

**Andromeda Metals Limited**  
ABN: 75 061 503 375

**Corporate details:**

ASX Code: ADN

Cash (31 Mar 2020): \$3.36 million

Issued Capital:

1,538,718,676 ordinary shares  
609,318,064 ADNOB options  
96,500,000 unlisted options

**Directors:**

**Rhod Grivas**

Non-Executive Chairman

**James Marsh**

Managing Director

**Nick Harding**

Executive Director and  
Company Secretary

**Joe Ranford**

Operations Director

**Andrew Shearer**

Non-Executive Director

**Contact details:**

69 King William Road,  
Unley, South Australia 5061

PO Box 1210  
Unley BC SA 5061

Tel: +61 8 8271 0600

Fax: +61 8 8271 0033

admin@andromet.com.au

[www.andromet.com.au](http://www.andromet.com.au)



# ASX Announcement

10 July 2020

## Maiden Ore Reserve for Carey's Well Deposit

### Summary

- A maiden Ore Reserve Estimate of 12.5Mt of bright white kaolinised granite containing 52% of material in the minus 45 micron fraction has been determined for the Carey's Well Deposit located within the Poochera Halloysite-Kaolin Project in South Australia.
- The Ore Reserve Estimate, which comprises 15% halloysite and 78% kaolinite in the minus 45 micron fraction, is classified in the Probable category.
- The Ore Reserve supports a 26 year mine life at a mining rate of 500,000 tonnes per annum as reported in the recently announced Pre-Feasibility Study.
- Focus is now heavily directed towards completion of the Definitive Feasibility Study and the Mining Lease application process with site mining activities targeted for early 2022.

### Discussion

Andromeda Metals Limited (ASX: ADN, Andromeda, the Company) is pleased to announce a maiden Ore Reserve Estimate for the Carey's Well Deposit at the Poochera Halloysite-Kaolin Project.

An Ore Reserve Estimate of 12.5Mt classified in the Probable category under the 2012 JORC Code has been estimated based upon the recently completed Pre-Feasibility Study (PFS) prepared by the Company and announced on 1 June 2020. The Ore Reserve Estimate is underpinned by the Mineral Resource Estimate released to the market on 23 December 2019.

Information to support the Ore Reserve Estimate is provided below:

#### 1. Project Location

The Poochera Halloysite-Kaolin Project covers two main geographic areas of interest, both situated in the western province of South Australia. The current main area of focus is the Carey's Well Deposit, which is located near Poochera on the western part of the Eyre Peninsula of South Australia approximately 635 kms west by road from Adelaide and 130 kms south-east from Ceduna, and which was the subject of the PFS.

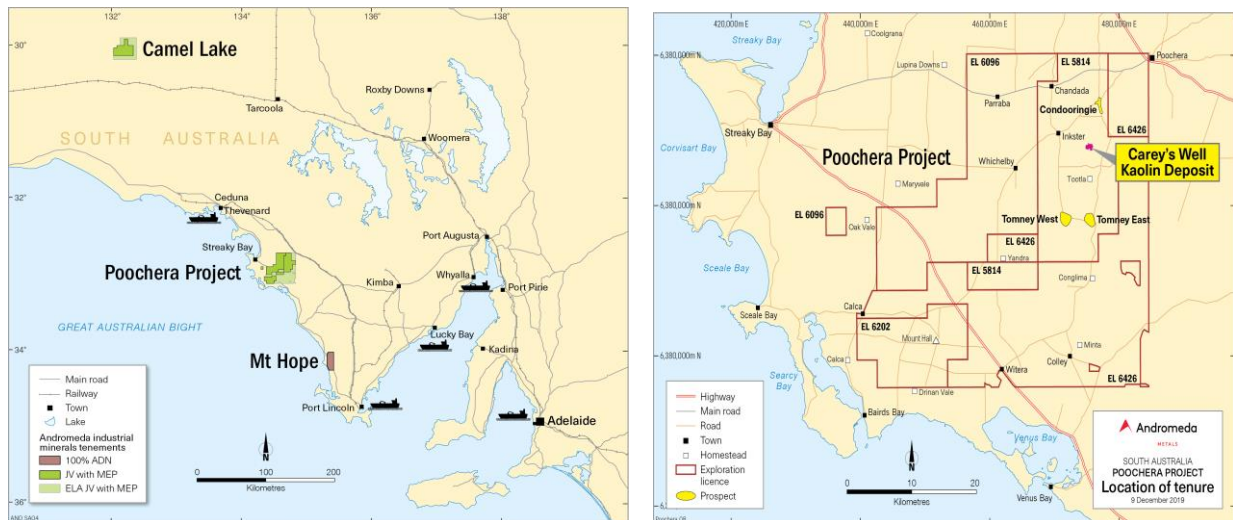


Figure 1 – Project Location Map

## 2. Project Ownership

The Poochera Halloysite-Kaolin Project is a joint venture between Andromeda and Minotaur Exploration Limited (ASX: MEP) executed in April 2018. Under the terms of the joint venture, Andromeda can earn up to a 75% equity interest in the Project by either sole funding \$6.0M over 5 years or alternatively a decision to mine is made by the joint venture partners. On 4 March 2020 the Company announced that it had met the Stage 1 expenditure commitment of \$3.0M within 2 years of execution of the agreement and had therefore earned a 51% interest in the Project. Andromeda at the same time elected to immediately proceed to Stage 2 through the sole contribution of a further \$3.0M to be spent by April 2023 in order to acquire a further 24% interest.

On Andromeda reaching a 75% interest, each party will then contribute to the Project budget as per their equity interest or otherwise be reduced as per the standard industry dilution formula. If an equity interest falls below 5%, that party's interest will convert to a 2% net smelter royalty over the Project.

The tenement package is secure and compliant with the requirements of the SA Department for Energy and Mining as at the date of this announcement.

## 3. Ore Reserve Estimate

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"*) which is available to review on the Company's website.

The PFS is based on shallow open pit mining of kaolinised granite mineralization, with an initial phase of Direct Shipping Ore (DSO) and toll wet-refined overseas to generate early cash flows. During the second year of operation, production is scheduled to convert to on-site wet processing to remove sand content (which is approximately 50%) before it is shipped in bulk as filter cake for final toll wet-refining overseas in order to produce a premium bright white halloysite-kaolin product.

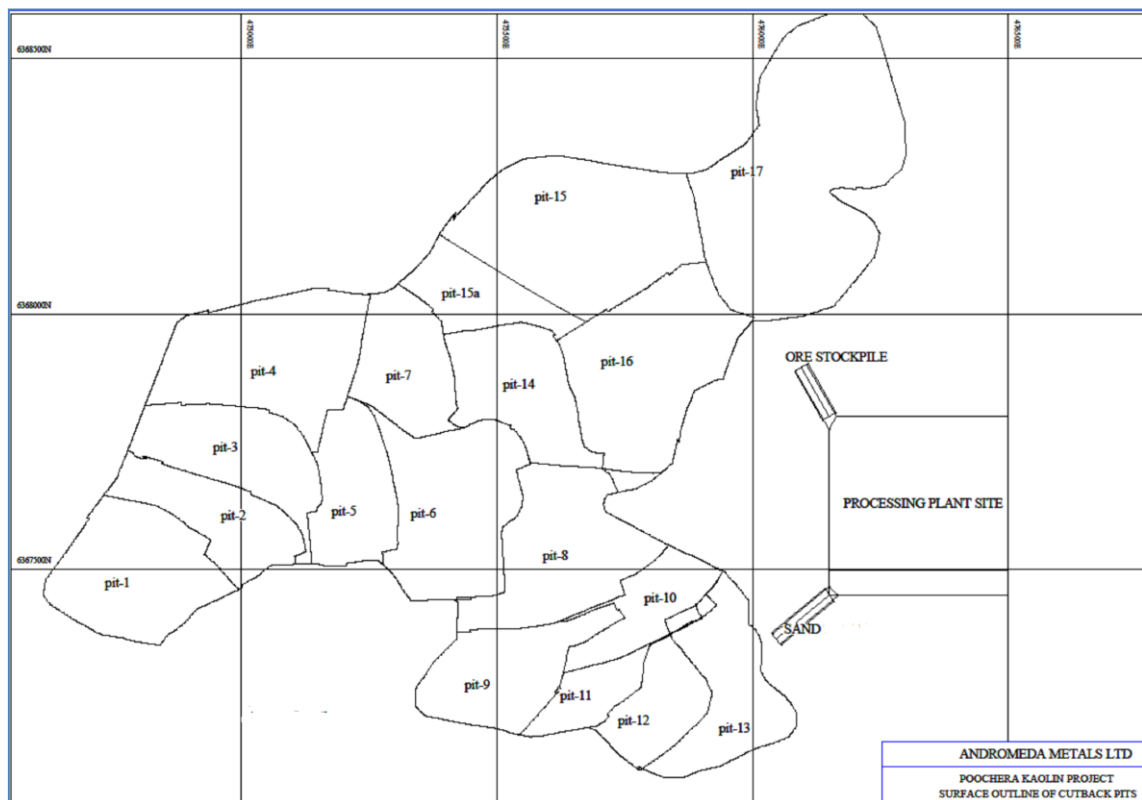
The Ore Reserve Estimate for the Carey's Well Deposit is summarized in Table 1 below.

Category	Tonnes Mt	Grade % -45µm	Mineral Content % of -45µm fraction		Halloysite + Kaolinite % of -45µm fraction
			Halloysite	Kaolinite	
Proven	0.0	0	0	0	0
Probable	12.5	52	15	78	93
<b>Total</b>	<b>12.5</b>	<b>52</b>	<b>15</b>	<b>78</b>	<b>93</b>

**Table 1 – Carey’s Well Ore Reserve Estimate**

*Note that all figures are on a 100% Project basis and rounded to reflect appropriate levels of confidence.*

Scheduled mining stages of the Ore Reserves are shown in Figure 2 and Table 2 below.



**Figure 2 – Carey’s Well Deposit Mining Stages**

Pit Stage	Category	Ore Mined		Grade % -45µm	Minus 45 micron portion			
		Mbcm	Mt		Mt	Halloysite %	Kaolinite %	H & K Clay %
1	Probable	0.4	0.6	47	0.3	17	74	91
2	Probable	0.4	0.5	49	0.3	16	78	94
3	Probable	0.4	0.5	51	0.3	16	79	95
4	Probable	0.4	0.5	55	0.3	15	80	95
5	Probable	0.3	0.4	48	0.2	16	76	92
6	Probable	0.4	0.6	50	0.3	15	76	91
7	Probable	0.3	0.5	49	0.2	11	82	93
8	Probable	0.4	0.5	46	0.2	13	77	90
9	Probable	0.3	0.5	50	0.2	17	76	93
10	Probable	0.4	0.5	51	0.3	18	75	93
11	Probable	0.3	0.4	50	0.2	12	80	92
12	Probable	0.4	0.5	52	0.3	13	78	91
13	Probable	0.5	0.8	54	0.4	11	81	92
14	Probable	0.5	0.7	51	0.4	21	73	94
15	Probable	1.1	1.6	58	1.0	11	88	95
16	Probable	1.6	2.2	53	1.2	16	77	94
17	Probable	0.7	1.0	52	0.5	16	77	92
<b>LOM Total</b>	<b>Probable</b>	<b>8.7</b>	<b>12.5</b>	<b>52</b>	<b>6.5</b>	<b>15</b>	<b>78</b>	<b>93</b>

**Table 2 – Carey’s Well Deposit Mining Stages**

*Note that all figures are on a 100% Project basis and rounded to reflect appropriate levels of confidence.*

#### **4. Ore Reserve Classification**

This maiden Carey’s Well Deposit Ore Reserve is derived from the Mineral Resources described in the ADN announcement dated 23 December 2019 titled “*Significant increase in mineral resources for the Poochera Kaolin Project*”. The Mineral Resources are inclusive of the Ore Reserves.

The Ore Reserves are in the Probable category and have been derived from the Measured and Indicated Mineral Resources in accordance with the Joint Ore Reserves Committee (JORC) Code 2012 guidelines.

The Ore Reserve Estimate consists entirely of Probable Reserves in accordance with JORC Code (2012) guidelines. Both Indicated and Measured Resources within the Production Target have been converted to Probable Ore Reserves. As part of the Definitive Feasibility Study (DFS) the Company intends to update aspects to land access, aboriginal cultural heritage, and environmental status to improve these Modifying Factors in anticipation of converting the Measured Resources to Proven Reserves.

The Ore Reserve classification reflects the Competent Person’s view of the deposit and the status of the Project.

## **5. Ore Reserve Estimation Methodology**

The Ore Reserve Estimate is based on the estimated Mineral Resources classified as Measured or Indicated, after consideration of all modifying factors such as geotechnical, mining, metallurgy and processing, infrastructure, transport shipping and refining, social and financial aspects.

The Ore Reserve was estimated using the PFS economic parameters including product pricing based on a marketing assessment by consultants, agents, and staff of Andromeda.

## **6. Cut-Off Grade**

Though a cut-off grade was calculated, it was found to be lower than the lowest block in the Mineral Resource, so consequently a cut-off grade criterion did not need to be applied.

## **7. Geotechnical**

Geotechnical mine design parameters were developed based on geological and resource drilling information along with drillhole sampling and logging and laboratory testing of representative geotechnical drill core samples. These parameters were used in the mine design. Because of the relatively shallow nature of the mine the project economics are not sensitive to the geotechnical parameters.

## **8. Mining**

The deposit is amenable to open pit mining using conventional mining machinery such as excavators and trucks, or bulldozers and scrapers. A staged mining approach is proposed which features overburden stripped to expose the ore being placed into the mining void of the previous stage. Sand removed by the processing will be returned to the pit to be placed underneath the overburden.

In order to generate a workable and practical pit design, some Inferred Mineral Resources were included in the pit optimisation, pit design, mine schedules, and economic valuations that were used in the PFS. The Inferred Mineral Resources comprise a very minor part (1%) of the Production Target, and it has been verified that the Ore Reserves are technically and economically viable without the inclusion of the Inferred Resources.

## **9. Metallurgy and Processing Assumptions**

Extensive laboratory and pilot scale testing has been done of the mineralised material comprising the Mineral Resources. High recovery of the halloysite and kaolinite mineral clays has been established from this test work. On a Life of Mine (LOM) basis, the metallurgical recovery is 90% of the halloysite and kaolinite mineral clays, and the yield of marketable product is 46% of the kaolinised granite.

## **10. Infrastructure**

Water required for the wet-processing plant, dust suppression on the stockpile areas and haul roads, and for site offices and facilities is based on water sourced from SA Water who have indicated it is possible for a water supply to be made available to support the Project. The water supply would be subject to any required network upgrades to ensure water supply services to existing customers are not impacted.

Access to the site from Adelaide is excellent via the Eyre Highway, and within the Project area access is available by a network of well-maintained District Council bitumen and gravel roads. The mine and plant can be accessed by a planned mine road from the Poochera-Port Kenny Road several kms to the east,

via a route to be determined by environmental, land ownership, terrain, and haul distance considerations.

Project site personnel, anticipated to be approximately 30-40 people, and construction and shutdown staff, are likely to be housed in Streaky Bay or other localities within self-driving distance from the mine.

The power supply adopted in the PFS is based on LPG fueled generators on site to be supplied on a Build-Own-Operate (BOO) basis by an independent power producer under a price per kWhr contract, with the generator waste heat able to be used in the process plant driers. Grid power via the construction of a new power line may be considered in the longer term.

It is proposed that LPG will be supplied and delivered under an all-inclusive \$/L or \$/GJ contract.

## **11. Transport and Shipping**

The Project is well serviced by roads for truck transport to several regional ports considered in the PFS. Indicative break-bulk shipping costs have been obtained for shipment of product to port options in northern and southern China, and these have been applied in the PFS financial evaluation.

## **12. Refining**

Refining to produce saleable product will involve the following processes:

- fresh water rinsing to reduce the salt content of the product to meet customer specifications;
- adjusting the particle size distribution of the product to meet customer specifications;
- further reducing the content of deleterious elements such as iron, titanium and potash;
- increasing the kaolin clay content grade to a minimum of 99%;
- adding a few percent of bentonite clay to enhance the plastic properties of the product;
- bagging the product in either 20kg paper bags or 1,000kg FIBC bulk bags for distribution and sale to regional and export markets.

Kaolin refineries are being considered by Andromeda that have good low-cost inbound bulk material and outbound packaged product freight logistics, and ample supplies of fresh water for salt removal by rinsing.

The Company is progressing toll-refining options with the management of several refining facilities in China and Japan.

## **13. Marketing and Sales**

Refining by wet conventional processes has been proven to yield desirable products with low levels of impurities that give excellent properties in ceramics applications, permitting sales into the international porcelain and high value ceramics market. ParlaWhite® (PW) is a trademark registered with IP Australia, named after the Parla Peak landmark in the Poochera locality. Comparison of samples with competitor products and assessment of test samples by prospective customers has established the technical competitiveness of the ParlaWhite® product.

Market demand is extremely high and growing because global production is reducing with the closure of several significant high-quality sources. The Company considers the 26 year supply life identified in the PFS makes Poochera halloysite-kaolin a valuable long-life strategic source to customers, which is not currently available to them.

Because of the superior quality and long life reliable strategic supply, there is strong interest from potential customers in Japan, Europe and throughout Asia. Letters of Intent (LOI's) for 211,000tpa of the premium wet-refined grade of Poochera halloysite-kaolin have been received from prospective

customers in China, along with expressions of interest from prospective customers throughout Asia and Europe.

## **14. Social, Environmental and Approval**

Most of the Project is located on freehold land and Andromeda is currently negotiating a range of commitments with private landowners for land access.

The Project area lies within the Wirangu Number 2 Native Title Claim (SC1997/006) area southwest of the Eyre Highway though the Carey's Well mine area is located on privately owned (freehold) land where Native Title is extinguished. While most of the mine area is in disturbed agricultural land, an Aboriginal heritage survey will be carried out to identify any Aboriginal artefact sites or sites of cultural significance, and Andromeda is working with the South Australian Native Title Services to facilitate this work.

The Company is also in ongoing discussions with representatives of Local and State government on matters including access to roads and environmental approvals.

Based on the studies to date and the anticipated project impacts, it is expected the main environmental approval will be via a Mining Proposal submitted to the Department for Energy and Mining.

## **15. Timeframe**

The anticipated timeline for the Project development is to conduct the environmental impact assessments over the balance of the 2020 calendar year and prepare a mining proposal application which is targeted to be lodged in early 2021. Subject to satisfactory progress negotiating agreements with key stakeholders, obtaining all necessary regulatory approvals and completion of the DFS, commencement of site activities is now targeted for early 2022.

Allowing for the time required for site establishment and mine pre-stripping, mining, shipping, refining and product delivery, the first sales of Poochera halloysite-kaolin product is therefore estimated for mid 2022.

## **16. Competent Person's Statements**

### **Mineral Resources**

The data in this announcement that relates to the Mineral Resource Estimates for the Poochera Kaolin Project is based on information in the Resource announcement of 23 December 2019 titled "Significant increase in Mineral Resource for the Poochera Kaolin Project", and available to view on the Andromeda website.

For the purposes of the PFS study, and the Ore Reserve Estimation, the Company 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, that all material assumptions and technical parameters underpinning the estimates in the original market announcement continue to apply and have not materially changed. The Company 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.

### **Ore Reserves**

The information in this report that relates to Ore Reserves is based on and fairly represents information and supporting documentation compiled by Paul Griffin, BMinTech, GradDip(Tech)Man, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy (AusIMM Member No. 100234). Paul Griffin is an Employee and Director of MinEcoTech Pty Ltd and is retained as a consultant

and study manager by Andromeda Metals Limited. Paul Griffin holds options in Andromeda Metals Limited.

Paul Griffin 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'. Paul Griffin consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

## **17. Forward Looking Statements**

Some of the statements contained in this announcement 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 announcement, and on other published information of Andromeda, the words such as "will", "planned", "expected", "projected", "estimated", "may", "scheduled", "intends", "anticipates", "believes", "potential", "nominal", "conceptual" 'aim', 'could', 'intend', '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, financial markets and other risks not anticipated by Andromeda.

Andromeda is pleased to report the Ore Reserve Estimation 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 information provided by MinEcoTech. All financial assumptions and estimates are quoted in Australian Dollars ('A\$' or 'AUD') only, unless indicated otherwise.



## Appendix C. JORC Code 2012 Edition – Table 1

### Section 4 Estimation and Reporting of Ore Reserves

Criteria	JORC Code Explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	<ul style="list-style-type: none"> <li>• <i>Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve</i></li> <li>• <i>Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves</i></li> </ul>	<ul style="list-style-type: none"> <li>• The Mineral Resource Estimate dated 23 December 2019 and entitled “<i>Significant increase in Mineral Resource for the Poochera Kaolin Project</i>”, which was prepared by a Competent Person in accordance with the requirements of the 2012 JORC Code as noted in the Mineral Resources Compliance Statement above, was used for the Pre-Feasibility Study.</li> <li>• Mineral Resources are reported inclusive of Ore Reserves.</li> </ul>
Site visits	<ul style="list-style-type: none"> <li>• <i>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</i></li> <li>• <i>If no site visits have been undertaken indicate why this is the case.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The Competent Person visited and inspected the Poochera mine site on several occasions in 2019 and 2020.</li> <li>• The site has also been visited by the Resources Competent Person and at least one of the authors of each of the following contributing technical reports contributing to the PFS: Hydrology and Hydrogeology, Geotechnical, Mining, Flora and Fauna.</li> </ul>
Study status	<ul style="list-style-type: none"> <li>• <i>The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.</i></li> <li>• <i>The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.</i></li> </ul>	<ul style="list-style-type: none"> <li>• This Ore Reserve statement is based upon the 2020 Pre-Feasibility Study announced on 1 June 2020 titled “<i>Pre-Feasibility Study further improves Poochera Halloysite-Kaolin Economics</i>”.</li> <li>• A Scoping Study for the Project was previously completed in September 2019 and updated in April 2020.</li> <li>• The PFS mine plan is based on staged pit designs and mining schedules, along with processing and refining methods, that are all using well-established conventional technology and technically achievable.</li> <li>• Modifying factors (mining, processing, transport and shipping, refining, marketing, infrastructure, environmental, legal, social and commercial) have been considered in the PFS and the Ore Reserve estimation.</li> <li>• Financial modelling completed as part of the PFS shows that the Project is economically viable under current assumptions.</li> </ul>
Cut-off parameters	<ul style="list-style-type: none"> <li>• <i>The basis of the cut-off grade(s) or quality parameters applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>• A mining breakeven cut-off grade (%-45µm) was estimated (based on product price, operating costs, processing and refining recovery, transport and refining costs, general and administrative costs and royalty costs). This was found to be below the grade of the lowest block in the resource model, and so a cut-off grade was not required to be applied.</li> <li>• The pit design was done with reference to contained kaolin clay classed as bright white, and focusing on measured and indicated resources, but including 1% of inferred resources where required to achieve a practical mine design.</li> </ul>

Mining factors or assumptions	<ul style="list-style-type: none"> <li>• <i>The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).</i></li> <li>• <i>The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.</i></li> <li>• <i>The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes etc) grade control and pre-production drilling.</i></li> <li>• <i>The major assumptions made and Mineral Resource model used for pit and slope optimisation (if appropriate).</i></li> <li>• <i>The mining dilution factors used.</i></li> <li>• <i>The mining recovery factors used.</i></li> <li>• <i>Any minimum mining widths used.</i></li> <li>• <i>The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.</i></li> <li>• <i>The infrastructure requirements of the selected mining methods.</i></li> </ul>	<ul style="list-style-type: none"> <li>• All bright white kaolinised granite contained within the pit design is scheduled to be mined and processed.</li> <li>• To ensure no contamination of the kaolinised granite, a 10% mining ore loss factor and 0% mining dilution is assumed.</li> <li>• Pit optimisations were done and based on the selected optimised pit shell, a detailed manual and interactive pit design was completed.</li> <li>• Detailed staged pit designs were done with due consideration of geotechnical, geometric, and access constraints. These pit designs were used as the basis for production scheduling and economic evaluation.</li> <li>• Conventional mining methods (bulldozer and scrapers, and 6WD articulated dump trucks and excavator and supporting equipment), and costs were used in the Study.</li> <li>• The geotechnical parameters applied in the pit designs were compliant with those suggested in the 2020 geotechnical study.</li> <li>• Inferred Mineral Resources are included in the estimation of the Production Target but comprise only a minor (1%) part of it. The PFS Mine Plan is based on a Production Target of the following LOM quantities: <ul style="list-style-type: none"> <li>○ Measured : 11.2Mt of 15.6Mt in Mineral Resources</li> <li>○ Indicated : 1.3Mt of 4.9Mt in Mineral Resources</li> <li>○ Inferred : 0.2Mt of 5.5Mt in Mineral Resources (Excluded from the Ore Reserve Estimate)</li> <li>○ Total : 12.7Mt of 26.0Mt in Mineral Resources</li> </ul> </li> <li>• The Mineral Resources, published on 23 December 2019, underpin the Production Target.</li> <li>• Metallurgical parameters were applied to the resource model to assess product grades and yields.</li> <li>• Pit optimisations utilising the Lerchs-Grossmann algorithm with industry standard software were undertaken. This optimisation utilized the Mineral Resource model together with geotechnical inputs, cost, and revenue inputs.</li> <li>• The geotechnical parameters have been applied based on geotechnical studies.</li> <li>• The resultant pit shells were used to guide detailed pit designs with due consideration of geotechnical, geometric, and access constraints. These pit designs were used as the basis for production scheduling and economic evaluation.</li> <li>• Inferred Mineral Resources were excluded from the calculation of the Ore Reserve statement.</li> <li>• The Feasibility Study Production Target incorporated a minor portion (1%) of Inferred Mineral Resources which are not material to the economic viability of the production schedule.</li> </ul>
Metallurgical and mineral processing factors or assumptions	<ul style="list-style-type: none"> <li>• <i>The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.</i></li> <li>• <i>Whether the metallurgical process is well tested technology or novel in nature.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Site based wet-process concentration and high specification wet refining are considered in the PFS. These processes have been successfully tested multiple times at both laboratory and pilot scale.</li> <li>• The processing and refining techniques are long- established and widely and routinely used at full plant scale throughout the kaolin industry.</li> </ul>

	<ul style="list-style-type: none"> <li>• <i>The nature, amount and representativeness of the metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical factors applied.</i></li> <li>• <i>Any assumptions or allowances made for deleterious elements.</i></li> <li>• <i>The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.</i></li> <li>• <i>For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?</i></li> </ul>	<ul style="list-style-type: none"> <li>• Representative samples of mineralisation types suited to the processing approaches above have been obtained by RC or air core drilling and tested in kaolin processing laboratories and by bulk auger drilling and testing in pilot plants. Bulk auger drilling was focussed at an accessible portion of the orebody and further drilling and testing is required to assess the variability of the metallurgical properties across the extent of the proposed open pit.</li> <li>• Understanding of the variability in metallurgical properties is required for detailed plant design but is not considered material to overall plant performance.</li> <li>• Metallurgical recovery applied to the resource model averaged over 90% over the LOM based on: <ul style="list-style-type: none"> <li>▪ DSO by wet refining: 95% metallurgical recovery of the contained kaolin clay;</li> <li>▪ Site wet processed then refined: 88% metallurgical recovery of the contained kaolin clay.</li> </ul> </li> <li>• Steady site-plant throughputs of 500ktpa dry feed basis are assumed after the pre-stripping phase for the LOM.</li> <li>• Representative samples of mineralisation types suited to the three processing approaches above have been obtained by metallurgical diamond drilling and tested in metallurgical laboratories.</li> <li>• A steady plant throughput of 500 ktpa is maintained from commencement of site processing in year 2.</li> </ul>
Environmental	<ul style="list-style-type: none"> <li>• <i>The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.</i></li> </ul>	<ul style="list-style-type: none"> <li>• All environmental, heritage and tenure approvals required under State and Commonwealth legislation are being progressed. The mine is to be developed under the South Australian Mining Act 1971.</li> <li>• Apart from a small starter pit overburden landform, most of the overburden will be retained within the open pit and placed into the preceding stage mining void.</li> <li>• Sand removed by the processing operation will be returned to the pit and covered by the relocated overburden.</li> <li>• Overburden and processing sand characterisation is currently underway and will contribute to the detailed overburden landform and in pit backfill design work during the Definitive Feasibility Study.</li> </ul>
Infrastructure	<ul style="list-style-type: none"> <li>• <i>The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided or accessed.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The mine site is readily accessible by multiple sealed highways and local gravel roads. The majority of the workforce will be sourced from the local region and reside within driving distance of the project site. Infrastructure is plentiful and readily available in the region.</li> <li>• The mine development will be on private land to which access is to be obtained by the Company.</li> <li>• Appropriate power and water supplies have been identified and costed.</li> </ul>
Costs	<ul style="list-style-type: none"> <li>• <i>The derivation of, or assumptions made, regarding projected capital costs in the study.</i></li> <li>• <i>The methodology used to estimate operating costs.</i></li> <li>• <i>Allowances made for deleterious elements.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Capital cost estimates have been based on quoted budget prices or known factors and industry standard unit costs provided predominantly by specialist suppliers as well as current knowledge and industry experience where applicable.</li> <li>• Mining costs are based on industry standard unit rates and checked by contractor budget prices. Processing operating cost estimates were provided by CDE Global and from vendor budget quotes, and first principles.</li> </ul>

	<ul style="list-style-type: none"> <li>• <i>The source of exchange of exchange rates used in the study.</i></li> <li>• <i>Derivation of transportation charges.</i></li> <li>• <i>The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification etc.</i></li> <li>• <i>The allowances made for royalties payable, both Government and private.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Transport and shipping costs are based on quoted budget prices.</li> <li>• Power costs are based on industry standard rates, and gas and water costs are based on quoted budget prices.</li> <li>• Toll basis wet refining charges used in the Study are based on budget purpose quotes.</li> <li>• The SA Government retains a 3.5% net royalty on product sales, less shipping costs, and this is accounted for in the PFS financial assessment.</li> <li>• Deleterious elements and product characteristics were assessed in the assay process, and subgrade materials were largely excluded from the mineral resource. Where minor amounts of such materials are encountered, selective mining removes them or they are blended with above average quality materials to maintain the product specification.</li> <li>• Cost estimates are made in May 2020 Australian dollars, using the following assumed exchange rates where applicable: <ul style="list-style-type: none"> <li>○ United States of America Dollars      USD: AUD = 0.70</li> <li>○ Chinese Yuan      CNY: AUD = 4.80</li> </ul> </li> </ul>
Revenue factors	<ul style="list-style-type: none"> <li>• <i>The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns etc.</i></li> <li>• <i>The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The mined processing plant feed head grades (as kaolin clay content expressed as % -45µm in the kaolinised granite) are estimated utilising industry accepted geostatistical techniques with the application of relevant modifying Factors.</li> <li>• The halloysite-kaolin price assumed for LOM operations on an ex-refinery dry product packaged basis is USD500/t (A\$700/t at USD:AUD=0.70) for the premium specification wet-refined kaolin product based on expert advice and discussions with potential customers, with Chinese Renminbi/Yuan (CNY) or USD conversions to AUD.</li> </ul>
Market assessment	<ul style="list-style-type: none"> <li>• <i>The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.</i></li> <li>• <i>A customer and competitor analysis along with the identification of likely market windows for the product.</i></li> <li>• <i>Price and volume forecasts and the basis for these forecasts.</i></li> <li>• <i>For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Whilst the international market for kaolin is based on individual supplier vendor negotiations, Andromeda's staff and industry specialist advisors have a good understanding of market volumes and prices and this information has been used in the PFS.</li> <li>• There is a growing shortage of bright- white kaolin clay with a significant halloysite content suitable for the premium ceramic market.</li> <li>• The customer acceptance criteria are well understood, and the refined product is known to be technically equal to most competitor products.</li> <li>• Based on advice from the Company's industry advisors and discussions with its agents and potential customers, the PFS adopted packaged ex-refinery product price of A\$700/t (US\$500/t at an exchange rate of 0.70 USD: AUD).</li> <li>• Based on Letters of Intent for 211 ktpa from prospective customers and further expressions of interest, the PFS uses LOM annual average sales of 233 ktpa.</li> </ul>

		<ul style="list-style-type: none"> <li>• The impact of the COVID-19 pandemic is not considered material to the product pricing because sales are scheduled to extend for 26 years from 2022. Exposure to any one market is limited due to sales being anticipated to China, broader Asia, Japan and Europe.</li> <li>• For halloysite-kaolin mineral products, supply/sales agreements are specific to customer requirements and are made with numerous parties including direct customers, agents who are paid commission for securing sales, and distributors who purchase stock for supply to their own downstream customers. Commercial scale representative products will be provided to demonstrate the expected consistency and quality in order to secure binding supply agreements. At this stage testing and discussions are in progress with agents/distributors covering Australia/NZ, Asia (two large distribution houses), China (four companies), India, the Middle East and Europe. This is in addition to the direct customers who have already signed offtake letters of intent, customers where testing is in progress, and new potential customers that have either requested samples or are being targeted. Representative samples of Poochera halloysite-kaolin previously evaluated by prospective customers have been favourably assessed.</li> </ul>
Economic	<ul style="list-style-type: none"> <li>• <i>The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate etc.</i></li> <li>• <i>NPV ranges and sensitivity to variations in the significant assumptions and inputs.</i></li> </ul>	<ul style="list-style-type: none"> <li>• A financial model of the Project has been prepared by Andromeda using input factors as outlined above.</li> <li>• The model shows the Project is comfortably economically viable with a low initial capex, short payback, high NPV and high IRR. A discount rate of 8% has been used in the NPV analysis, and the inflation rate has been assumed at 0%, with costs and product prices fixed through the LOM.</li> <li>• Sensitivity of the Project to changes in the key drivers of sales price, operating cost (mining and processing cost) was carried out and showed the Project is very robust. The NPV to be most sensitive to significant changes in sales price.</li> <li>• The Study uses both a Pre-tax and After-tax basis, and a 100% Project basis for the financial assessment.</li> </ul>
Social	<ul style="list-style-type: none"> <li>• <i>The status of agreements with key stakeholders and matters leading to social licence to operate</i></li> </ul>	<ul style="list-style-type: none"> <li>• Andromeda is negotiating a range of commitments with private landowners for land access.</li> <li>• Further negotiation is required with the affected landowners, as well as regulatory approvals from the Shire Council and state authorities to enable operations.</li> <li>• The Company has been involved with the site for more than 2 years and engaged with key local community stakeholders over that period. Positive working relationships have been established with directly affected landowners, the District Council of Streaky Bay and the Wirangu Native Title Claimant Group.</li> </ul>
Other	<ul style="list-style-type: none"> <li>• <i>To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:</i></li> <li>• <i>Any identified material naturally occurring risks.</i></li> <li>• <i>The status of material legal agreements and marketing arrangements.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The PFS has confined itself to determining the economic viability of developing the Project, and its potential material impacts on the environment and community.</li> <li>• There are no identified material naturally occurring risks affecting the project or the Ore Reserve estimate and classification.</li> <li>• The Company holds current Exploration Leases over the resource and surrounding areas. Access to the site is subject to the approval of the immediate landowners, and an agreement with them is required to enable approval of the Project and grant of the mining lease to enable operations of the Project to proceed.</li> </ul>

	<ul style="list-style-type: none"> <li>• <i>The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility Study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.</i></li> </ul>	<ul style="list-style-type: none"> <li>• New commercial scale representative products are currently in the process of being produced to demonstrate the expected consistency and quality in order to support the negotiation of secure binding supply agreements. At this stage testing and discussions are in progress with agents/distributors covering Australia/NZ, Asia (two large distribution houses), China (four companies), India, the Middle East and Europe. This is in addition to the direct customers who have already signed offtake letters of intent, customers where testing is in progress, and new potential customers that have either requested samples or are being targeted.</li> <li>• It is common for binding sales contracts to be negotiated towards or after the completion of a DFS, once bulk final product has been distributed and tested, and there is a higher level of confidence between the buyer and seller about delivery timing, quantity, quality specification and pricing.</li> <li>• Arranging finance to develop the Project is required and would occur after completion of the DFS, along with tendering for suitable contractors to carry out the mining and to construct the process plant and infrastructure.</li> <li>• A range of governmental agreements and licences are required prior to the decision to commence construction can be made, in particular the Mining Proposal and Mining Lease Application to be submitted to the SA Department for Energy and Mining, in accord with the South Australian Mining Act 1971.</li> <li>• It is expected all necessary approvals and licences will be forthcoming when applied for progressively over the ensuing phases of the Project.</li> </ul>
Classification	<ul style="list-style-type: none"> <li>• <i>The basis for the classification of the Ore Reserves into varying confidence categories.</i></li> <li>• <i>Whether the result appropriately reflects the Competent Person's view of the deposit.</i></li> <li>• <i>The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).</i></li> </ul>	<ul style="list-style-type: none"> <li>• The underlying Mineral Resource classification consists of Measured and Indicated Resources together with some Inferred Mineral Resources comprising a minor part (1%) of the Production Target and not included in the Ore Reserves.</li> <li>• The Ore Reserve Estimate consists entirely of <b>Probable Reserves</b> in accordance with JORC Code (2012) guidelines. Measured Resources within the Production Target have been converted to Probable Ore Reserves due to the undeveloped status of the project and corresponding lower confidence in the Modifying Factors. Though the JORC Code allows the Measured Resources to be converted to Proven Reserves, the Project is not sufficiently advanced in land access, aboriginal cultural heritage, and environmental aspects to allow this, so the Ore Reserve is currently entirely in the Probable category. When the land access, aboriginal cultural heritage, and environmental approvals status improve, the Measured Resources can be upgraded to Proven Reserves.</li> <li>• No Inferred Mineral Resources are included in the Ore Reserve.</li> <li>• The Competent Person is satisfied the stated Ore Reserve classification reflects the outcome of the technical and economic studies.</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li>• <i>The results of any audits or reviews of Ore Reserve estimates.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The Ore Reserve estimate was prepared by MinEcoTech based on inputs from independent consulting groups, contractors, suppliers and ADN personnel.</li> <li>• The estimate has been internally reviewed but has not yet been externally audited.</li> </ul>
Discussion of relative accuracy/confidence	<ul style="list-style-type: none"> <li>• <i>Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or</i></li> </ul>	<ul style="list-style-type: none"> <li>• The confidence in the Ore Reserve is reflected by the classifications shown above.</li> <li>• The estimate is supported by a <math>\pm 25\%</math> level of accuracy technical study which included a contingency of 20% on all capital costs.</li> </ul>

	<p><i>procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.</i></p> <ul style="list-style-type: none"> <li>• <i>The statement should specify whether It relates to global or local estimates, and if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</i></li> <li>• <i>Accuracy and confidence discussions should extend to specific discussions of any Modifying Factors that may have a material impact on the Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.</i></li> <li>• <i>It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</i></li> </ul>	<ul style="list-style-type: none"> <li>• In the opinion of the Competent Person, the Ore Reserve Estimate is supported by appropriate design, scheduling, and costing work as reported in the prefeasibility study. The cost assumptions and modifying factors applied in the process of estimating the Ore Reserve are considered reasonable. These are subject to further refinement in future Definitive Feasibility Studies which may influence the accuracy and confidence of Ore Reserve.</li> <li>• Market price and exchange rate assumptions are subject to market forces and present an area of uncertainty, though the low breakeven cut-off grade provides a high tolerance to the Project.</li> <li>• The accuracy and confidence expressed above applies equally to the whole Ore Reserve.</li> <li>• In the opinion of the Competent Person, it is reasonable to anticipate that all relevant social environmental and legal approvals to operate will be granted within the indicated project timeframe.</li> </ul>
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