

Donald Minerals Sands Project - Mineral Separation

Metallurgical Testwork Update - Updated Announcement

KEY OUTCOMES

- Confirmation of the ability to produce a high quality Rare Earth Elements concentrate from a froth flotation technique, with total Rare Earth Elements (“REE”) of 51.2% with low impurity levels, at recoveries of up to 94.6% from HMC.
 - Achieved high quality zircon final product with low impurities ($\text{ZrO}_2 > 66\%$, $\text{TiO}_2 < 0.15\%$, $\text{Fe}_2\text{O}_3 < 0.1\%$, $\text{Al}_2\text{O}_3 < 0.1\%$), recoveries of zircon final products up to 90.8% from HMC, of which >80% is assay proven to be of premium specification.
 - Titania (titanium dioxide) product recoveries of up to 94.4% from HMC, with the potential to produce a 65% Ti concentrate.
 - Overall test results provide confidence in relation to the mineral separation process to be employed for final product separation of the finer, WIM-style materials, as well as confidence that commercial scale recovery of final products is achievable by the processes employed.
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Astron Corporation Limited (Astron) (ASX: ATR) previously announced on 30 March 2021 the results of mineral separation metallurgical testwork for the Donald project. This announcement is being rereleased as Astron has been advised that certain additional information (including tables under the JORC Code, 2012 edition) were required to be included in this announcement.

Accordingly, Astron updates the results of metallurgical test work relating to its Donald mineral sands project, located in regional Victoria. Pilot scale process work has been undertaken on 1,000 tonnes (t) of ore recovered from a test pit and subsequently produced a 24 tonne sample of heavy mineral concentrate (HMC) for purposes of pilot testing the processing of HMC into final product streams.

The metallurgical test work has been undertaken at facilities operated by Mineral Technologies. The test work and evaluation has included the production of zircon, a titania (titanium dioxide) concentrate, and a rare earth element (REE) concentrate. The work represents a key part of the work stream for the potential commercialisation of the Donald resource; one of the largest undeveloped mineral sands ore bodies globally.

The metallurgical test work forms an integral part of determining the full scope of the Donald mineral sands project, including: rare earth recovery; zircon and titania production stream and product specifications (suitable for customer testing and offtake arrangements); determination of concentrating and processing flow sheet and configuration on site; further pilot work and the move to a detailed

feasibility study during 2021 to allow completion of project economics for determination of project funding strategies.

Donald Project – Background

The Donald mineral sands project is located in the Wimmera region of Victoria, 60 kilometres from Horsham and near the township of Minyip.

Donald represents one of the largest known zircon and titanium ore bodies in the world and a potentially significant new source of global supply. Based on an Ore Reserve Update, as announced on 18 February 2021, the Donald project area holds Ore Reserves of 602 million tonnes (mt) of ore with an average heavy mineral (HM) grade of 4.8% consisting of 310 mt of proved ore and 292 mt of probable ore. In total, the ore reserves equates to an approximate, in-situ ore body of 28.9 Mt of heavy minerals, comprised: 5.4 mt of zircon; 9.2 mt of ilmenite; 8 mt of higher titanium content products of rutile and leucoxene (Hi-Ti), as well as a significant REE component of 491 thousand tonnes (kt).

It is likely that the Donald project will produce four main product streams: a premium, ceramic grade zircon (expected to be 80% of total zircon, or ~95ktpa –100ktpa during Stage 1); a zircon 60 product (~20 – 25ktpa); a combined titania product, with a 65% titanium dioxide content (>200ktpa), suitable for slag production for both chloride and sulphate pigment production; and a REE concentrate (~15ktpa). Astron is now investigating a pit to final product on site, allowing the capture of the value-adding processing component within Australia (as opposed to offshore processing of HMC).

The initial stage of the planned Donald project will involve the mining and processing of the Ore Reserves contained within ML5532, located wholly within RL2002 (refer tenement map below). Mining operations are then planned to extend into the remainder of RL2002. The current Ore Reserves for the project encompass only RL2002; while a Mineral Resources is available for the entire area including RL2003.

Metallurgical Test Work – Background

In 2018 and 2019, Astron excavated and processed ore from a test pit and recovered a 1000 tonne bulk sample suitable for the pilot production of a heavy mineral concentrate. 24 tonnes of HMC was produced from a pilot scale heavy mineral concentration plant. A 75kg batch sample was extracted from the HMC for confirmatory and optimisation testing to confirm the suitability of a hybrid processing approach.

Astron advises that the test results obtained have been satisfactory; and provide confidence that commercial scale recovery of final products is achievable by the process employed.

Summary of Results

Rare Earth Recoveries

- Flotation testing using conventional reagents produced a mixed rare earth concentrate stream containing 51.2% total REE with low impurities;

- using CeO₂ as a tracer, rare earth mineral recovery to final rare earth mineral concentrate was calculated to be up to 94.6% relative to HMC, using a wet process only;
- further separation to a light rare earth concentrate with mineral assemblage of 51.3% of light REE (La, Ce, Pr, Nd, Sm, Eu, Gd) and a heavy rare earth concentrate containing 26.1% heavy REE (Tb, Dy, Ho, Er, Tm, Yb, Lu, Y) was achieved.

Zircon Recoveries

- High quality zircon specifications with assemblage characteristics of ZrO₂ > 66.0%, TiO₂ < 0.15%, Fe₂O₃ < 0.1%, Al₂O₃ < 0.1%, were achieved;
- optimisations of the downstream circuits has the potential to significantly improve ZrO₂ recovery to 90.6% relative to HMC;
- recovery to high quality zircon was calculated to be 72.6% relative to HMC;
- an additional 18% of zircon is expected to report as a zircon product with >60% ZrO₂.

Titania Product Recoveries

- The metallurgical test work produced a combined titania concentrate with 64.9% titanium dioxide content (TiO₂);
- opportunities were identified to lower the silica content within the titania concentrate to enable processing to produce a chlorinatable slag.

Figure 1. Astron's final product samples (REEC, zircon, non-magnetic concentrate, magnetic concentrate respectively)



Process Flowsheet

A detailed process flow sheet is being developed, which is likely to contain the following main elements:

- a wet concentrator plant containing spirals for production of a heavy mineral concentrate
- a flotation circuit to recover the REE concentrate from the heavy mineral concentrate;
- wet high intensity magnetic separation ("WHIMS") for production of a magnetic concentrate (consisting of ilmenite) and non-magnetic (consisting of Hi-Ti and zircon) product stream;
- a gravity non-magnetic upgrade circuit containing spirals for further separation of the zircon products from the Hi-Ti products; and
- a mineral processing circuit, including electro-static separation, to produce a final zircon production stream.

Key Findings

- Associated with the recovery of the REE prior to separation of the mineral sands constituents of the HMC, the subsequent concentrate had a natural radioactivity of under 9 becquerel/gram (Bq/g), meeting export regulatory requirements;
- The recent scope of works confirms the practicality of conducting downstream final product mineral separation in Australia, and Astron intends to investigate opportunities for an integrated mining, concentrating and final product separation concept locally for the Donald project; and
- given test results were achieved via a small scale, batch process, it can be anticipated that on a continuing operating basis, further improvements in recoveries and grades may be expected.

Future Areas of Technical and Market Investigation

- Following this test work, Astron will move towards final conceptual design considerations, as well as consecutively engaging in definitive pilot scale processing work;
- Astron has conducted opacification tests on its premium zircon product (at its own laboratory test facilities in Yingkou, China) and plans to release the results of these tests shortly, these results are integral to potential customer engagement and off-take discussions; and
- Astron intends to commence the process of providing product samples of both the titania and zircon products to selected customers for testing and as part of these product off-take discussions.

For further information, please contact:

Tiger Brown, Managing Director

+61 3 5385 7088

Joshua Theunissen, Australian Company Secretary

+61 3 5385 7088

joshua.theunissen@astronlimited.com

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This announcement is authorised for release to ASX by the Board of Directors of Astron

About Astron Corporation Limited

Astron Corporation Limited (ATR: ASX) is an ASX listed company, with extensive (30 years+) experience in mineral sands processing, technology and downstream product development, as well the marketing and sale of zircon and titania (titanium dioxide) products, most notably in China. Astron conducts a mineral sands trading operation based in Shenyang, China and operates a zircon and titanium chemicals and metals research and development facility in Yingkou, China. The company's prime focus is upon the development of the large, long-life and attractive zircon assemblage Donald mineral sands deposit in the Murray Basin, Victoria. Donald has the ability to represent a new major source of global supply in mineral sands. Astron is also the owner of the Niafarang mineral sands project in Senegal, West Africa. Niafarang is a high-grade coastal mineral sands deposit, planned to be developed using simple dredge mining and processing methodology.

COMPETENT PERSONS STATEMENT

The information in this report that relates to Exploration Results and Mineral Resources for the Donald Project is based on information first reported in previous ASX announcements by the Company, as listed in this announcement. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the estimates in the original announcements continuing to apply and have not materially changed. The information in this document that relates to the estimation of the Ore Reserves is based on information compiled by Mr Pier Federici, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy and Australian Institute of Geoscientists. Mr Federici is a full-time employee of AMC Consultants Pty Ltd and is independent of DMS, the owner of the Donald Project Mineral Resources. Mr Federici 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'. The information in this document that relates to the estimation of the Mineral Resources is based on information compiled by Mr Rod Webster, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy and Australian Institute of Geoscientists. Mr Webster is a full-time employee of AMC Consultants Pty Ltd and is independent of DMS, the owner of the Donald Project Mineral Resources. Mr Webster 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'. The Company confirms that the form and context in which the Competent Persons' findings are presented have not materially modified from the relevant original market announcement.

The information in this document that relates to the metallurgical performance and outcomes of testwork is based on information compiled by Mr Ross McClelland, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy. Mr McClelland is the principal metallurgist and director of Metmac Services Pty Ltd. Mr McClelland has been involved with the metallurgical development of the Wimmera-style mineral sands resources for more than 30 years. He has provided metallurgical consultation services to DMS for more than 7 years. He qualifies as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. The Company confirms that the form and context in which the Competent Persons' findings are presented have not been prematurely modified from the relevant original market announcement.

CAUTIONARY STATEMENT

Certain sections of this ASX Release contain forward looking statements that are subject to risk factors associated with, among others, the economic and business circumstances occurring from time to time in the countries and sectors in which the Astron group operates. It is believed that the expectations reflected in these statements are reasonable, but they may be affected by a wide range of variables which could cause results to differ materially from those currently projected.

The information contained in this Release is not investment or financial product advice and is not intended to be used as the basis for making an investment decision. Please note that, in providing this document, Astron has not considered the objectives, financial position or needs of any particular recipient. Astron strongly suggests that investors consult a financial advisor prior to making an investment decision.

This Release may include “forward looking statements” within the meaning of securities laws of applicable jurisdictions. Forward looking statements can generally be identified by the use of the words “anticipate”, “believe”, “expect”, “project”, “forecast”, “estimate”, “likely”, “intend”, “should”, “could”, “may”, “target”, “plan”, “guidance” and other similar expressions. Indications of, and guidance on, future earning or dividends and financial position and performance are also forward-looking statements. Such forward-looking statements are not guarantees of future performance and involve known and unknown risks, uncertainties and other factors, many of which are beyond the control of Astron and its related bodies corporate, together with their respective directors, officers, employees, agents or advisers, that may cause actual results to differ materially from those expressed or implied in such statement. Actual results, performance or achievements may vary materially from any forward looking statements and the assumptions on which those statements are based. Readers are cautioned not to place undue reliance on forward looking statements and Astron assumes no obligation to update such information.

Figure 2 Donald Project Tenement Map

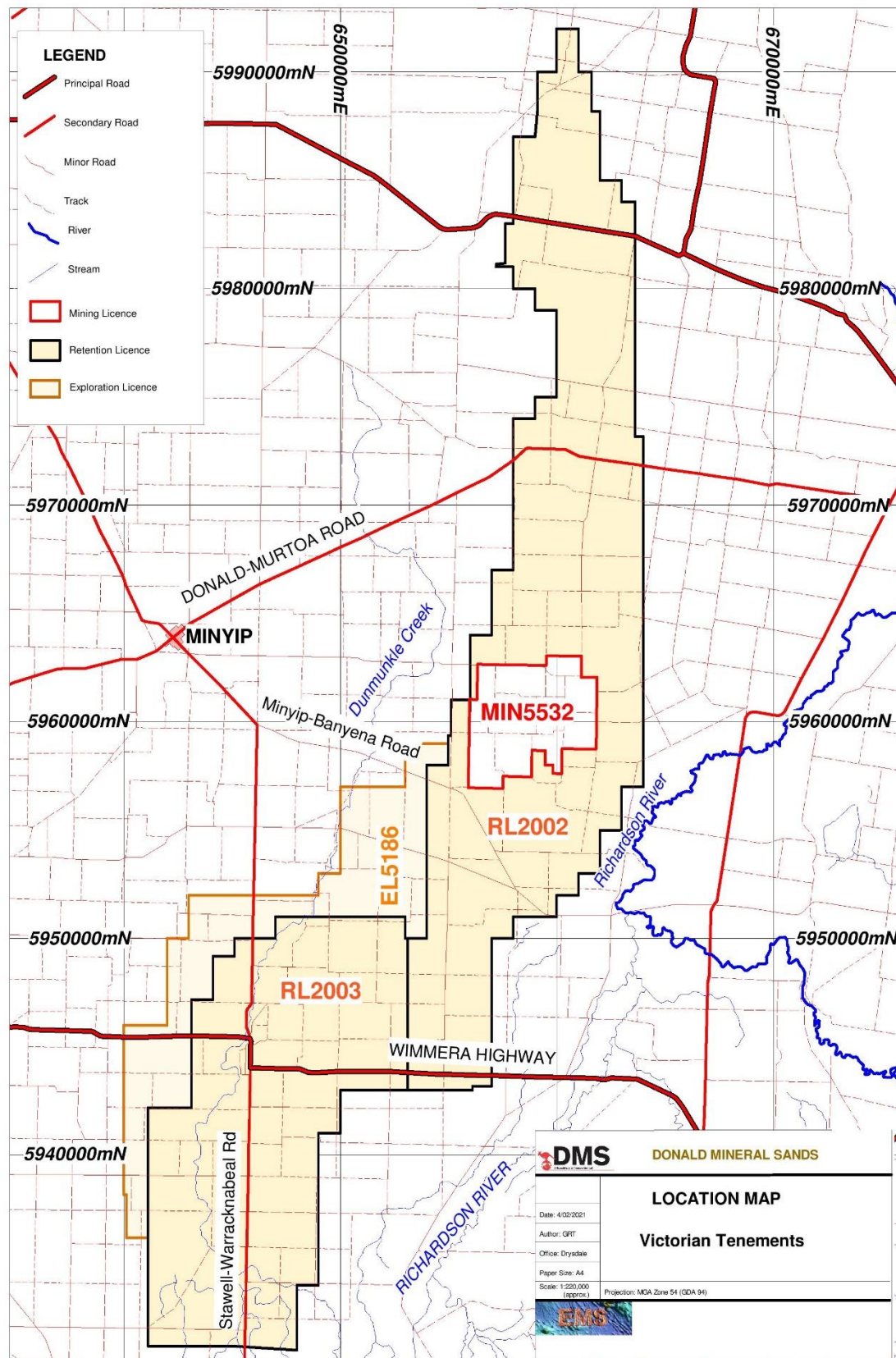


Figure 3. Bulk Test Pit - Costean location

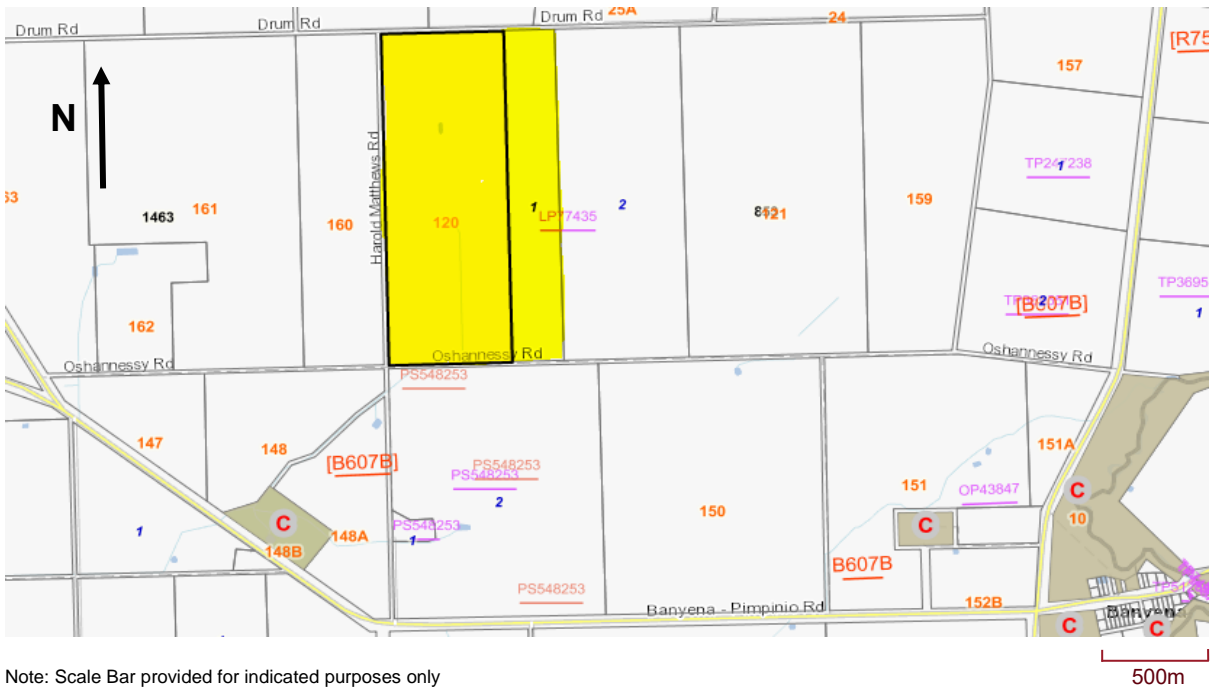
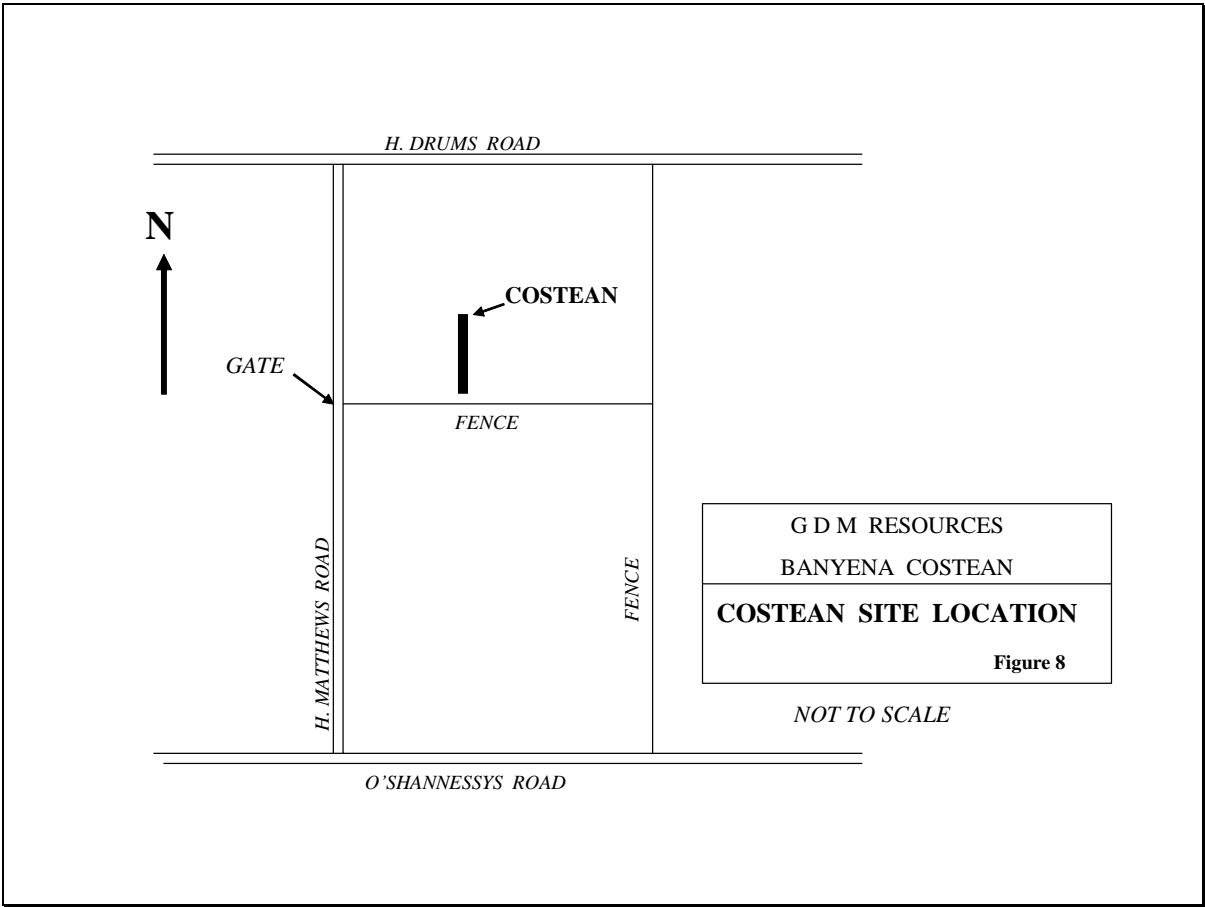


Figure 3.1



APPENDIX A: DONALD DEPOSIT UPDATED ORE RESERVE & MINERAL RESOURCE STATEMENTS

Ore Reserves

Based on the supporting mine planning completed, pit inventories to support an Ore Reserve Estimate, in accordance with JORC 2012 are shown in Table 1.1. Ore has been classified as Proven Ore Reserve, based on Measured Mineral Resource and Probable Ore Reserve, based on Indicated Mineral Resource. The results of the Ore Reserve estimate reflect the Competent Person's view of the deposit.

Note that the Mineral Resources are reported inclusive of the Ore Reserve.

Table 1.1 Donald Mineral Sands Ore Reserve for RL 2002 at February 2021

Classification	Tonnes (mt)	Slimes (%)	Oversize (%)	HM (%)	Ilmenite (%HM)	Leucoxene (%HM)	Rutile (%HM)	Zircon (%HM)	Monazite (%HM)
Within ML5532									
Proved	170	14.2	11.9	5.3	31.4	22.1	7.1	18.8	1.9
Probable	24	13.4	12.5	4.9	33.2	21.3	6.7	20.2	2.0
Total	194	14.1	12.0	5.3	31.6	22.0	7.0	19.0	1.9
Within RL2002 Outside of ML5532									
Proved	140	19.1	7.1	5.6	31.0	18.4	9.6	21.2	1.8
Probable	268	15.8	14.4	4.0	32.3	19.5	7.5	17.0	1.6
Total	408	16.9	11.9	4.5	31.8	19.0	8.4	18.8	1.8
Total within Donald Deposit (RL2002)									
Proved	310	16.4	9.8	5.4	31.2	20.4	8.2	19.9	1.8
Probable	292	15.6	14.2	4.1	32.4	19.7	7.4	17.3	1.6
Total	602	16.0	11.9	4.8	31.7	20.1	7.9	18.8	1.7

Note

1. The ore tonnes have been rounded to the nearest 1mt and grades have been rounded to one decimal place.
2. The Ore Reserve is based on indicated and Measured Mineral Resource contained with mine designs above an economic cut-off. The economic cut-off is defined as the value of the products less the cost of processing
3. Mining recovery and dilution have been applied to the figures above.

The JORC Code 2012 Table 1, Section 4 to support the Ore Reserve Estimate is included in Appendix B of the Donald Project Ore Reserve Statement released 18 February 2021. The Ore Reserve estimates have been compiled in accordance with the guidelines defined in the 2012 JORC Code.

Mineral Resources

Astron Corporation last reported the Mineral Resource on 7th April 2016 in accordance with JORC 2012. Below is an exact of the AMC report (AMC 115075) prepared to support the Mineral Resource. The Mineral Resource estimate was reported in accordance with the JORC Code for the heavy minerals (HM) and valuable heavy minerals (VHM) Content for MIN5532 and RL 2002 of the Donald Heavy Mineral Sands Deposit and for RL2003, RLA2006 (since been amalgamated into RL2003) of the Jackson Heavy Mineral Sands Deposit.

The Mineral Resource estimate was reported in accordance with the JORC Code for the heavy minerals (HM) and valuable heavy minerals (VHM) content has been used for the preparation of the Ore Reserve. Only the resource containing valuable heavy minerals (VHM) content has been used for the preparation of the Ore Reserve.

Table 1.2 Mineral Resource at a 1% Cut-off

Classification	Tonnes (mt)	HM (%)	Slimes (%)	Oversize (%)
Within ML5532				
Measured	372	4.5	14.4	12.8
Indicated	75	4.0	13.8	13.1
Inferred	7	3.5	13.5	10.6
Subtotal	454	4.4	14.2	12.8
With RL2002 Outside of ML5532				
Measured	343	3.9	19.8	8.1
Indicated	833	3.3	16.2	13.5
Inferred	1,595	3.3	15.7	6.0
Subtotal	2,771	3.4	16.4	8.5
Total within Donald Deposit (RL2002)				
Measured	715	4.2	17.0	10.6
Indicated	907	3.4	16.0	13.4
Inferred	1,603	3.4	15.7	6.0
Subtotal	3,225	3.6	16.1	9.1
Total within Jackson Deposit (RL2003)				
Measured	0	0.0	0.0	0.0
Indicated	1,903	2.8	19.0	5.8
Inferred	584	2.9	16.7	3.3
Subtotal	2,497	2.9	18.5	5.2
Total Donald Project				
Measured	715	4.3	18.1	11.1
Indicated	2,811	3.0	17.9	8.2
Inferred	2,187	3.3	16.4	5.5
Total	5,712	3.2	16.9	7.3

Note

1. The total tonnes may not equal the sum of the individual resources due to rounding.
2. The cut-off grade is 1% HM.
3. The figures are rounded to the nearest: 10M for tonnes, one decimal for HM, Slimes and Oversize.
4. For further details including JORC Code, 2012 Edition – Table 1 and cross sectional data, see previous announcements dated 7 April 2016, available at ASX's website at:
www.asx.com.au/asxpdf/20160407/pdf/436cjqcg3cf47.pdf

Table 1.3 Mineral Resource where VHM Data is Available at a Cut-off of 1% HM

Classification	Tonnes (mt)	Slimes (%)	Oversize (%)	HM (%)	Ilmenite (%HM)	Leucoxene (%HM)	Rutile (%HM)	Zircon (%HM)	Monazite (%HM)
Within ML5532									
Measured	264	14.2	12.2	5.4	31	22	7	19	2
Indicated	49	13.6	12.1	4.9	33	22	7	20	2
Inferred	5	13.5	10.2	4.2	36	20	7	22	3
Total	317	14.1	12.1	5.3	32	22	7	19	2
Within RL2002 Outside of ML5532									
Measured	185	19.1	7.3	5.5	31	19	9	21	2
Indicated	454	15.9	13.2	4.2	33	19	7	17	2
Inferred	647	15.2	5.8	4.9	33	17	9	18	2
Total	1,286	16.0	8.6	4.8	33	18	8	18	2
Total within Donald Deposit (RL2002)									
Measured	448	16.2	10.2	5.4	31	21	8	20	2
Indicated	503	15.7	13.1	4.3	33	20	7	18	2
Inferred	652	15.2	5.8	4.9	33	17	8	18	2
Total	1,604	15.6	9.3	4.9	32	19	8	18	2
Total within Jackson Deposit (RL2003)									
Measured									
Indicated	668	18.1	5.4	4.9	32	17	9	18	2
Inferred	155	15.1	3.1	4.0	32	15	9	21	2
Total	823	17.6	5.0	4.8	32	17	9	19	2
Total Donald Project									
Measured	448	16.2	10.2	5.4	31	21	8	20	2
Indicated	1,171	17.1	8.7	4.6	32	18	8	18	2
Inferred	807	15.2	5.3	4.7	33	17	9	19	2
Total	2,427	16.3	7.0	4.8	32	18	8	19	2

Note

1. The total tonnes may not equal the sum of the individual resources due to rounding.
2. The cut-off grade is 1% HM.
3. The figures are rounded to the nearest: 1mt for tonnes, one decimal for HM, Slimes and Oversize and whole numbers for zircon, ilmenite, rutile + anatase, leucoxene and monazite.
4. Zircon, ilmenite, rutile + anatase, leucoxene and monazite percentages are report as a percentage of the HM.
5. Rutile + anatase, leucoxene and monazite resource has been estimated using fewer samples than the other valuable heavy minerals. The accuracy and confidence in their estimate is therefore lower.
6. For further details including JORC Code, 2012 Edition – Table 1 and cross sectional data, see previous announcements dated 7 April 2016, available at ASX's website at www.asx.com.au/asxpdf/20160407/pdf/436cjqcg3cf47.pdf

APPENDIX B: DONALD MINERAL SANDS TESTPIT TABLE 1 SECTION 1, 2 & 3

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <i>Nature and quality of sampling (eg 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.</i> <i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i> <i>Aspects of the determination of mineralization that are Material to the Public Report.</i> <i>In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m 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 mineralization types (eg submarine nodules) may warrant disclosure of detailed information.</i> 	<ul style="list-style-type: none"> One bulk ore and five bulk density samples were taken from the Donald deposit in March 2018. The bulk sample was taken from the top of the mineralized zone at 9m below the surface to a depth of 16m, totaling a 7m thickness. The bulk sample suitable for metallurgical test work was dug using a Cat 330 excavator. The test pit was benched and dug in two blocks with the top block approximately 17m long x 6m wide x 5m deep and the lower block 7m long x 6m wide x 2m deep. Both blocks formed the one bulk sample which was used for metallurgical test work. The mineralized Loxton Sands were also sampled by hand shovels to depths of approximately 0.3 m for five bulk density samples used to measure the bulk density, moisture content, Atterberg limits and particle size distribution. These samples weighing 1 to 1.5 kg were placed in sealed plastic bags.
Drilling techniques	<ul style="list-style-type: none"> <i>Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg 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).</i> 	<ul style="list-style-type: none"> No drilling was undertaken
Drill sample recovery	<ul style="list-style-type: none"> <i>Method of recording and assessing core and chip sample recoveries and results assessed.</i> <i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i> <i>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.</i> 	<ul style="list-style-type: none"> No drilling as undertaken. No relationship between recovery and grade were found in the bulk sample as the total material within the tested mineralized zones was sampled. The bulk sample contained 5.1% HM, 2.22% TiO₂ and 0.67 % ZrO₂ The Mineral Reserves stating 4.8 % HM, 2.87 % TiO₂ and 0.90 % ZrO₂
Logging	<ul style="list-style-type: none"> <i>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.</i> <i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i> <i>The total length and percentage of the relevant intersections logged.</i> 	<ul style="list-style-type: none"> During excavation the following was recorded: <ul style="list-style-type: none"> Lithologies Induration Material hardness
Sub-sampling	<ul style="list-style-type: none"> <i>If core, whether cut or sawn and whether quarter, half or all core taken.</i> 	<ul style="list-style-type: none"> Five sub-samples (1 to 5 kg) were taken for bulk density testing.

Criteria	JORC Code explanation	Commentary
techniques and sample preparation	<ul style="list-style-type: none"> If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry. For all sample types, the nature, quality and appropriateness of the sample preparation technique. Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples. Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling. Whether sample sizes are appropriate to the grain size of the material being sampled. 	<ul style="list-style-type: none"> One bulk mineralised sample of 1000 tonnes was sent for metallurgical testing.
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc. Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established. 	<ul style="list-style-type: none"> The following laboratory tests were carried on the bulk sample as a whole: <ul style="list-style-type: none"> Moisture content Density separation by size fraction. Particle size -250 um to +20 um were used in the analysis. Bulk density by size fraction THM content TiO₂, ZrO₂, CeO₂, Fe₂O₃ and Al₂O₃ were analysed and percentages were calculated. Duplicates were prepared with no other laboratories were used.
Verification of sampling and assaying	<ul style="list-style-type: none"> The verification of significant intersections by either independent or alternative company personnel. The use of twinned holes. Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. Discuss any adjustment to assay data. 	<ul style="list-style-type: none"> No twin samples were collected or assayed. The intersection of the mineralized zone was recorded by the site geologist. No adjustments to the data were undertaken.
Location of data points	<ul style="list-style-type: none"> Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. Specification of the grid system used. Quality and adequacy of topographic control. 	<ul style="list-style-type: none"> The position of the bulk sample was mapped and surveyed
Data spacing and distribution	<ul style="list-style-type: none"> Data spacing for reporting of Exploration Results. Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. Whether sample compositing has been applied. 	<ul style="list-style-type: none"> A single bulk sample was taken. The size of the sample (1000 tonne) was sufficient to identify grade, lithology continuity and for metallurgical test work. No compositing was applied
Orientation of data in relation to geological	<ul style="list-style-type: none"> Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. 	<ul style="list-style-type: none"> The bulk sample was unbiased in regards to the style of mineralisation for metallurgical test work. The bulk sample consists of mineralisation

Criteria	JORC Code explanation	Commentary
structure	<ul style="list-style-type: none"> <i>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.</i> 	<p>taken from two blocks. Most material was taken from the top block sample. It was taken in mineralisation from 9m to 14m below surface (510 bank cubic metres) and the lower block was taken in mineralisation from 14m to 16m depth (84bank cubic metres).</p> <ul style="list-style-type: none"> The mineralisation style is similar in both blocks and representative for metallurgical test work. The bulk sample dimensions are very small in regard to the large dimensions of the deposit (approx. 3km width and over 10km long). There is no bias in relation to the orientation of the sample.
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> <i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i> <i>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.</i> 	<ul style="list-style-type: none"> The bulk sample was unbiased in regards to the flat lying nature of mineralisation for metallurgical test work. Most material was taken from the top block sample. It was taken in mineralisation from 9m to 14m below surface (510 bank cubic metres) and the lower block was taken in mineralisation from 14m to 16m depth (84bank cubic metres). The mineralisation style is similar in both blocks and representative for metallurgical test work. This bulk sample dimensions are very small in regard to the large dimensions of the deposit (approx. 3km width and over 10km long)
Sample security	<ul style="list-style-type: none"> <i>The measures taken to ensure sample security.</i> 	<ul style="list-style-type: none"> The five bulk density samples were stored in sealed bags on private land controlled by the company. The bulk sample was stored on location and loaded into covered bulk trucks and transported to the processing plant in Queensland.
Audits or reviews	<ul style="list-style-type: none"> <i>The results of any audits or reviews of sampling techniques and data.</i> 	<ul style="list-style-type: none"> Only internal reviews were carried out.

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 style="list-style-type: none"> <i>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.</i> <i>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.</i> 	<ul style="list-style-type: none"> This sample was taken within MIN5532 which is located within RL2002 owned by Donald Mineral Sands (refer to Figure 2). AMC has been informed by Astron Limited that no third parties or other interests impact on the exploration licence. AMC is not aware of any known impediments to the tenure being in existence. Land use is broad acre cropping

Criteria	JORC Code explanation	Commentary
Exploration done by other parties	<ul style="list-style-type: none"> Acknowledgment and appraisal of exploration by other parties. 	<ul style="list-style-type: none"> Drilling by CRA Exploration Pty Ltd in 1980's. Drilling and bulk sampling by Zirtanium Ltd in 2000, 2002 and 2004.
Geology	<ul style="list-style-type: none"> Deposit type, geological setting and style of mineralisation. 	<ul style="list-style-type: none"> WIM-style mineralisation, fine grained heavy mineral deposit within the Loxton Sands. The deposit can be described as a Tertiary aged succession of marine, coastal and continental sediments deposited with heavy minerals in the area. The deposit consists of a solitary or composite broad, lobate sheet-like body of considerable aerial extent, highly sorted and associated with fine to very fine- grained micaceous sand with minor silt, clay and gravel beds. The HM occurs in parallel and cross laminated beds within the host unconsolidated sand, In the Donald deposit the HM mineralisation varies from 4m to over 18m in thickness. These WIM deposits are thought to represent accumulations formed below the active wave base in a near shore marine environment, possibly representing the submarine equivalent of the coarse-grained beach or strand style HM deposits. Minor coarse-grained deposits can occur at the top part of the Loxton Sands.
Drill hole Information	<ul style="list-style-type: none"> 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 style="list-style-type: none"> easting and northing of the drill hole collar elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar dip and azimuth of the hole down hole length and interception depth hole length. If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case. 	<ul style="list-style-type: none"> Previous drilling was used to identify the location of the bulk sample. The sample was taken within the following co-ordinates (projection MGA94): <ul style="list-style-type: none"> Easting – 659,826.4 m to 659,832.6 m Northing – 5,953,155.6 m to 5,953,172.5 m Depth from surface - 9 m
Data aggregation methods	<ul style="list-style-type: none"> In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated. Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail. The assumptions used for any reporting of metal equivalent values should be clearly stated. 	<ul style="list-style-type: none"> The information reported is the aggregation of samples taken by an excavator within a single bulk sample. A single bulk sample grade is reported within the -250 um to +20 um size fraction as containing 5.1 % HM. No metal equivalents are reported.
Relationship between	<ul style="list-style-type: none"> These relationships are particularly important in the reporting of Exploration 	<ul style="list-style-type: none"> The bulk sample was taken in two blocks, the top block sample was

Criteria	JORC Code explanation	Commentary
mineralisation widths and intercept lengths	<p><i>Results.</i></p> <ul style="list-style-type: none"> <i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i> <i>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').</i> 	<p>taken in the mineralisation from 9m to 14m below surface for 510 bank cubic metres and 17m long x 6m width x 5m deep and the lower block was taken in mineralisation from 14m to 16m depth for 84bank cubic metres and 7m long x 6m width x 2m deep).</p> <ul style="list-style-type: none"> The mineralisation in the two blocks is a similar style and flat lying and representative for metallurgical test work.
Diagrams	<ul style="list-style-type: none"> <i>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.</i> 	<ul style="list-style-type: none"> Refer to Figure 3 for location of bulk sample.
Balanced reporting	<ul style="list-style-type: none"> <i>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.</i> 	<ul style="list-style-type: none"> The bulk sample is the complete Exploration Results being reported.
Other substantive exploration data	<ul style="list-style-type: none"> <i>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.</i> 	<ul style="list-style-type: none"> In 2010 a bulk sample within MIN5532 was taken using various composited drill holes around hole D10_044. Test work was completed in 2010 to compare results from test pit bulk sample taken in 2005. The entire Loxton Sands horizon was sampled resulting in a composited low-grade sample of 2%HM head grade. In 2005 a test pit within EL4433 (now RL2003), material was processed at Mildura pilot plant and formed the basis of a process flow sheet design at the time. In 2000 a Caldwell hole near MIN5532 was drilled. Test work was carried out in 2001 and 2004 to develop process flow sheet design and determine HM, oversize, slimes and valuable mineral recoveries.
Further work	<ul style="list-style-type: none"> <i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i> <i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i> 	<ul style="list-style-type: none"> The pit used to provide the bulk sample was rehabilitated in 2020. No additional bulk sampling is proposed at the moment.

Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	<ul style="list-style-type: none"> <i>Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral</i> 	<ul style="list-style-type: none"> No new Mineral Resources are being reported based on the bulk sample

Criteria	JORC Code explanation	Commentary
	<p>Resource estimation purposes.</p> <ul style="list-style-type: none"> Data validation procedures used. 	
Site visits	<ul style="list-style-type: none"> Comment on any site visits undertaken by the Competent Person and the outcome of those visits. If no site visits have been undertaken indicate why this is the case. 	<ul style="list-style-type: none"> The Competent Person, Ross McClelland, visited the site and viewed the excavation of the bulk sample as with the Metallurgical performance of the pilot plant process.
Geological interpretation	<ul style="list-style-type: none"> Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit. Nature of the data used and of any assumptions made. The effect, if any, of alternative interpretations on Mineral Resource estimation. The use of geology in guiding and controlling Mineral Resource estimation. The factors affecting continuity both of grade and geology. 	<ul style="list-style-type: none"> The previous drillhole data confirms the geological interpretation. The HM is contained within the Loxton Sands unit which exists over the entire tenements RL2003 and MIN5532. No realistic alternative interpretations can be made. Geology and site observation was used to locate the top of the Loxton Sands and the mineralized zone.
Dimensions	<ul style="list-style-type: none"> The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource. 	<ul style="list-style-type: none"> Almost all of MIN5532 contains mineralization. The mineralization ranges in depth from 8 m to 22 m. The bulk sample was taken from a depth of 9m to 16m in the mineralization.
Estimation and modelling techniques	<ul style="list-style-type: none"> The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used. The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data. The assumptions made regarding recovery of by-products. Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation). In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed. Any assumptions behind modelling of selective mining units. Any assumptions about correlation between variables. Description of how the geological interpretation was used to control the resource estimates. Discussion of basis for using or not using grade cutting or capping. The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available. 	<ul style="list-style-type: none"> No new Mineral Resource estimation or reporting based on the bulk sample is being carried out.
Moisture	<ul style="list-style-type: none"> Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content. 	<ul style="list-style-type: none"> The bulk sample moisture content was determined to be 13.7%

Criteria	JORC Code explanation	Commentary
Cut-off parameters	<ul style="list-style-type: none"> The basis of the adopted cut-off grade(s) or quality parameters applied. 	<ul style="list-style-type: none"> No new Mineral Resource estimation or reporting based on the bulk sample is being carried out.
Mining factors or assumptions	<ul style="list-style-type: none"> Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made. 	<ul style="list-style-type: none"> It is assumed the dry mining methods will be employed with the option of using wet mining methods.
Metallurgical factors or assumptions	<ul style="list-style-type: none"> The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made. 	<ul style="list-style-type: none"> Metallurgical testing of the bulk sample has shown: <ul style="list-style-type: none"> A de-slimed fine sample product with elevated TiO₂, ZrO₂ and CeO₂ can be produced. The confirmed recoveries of in-size and in SG minerals to HMC, relative to the wet concentrator plant (WCP) feed are 88.5% for TiO₂, 94.3% for ZrO₂ and 93.8% for CeO₂.
Environmental factors or assumptions	<ul style="list-style-type: none"> Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made. 	<ul style="list-style-type: none"> For Donald Mineral Sands mining license MIN5532 conditional approval has been obtained from the Victorian Government for mining of the deposit and placement of all waste material back into the mined-out void. Astron Limited has informed AMC that the current understanding is that there are no social or environmental issues which will impact on processing or mining of the deposit.
Bulk density	<ul style="list-style-type: none"> Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples. The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit. Discuss assumptions for bulk density estimates used in the evaluation process of the different materials. 	<ul style="list-style-type: none"> Bulk density tests for the five locations where the bulk pre-sample was taken showed a range of; Wet 2.07 to 2.21 t/m³ Dry 1.74 to 1.83 t/m³ Bulk density was measured using the sand replacement method (AS 1289.5.3.1)
Classification	<ul style="list-style-type: none"> The basis for the classification of the Mineral Resources into varying confidence categories. Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data). 	<ul style="list-style-type: none"> No new Mineral Resource have been reported or classified based on the bulk sample.

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> Whether the result appropriately reflects the Competent Person's view of the deposit. 	
Audits or reviews	<ul style="list-style-type: none"> The results of any audits or reviews of Mineral Resource estimates. 	<ul style="list-style-type: none"> Previous Mineral Resource estimates based on drillhole samples have been audited by a third party independent consultancy, and they found no issues with the Mineral Resource estimate and reporting.
Discussion of relative accuracy/confidence	<ul style="list-style-type: none"> Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate. 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. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available. 	<ul style="list-style-type: none"> No new Mineral Resource have been reported or classified based on the bulk sample. There has been no production to date.