RESOURCES |       |           |           |
|--|-----------------------|-------------------|-------|-----------|------------|--------|--------------------|-----------|------------|--------|--------|------------|------------|-----------------|-------|-----------|-----------|
|  | ANDROMEDA<br>INTEREST | TONNES            | PSD   | KAOLINITE | HALLOYSITE | TONNES | PSD                | KAOLINITE | HALLOYSITE | TONNES | PSD    | KAOLINITE  | HALLOYSITE | TONNES          | PSD   | KAOLINITE | HALLOYSIT |
|  | (%)                   | (Mt)              | <45µm | (%)       | (%)        | (Mt)   | <45µm              | (%)       | (%)        | (Mt)   | <45µm  | (%)        | (%)        | (Mt)            | <45µm | (%)       | (%)       |
| 2020   |                       |                   |       |           |            |        |                    |           |            |        |        |            |            |                 |       |           |           |
| Great White <sup>1,2</sup>                               | 50                    |                   |       |           |            |        |                    |           |            |        |        |            |            |                 |       |           |           |
| Hammerhead   | -                     |                   |       |           |            |        |                    |           |            |        |        |            |            |                 |       |           |           |
| Mount Hope   | -                     |                   |       |           |            |        |                    |           |            |        |        |            |            |                 |       |           |           |
|  |                       |                   |       |           |            |        |                    |           |            |        |        |            |            |                 |       |           |           |
| Total (100%)   | -                     |                   |       |           |            |        |                    |           |            |        |        |            |            |                 |       |           |           |
| -<br><b>Total 2020</b><br>(Andromeda share)              | -                     |                   |       |           |            |        |                    |           |            |        |        |            |            |                 |       |           |           |
| 2021   |                       |                   |       |           |            |        |                    |           |            |        |        |            |            |                 |       |           |           |
| Great White <sup>1,3,4</sup>                             | 75                    | 2.9               | 83.9  | 78.8      | 13.8       | 7.3    | 82.8               | 82.3      | 9.9        | 7.2    | 83.3   | 81.7       | 9.9        | 17.4            | 83.2  | 81.5      | 10.5      |
| Hammerhead <sup>1,4,5</sup>                              | 75                    |                   |       |           |            |        |                    |           |            | 27.1   | 82.2   | 81         | 12.3       | 27.1            | 82.2  | 81        | 12.3      |
| Mount Hope <sup>1,4,6</sup>                              | 100                   |                   |       |           |            |        |                    |           |            | 7.5    | 82.2   | 81.4       | 3.3        | 7.5             | 82.2  | 81.4      | 3.3       |
|  |                       |                   |       |           |            |        |                    |           |            |        |        |            |            |                 |       |           |           |
| Total (100%) <sup>1</sup>                                | -                     |                   |       |           |            |        |                    |           |            | 41.8   | 82.4   | 81.2       | 10.3       | 52              | 82.5  | 81.2      | 10.4      |
| -<br><b>Total 2021</b><br>(Andromeda share) <sup>1</sup> | -                     |                   |       |           |            |        |                    |           |            | 33.2   | 82.4   | 81.3       | 9.9        | 40.9            | 82.5  | 81.2      | 10.1      |

#### Table of Resources – Clay <45µm continued

|   |                       |        | MEASURED                       | RESOURCE                       |                  | INDICATED RESOURCE |                                |                                |                  |        | INFERRED                       | RESOURCE                       |                  | TOTAL RESOURCES |                                |                                |                  |
|---|-----------------------|--------|--------------------------------|--------------------------------|------------------|--------------------|--------------------------------|--------------------------------|------------------|--------|--------------------------------|--------------------------------|------------------|-----------------|--------------------------------|--------------------------------|------------------|
|   |                       |        |                                |                                |                  |                    | INDIGATED                      |                                |                  |        |                                |                                |                  |                 | TUTAL N                        |                                |                  |
|   | ANDROMEDA<br>INTEREST | TONNES | Al <sub>2</sub> O <sub>3</sub> | Fe <sub>2</sub> O <sub>3</sub> | TiO <sub>2</sub> | TONNES             | Al <sub>2</sub> O <sub>3</sub> | Fe <sub>2</sub> O <sub>3</sub> | TiO <sub>2</sub> | TONNES | Al <sub>2</sub> O <sub>3</sub> | Fe <sub>2</sub> O <sub>3</sub> | TiO <sub>2</sub> | TONNES          | Al <sub>2</sub> O <sub>3</sub> | Fe <sub>2</sub> O <sub>3</sub> | TiO <sub>2</sub> |
|   | (%)                   | (Mt)   | (%)                            | (%)                            | [%]              | (Mt)               | [%]                            | (%)                            | [%]              | (Mt)   | (%)                            | (%)                            | (%)              | (Mt)            | (%)                            | (%)                            | [%]              |
| 2020  |                       |        |                                |                                |                  |                    |                                |                                |                  |        |                                |                                |                  |                 |                                |                                |                  |
| Great White <sup>1,2</sup>                          | 50                    |        |                                |                                |                  |                    |                                |                                |                  |        |                                |                                |                  |                 |                                |                                |                  |
| Hammerhead  | -                     |        |                                |                                |                  |                    |                                |                                |                  |        |                                |                                |                  |                 |                                |                                |                  |
| Mount Hope  | -                     |        |                                |                                |                  |                    |                                |                                |                  |        |                                |                                |                  |                 |                                |                                |                  |
| Total (100%)  | -                     |        |                                |                                |                  |                    |                                |                                |                  |        |                                |                                |                  |                 |                                |                                |                  |
| <b>Total</b><br>(Andromeda share)                   | -                     |        |                                |                                |                  |                    |                                |                                |                  |        |                                |                                |                  |                 |                                |                                |                  |
| 2021  |                       |        |                                |                                |                  |                    |                                |                                |                  |        |                                |                                |                  |                 |                                |                                |                  |
| Great White <sup>1,3,4</sup>                        | 75                    | 2.9    | 36.7                           | 0.52                           | 0.32             | 7.3                | 36.6                           | 0.51                           | 0.5              | 7.2    | 36.4                           | 0.51                           | 0.45             | 17.4            | 36.5                           | 0.51                           | 0.45             |
| Hammerhead <sup>1,4,5</sup>                         | 75                    |        |                                |                                |                  |                    |                                |                                |                  | 27.1   | 37                             | 0.63                           | 0.71             | 27.1            | 37                             | 0.63                           | 0.71             |
| Mount Hope <sup>1,4,6</sup>                         | 100                   |        |                                |                                |                  |                    |                                |                                |                  | 7.5    | 35.3                           | 0.51                           | 0.62             | 7.5             | 35.3                           | 0.51                           | 0.62             |
| Total (100%) <sup>1</sup>                           | -                     |        |                                |                                |                  |                    |                                |                                |                  | 41.8   | 36.6                           | 0.59                           | 0.65             | 52              | 36.6                           | 0.6                            | 0.61             |
| -<br><b>Total</b><br>(Andromeda share) <sup>1</sup> | -                     |        |                                |                                |                  |                    |                                |                                |                  | 33.2   | 36.5                           | 0.58                           | 0.65             | 40.9            | 36.5                           | 0.6                            | 0.6              |

#### JORC Resource Reference Tables 2

#### Table of Reserves - Clay

|  |                              |                | P                                 | ROBABLE RESERVE   |                  | TOTAL RESERVE                    |                |                                   |                     |                  |                                  |  |
|--|------------------------------|----------------|-----------------------------------|-------------------|------------------|----------------------------------|----------------|-----------------------------------|---------------------|------------------|----------------------------------|--|
|  |                              | WHO            | ILE ROCK                          | WIT               | HIN ≤45µm FRACT  | TON                              | WHO            | OLE ROCK                          | WITHIN <45µm FRACTI |                  | ion                              |  |
|  | ANDROMEDA<br>INTEREST<br>(%) | TONNES<br>(Mt) | RECOVERY<br><45µm FRACTION<br>(%) | HALLOYSITE<br>(%) | Kaolinite<br>(%) | HALLOYSITE<br>+ KAOLINITE<br>(%) | Tonnes<br>(Mt) | RECOVERY<br><45µm FRACTION<br>(%) | HALLOYSITE<br>(%)   | Kaolinite<br>(%) | HALLOYSITE<br>+ KAOLINITE<br>(%) |  |
| 2020   |                              |                |                                   |                   |                  |                                  |                |                                   |                     |                  |                                  |  |
| Great White                                    |                              |                |                                   |                   |                  |                                  |                |                                   |                     |                  |                                  |  |
| Total (100%)                                   |                              |                |                                   |                   |                  |                                  |                |                                   |                     |                  |                                  |  |
| <b>Total</b><br>(Andromeda share)              |                              |                |                                   |                   |                  |                                  |                |                                   |                     |                  |                                  |  |
| 2021   |                              |                |                                   |                   |                  |                                  |                |                                   |                     |                  |                                  |  |
| Great White <sup>1,12,13,14</sup>              | 75                           | 12.5           | 52                                | 15                | 78               | 93                               | 12.5           | 52                                | 15                  | 78               | 93                               |  |
| Total (100%)                                   | -                            | 12.5           | 52                                | 15                | 78               | 93                               | 12.5           | 52                                | 15                  | 78               | 93                               |  |
| <b>Total</b><br>(Andromeda share) <sup>1</sup> | -                            | 9.4            | 52                                | 15                | 78               | 93                               | 9.4            | 52                                | 15                  | 78               | 93                               |  |

1 Figures are rounded to reflect appropriate levels of confidence. Apparent differences may occur due to rounding.

2 ASX 23 December 2019, "Significant increase in Mineral Resource for the Poochera Kaolin Project".

3 ASX 26 November 2020, "Updated mineral resource for the Great White Kaolin JV Deposit".

4 ISO brightness (R457) cut-off of at 75 in the <45μm size fraction.

5 ASX 29 September 2020, "New mineral resource estimate for Hammerhead Halloysite-Kaolin Deposit".

6 ASX 11 August 2020, "New mineral resource for the Mount Hope Kaolin Project".

7 ASX announcement released 8 May 2019 "Increased ounces in updated Wudinna Gold Project Mineral Resource".

8 The Wudinna Gold Project Mineral Resources estimates have been reported at a 0.5 g/t gold cut-off grade to reflect extraction by open pit mining.

9 ASX release dated 15 August 2019 "Substantial initial copper resource – Moonta Project, inferred ISR copper resource of 114,000 tonnes contained copper".

10 Figures are rounded to reflect appropriate levels of confidence. Apparent differences may occur due to rounding.

11 Environmental Copper Recovery Pty Ltd earning a 75% interest.

12 ASX release dated 10 July 2020 "Maiden Ore Reserve for Carey's Well Deposit".

13 Great White Reserve estimated based off the 2019 Great White Resource estimate (refer ADN ASX release dated

23 December 2019 "Significant Increase in Mineral Resource at Poochera").

14 The maiden Ore Reserve Estimate is drawn from the PFS released in June 2020 (refer ADN ASX announcement dated

1 June 2020 titled "Pre-Feasibility Study further improves Poochera Halloysite-Kaolin Project Economics").

15 Ore Reserves have been reported from Measured and Indicated Resources only.