

# Perpetual Achieves Significant Impurity Reduction at Beharra Silica Sand Project

**ANZAPLAN Test Work Delivers Consistent Low-Iron Results, Highlighting Potential for Perpetual to Access Premium Silica Sand Markets**

## HIGHLIGHTS

- ANZAPLAN test work confirms Beharra silica sand can be upgraded to ~110–120 ppm Fe<sub>2</sub>O<sub>3</sub>
- Represents a material improvement from previous test work (~150 ppm Fe<sub>2</sub>O<sub>3</sub>)
- Results achieved consistently across multiple processing methods
- High-purity silica product delivered using conventional flowsheet:
  - Classification
  - Gravity separation
  - Magnetic separation
- Product quality meets specifications for multiple premium glass markets
- Results place Beharra within close range of <100 ppm Fe<sub>2</sub>O<sub>3</sub> required for solar glass
- Further test work planned to assess potential for additional impurity reduction, including use of mild processing enhancements.
- Project advancement strategy for Beharra now under review, following encouraging metallurgical outcomes

**Perpetual Resources Ltd** (“Perpetual” or “the Company”) (**ASX: PEC**) is pleased to announce the results of a comprehensive metallurgical test work program undertaken by leading German laboratory ANZAPLAN on silica sand from its Beharra Project in Western Australia.

## High-Purity Silica Product Achieved

The test work successfully reduced iron (Fe<sub>2</sub>O<sub>3</sub>) content from approximately 0.076% (760 ppm) in raw silica sand to ~0.011–0.012% (110–120 ppm) in processed product, representing a significant improvement on the Company’s previous test work results of ~0.015% (150 ppm).

Importantly, these results were achieved consistently across a range of processing pathways, including magnetic separation, flotation and gravity separation, as well as combination flowsheets.

---

### Perpetual Resources Ltd

**T:** 08 6256 5390


**E:** [info@perpetualresources.co](mailto:info@perpetualresources.co)

**W:** [perpetualresources.co](http://perpetualresources.co)

**ACN:** 154 516 533

**Principal & Registered Office:**

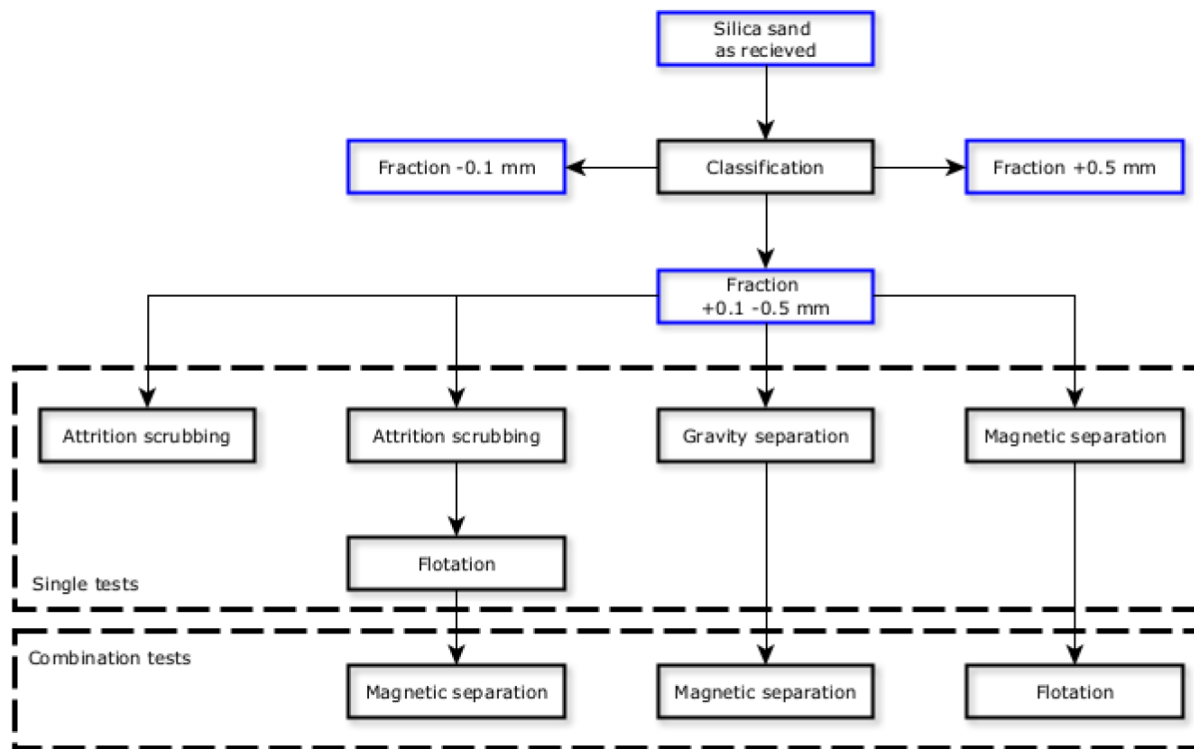
Suite 2, 68 Hay Street, Subiaco, Western Australia 6008



**Simple and Low-Cost Processing Flowsheet**

Based on the results, ANZAPLAN has recommended a simple and conventional beneficiation flowsheet comprising:

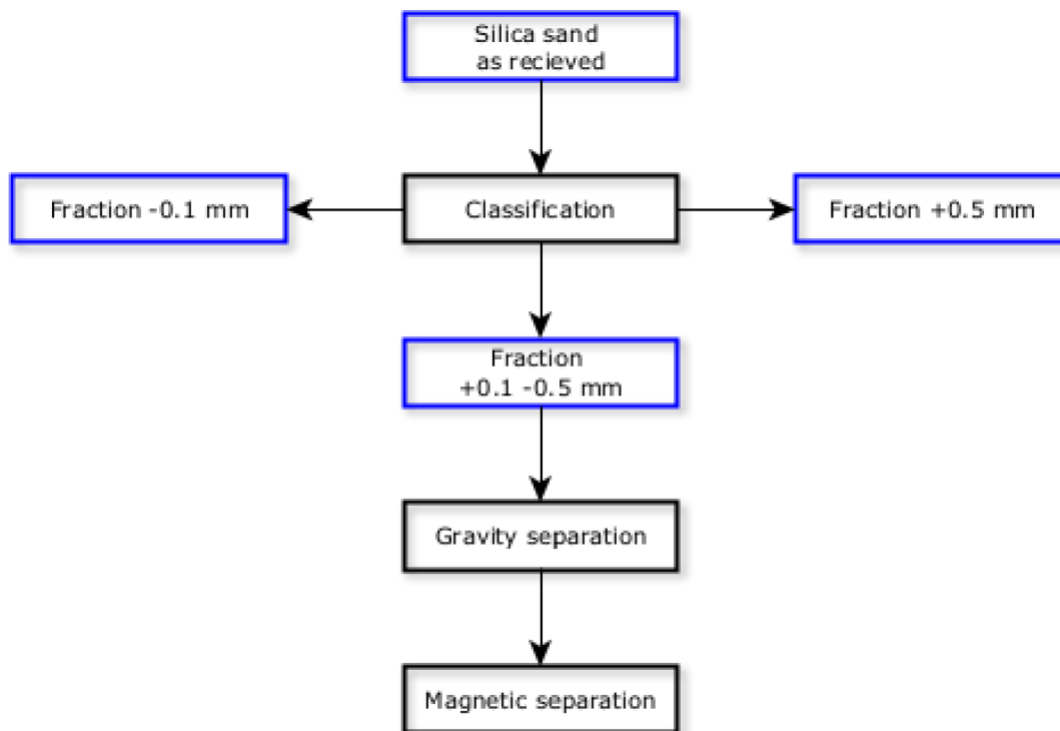
- Classification
- Gravity separation (spiral units)
- High-gradient magnetic separation



**Figure 1: Flowsheet showing physical processing undertaken by ANZAPLAN on Beharra silica sand.**

This flowsheet is widely used in the silica industry and is considered low complexity and cost-effective, supporting the potential for a commercially viable development pathway.

Notably, more complex processing routes did not deliver materially better outcomes, reinforcing the robustness of a simplified processing approach.



**Figure 2: Flowsheet recommended by ANZAPLAN for optimal Beharra Silica Sand impurity reduction, based on initial test work program. ANZAPLAN expects additional refinements can be made to this flowsheet which may further reduce impurity profile.**

**Executive Chairman, Julian Babarczy, commented:**

*“These results represent a significant step forward for the Beharra Silica Project and demonstrate our ability to produce a much high-purity silica product than previously achieved, using a simple and conventional processing flowsheet.*

*Importantly, we have reduced iron content to around 110 to 120 ppm, placing us firmly within premium glass markets and within striking distance of the key sub-100 ppm specification required for solar glass applications.*

*What is particularly encouraging is that these outcomes have been achieved using low-complexity, industry-standard processing techniques, which supports a potentially robust and cost-effective development pathway.*

*We now look forward to working with ANZAPLAN to assess the next phase of test work, including opportunities to further reduce impurities and unlock additional value from the project”.*

### Positioned for Premium Glass Markets

The achieved product quality (~110–120 ppm Fe<sub>2</sub>O<sub>3</sub>) places Beharra within specifications for premium glass applications, including white float, crystal and specialty glass.

Max. 150 ppm Fe <sub>2</sub> O <sub>3</sub>	Max. 125 ppm Fe <sub>2</sub> O <sub>3</sub>	Max. 100 ppm Fe <sub>2</sub> O <sub>3</sub>	Max. 70 ppm Fe <sub>2</sub> O <sub>3</sub>
<ul style="list-style-type: none"> <li>• Borosilicate glass</li> <li>• Pyrex</li> </ul>	<ul style="list-style-type: none"> <li>• White float glass</li> <li>• Opal glass, Arcoroc</li> <li>• (Lead) Crystal glass</li> </ul>	<ul style="list-style-type: none"> <li>• Solar glass</li> </ul>	<ul style="list-style-type: none"> <li>• Borofloat glass</li> </ul>

The results also position the project within close proximity to the <100 ppm Fe<sub>2</sub>O<sub>3</sub> threshold typically required for solar glass, one of the highest-value silica sand markets.

### Silica Market Dynamics

Silica sand is a critical industrial mineral underpinning a wide range of high-value applications, particularly in glass manufacturing. Demand for high-purity silica is being driven by structural growth in sectors such as construction, advanced manufacturing and the global energy transition, including solar photovoltaic (PV) panels. High-quality silica suitable for premium glass applications remains relatively scarce, with supply constrained by the limited availability of deposits capable of meeting increasingly stringent impurity specifications. As a result, projects capable of producing consistent, low-iron silica products are well positioned to access higher-margin end markets.

### Pathway to Further Upside

While the current results are highly encouraging, ANZAPLAN has advised that further work is required to determine whether additional impurity reduction below 100 ppm can be achieved.

Potential next steps under consideration include:

- Detailed mineralogical analysis to determine how residual iron is present within the sand
- Targeted test work to assess further impurity removal pathways
- Evaluation of mild chemical treatment options (e.g. dilute acid leaching) to further reduce iron content

The Company notes that any such additional processing would be assessed in the context of technical feasibility and economic viability.

The encouraging metallurgical outcomes achieved by ANZAPLAN have prompted the Company to commence a review of potential next-stage advancement pathways for the Beharra Project. This review will consider the technical and economic implications of further testwork, potential product positioning and market opportunities, as well as the broader strategic role of Beharra within Perpetual's critical minerals portfolio.

**Next Steps**

ANZAPLAN has recommended:

- A variability test program to confirm consistency across the deposit
- Market engagement and pricing analysis for the achieved product quality
- Further application-specific testing to support product qualification

Perpetual is currently reviewing these recommendations and will determine the optimal next phase of work.

**- ENDS -**

This announcement has been approved for release by the Board of Perpetual.

**KEY CONTACT**

Julian Babarczy

Executive Chairman

**E** [info@perpetualresources.co](mailto:info@perpetualresources.co)

## About Perpetual Resources Limited

Perpetual Resources Limited (Perpetual) is an ASX-listed company pursuing exploration and development of critical minerals essential to the fulfilment of global new energy requirements.

Perpetual is active in exploring for lithium, caesium and other critical minerals in the Minas Gerais region of Brazil, where it has secured approximately 12,000 hectares of highly prospective lithium and caesium exploration permits, within the pre-eminent lithium (spodumene) bearing region that has become known as Brazil's "Lithium Valley".

Perpetual has also secured approximately 8,714 hectares of highly prospective tungsten claims in Paraíba State, Brazil, within the Seridó Mineral Province (SMP), South America's leading tungsten-producing region. The concessions are strategically located 6km southwest and along trend from the Quixaba Mine and 22km northwest of the Ilha Grande Mine, placing the project within the centre of a high-grade tungsten corridor.

Perpetual also operates the Beharra Silica Sand development project, located 300km north of Perth and 96km south of the port town of Geraldton in Western Australia.

Perpetual continues to review complementary opportunities consistent with its focus on critical minerals.



## **COMPLIANCE STATEMENTS**

### **Forward-looking statements**

This announcement contains forward-looking statements which involve a number of risks and uncertainties. These forward-looking statements are expressed in good faith and believed to have a reasonable basis. These statements reflect current expectations, intentions or strategies regarding the future and assumptions based on currently available information. Should one or more of the risks or uncertainties materialise, or should underlying assumptions prove incorrect, actual results may vary from the expectations, intentions and strategies described in this announcement. No obligation is assumed to update forward looking statements if these beliefs, opinions and estimates should change or to reflect other future developments.

### **Disclaimer**

No representation or warranty, express or implied, is made by Perpetual that the material contained in this document will be achieved or proved correct. Except for statutory liability and the ASX Listing Rules which cannot be excluded, Perpetual and each of its directors, officers, employees, advisors and agents expressly disclaims any responsibility for the accuracy, correctness, reliability or completeness of the material contained in this document and excludes all liability whatsoever (including in negligence) for any loss or damage which may be suffered by any person through use or reliance on any information contained in or omitted from this document.

### **Competent Person Statement**

The information in this announcement that relates to metallurgical test work is based on, and fairly represents, information and supporting documentation reviewed by Mr Eduardo Ruaro. Mr. Ruaro is a consultant to Perpetual Resources Limited and is a member of the Australian Institute of Geoscientists (AIG). He possesses sound experience that is relevant to the style of mineralisation and type of deposit under consideration, as well as the activities he is currently undertaking. Mr. Ruaro 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.' He provides his consent for the inclusion of the matters based on his information, as well as information presented to him, in the format and context in which they appear within this announcement.

### **Previous disclosure**

This announcement contains references to prior exploration results, all of which have been cross-referenced to previous market announcements made by the Company. The Company confirms that it is not aware of any new information or data that materially affects the information included in the relevant market announcements, and that all material assumptions and technical parameters underpinning those results continue to apply and have not materially changed.

## JORC Code, 2012 Edition – Table 1 report

### Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
<b>Sampling techniques</b>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>• Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>• In cases where ‘industry standard’ work has been done this would be relatively simple (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 mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<p>This announcement reports results of metallurgical test work conducted by Dorfner Anzaplan GmbH (ANZAPLAN) on a composite head sample of Beharra silica sand sourced from previously disclosed drill core. No new drilling results are reported.</p> <p>Drill programs that have contributed sample material to the Beharra Project, the results of which have been previously disclosed by the Company (refer cross-references in the “Drill hole Information” cell of Section 2 of this Table), are summarised below:</p> <p>2019: Hand augering to a maximum depth of 2 m. Three auger samples per hole (surface to 0.5 m, 0.5–1.0 m, 1.0–2.0 m), with the top 0.5 m kept separate to allow stockpiling of organic material for future rehabilitation. Refer Perpetual Company release dated 12 February 2019.</p> <p>March 2020 (Phase 1 aircore): Aircore samples were collected via a cyclone; the entire 1 m sample interval was placed in a labelled calico sample bag with no on-rig splitting.</p> <p>September 2020 (Phase 2 aircore): Aircore samples were collected via a cyclone for each 1 m interval; a 1 kg split was taken by spear and placed in a smaller calico bag for assay. For the September program, separate samples were taken for 0–0.5 m and 0.5–1 m, with only the latter having a 1 kg split taken.</p> <p>June 2021 (Phase 3 aircore): Aircore samples were collected for each metre drilled via a cyclone fitted with a rotary splitter (25–30% deflection), giving an average subsample weight of approximately 2.7 kg/m. The subsample was collected in a calico bag and the remainder in a 450 mm × 900 mm plastic enviro bag (average reject weight 5.6 kg/m). The first 0.5 m from surface was not sampled (consistent</p>

Criteria	JORC Code explanation	Commentary
		<p>with anticipated rehabilitation stripping). Samples were collected from 0.5–1.0 m, then in 1 m intervals to the end of the hole.</p> <p>July 2022 (Beharra North auger): Auger drilling at the northern end of E70/5221; samples collected directly from auger flights by speared sub-sample (approximately 1 kg in a labelled calico bag).</p> <ul style="list-style-type: none"> <li>For all programs, representative samples were placed in chip trays and photographed; drill logs recorded lithology, colour, grainsize, sample interval, moisture and groundwater intersections.</li> </ul>
<p><b>Drilling techniques</b></p>	<ul style="list-style-type: none"> <li>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).</li> </ul>	<p>No new drilling results are reported in this announcement.</p> <p>2019 hand auger: Manually hand-operated 75 mm diameter sand auger (Dormer Sand Auger) with PVC casing used to reduce contamination potential as the auger was withdrawn.</p> <p>March 2020 (Phase 1): 40 aircore drillholes for an average depth of 12.7 m (deepest 20 m); track-mounted Hitachi hydraulic top-drive rig coupled to a 130 cfm/100 psi compressor; 76 mm aircore bit fitted to 70 mm twin tube rod string. All holes drilled vertically.</p> <p>September 2020 (Phase 2): 32 aircore drillholes for an average depth of 12.3 m (deepest 17 m); track-mounted KL170 hydraulic top-drive rig coupled to a 250 psi compressor; 84 mm vacuum bit fitted to a 76 mm OD / 51 mm ID twin tube rod string. All holes drilled vertically.</p>

Criteria	JORC Code explanation	Commentary
		<p>June 2021 (Phase 3): 86 aircore drillholes for an average depth of 12.3 m (range 11–17 m); total length drilled 1,153 m. Drilled by Hornet Drilling (Bunbury, WA) using a Mantis 75 aircore rig (vehicle-mounted) with a 160 cfm/125 psi compressor; 75 mm twin tube rods fitted with an 81 mm aircore bit; sample collection via cyclone with rotary splitter. All holes drilled vertically.</p> <ul style="list-style-type: none"> <li>July 2022 (Beharra North): 25 auger drill holes for total depth of 117.2 m (average 4.7 m). Drilled by APS Pty Ltd using an APSA 20 drill driving 3" flight augers fitted with a tungsten carbide bit. All holes drilled vertically.</li> </ul>
<p><b>Drill sample recovery</b></p>	<ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</li> </ul>	<p>No new drilling results are reported.</p> <p>March 2020 / September 2020 / June 2021 aircore: Each sample bag was weighed to determine actual sample recovery, with average recoveries of approximately 7.5 kg/m (Phase 1), 4 kg/m (Phase 2) and 8.4 kg/m theoretical (Phase 3, 100% recovery against theoretical based on drill hole diameter). The cyclones were cleaned regularly and at the end of each hole to ensure maximum and representative recovery.</p> <p>Aircore sampling was typically terminated 2 m below the water table; water table was generally at 10–12 m below surface.</p> <p>July 2022 auger: Cuttings were collected on a shovel and speared with a 100 mm aluminium scope to collect approximately 1 kg of sample; remainder placed near the hole.</p> <ul style="list-style-type: none"> <li>The type of sand auger used in 2019 provided a clean sample with reduced contamination potential compared to a flight auger.</li> </ul>
<p><b>Logging</b></p>	<ul style="list-style-type: none"> <li>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> </ul>	<ul style="list-style-type: none"> <li>All drill samples have been sufficiently logged including estimates of grain size, sorting, texture and colour. Particular attention was given to a more scientific and less subjective approach to</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<p>colour because colour (white to grey shades, and pale yellow and grey shades) is one of the targeting features. Chip tray samples for each hole were photographed.</p>
<b>Sub-sampling techniques and sample preparation</b>	<ul style="list-style-type: none"> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<p>At ANZAPLAN: the head sample was classified in two stages at 0.5 mm and 0.1 mm. The +0.1/-0.5 mm fraction (~76.2% of head sample by weight) was used as the feed for metallurgical tests; the +0.5 mm coarse fraction (22.0%) and -0.1 mm fines fraction (1.7%) were retained for mass balance. Wet screening used deionised water only to prevent contamination. The tumbling screening machine was equipped with a plastic-coated stainless-steel frame and removable screening decks. ANZAPLAN's preparation procedures are contamination-free and specifically developed for high-purity silica sand. Sample sizes are considered appropriate for the metallurgical test work undertaken.</p> <p>Drill sample sub-sampling (previously disclosed):</p> <p>June 2021 (Phase 3): Sub-samples were collected via the drill rig rotary splitter (average 2.7 kg). Samples were road transported to Intertek's laboratory in Maddington, Perth; Intertek dried and re-split the samples for assay, with the remainder rebagged for shipment to IHC Robbins (Brisbane) for further metallurgical testing. Duplicates were inserted at approximately 1:21 and standards at approximately 1:41.</p> <p>March 2020 (Phase 1): Aircore samples were transported to Welshpool (Perth) and stored in a secure shed for further check logging. Representative subsamples (approximately 400 g) were taken by spearing for duplicate analysis at a rate of 1:20. Samples were submitted to Nagrom Metallurgical Analytical Laboratories (Kelmescott, Perth) for drying, splitting, and pulverisation in a zircon bowl; a 100 g subsample at P90 -75 µm particle size was used for analysis.</p> <p>September 2020 (Phase 2): Duplicate 1 kg subsamples were taken on site at a ratio of 1:18.</p>

Criteria	JORC Code explanation	Commentary
		<p>Blanks (publicly available washed sand product) were generated and inserted at approximately 1:18. Samples were submitted to Intertek Genalysis (Maddington) for drying, splitting to 100 g and pulverisation to P90 –75 µm in a zircon bowl.</p> <p>July 2022: Sub-samples were taken by driving a scope through the entire recovered auger sample for each sample length. Sampling method and mass taken are considered appropriate and representative.</p> <p>2019 auger: Three twin holes were drilled within 1 m of original holes (representing approximately 8% duplicate sampling).</p> <ul style="list-style-type: none"> <li>• Sample preparation methods are considered industry standard for silica sands and laboratory sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>
<p><b>Quality of assay data and laboratory tests</b></p>	<ul style="list-style-type: none"> <li>• The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>• For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> <li>• Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</li> </ul>	<p>ANZAPLAN metallurgical assays (current): Chemical analysis was conducted by ANZAPLAN by inductively coupled plasma optical emission spectroscopy (ICP-OES) using an Agilent 5800 instrument, following ANZAPLAN’s contamination-free digestion method specifically developed for high-purity silica sand. The assay technique is considered an appropriate total assay for trace impurities in high-purity silica sand. Particle size distribution was analysed by dry sieve analysis per DIN 661655-2. ANZAPLAN’s internal QA/QC protocols were applied. No independent external check assays on the ANZAPLAN test products have been undertaken by the Company.</p> <p>Drill sample assays (previously disclosed):</p> <p>March 2020 / September 2020 / June 2021 / July 2022: All drill samples were assayed by Intertek’s laboratory in Maddington, Perth, using four-acid digest (hydrofluoric, nitric, perchloric and hydrochloric acids in Teflon beakers) with ICP-OES finish (test method 4ABSi/OE901). SiO<sub>2</sub> reported by difference. LOI at 1,000°C. Samples were pulverised</p>

Criteria	JORC Code explanation	Commentary
		<p>in a zirconium bowl to eliminate iron contamination, pulp grading P90 75 microns.</p> <p>Inter-laboratory umpire analysis was undertaken by submitting pulps to Bureau Veritas (Canning Vale, Perth) for analysis by mixed acid digest (MA100) followed by 17-element ICP-OES (MA101) and LOI (TG001).</p> <p>For the Phase 3 bulk metallurgical samples processed at IHC Robbins, assaying of process streams and finished products was carried out by ALS (Brisbane) using test method ME-PKG85 (borate fusion with ICP-AES finish for Al<sub>2</sub>O<sub>3</sub>, Fe<sub>2</sub>O<sub>3</sub>, TiO<sub>2</sub> and other minor elements; LOI at 1000°C; SiO<sub>2</sub> by calculation). Check assaying was performed by Intertek using the same four-acid digestion method applied to drill samples.</p> <ul style="list-style-type: none"> <li>The extensive analysis by multiple laboratories and methods is considered industry standard with a high level of confidence on results. The ICP method is considered industry standard for reporting sand grades. No geophysical tools or portable XRF instruments were utilised in the assay process.</li> </ul>
<p><b>Verification of sampling and assaying</b></p>	<ul style="list-style-type: none"> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<p>ANZAPLAN test work: The Competent Person has reviewed the ANZAPLAN Final Report (Report 251614098, dated 23 April 2026) and is satisfied with the methodology, mass balance and chemical assay results. No adjustments have been made to the assay data. All data is documented in digital format and stored by the Company.</p> <p>Twin holes (previously disclosed): Three twin holes were drilled in the 2019 auger program (out of 38 holes); one twin in the September 2020 aircore program (plus two twins of March 2020 holes); two twin holes in June 2021 (plus five infill holes adjacent to March 2020 holes on section lines 6740900N and 6741400N). No twin holes were drilled in the July 2022 auger program.</p>

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>All drilling and sampling procedures were monitored on site by an independent geologist on a hole-by-hole basis. All primary information was initially captured in a written log on site by a geologist, data entered, imported, validated and stored in a geological database. Additional check logging was carried out by an independent geologist in Perth prior to samples being submitted for analysis. External review of umpire samples between Intertek and Bureau Veritas was carried out. No adjustments to assay data have been performed.</li> </ul>
<p><b>Location of data points</b></p>	<ul style="list-style-type: none"> <li>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<p>The Beharra Project is located approximately 300 km north of Perth and 96 km south of Geraldton in Western Australia.</p> <p>Drill hole locations were surveyed as follows:</p> <p>March 2020 / September 2020 aircore: Trimble R6 RTK GPS in RTK mode (Heyhoe Surveys, Geraldton), accuracy 0.05 m relative to SSM Dongara 49. Auger hole positions determined by Garmin GPS Map 64s handheld GPS, accuracy ±5 m.</p> <p>June 2021 (Phase 3) aircore: Survey by Hayhoe Surveying (Geraldton) using Trimble R10 RTK GPS with expected accuracies of ±20 mm horizontal and ±30 mm vertical. Survey control established from SSM Don49 with redundancy checks to SSM Don50.</p> <p>July 2022 auger: Garmin 64S handheld GPS, accuracy ±5 m.</p> <ul style="list-style-type: none"> <li>Grid system: GDA94/MGA Zone 50 (ex SSM DON49). Topography is flat to gently undulating; Hayhoe Surveys produced a ±50 cm DTM across the entire project area.</li> </ul>
<p><b>Data spacing and distribution</b></p>	<ul style="list-style-type: none"> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and</li> </ul>	<p>ANZAPLAN metallurgical test work was conducted on a single composite head sample. ANZAPLAN has recommended a deposit-scale variability study to confirm the consistency of product quality across the deposit; this has not yet been undertaken.</p>

Criteria	JORC Code explanation	Commentary
	classifications applied. <ul style="list-style-type: none"> <li>Whether sample compositing has been applied.</li> </ul>	<p>Accordingly, the reported results may not be representative of the deposit as a whole.</p> <p>Drill hole spacing (previously disclosed):</p> <p>March 2020 (Phase 1) and September 2020 (Phase 2) aircore: approximately 350–600 m east–west by 480–500 m north–south, with a tighter 100 m × 100 m grid at the southern end of the September 2020 program.</p> <p>June 2021 (Phase 3) aircore: main drill hole spacing approximately 200 m east–west and 200 m north–south, with a closer 100 m × 100 m spacing applied to 20 holes (35% of holes) in the centre of the drill area. The data spacing and distribution is considered appropriate for Mineral Resource and Ore Reserve estimation, with the drill pattern proposed by the independent resource consultant.</p> <p>July 2022 auger (Beharra North): approximately 400–500 m north–south and 900–1,400 m east–west; appropriate for a reconnaissance-stage program.</p> <p>2019 auger: approximately 400 m east–west by 800 m north–south.</p> <ul style="list-style-type: none"> <li>All holes were drilled vertically. No sample compositing of holes has been applied.</li> </ul>
<b>Orientation of data in relation to geological structure</b>	<ul style="list-style-type: none"> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	<ul style="list-style-type: none"> <li>The orientation used for the aircore and auger drilling campaigns covered the strike length of the aeolian dune within the prospective target area and is not expected to introduce sampling bias. The metallurgical test work was conducted on a composite head sample for which sampling orientation is not material.</li> </ul>
<b>Sample security</b>	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	ANZAPLAN sample: The head sample was prepared by Perpetual and shipped to ANZAPLAN’s laboratory in Hirschau, Germany, by approved commercial

Criteria	JORC Code explanation	Commentary
		<p>courier. ANZAPLAN's standard sample handling and chain-of-custody protocols were followed.</p> <ul style="list-style-type: none"> <li>Drill samples (previously disclosed): All samples were bagged and removed from site under the care of the Company's Managing Director, Senior Geologist and/or field sampling supervisor. Subsamples for assay were delivered directly to the relevant laboratory (Intertek Maddington, Nagrom Kelmscott or ALS Brisbane) at the completion of drilling. Aircore samples and returned pulps from Intertek Genalysis were stored at the Welshpool facility along with chip trays. Drill cyclone rejects were left on site awaiting final assay results and then moved to the Company's locked and yarded shipping container at Dongara. Laboratories conducted sample reconciliation against the sample submission sheets.</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<p>The ANZAPLAN Final Report (Report 251614098, 23 April 2026) has been reviewed by the Competent Person. No independent third-party audit of the metallurgical test work has been undertaken to date.</p> <ul style="list-style-type: none"> <li>Guidance on sampling lengths and hole spacings for Phases 1–3 aircore drilling was previously provided by independent consultant Mr Andrew Scogings, who conducted a site visit in February 2020 to inspect drilling and sampling operations.</li> </ul>

## Section 2 Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
<b>Mineral tenement and land tenure status</b>	<ul style="list-style-type: none"> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</li> </ul>	<ul style="list-style-type: none"> <li>The Beharra Silica Sand Project comprises Mining Lease M70/1406 (granted 18 June 2021, 10.4 km<sup>2</sup>, 21-year term) and Exploration Licence E70/5221 (granted 13 June 2019, currently 30.8 km<sup>2</sup> following grant of M70/1406 over part of the original licence area). Both tenements are held by Perpetual Resources Pty Ltd, a wholly-owned subsidiary of Perpetual Resources Limited. A 1% royalty applies to E70/5221 the details of which were previously disclosed. The Company is not aware of any new impediments to its tenure or to operating on the Project.</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>Exploration done by other parties</b>	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>Prior metallurgical test work on Beharra silica sand was undertaken at IHC Robbins (part of IHC Mining) on bulk samples derived from the June 2021 Phase 3 source drilling, as disclosed in Perpetual ASX announcement dated 15 August 2022 – “Higher SiO<sub>2</sub> and materially lower Fe<sub>2</sub>O<sub>3</sub> impurity profile confirmed from Beharra White Sand Test Work”. IHC Robbins reported Fe<sub>2</sub>O<sub>3</sub> levels of 155 ppm (Lower White Coarse) and 165 ppm (Upper White Coarse) at SiO<sub>2</sub> purity ≥99.7%, using a gravity and magnetic separation flowsheet (vibrating screen, hydrocyclone, WHIMS, spirals, up-current classifier, vibrating screen). Past exploration by other parties at the Beharra tenement targeted heavy mineral sands (refer Perpetual ASX release dated 6 February 2019).</li> </ul>
<b>Geology</b>	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul style="list-style-type: none"> <li>Beharra is an unconsolidated Quaternary aeolian quartz sand deposit within the Perth Basin, comprising sand dunes overlying Pleistocene limestones and a paleo-coastline. The deposit is stratified into distinct chemical sub-domains: Upper White, Lower White, Grey (above and below water table) and Yellow. Detailed geological information has been disclosed in Perpetual ASX announcements relating to the Mineral Resource Estimate (most recently 15 December 2022).</li> </ul>
<b>Drill hole Information</b>	<ul style="list-style-type: none"> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:             <ul style="list-style-type: none"> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the</li> </ul>	<p>Not applicable to this announcement. No new drilling results are reported.</p> <p>Drill hole information for the previously disclosed drilling programs is available in the following Perpetual ASX announcements:</p> <ul style="list-style-type: none"> <li>March 2020 (Phase 1 aircore): ASX release dated 1 April 2020, and Appendix 2 Table 10 of the release dated 22 July 2020 – “Maiden Mineral Resource Estimate, Beharra Silica Sand Project”.</li> <li>September 2020 (Phase 2 aircore): ASX release dated 7 December 2020 – “Recent Air-core Drilling Further Extends High-Grade Silica Sand at Beharra”.</li> <li>June 2021 (Phase 3 aircore): ASX release dated 30 August 2021 – “Phase 3 Air Core Infill Drilling Results Confirms High Grade White Silica Sand at Beharra”.</li> </ul>

Criteria	JORC Code explanation	Commentary
	case.	<ul style="list-style-type: none"> <li>July 2022 auger (Beharra North): ASX release dated 5 August 2022 – “Beharra North Reconnaissance Auger Drilling Successfully Completed”.</li> <li>Deposit-scale Mineral Resource Estimate disclosed in ASX announcement dated 15 December 2022 (Snowden Optiro).</li> </ul>
<b>Data aggregation methods</b>	<ul style="list-style-type: none"> <li>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.</li> <li>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul style="list-style-type: none"> <li>Not applicable to this announcement. Chemical assay results from the ANZAPLAN test programme are reported as absolute values for the relevant test fractions. No aggregation, weighting, compositing or grade truncation has been applied. No metal equivalents have been used.</li> </ul>
<b>Relationship between mineralisation widths and intercept lengths</b>	<ul style="list-style-type: none"> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg ‘down hole length, true width not known’).</li> </ul>	<ul style="list-style-type: none"> <li>Not applicable to this announcement. No new drilling results are reported. All previously disclosed Beharra drill holes were drilled vertically and reported widths are therefore true.</li> </ul>
<b>Diagrams</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Flowsheet diagrams illustrating the ANZAPLAN test programme and recommended beneficiation flowsheet are included in the body of the announcement. Project location, drill hole collar plans and sectional views were disclosed in previously announced exploration results (refer ASX releases 22 July 2020, 7 December 2020, 30 August 2021, 5 August 2022 and 15 December 2022).</li> </ul>
<b>Balanced reporting</b>	<ul style="list-style-type: none"> <li>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of</li> </ul>	<ul style="list-style-type: none"> <li>The chemical assay results reported in this announcement relate to the +0.1/–0.5 mm fraction, representing approximately 76.2% of the</li> </ul>

Criteria	JORC Code explanation	Commentary
	<p>both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</p>	<p>head sample by weight. The +0.5 mm coarse fraction (22.0%) and -0.1 mm fines fraction (1.7%) were not subjected to the same beneficiation flowsheet; in particular, the -0.1 mm fines fraction is strongly enriched in impurities (Al<sub>2</sub>O<sub>3</sub> 2.06 wt.-%, TiO<sub>2</sub> 2.18 wt.-%, Fe<sub>2</sub>O<sub>3</sub> 0.53 wt.-%) and would not meet glass sand specifications without further treatment. Suitability for white float, opal and crystal glass applications is conditional on heavy mineral content confirmation, which has not yet been analysed. The product does not meet typical Fe<sub>2</sub>O<sub>3</sub> specifications for solar glass (&lt;100 ppm) or borofloat glass (&lt;70 ppm).</p>
<p><b>Other substantive exploration data</b></p>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<p>All material data from the ANZAPLAN metallurgical test programme is summarised in the body of this announcement.</p> <p>Petrological examination of Upper White and Lower White processed sand products by Paul Ashley (MAusIMM, FSEG) was previously disclosed (refer Perpetual ASX announcement dated 25 August 2022 – “Petrological Examination Supports Beharra Low Impurity Profile”) and identified the mineralogical residences of impurities: Fe<sub>2</sub>O<sub>3</sub> predominantly as ultrafine supergene goethite/hematite coatings and fracture fillings on quartz grains; TiO<sub>2</sub> in rutile (typically as acicular inclusions in quartz) and leucoxene; Al<sub>2</sub>O<sub>3</sub> in K-feldspar, micas (muscovite, biotite), clay phases (illite, kaolinite) and rare lithic grains; with trace zircon, garnet and tourmaline. Heavy mineral quantitative analysis recommended by ANZAPLAN has not yet been undertaken.</p> <p>Initial metallurgical testwork by Nagrom (refer ASX releases dated 30 January 2020 and 24 February 2020), and additional metallurgical testing by IHC Robbins (refer ASX releases dated 29 January 2021, 22 April 2021 and 15 August 2022).</p> <p>Desk-top statistical analysis of June 2021 Phase 3 drill geochemistry refer ASX release dated 31 March 2022 – “Desktop Analysis of Beharra Drilling Data Suggests Significant Impurity Reduction Possible”.</p> <p>Particle size distribution (PSD) testing: 143 PSD</p>

Criteria	JORC Code explanation	Commentary
		<p>samples generated from all geological sub-domains, gradings by wet sieving over 12 sieves (Nagrom Laboratory, Perth). Average in-situ density (dry) of 1.64 t/m<sup>3</sup> determined from six sites (Western Geotechnical &amp; Laboratory Services). Aircore drilling intersected groundwater in all holes exceeding 10 m depth (water table typically 10–12 m below surface).</p>
<b>Further work</b>	<ul style="list-style-type: none"> <li>• The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>• Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<p>ANZAPLAN has recommended a deposit-scale variability study, application-specific testing (melting, optical and transmittance properties), heavy mineral analysis, and a preliminary economic and market assessment. Further mineralogical work and trial of mild chemical treatment options may also be considered to assess potential Fe<sub>2</sub>O<sub>3</sub> reduction below 100 ppm.</p>