

June 17<sup>th</sup>, 2025

CORPORATE RELEASE

## LAKE HOPE HPA PRE-FEASIBILITY STUDY AND MAIDEN ORE RESERVE

- **Very strong economic metrics and low-cost production:**  
**NPV<sub>10</sub> A\$1.165 billion (with no by-product revenue)**
- **Capex A\$259 million**  
**Opex US\$5,860 per tonne excluding by-product credit**
- **Potential Opex of <US\$4,500 with by-product credit**
- **Maiden Probable and Proved Ore Reserve of:**  
**1.7 Mt at 26% Al<sub>2</sub>O<sub>3</sub> for 450,000 tonnes of contained Al<sub>2</sub>O<sub>3</sub>.**
- **Election to proceed to an 80% interest in Playa One Pty Ltd providing Impact with 80% ownership in the Lake Hope resource and intellectual property.**
- **Definitive Feasibility Study to commence with construction of pilot plant and investigation into the integration of Lake Hope with the HiPurA process.**

Impact Minerals Limited (ASX:IPT) is pleased to announce the positive results of a Preliminary Feasibility Study (PFS) for the Company's Lake Hope High Purity Alumina (HPA) Project, located 500 km southeast of Perth in the Tier 1 mining jurisdiction of Western Australia. The PFS results align with those of the Scoping Study on the project released to the ASX on November 9<sup>th</sup> 2023.

The PFS highlights the project's exceptionally strong economics and outlines a pathway for Lake Hope to become a global supplier of low-cost, low-carbon HPA, benefiting both the local Ngadju Aboriginal Native title holders and the broader community. The robust economics stem from the unique characteristics of the Lake Hope deposit, which facilitate cost-effective mining and processing.

The PFS confirms that, to the best of Impact's knowledge based on published data, the Lake Hope project could be among the lowest-cost producers of HPA globally, potentially by a significant margin of at least 30%.

Given these strong fundamentals, Impact will issue 120 million shares, escrowed for 12 months, to exercise its option to acquire an 80% interest in Playa One Pty Ltd, which owns the Lake Hope assets and intellectual property, including two patents for metallurgical processes (ASX Release March 21st 2023).

Work will now commence on a Definitive Feasibility Study (DFS), which will include the construction of a pilot plant to produce HPA samples at scale for discussions on offtake agreements. The pilot plant project, currently underway, will be part-funded by the recent federal government grant awarded to Impact Minerals in collaboration with CPC Engineering and Edith Cowan University (ASX Release October 22<sup>nd</sup> 2024).

In addition, as part of these studies, Impact will focus on the potential integration of the Lake Hope ore and its associated metallurgical processes with the assets and intellectual property related to the HiPurA process, which were recently acquired through Impact's 50% share in Alluminous Pty Ltd (ASX Release April 23<sup>rd</sup> 2025).

As the acquisition occurred near the end of the PFS, the study only pertains to Lake Hope as a stand-alone project and does not consider integration with HiPurA. Impact believes the HiPurA acquisition will accelerate the Company's entry into the HPA market by several years, potentially enhancing the economics of the combined projects.

## Lake Hope PFS Summary

Characteristic	Value (A\$)	Value (US\$)
 <b>Production Rate</b>	10,000 tonnes/year	
 <b>Product Sale Price</b>	\$35,484/t	\$22,000/t
 <b>Post Tax NPV10</b>	\$1,165M	\$722.3M
 <b>Initial Capex</b>	\$259M	\$160.6M
 <b>Operating Cost (excl by-product)</b>	\$9,452/t	\$5,860/t
 <b>Operating Cost (net by-product)</b>	\$7,105/t	\$4,405/t
 <b>Post Tax Cash Flow/Year</b>	\$170M	\$105.4M
 <b>Initial Mine Life</b>	33 years	
 <b>Life of Mine Cash Flows</b>	\$5,148M	\$3,192M
 <b>Post Tax IRR</b>	47%	
 <b>Pay Back</b>	2.2 years	
 <b>Capital Efficiency</b>	4:1	

Impact Minerals' Managing Director, Dr Mike Jones, said, "The Lake Hope PFS clearly demonstrates that Impact Minerals is now on the cusp of delivering a significant, low-cost and highly scalable HPA project. In just over two short years since acquiring the rights to the project, we have proven that Lake Hope's unique natural feedstock, combined with a straight-forward flowsheet, offers one of the most capital-efficient and environmentally responsible pathways to high-purity alumina production globally. The Project's strong margins, minimal carbon footprint, and ability to deliver 4N product without critical reagents or complex processing provides us with a clear competitive advantage as the HPA market enters a phase of rapid growth."

"Importantly, the PFS positions Lake Hope to potentially be the upstream foundation of our vertically integrated HPA business. Through our recent acquisition of a 50% interest in Alluminous Pty Ltd and the HiPurA® downstream processing technology we are now accelerating plans to seamlessly integrate Lake Hope feedstock with HiPurA's potentially modular HPA production capacity. This unique model offers Impact the flexibility to scale production in line with market demand and customer qualification, while minimising capital intensity and de-risking the path to early revenues."

"With the PFS now complete, our next steps are clear: we will advance the detailed engineering required to bring Lake Hope into production, which will revolve around our exciting federal government co-funded membrane research project now underway in conjunction with Edith Cowan University and CPC Engineering. We believe very significant improvements to our flow sheet will emerge from that work. We will also progress approvals and initiate off-take discussions. At the same time, we will help fund and rapidly develop the HiPurA® modular production pathway to establish near-term capacity and position Impact as a differentiated, vertically integrated supplier of high-purity alumina to the global market. The opportunities in front of us are significant and today marks a major milestone in what is shaping up to be an exciting future for Impact Minerals and our shareholders."

## SUMMARY OF THE PRE-FEASIBILITY STUDY

### Production Base

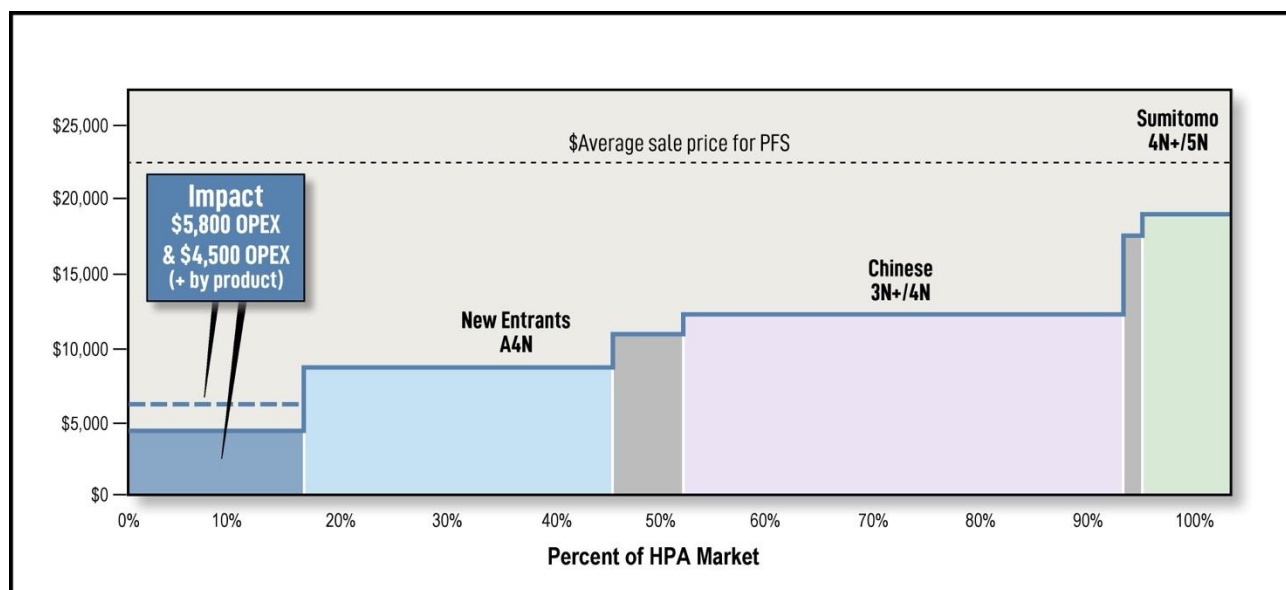
- Potential to become a major producer of HPA with stand-alone steady-state production of 10,000 tonnes per annum following a two-year ramp-up.
- Initial mine life of 33 years.
- Conservative commodity price estimate of US\$22,000 per tonne of HPA compared to recent forecasts of more than US\$25,000 per tonne from 2026 onwards.
- Ideally positioned to meet forecast growth in demand for HPA over the next decade.
- For a stand-alone operation as per the PFS, Definitive Feasibility Study (DFS) completion and FID for a stand-alone operation are anticipated in H1 2028.
- Integration studies with the HiPurA process and the potential for a modular scale-up in production to commence immediately, to accelerate to commercial production by several years (ASX Release April 25<sup>th</sup> 2025).

### Physical Parameters

- JORC Mineral Resource Estimate (MRE) of 2.8 million tonnes at 25.1% Al<sub>2</sub>O<sub>3</sub> for 700,000 tonnes of contained Al<sub>2</sub>O<sub>3</sub> (alumina) (ASX Release November 19<sup>th</sup>, 2024).
- Maiden JORC Proved and Probable Ore Reserve of 1.7 million tonnes at 26% Al<sub>2</sub>O<sub>3</sub> for 450,000 tonnes of contained Al<sub>2</sub>O<sub>3</sub>, a resource to reserve conversion rate of 66%.

## Capital Costs and Operating Costs (+/-25%)

- Pre-production capex A\$259 million, including a contingency of \$50 million.
- Lowest quartile Life Of Mine Opex cash costs of US\$5,860 (A\$9,450) per tonne, excluding by-product credits (Figure 1).
- Key by-product of sulphate of potash (SOP) could reduce Opex to <US\$4,500. SOP flowsheet and market research have only been completed to the Scoping Study level and are not considered in the financial model. Offers significant upside to current financial metrics in the DFS.
- Potentially at least 30% lower than operating costs (net of by-product) estimated by Alpha HPA Ltd (ASX: A4N ASX Release March 26<sup>th</sup> 2025).

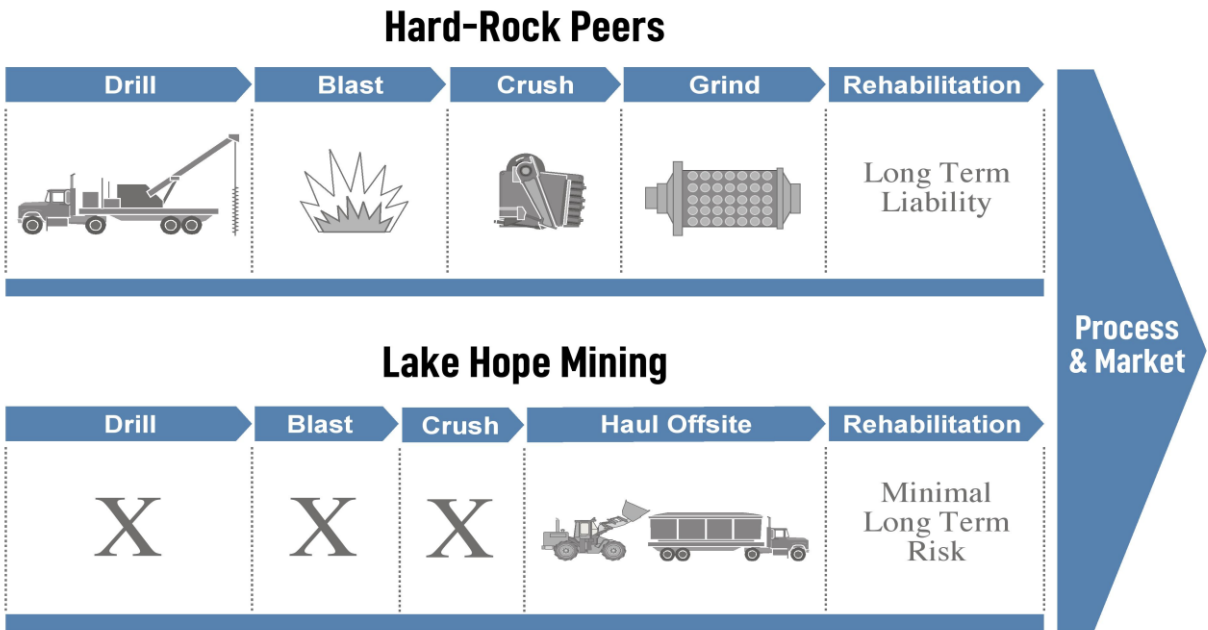


**Figure 1.** HPA Industry operating cost curve.

Existing OPEX Data sourced from market analyst reports and in-house research.

## Key Operating Dynamics

- The low operating and capital costs compared to competitors stem from the unique characteristics of the clay deposit at Lake Hope, which features high-grade mineralisation at the surface that requires no on-site beneficiation (Figure 2) advantageous metallurgical process kinetics, and potential future SOP by-product credit with further testwork.
- Ore to be mined at Lake Hope, and transported to Kwinana, Perth, for processing.
- Mining to take place on a campaign basis with ore stockpiled across a three month period. Mining campaigns occur annually for the first three years before transitioning to every three years.
- An average of 54,000 dry metric tonnes of ore is delivered annually to the process plant with year-round transport.
- A potential site for a refinery has been identified in Kwinana with ready access to required reagents and potential buyers for by-products.



**Figure 2.** Comparison of mining techniques between Lake Hope and conventional hard rock mining.

### Metallurgy

- PFS flowsheet is based on the now-patented Playa One Low-Temperature Leach (LTL) hydrometallurgical process (Figure 3 and ASX Release February 27<sup>th</sup>, 2024). The Scoping Study was based on the patented Playa One sulphate process (ASX Releases November 9<sup>th</sup> 2023 and February 19<sup>th</sup> 2024).
- The LTL process comprises two main hydrometallurgical stages: Stage 1, a potassium hydroxide pre-treatment of the raw ore, which produces a high-value Sulphate of Potash (SOP) crystalline by-product; and Stage 2, a solid residue that is leached in a hydrochloric acid circuit to produce aluminium chloro-hexahydrate (ACH). The ACH is then calcined to produce HPA. Stage 2 is a recognised route to HPA and is used by several other private manufacturers of HPA.
- Alumina recovery is about 70%, with potential to significantly improve on this with further testwork.
- Regeneration of the hydrochloric acid using “off-the-shelf” acid recovery equipment, is a key financial metric for the Opex.
- There have been no detailed testwork studies on the production of the SOP, and all considerations are at a Scoping Study level. However, preliminary assays suggest the potential for a high-quality product.
- The SOP circuit has been included in the CapEx estimates but potential revenue and contribution to the earnings have not been included in the financial modelling.
- Significant improvements to the alumina recovery, acid regeneration, SOP production and waste liquid management are anticipated under the federally co-funded CRC-P research project into membranes in association with CPC Engineering and Edith Cowan University (ASX Release October 22<sup>nd</sup>, 2024).
- CPC Engineering has designed an elegant refinery layout for a specific site in Kwinana that has ready access to reagents and potential buyers of by-product (Figure 4).

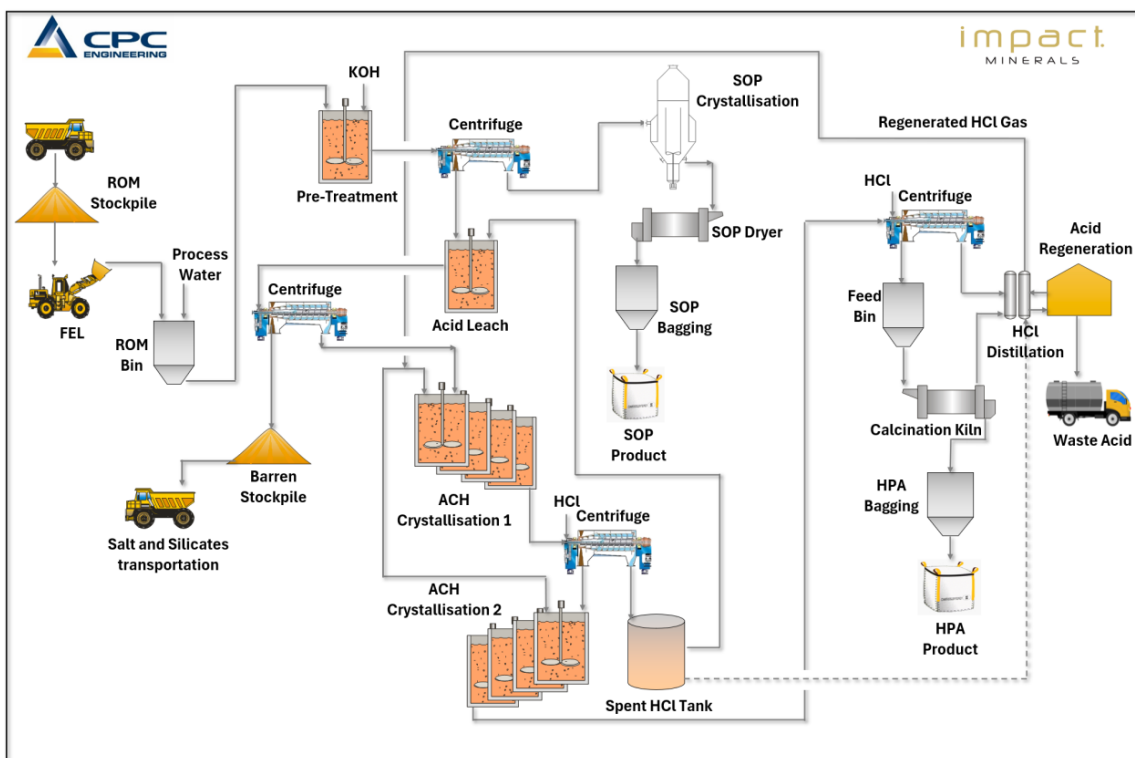
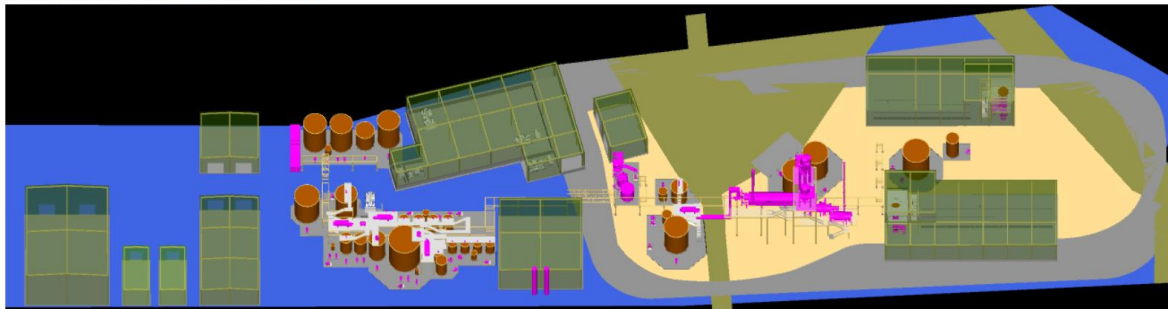


Figure 3. Process Flowsheet for production of HPA.

#### Plan View of Process Plant:



#### Elevated Side View of Process Plant:

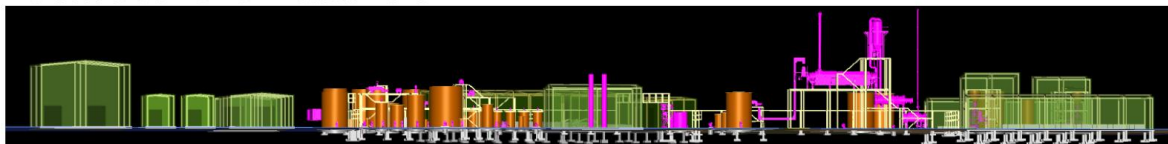
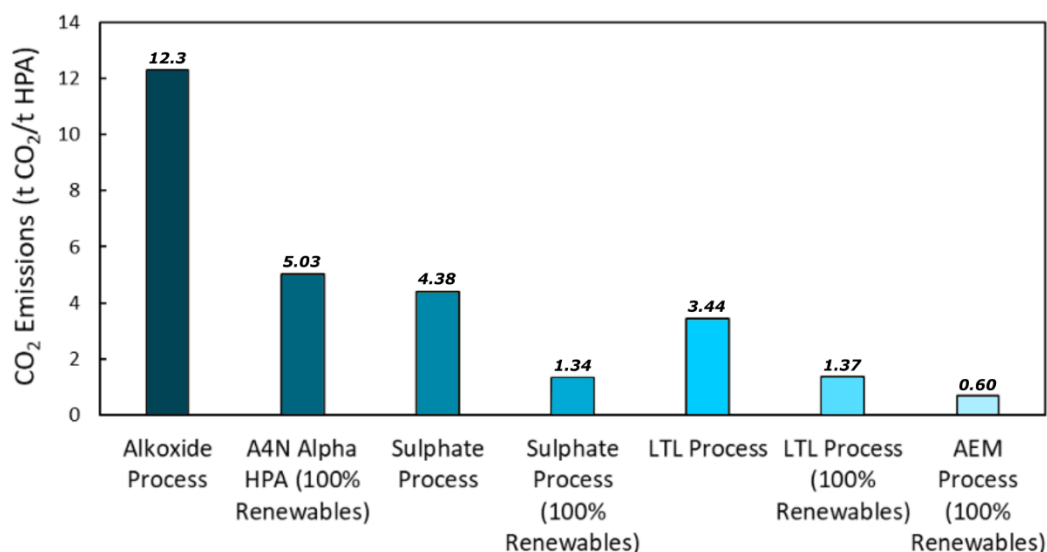


Figure 4. 3D view and side elevation view of the proposed process plant in Kwinana.



## ESG and Carbon footprint

- Baseline environmental and heritage surveys were completed over Lake Hope, with no impediments to mining identified.
- Power for the Kwinana refinery will be 70% renewable by 2040, subject to the West Australian state government fully implementing the Whole of System plan (WoSP). Impact Minerals will also investigate options to increase renewable energy supply opportunities to bring this online sooner.
- Expected low-in-class CO<sub>2</sub> emissions compared to incumbent producers (Scope 1 & 2), including Alpha HPA Ltd (Figure 5 and ASX Release June 19<sup>th</sup> 2024)



**Figure 5.** Likely CO<sub>2</sub> emissions for four different production methods for HPA: The incumbent alkoxide process; Alpha HPA Limited (ASX Release November 21<sup>st</sup>, 2023); Impact's proposed Sulphate and Low-Temperature-Leach (LTL) processes; and AEM who produce modest quantities of HPA in Canada using hydroelectric power

## Key Approval Processes Going Forward

- Impact has elected to move to 80% ownership of Playa One Pty Ltd, owner of the Lake Hope project and associated metallurgical patents and other intellectual property. Impact will issue 120 million shares which are escrowed for 12 months.
- Mining Lease and Miscellaneous Licence applications lodged.
- Initial discussions with the Norseman-based Ngadju people, traditional custodians of the land which includes Lake Hope, have been very encouraging. The financial model incorporates an estimate of the community's financial benefits.
- Further heritage and environmental surveys required around infrastructure and the miscellaneous licence to be completed as part of the DFS.
- Further engagement with the Ngadju group planned for Q4 2025 and 2026.

## Strong Post-Tax Financial Returns

- A conservative discount rate of 10% returns a post-tax NPV<sub>10</sub> of A\$1.165 billion, excluding any by-product income from the SOP. For comparison, the Scoping Study used an 8% discount rate for an NPV<sub>8</sub> of A\$1.334 billion. At a discount rate of 8%, the PFS NPV<sub>8</sub> is A\$1.525 billion, and at a discount rate of 12%, the NPV<sub>12</sub> is \$961 million. Neither of these results includes the significant benefits from the potential sale of SOP.
- IRR of 47.5%
- Capital payback of 2.2 years from first HPA production.
- Average annual post-tax free operating cash flow (real) of about A\$170 million.
- Life of mine post-tax cash flows of discounted \$5.148 billion
- Financial (real) modelling does not include any by-product credit.

## Key Project Financial Metrics

Parameter	Units	Outcome
Average annual ore mining rate	dmt	54,300
Life of mine (LOM)	years	33
4N HPA Production (LOM)	t	323,640
Average annual production of 4N HPA	t	10,000
Revenue 4N HPA (excluding by-product credits)	AUD \$/ t	35,484
Revenue (LOM)	AUD \$M	11,484
Post-tax NPV10 (real)	AUD \$M	\$1,165.7
Post-tax IRR	%	47.5%
CapEx (including contingency and owner's costs)	AUD \$M	\$259
Govt Royalties (LOM)	AUD \$M	287.1
Other Royalties (LOM)	AUD \$M	344.5
Corporate Tax (LOM)	AUD \$M	2,176
Payback	Years	2.2
Average cash cost of production of 4N HPA per tonne over LOM – without by-product credit	AUD \$/t	\$9,453/US\$5,860
EBITDA (LOM)	AUD \$M	7,786
Net profit (LOM)	AUD \$M	5,148

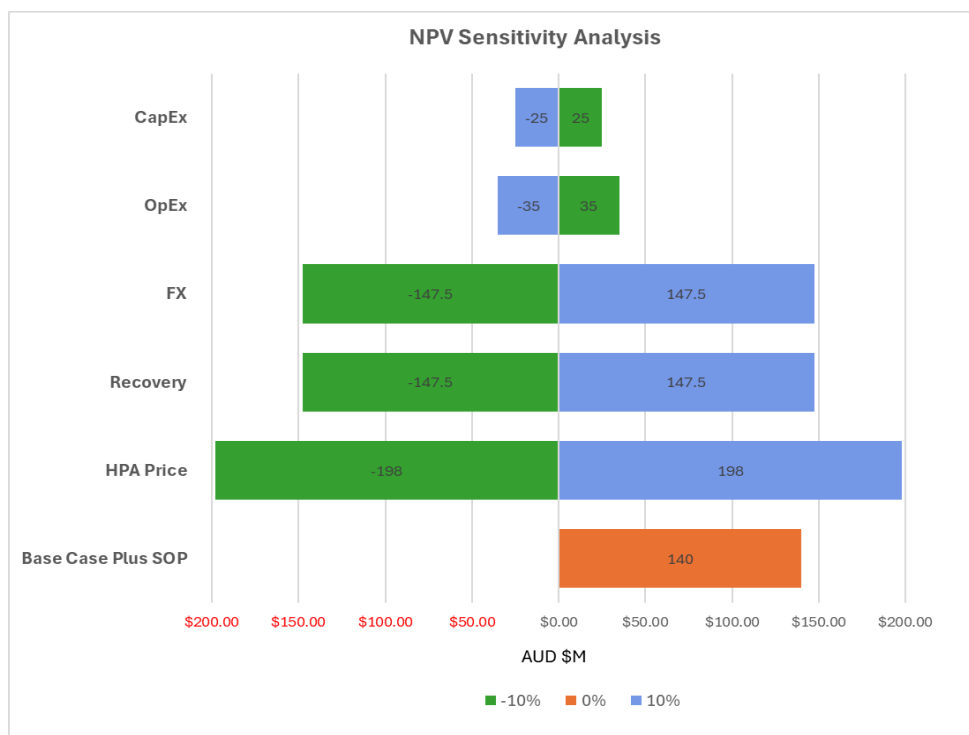


## Key Assumptions

Parameter	Unit	Assumption
Time series used	Time	Annual
Weighted Average Cost of Capital (Discount rate)	%	10.0
Tax rate	%	30
Royalties	%	5.5
Critical Minerals Tax Offset (recently introduced Australian federal tax incentive)	%	10% of OpEx for 10 years
Exchange rate	US / AUD	\$0.62

## Sensitivities

- The project economics are most sensitive to the HPA price, US:AUD foreign exchange rate and the metallurgical recoveries (Figure 6).
- A +/-10% change in these three items together would result in an NPV<sub>10</sub> range of between A\$672 million and A\$1.658 billion. This demonstrates the robust economics of the project.
- Inclusion of by-product potash revenue stream increases the base case NPV<sub>10</sub> by A\$140 million to \$1.305 billion.



**Figure 6. Project Sensitivities.**

(Note that the identical FX and recovery sensitivities are coincidental.)

## Resources and Reserves

A summary of the Lake Hope JORC Mineral Resources and Reserves is set out below.

### Lake Hope Project Mineral Resources: ASX Release November 11<sup>th</sup> 2024.

The Mineral Resources for the Lake Hope alumina deposits are reported using the mineral wireframe, with a partial per cent block volume adjustment and without a cut-off grade reflecting the mining method which will mine the entire deposit.

Mineral Resources			
Category	Million Tonnes	Al <sub>2</sub> O <sub>3</sub> %	Contained Al <sub>2</sub> O <sub>3</sub> t
Measured	0.73	25.8	189,000
Indicated	1.88	25.0	471,000
Inferred	0.17	23.1	40,000
Total	2.79 Million Tonnes	25.1%	700,000 tonnes

### Lake Hope Project Ore Reserves: ASX Release June 17<sup>th</sup> 2025

Reserves				
Deposit	Classification	Tonnes	Al <sub>2</sub> O <sub>3</sub> %	Contained Al <sub>2</sub> O <sub>3</sub> t
West Lake	Proved	410,000	25.9	106,000
	Probable	860,000	26.1	224,000
	Sub-Total	1,270,000	26.1	330,000
East Lake	Proved	200,000	25.9	53,000
	Probable	260,000	25.5	66,000
	Sub-Total	460,000	25.7	119,000
Total	Proved	610,000	25.9	159,000
	Probable	1,120,000	26.0	290,000
	Total	1,730,000	26.0%	449,000

- 1) The Ore Reserves are a subset of the Mineral Resource
- 2) Tonnages are dry metric tonnes
- 3) Both tonnages and grades are reported inclusive of dilution; appropriate rounding has been applied, and rounding errors may occur
- 4) Total Al<sub>2</sub>O<sub>3</sub> metal content represents in situ quantities without metallurgical recoveries applied
- 5) Mine designs target grades above 25% Al<sub>2</sub>O<sub>3</sub>%, however, no cut-off grade has been applied to the ore reserve estimate

## Marketing

- Favourable market fundamentals with HPA added to the Australian critical minerals list in March 2022 and other countries.
- Forecast compound annual growth rate of about 20% for the HPA and related products market over the next decade driven by expansion in the battery and LED sectors (Figure 7).
- Customer engagement will commence on the commissioning of the proposed pilot plant. This may be accelerated with the commissioning of the HiPurA pilot plant (ASX Release April 23<sup>rd</sup> 2025).

- Capabilities in end-product specification need to be developed over the next 24 months.

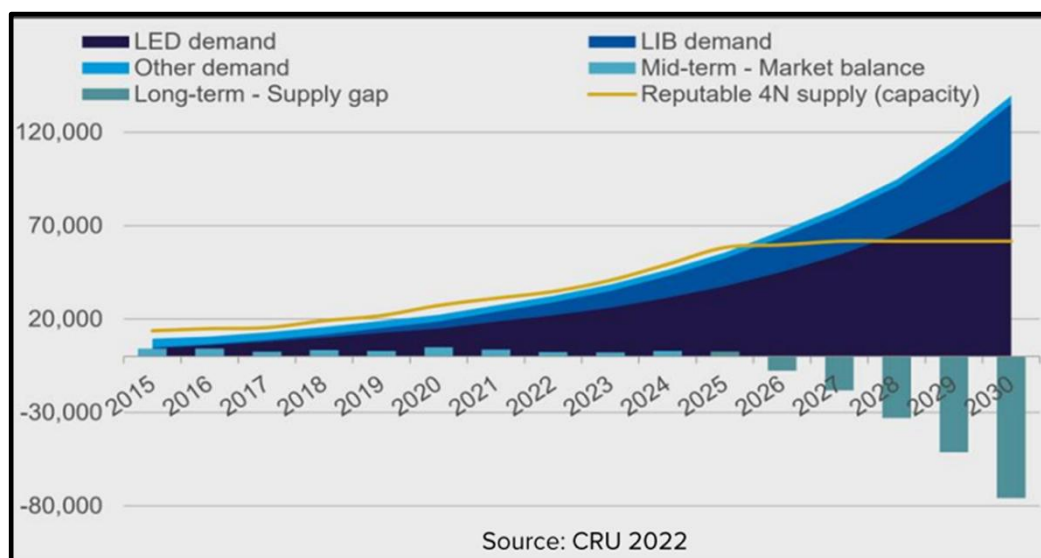


Figure 7. HPA supply demand balance deficit from CRU Group Source: CRU via Alpha HPA

### Key Risks

- Further test work must be undertaken to assess the variability in ore across the Lake Hope deposit. Throughout the PFS, the understanding of the deposition and mineralogy across the lakes has improved significantly.
- No vendor equipment test work was undertaken during the PFS stage. This presents a risk of vendors quoting equipment that may not function properly and/or is sized incorrectly, potentially leading to cost and schedule impacts in later phases.

Key areas of focus are:

- Evaporators and Crystallisers;
- Centrifuges and potentially high-speed separators;
- Calciner; and
- HCl distillation and recovery (membranes)
- Suitability of scale muncher and conveyor systems for handling the specific properties of the evaporite, including its flowability, abrasiveness, and potential for clogging; and
- Reagent recoveries and recycle process liquors via locked cycle testing during pilot-scale testing.
- The impact of geopolitical uncertainty which is increasing globally. Fluctuation in raw material prices has not been incorporated into the estimates, although the project is relatively insensitive to variances in CapEx and Opex (Figure 6).

### Upside to the Preliminary Feasibility Study Outcomes

The Company has also identified significant opportunities for improvement to the PFS estimates and proposed programmes of work which will be incorporated into the Definitive Feasibility Study (DFS) commencing immediately, including:

- Value engineering opportunities to further optimise the mine plan, production profile and financial returns early in the life of the operation, above the PFS estimates.
- Further test work to improve recoveries and process modifications.
- A 12-month stockpile programme to evaluate the seasonal effects of weather on stockpile integrity, surface runoff, and ore slumping.
- Output from the pilot facility may produce findings that offer significant positive benefits to the larger industrial-scale refinery design. These include plant operability, process optimisation and improved ore recoveries, acid recovery and waste acid management, and construction materials, specifically for the calciner.
- Conduct all necessary in-house and vendor supply process tests to ensure that the process flowsheet is not overdesigned and that anticipated design parameters are met or exceeded to reduce the size, cost, and delivery times of the vendor equipment.
- Investigate the energy balance within the flowsheet to help reduce energy costs.
- Explore opportunities to create higher purity 4N5+ and 5N products through the pilot plant, which will enhance the economics of the Definitive Feasibility Study.
- Integration with the HiPurA process.

The Executive Summary from the full PFS report is attached.

This ASX announcement was approved and authorised for release by the Board of Impact Minerals Limited.

Dr Michael G Jones

Managing Director

### Competent Persons Statements

*The information in this report that relates to Exploration Results is based on, and fairly represents, information and supporting documentation prepared by Roland Gotthard, a consultant geologist to Impact Minerals Limited. Mr Gotthard is a Member of the Australasian Institute of Mining and Metallurgy, and he has sufficient experience which is relevant to the style of mineralisation and type of deposits under consideration and to the activity which has been 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 JORC Code). Mr Gotthard consents to the inclusion in this release of the matters based on the information in the form and context in which they appear.*

*The data in this report that relates to Mineral Resource estimates is based on, and fairly represents, information and supporting documentation prepared by Mr Simon Tear who is a Member of The Australasian Institute of Mining and Metallurgy (MAusIMM) and who has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking 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 "JORC Code"). Mr Tear is a Director of H&S Consultants Pty Ltd and he consents to the inclusion in the report of the Mineral Resource in the form and context in which they appear.*

*The information in this report that relates to Metallurgical test work is based on, and fairly represents, information and supporting documentation prepared by Scott Phegan, a consultant chemical engineer to Impact Minerals Limited. Mr Phegan is a Member of the Australasian Institute of Mining and Metallurgy, and he has sufficient experience which is relevant to the style of mineralisation and type of deposits under consideration and to the activity which has been 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 JORC Code). Mr Phegan consents to the inclusion in this release of the matters based on the information in the form and context in which they appear.*

*The information in this report that relates to the maiden Ore Reserves is based on, and fairly represents, information and supporting documentation prepared by Mr Joel van Anen, a Competent Person who is a Member of The Australasian Institute of Mining and Metallurgy (AusIMM). Mr van Anen is a full-time employee of TME Mine Consulting and 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'. Mr van Anen has no economic, financial or pecuniary interest in the Company and consents to the inclusion in this report of the matters based on his information in the form and context in which it appears*

*Forward Looking Statements: This announcement contains 'forward-looking information' that is based on the Company's expectations, estimates and projections as of the date on which the statements were made. This forward-looking information includes, among other things, statements with respect to the Company's business strategy, plans, development, objectives, performance, outlook, growth, cash flow, projections, targets and expectations, mineral reserves and resources, results of exploration and related expenses. Generally, this forward-looking information can be identified by the use of forward-looking terminology such as 'outlook', 'anticipate', 'project', 'target', 'potential', 'likely', 'believe', 'estimate', 'expect', 'intend', 'may', 'would', 'could', 'should', 'scheduled', 'will', 'plan', 'forecast', 'evolve' and similar expressions. Persons reading this announcement are cautioned that such statements are only predictions, and that the Company's actual future results or performance may be materially different. Forward-looking information is subject to known and unknown risks, uncertainties and other factors that may cause the Company's actual results, level of activity, performance or achievements to be materially different from those expressed or implied by such forward-looking information.*

*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 referred to in the report and, in the case of estimates of Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the original market announcements continue to apply and have not materially changed. The Company confirms that the form and context in which the competent persons findings were presented have not been materially modified from the original announcements.*

### **Cautionary Statement**

*The Pre-Feasibility Study ("PFS") discussed herein has been undertaken to explore the technical and economic viability of the Lake Hope HPA Project.*

*The Production Target and financial forecast presented in the PFS comprises 34% Measured Resources, 62% Indicated Resources and 4% Inferred Resources. The Production Target included in the PFS relating to the Project payback period of 2.2 years comprises 100% Measured and Indicated Resources. The inclusion of Inferred Resources within the financial forecast is not material to the project's economic metrics.*

*There is a low level of geological confidence associated with Inferred Mineral Resources, and there is no certainty that further exploration work will result in the conversion to Indicated Mineral Resources or that the production target itself will be realised.*





# Pre-Feasibility Study Executive Summary

Lake Hope, High Purity Alumina Project

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## 1. Executive Summary

### List of Abbreviations

µm	Micrometre or micron (1/1,000,000 <sup>th</sup> of a meter)	MEL	Mechanical Equipment List
4N	99.99%	METSIM	Process simulation package
AACE	American Association of Cost Engineers	OpEx	Operating Expenditure
ACH	Aluminium Chloro-Hexahydrate	OEM	Original Engineering Manufacturer
ASX	Australian Securities Exchange	PDC	Process Design Criteria
BOD	Basis of Design	PFD	Process Flow Diagram
CapEx	Capital Expenditure	PFS	Pre-Feasibility Study
DCS	Distributed Control System	PLC	Programmable Logic Control
DFS	Definitive Feasibility Study	PSD	Particle Size Distribution
dtpa	Dry tonnes per annum	RO	Reverse Osmosis
dtpH	Dry tonnes per hour	ROM	Run of Mine
EPCm	Engineering, Procurement and Construction Management	SLS	Solid Liquid Separation
ERT	Emergency Response Training	SOP	Sulphate of Potash or Potassium Sulphate
EV	Electrical Vehicle	t	tonne (1000 kg)
FEL	Front-End Loader	tpa	Tonnes per annum
G&A	General and Administration	TDS	Total Dissolved Solids
GRP	Glass Reinforced Plastics	TML	Transportable Moisture Limit
HCl	Hydrochloric Acid	VSD	Variable Speed Drive
HPA	High purity Alumina	WACC	Weighted Average Cost of Capital (Discount rate)
KOH	Potassium Hydroxide	WBS	Work Breakdown Structure
MCC	Motor Control Centre	WMTPA	Wet metric tonnes per annum

## 1.1 Introduction

This report has been prepared for the Pre-Feasibility Study (PFS) on the Lake Hope High Purity Alumina (HPA) Project (the “Project”) located in Western Australia. The Project is expected to ultimately create a robust supply chain from a mining and refinery operation to produce 10,000 tonnes per annum (tpa) of 4N HPA material for the global market.

The Lake Hope Project's PFS financial assessment, which includes a maiden JORC 2012 Ore Reserve Proved and Probable Ore reserve estimate of 1.73 Mt at 26.0% Al<sub>2</sub>O<sub>3</sub>, clearly demonstrates the project's economic robustness. It has an estimated NPV<sub>10</sub> of AUD \$1,165m and an IRR of 47.5%. This financial assessment is based on real, financed, and post-tax analysis.

The PFS report indicates that the mine is estimated to exploit approximately 64,500 wet metric tonnes per annum (wmtpa), or approximately 54,300 dry metric tonnes per annum (dmtpa), of run-of-mine (“ROM”) alunite-bearing evaporite ore over a total mine life of 33 years. It is proposed that the mine will only operate during the summer months when the lake surface is completely dry, and not necessarily every year. The evaporite will be stockpiled on-site at Lake Hope and then transported to Kwinana for final refinement. At nameplate capacity, a nominal 10,000 tpa of 4N HPA will be produced at the proposed Kwinana refinery.

The report consolidates several studies conducted over the previous year to assess the viability of the Project at a PFS level. Strategic Metallurgy Pty Ltd was commissioned to develop the METSIM model for the refinery based on the testwork programmes managed by Impact Minerals Limited (“Impact”) and its consultants. TME Mine Consulting (“TME”) was commissioned to build on the mining study conducted during the Scoping Study by obtaining quotations from selected mining contractors and hauliers. Additionally, CPC Engineering Pty Ltd was commissioned to engineer the refinery to enable CapEx and OpEx cost estimates to be quantified at a Class 4 AACE level of maturity (+/-25%).

The study also outlines Impact’s plans to develop a pilot plant to test additional opportunities and presents recommendations to progress to the DFS Phase.

Western Australia is a highly developed resource and investment jurisdiction with a long-standing tradition of mineral extraction and processing. The area has an established, well-educated workforce and efficient logistics throughout the mineral value chain. The project includes additional upside scenarios, such as the potential to extend operations to other salt lakes currently under exploration licences in Playa One Pty Ltd’s (“Playa One”) portfolio.

Impact has now elected to exercise its option to purchase 80% of Playa One Pty Ltd, the owner of the Lake Hope project and associated intellectual property, including two patents for metallurgical processing.

## 1.2 Study Contributors

The report brings together studies conducted by several parties to assess the viability of the Project to a PFS Class 4 CapEx estimate level of maturity.

The PFS was initially managed by Roland Gotthard of Playa One, who discovered the Lake Hope Project and oversaw the Scoping Study (ASX Release November 19<sup>th</sup>, 2023). Subsequently, David English, one of several independent consultants and experienced contractors, was appointed Study Manager and provided advice and costs for various parts of the studies and contributed to the current understanding of the project. Then, in October 2024, Paul Henharen of Acacia Management Consultancy replaced David English, who had accepted a new role within the mining industry, as Study Manager.

### PFS Contributors

Study Management	Paul Henharen	Acacia Management Consultancy
Process Design	Scott Phegan	By Design
Product Marketing	Joseph Casella	Joseph Casella
Geology	various	Impact Minerals Limited
Resource Modelling	Simon Tear	H and S Consultants
Environmental and Approvals	Belinda Bastow	Integrate Sustainability
Flora and Fauna Study	C. Flaherty	Biota Environmental Sciences
Mine Design, CapEx and OpEx	Joel van Anen	TME Mine Consulting (TME)
Reserve Estimate	Joel van Anen	TME Mine Consulting (TME)
Process Testwork	various	ALS / Intertek
METSIM modelling	Nick Vines	Strategic Metallurgy
Mineralogical Analysis	Muhammet Kartal	RSC Consulting Limited
Refinery and Site Infrastructure Design, CapEx and OpEx	Paul Fleay	CPC Engineering
Logistics	various	Qube / Various
Financial Analysis	Christian Kunze	NPV ONE

## 1.3 Study Objectives and Scope

The Project is an integrated mine and metallurgical refining operation proposed for development over the next five years in the Tier 1 jurisdiction of Western Australia. The primary overarching scope items within the Pre-Feasibility Study involve mining approximately 64,5000 wmtpa (54,300 dmtpa) of evaporite deposit and refining it to produce 10,000 tpa of 4N High Purity Alumina (HPA) (99.99% Al<sub>2</sub>O<sub>3</sub>). The solid waste from the process will be returned to Lake Hope, while the liquid waste generated will be managed at the refinery. In addition to HPA, a sulphate of potash (SOP) by-product can be produced for potential sale. Alumina refers to aluminium oxide (Al<sub>2</sub>O<sub>3</sub>).

### 1.3.1 Study Objectives

The PFS study provides CapEx and OpEx estimates for a mine located on E63/2086 (GDA94/MGA Zone 51, 239944m east, 6410410m north), approximately 500 km east of Perth. This mine will supply an alumina-mineralised evaporite to a processing refinery in Kwinana, where the evaporite will be refined into 4N HPA or better. The study outlines the following battery limits:

- Turn off the Norseman-Hyden Road onto a new 16 km access road.
- The mine site includes a permanent ROM stockpile with year-round haulage.
- Dewatering bores and related infrastructure.
- Temporary mining facilities should align with summertime mining schedules.
- Leasing of Lot 605 on Mason Road, situated within the Strategic Industrial Area (SIA) at Kwinana.
- The refinery operates from the receipt of ROM to the loading of HPA and SOP products.
- Site development, utilities, associated infrastructure, and fencing.
- Reagents: receipt, storage, and handling.
- Operations and maintenance.
- Product dispatch at the site entrance.

In addition to the overarching study scope, specific work area scopes have also contributed to the overall output. These are categorised as follows:

#### 1.3.1.1 Geology Review (Impact and H&S)

- Develop a thorough geological understanding of the work completed so far, including the available geological base data and its interpretation.
- Review the approach used for geological modelling, including orebody wireframe construction and grade estimation.
- Identify potential improvements or refinements to the model to optimise its use as a mining model for the DFS and beyond; and
- Assist with the transfer of the model between Geology and Mining disciplines.

#### 1.3.1.2 Mining (TME)

- To gather the necessary information and parameters for mine optimisation, design, scheduling, and costing to proceed.
- To evaluate the Alunite resource estimate and the accompanying geological model for input into the mining works; and
- To review the Modifying Factors that are prerequisites for mine optimisation, scheduling and Ore Reserve estimation.



### 1.3.1.3 Process Engineering, Refinery design and estimating services (CPC)

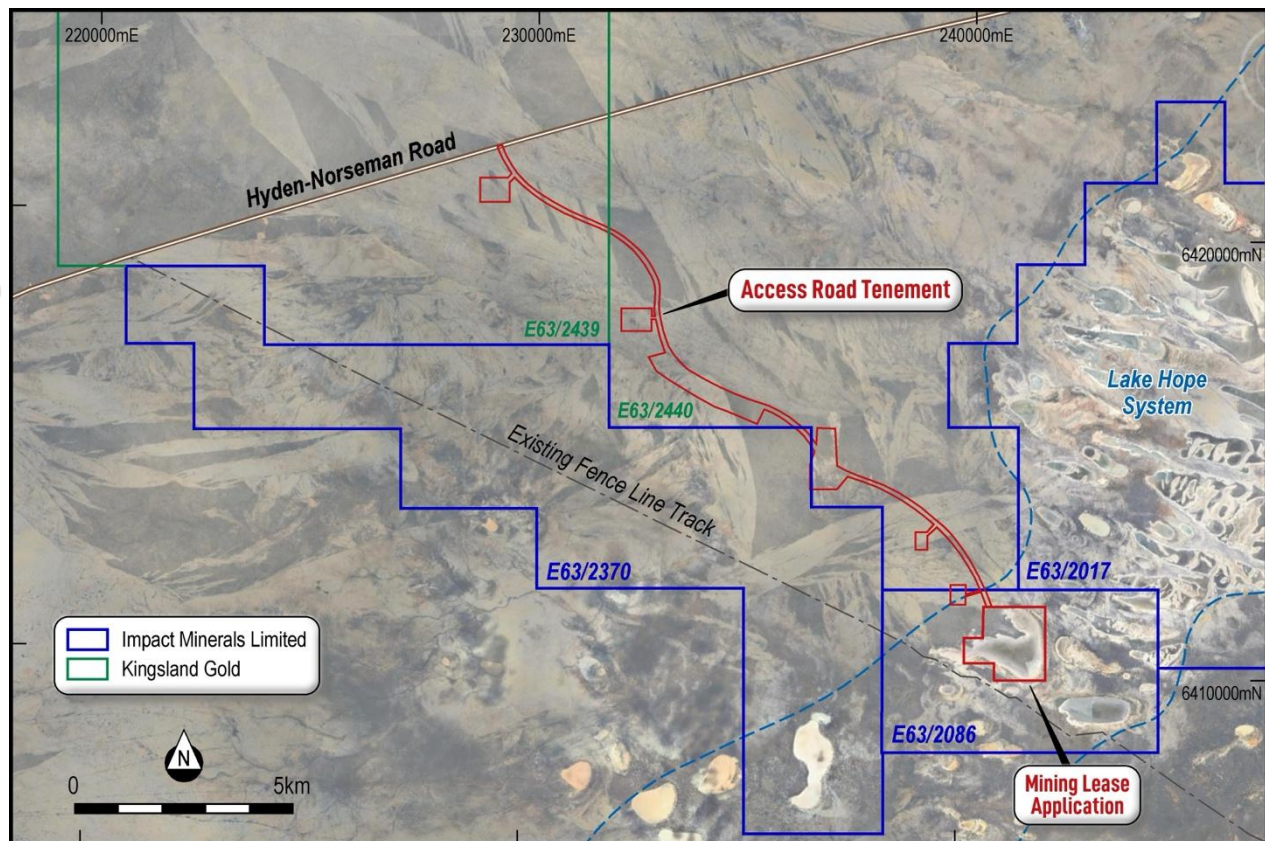
- Oversee the technical and commercial design details associated with the selected process option to ensure the production of 10,000 tpa of 4N HPA product;
- Develop the following:
  - Metallurgical and mass balance;
  - Basic Process Flow Diagrams;
  - Preliminary sizing and budget quotations for key process equipment; and
  - Estimates from previous CPC studies and library data.
- Production of the Class 4 Capital Estimate (CapEx) through the factoring of electrical, instrumentation, piping, civils etc. from direct costs;
- Production of a high-level project expenditure profile;
- Contribute to the overall project Operating Expenditure (OpEx);
- Production of the preliminary implementation schedule for executing the full project; and
- Compile a preliminary technical risk assessment contributing to a project Risk and Opportunity Register.

The design and production of the aforementioned documents rely on energy and mass balance using METSIM, provided by Strategic Metallurgy in collaboration with Impact.

## 1.4 Ownership & Tenure

The total project tenure covers numerous prospective salt lakes located between Hyden and Norseman in southeastern Western Australia, as well as in the Pyramid Lake-Lake Mends area of the Esperance region. It comprises eight granted exploration licences that have been poorly explored (E63/2086, EL63/2318-19, EL63/2730, E63/2492-2493, E63/25040, EL74/779, and E63/2257). The tenements encompass approximately 349 km<sup>2</sup>, all of which are 100% owned by Playa One Pty Ltd.

In August 2024, Playa One, on behalf Impact, lodged a Mining Lease Application (MLA63/684) along with an associated Miscellaneous Licence (L63/99) for the Lake Hope HPA project (Figure 1). The exploration licences under Impact's control are shown in blue. The Miscellaneous Licence covers the necessary infrastructure for the mine, including the haul road, areas identified as likely sources of road construction material, a site for stockpiling ore, and the temporary mine buildings required. Both the Lease and Licence have been applied for in the name of Playa One Pty Ltd. An Access Agreement that allows access road development is now in place with Kingsland Minerals Limited, who hold the green tenements.



**Figure 1.** Location of the Mining Lease and Miscellaneous Licence Applications at Lake Hope.

Impact has the right to earn an interest in Playa One Pty Ltd as follows (ASX Release March 21<sup>st</sup> 2023):

1. Upon completion of a Preliminary Feasibility Study (PFS), Impact has 90 days to elect to enter into an incorporated joint venture with the Playa One shareholders (through an entity representing them, Playa Two Pty Ltd). If it does, it will acquire an immediate 80% interest in Playa One by issuing up to 120 million fully paid ordinary shares, capped at a maximum value of \$8 million (based on the 5-day VWAP before the election), to the Playa One Shareholders.

Impact has elected to exercise this option and will now own 80% of Playa One Pty Ltd.

2. Upon completion of a Definitive Feasibility Study, which will be solely funded by Impact, Impact will issue up to 100 million fully paid ordinary shares, capped at a maximum value of \$10 million (based on the 5-day VWAP before the ASX announcement of the completion of the DFS), to the Playa One Shareholders.
3. Playa One shareholders will be free-carried to a Decision to Mine. Impact will maintain all Playa One tenements in good standing during this period.
4. If a Decision to Mine is made, the Playa One shareholders may contribute to mine development costs or face dilution. If their interest falls below 7.5%, it will convert to a 2% net smelter royalty.

## 1.5 Project Description

### 1.5.1 Overview

The proposed Lake Hope mine site is located approximately 135 km east of Hyden and about 500 km east of Perth in Western Australia (Figure 2). It is centred on two small salt lakes situated about 20 km south of the Norseman-Hyden Road (Figure 1) at GDA94/MGA Zone 51, 239944m east, 6410410m north. The lakes are called West Lake and East Lake and are part of the greater Lake Hope drainage system. An access track extends from the road to the lakes from the Norseman-Hyden road and is currently used for exploration and sampling purposes. A new access road will be constructed for the project and has been included in the capital cost estimate.

### 1.5.2 Mining Site Location



**Figure 2.** Location of the Lake Hope HPA Project.

Impact is applying for a mining concession and an environmental permit under the Code of Environmental Compliance, which includes the mining and processing of evaporite from West Lake. A subsequent application for East Lake will be required.

West Lake and East Lake are two of the evaporite deposits within the Playa One holdings, located approximately 20 km south of the Hyden–Norseman road. Once extracted, the evaporite will be stockpiled to facilitate regular haulage of ROM to the Kwinana-based refinery. The chemically benign solid waste from the refinery will be backhauled to the mine site, stockpiled, and backfilled during the mining operations. Liquid waste, primarily dilute acid waste, will be treated before management through recycling or off-site discharge in Kwinana.

A proposed pilot plant will use new membrane technology to minimise acid waste, provided through the \$2.87 million grant from the Federal Government's Cooperative Research Centres Projects (CRC-P: ASX Release October 22<sup>nd</sup> 2024).

The pilot plant, to be designed and managed by CPC Engineering and built at Edith Cowan University (ECU), will validate and optimize Impact's flowsheet while integrating Edith Cowan University's Membrane Selective Technology (MST) to maximise reagent and water recovery and minimise waste.



### 1.5.3 Mining

Mining at Lake Hope will be a small-scale truck and shovel operation carried out solely during the summer months for the first three years, before shifting to mining campaigns every three years. Preliminary dewatering and the establishment of haul roads around the proposed mining panels will be required before the commencement of each mining campaign.

A single excavator and several dump trucks will work on the lake surface, utilising top-loading techniques, with mining excavations retreating along defined panels to a common haul road before moving to the next adjacent panel. Gradual panel extraction will create a mine void that will be partially backfilled with process waste over time, while the remainder will fill with water and naturally rehabilitate.

The evaporite will be stockpiled on a Rom pad adjacent to West Lake and transported to Kwinana in side-tipping B Double road trains throughout the year. Solid refinery waste will be backhauled and stockpiled next to the ROM stockpile and then backfilled into the mine voids during each mining campaign.

### 1.5.4 Refinery

The proposed refinery location in the Kwinana industrial area provides access to essential infrastructure, including Hydrochloric (HCl) acid, water, power, and gas. Additionally, it offers a readily available source of skilled process operators and maintenance contractors.

Preliminary discussions with DevelopmentWA confirm that the site is available for lease and development. The refinery layout will ensure easy access to all equipment for operational and maintenance needs while maintaining a compact footprint to minimise construction and ongoing costs (Figure 3).

The final product will be packaged into bags and sent on pallets or in containers to the customer.

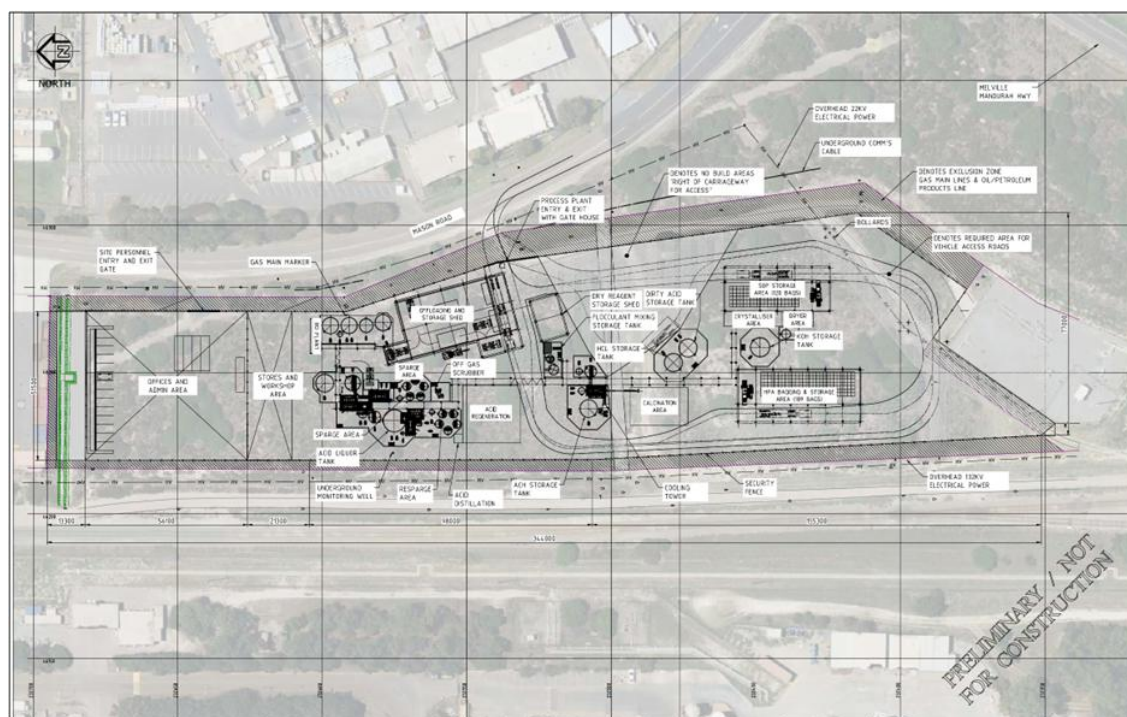


Figure 3. Plant General Arrangement on the Kwinana refinery site

## 1.6 Environmental

The mine site is located in the Southwestern Australian Floristic Region, within the Mallee Bioregion bioclimatic zone of Western Australia. The Mallee Bioclimatic Zone features a mix of medium woodland, mallee heath, scattered tallerack, scrub heath, and samphire grasses in the fringing dunes surrounding the lake.

### 1.6.1 Environmental Studies

Biota Environmental Sciences has completed a desktop study, followed by a flora and vegetation survey of the lake area, its immediate surroundings, and the proposed access road. No State or Federally listed Threatened Ecological Communities (TEC) or Priority Ecological Communities (PEC) were recorded within the survey area. Furthermore, no species listed as Threatened under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 or the State Biodiversity Conservation Act 2016 were found in the survey area, despite thorough searches of potential habitat. Several priority species were noted during the survey.

Biota also conducted a basic and targeted fauna survey, as defined in Environmental Protection Authority (EPA) guidance. Five broad fauna habitats were identified within the survey area, with open woodlands composed of Eucalyptus species and Callitris forming the dominant habitat type. Furthermore, none of the recorded fauna habitats represented TEC or PEC habitats within the survey area.

The desktop study identified a total of 283 species of vertebrate fauna previously recorded within the study area, of which 23 were considered significant species. During the field survey, 58 species of vertebrate fauna were observed, including 14 terrestrial mammal species, seven bat species, 35 bird species, and nine reptile species. Only three significant vertebrate fauna species were recorded from the survey area: Malleefowl, nominated as Vulnerable; the Western Brush Wallaby, designated as a Priority 4 species; and a Central Long-eared Bat, classified as a Priority 3 species.

In addition, eleven species of significance were considered 'likely to occur' or 'may occur' within the survey area based on previous regional records and field assessments of the habitats present. The survey area is situated beyond the eastern edge of Carnaby's Black Cockatoo distribution, with the closest known breeding tree records being approximately 50 kilometres west, near Forrestania. Within the surveyed area, 60 Wheatbelt Wandoo were identified as potential black cockatoo habitat trees, ten of which contained hollows potentially suitable for breeding. However, the species was not recorded from the survey area, and no evidence of foraging or breeding activity was noted. Given this, and that the survey area is approximately 50 kilometres beyond the documented range of the species, it is considered unlikely that Carnaby's Black Cockatoos inhabit the area.

Further environmental surveys will be required over the proposed infrastructure and access roads as well as seasonal surveys and these will be completed as part of the DFS.

### 1.6.2 Native Title

A heritage survey, which comprised both an archaeological field survey and ethnographic consultation with authoritative knowledge holders from the Ngadju Native Title Party, was completed over both West Lake and East Lake in 2023 (ASX Release July 27<sup>th</sup> 2023)

The survey area was assessed as having no Aboriginal artefacts or cultural heritage concerns, which ground-disturbing activities would impact. The survey provides evidence that, subject to negotiating a mining agreement with the Ngadju Native Title holders, there are no obvious impediments to mining on the lakes.

Initial discussions held with the Ngadju body corporate have been encouraging and further consultation will occur as the project progresses.

Impact will conduct further consultation and surveys for any additional work areas required to develop the project and aims to develop it collaboratively and respectfully with all traditional owners and native title parties. These areas include the access road and other sites needed for project infrastructure.

### 1.6.3 Legislative framework

Integrate Sustainability Pty Ltd. has created a comprehensive list of approvals necessary to begin the mining and processing activities, with none of the approvals regarded as being on the critical path. The list of approvals for the mine and refinery is outlined in the main report with the timelines incorporated into the project schedule (Figure 8).

### 1.6.4 Closure Planning

No formal closure plans have been developed; however, a preliminary estimate of the Environmental Bond assumes that 170 hectares of salt lake will be disturbed, 96 hectares will be cleared for the access road, and an additional 18 hectares will be cleared for the ROM and tailings stockpiles, as well as the temporary accommodation facility. Based on DEMIRS' Rehabilitation Liability Estimate Calculator, the rehabilitation estimate is approximately \$5.6 million, with an annual contribution to the Mining Rehabilitation Fund of \$55,000. No allowances have been included for the closure of the refinery at Kwinana.

## 1.7 Geology, Mineral Resource and Ore Reserve Estimates

The mine site is located within the Lake Hope drainage system in the Yilgarn Craton of Western Australia. This lake system primarily rests on an Archaean granitic basement, with minor amounts of metamorphosed greenstone and sedimentary rocks present in the region as inclusions in the granites.

The saline playas within E63/2086 consist of sheets of evaporitic salts up to two metres thick, composed of alunite mud (approximately 50-65%), amorphous silica (about 30-40%), goethite, halite (around 3-6%), gypsum (approximately 0.5%), and minor amounts of quartz, feldspar, and clay detritus (approximately 1% total).

### 1.7.1 Mineral Resource Estimate

In November 2024, H&S Consultants Pty Ltd completed its maiden Measured Resource for the Lake Hope alumina deposits (Table 1 and ASX Release November 19<sup>th</sup> 2024). The Mineral Resources for the Lake Hope alumina deposits are reported using the mineral wireframe, with a partial per cent block volume adjustment and without a cut-off grade reflecting the mining method which will mine the entire deposit.

The resource estimates are reported as Mineral Resources in accordance with the 2012 JORC Code and Guidelines (JORC Table 1 Sections 1, 2 and 3 at the end of this report).

Mineral Resources			
Category	Tonnes	Al <sub>2</sub> O <sub>3</sub> %	Contained Al <sub>2</sub> O <sub>3</sub> tonnes
Measured	730,000	25.8	189,000
Indicated	1,880,000	25.0	471,000
Inferred	170,000	23.1	40,000
Total	2,790,000	25.1%	700,000

Table 1. Project Total (JORC) Mineral Resource Estimate



### 1.7.1.1 Ore Reserve Statement

The maiden Ore Reserve estimate for the Project is shown in Table 2. It has been prepared by a Competent Person in accordance with the requirements of the JORC Code 2012, is based on the Mineral Resource estimate (ASX Release November 19th 2024), and the modifying factors discussed within this report and JORC Table 1 Section 4 appended to this report.

Deposit	Classification	Tonnes	Al <sub>2</sub> O <sub>3</sub> %	Contained Al <sub>2</sub> O <sub>3</sub> tonnes
West Lake	Proved	410,000	25.9	106,000
	Probable	860,000	26.1	224,000
	<i>Sub-Total</i>	<i>1,270,000</i>	<i>26.1</i>	<i>330,000</i>
East Lake	Proved	200,000	25.9	53,000
	Probable	260,000	25.5	66,000
	<i>Sub-Total</i>	<i>460,000</i>	<i>25.7</i>	<i>119,000</i>
Total	Proved	610,000	25.9	159,000
	Probable	1,120,000	26.0	290,000
	<b>Total</b>	<b>1,730,000</b>	<b>26.0%</b>	<b>449,000</b>

**Table 2.** Proved and Probable Ore Reserve Statement

1- The Ore Reserves are a subset of the Mineral Resource

2- Tonnages are dry metric tonnes

3- Both tonnages and grades are reported inclusive of dilution; appropriate rounding has been applied, and rounding errors may occur

4- Total Al<sub>2</sub>O<sub>3</sub> metal content represents in situ quantities without metallurgical recoveries applied

5- Mine designs target grades above 25% Al<sub>2</sub>O<sub>3</sub>%, however, no cut-off grade has been applied to the ore reserve estimate

The Ore Reserve is a subset of the scheduled mineral inventory (Production Target) supporting the forecast financial information which includes Inferred resource mineralisation, as well as unclassified materials as dilution. The Ore Reserve and economic viability of the project under the assumptions assessed for the PFS, are not reliant on the Inferred Resource or unclassified material, which is free carried at cost with zero revenue applied to support the Ore Reserve estimate.

Material classified as Measured and Indicated Mineral Resource have been directly converted to Proved and Probable Reserves. Inferred Mineral Resources are not included within the Reserve. The Ore Reserve classification is underpinned by the modifying factors contained within this report, JORC Table 1 Section 4, and the work completed for the PFS. The Production Target and financial forecast presented in the PFS comprises 34% Measured Resources, 62% Indicated Resources and 4% Inferred Resources.

The Ore Reserve estimation process followed a standard approach of input parameter definition, agreement on key project and mining assumptions, process driven evaluation and assessment of the established parameters and assumptions, and validation of the outputs produced. This is inclusive of ore loss and dilution estimation, pit optimisation of the Mineral Resource block model using optimisation software, mine design, mining method and equipment selection suitability, equipment productivity assessments and benchmarking, life-of-mine scheduling, mining cost estimation, and project financial analysis.

## 1.8 Mine Design and Production

The mining study builds on the designs, methods, and mining strategy developed during the Scoping Study. Conventional small-scale truck and shovel operations undertaken by mining contractors on a campaign basis remain the base case operating strategy for the project. Mining campaigns will occur annually for the first three years before shifting to every three years, delivering ore to the ROM stockpile for continuous haulage to the Kwinana-based refinery until mineral inventories are fully depleted.

All material mined from the lake deposit is sent to the ROM stockpile for eventual processing, making targeted excavation depths and mine planning execution important components of successful ore recovery from the lakes which will be assisted by onsite grade control processes, mine survey, and high precision GPS systems installed on the mining excavator. Average excavation depths are between 0.75m and 1.25m for both lakes with a maximum target dig depth of 1.5m in West Lake.

Mining areas target grades above 25%  $\text{Al}_2\text{O}_3$  from both West Lake and East Lake (Figure 4) to complement the process flowsheet and design criteria to produce 10,000 tonnes per annum of HPA product. The Life of Mine (LOM) schedule contains a total mineral inventory of 1.79 Mt at 25.9%  $\text{Al}_2\text{O}_3$ , supporting a total process life of 33 years across 13 mining campaigns.

The mineral inventory includes a subset Ore Reserve estimate of 1.73 Mt at 26%  $\text{Al}_2\text{O}_3$ , with Inferred mineral resources and unclassified dilution materials comprising only 4% of the total inventory.

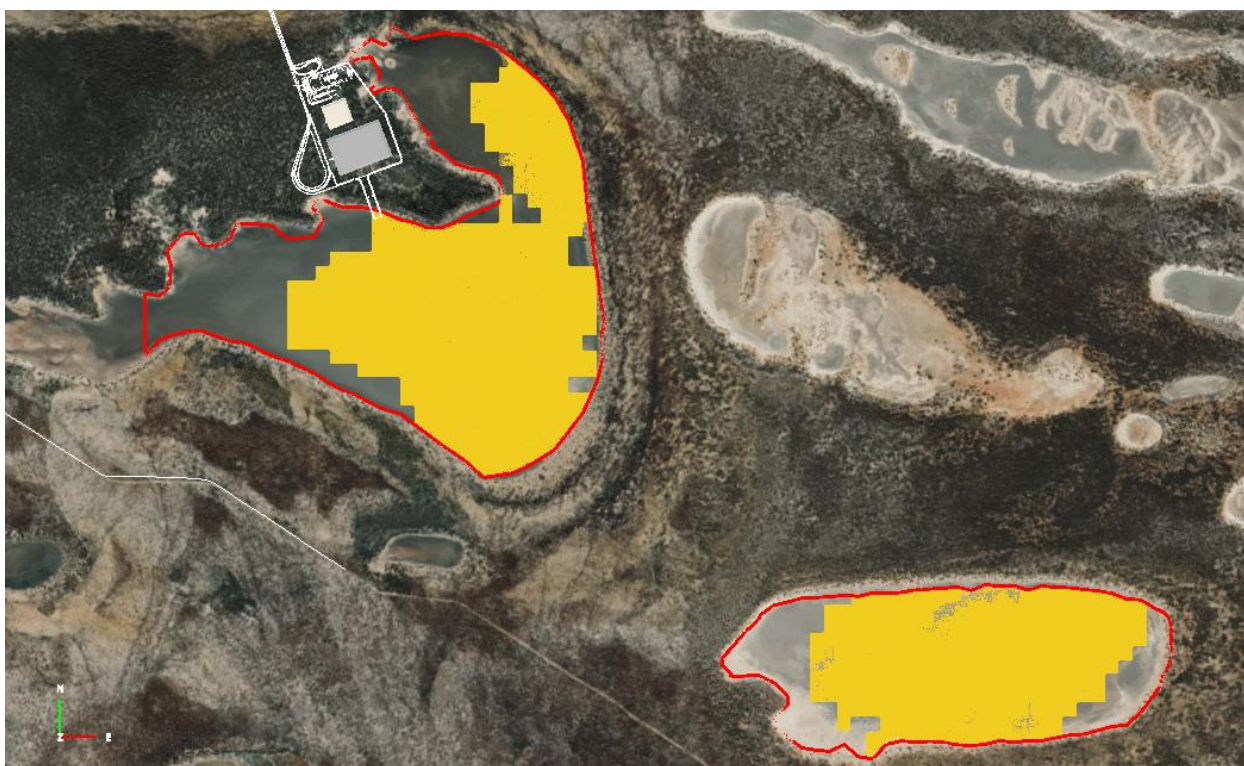


Figure 4. Target Mining Areas (gold) and mineralisation boundaries (red).

The first three mining campaigns occur annually to allow for a gradual increase in mining activities and the building of ROM stockpiles to support the two-year break between the subsequent three-yearly mining campaigns, while minimising start-up operational risks. The final campaign is necessary only to accommodate the last backfill of Process Waste material backhauled to the site.

The initial mining campaign lasts four months to facilitate site establishment activities and initial mining preparations, while successive campaigns last three months during the dry summer period (assumed to be January to March inclusive).

Various mine design options were considered in developing the final mining areas (Figure 5) and mining panels that target mineralisation greater than 25%  $\text{Al}_2\text{O}_3$  while minimising the length of the haulage routes on the lake surface, in addition to optimising ore recovery and addressing mining water management requirements. Mining areas are delineated by main (or trunk) haul roads built on top of the Lake surface using material sourced from borrow pits along the site access road. Individual mining panels within each mining area are 25 m in width, with areas under main haul roads (HR panels) typically 50 m in width.

Mining sequences have been generally constrained to one mining area at a time with HR panels not able to be mined until adjacent mining areas had been completed, ongoing access is no longer required, and haul road fill is removed from the surface.

The highest-grade mining areas have been given sequence priority with the final mine area designs generally dictating much of the mining sequence logic. Multi-area mining typically occurs when there is transition from one area to another during a single campaign.



Figure 5: Mining Areas (coloured) and main haul roads (grey/black)

Mining takes place on the West Lake in all campaigns except for Year 24 when mining activities are only taking place on the East Lake. Mining on the East Lake starts in Year 15 and continues for the next three mining campaigns until being completely mined out in Year 24. Mining then returns to the West Lake to finish the remaining mining areas with ore mining activities finishing in Year 30 (campaign 12). East Lake is connected to the West Lake haul road network via a 1.74km connecting haul road.

The mine is scheduled to produce approximately 54,300 tpa (dry) of ore over a total life of 33 years. Mining will occur only during the summer months and once in a steady state, it may be mined every three years to reduce mobilisation and demobilisation costs. The average mining production per campaign is 150,000 dry tonnes, with



an average of 167,000 dry tonnes mined during each of the three yearly campaigns. Currently, there are no restrictions on the mining rate, and it is not limited by geology or resources.

Ore is transported to the refinery at an average of 4,525 tonnes per month. The head grade of processed ore averages 25.9% Al<sub>2</sub>O<sub>3</sub> over the life of mine, with an average grade >26.6% Al<sub>2</sub>O<sub>3</sub> during the first 10 years.

Ore is transported to the refinery at an average of 4,525 tonnes per month. The head grade of processed ore averages 25.9% Al<sub>2</sub>O<sub>3</sub> over the life of mine, with an average grade >26.6% Al<sub>2</sub>O<sub>3</sub> during the first 10 years.

Multiple iterations were performed to develop mining schedules that ultimately provided a clearer understanding of the most cost-effective and practical strategy for extracting the deposit. Production scheduling concentrated on maximising the overall NPV for the project, ensuring steady plant feed tonnages and grades. The mine design strategy targeting >25% Al<sub>2</sub>O<sub>3</sub>, extraction sequencing and scheduling results have been validated by the pit optimisation results which supports a higher grade focus as the best economic outcome for the deposit given the current process design and flowsheet.

A formal mining contractor Request for Quotation (RFQ) to provide the relevant mining costs was successfully completed, with mine establishment costs, fixed costs, dewatering, excavation, backfill, and haulage costs developed from the responses.

### 1.8.1 Mining Waste, Ore Loss and Dilution

Given the nature of the deposit, no conventional waste material is generated during the mining sequence given all material within the mine designs is bulk mined to target depths and sent to the ROM stockpile for haulage to the Process Plant, inclusive of all classified resources and unclassified materials.

Waste, in the form of dilution, is included within the mineral inventory. Distal waste is the main contributor to dilution within planned designs (i.e. base of mineralisation, lake surface and mineralisation extremities). The mineral inventory contains a total of 1.2% dilution.

Ore loss was calculated within the mine schedule optimisation software based on estimates of excavation edge loss over time (i.e. bench edge slumping to 15 degrees during mining breaks) and surface loss (0.25m) from primary haul roads being removed from the lake surface when required for ore mining underneath. Total ore loss from the mine schedule is 1.4%.

### 1.8.2 Infrastructure and Logistics

Limited infrastructure exists in the immediate vicinity of the proposed mine. The site establishment team will initially use the existing access track to reach the site and set up a basic camp. However, this will eventually be replaced by an all-weather access road for mine site establishment, mobilisation, and road transportation.

The approximately 16 km access road will be constructed as an all-weather road and, for the purposes of the PFS, has not been bituminised. Development costs have been provided by a local contractor who visited the site.

The following assumptions have been made in developing the schedule and cost to build the access road, none of which are considered problematic:

- Access to several water bores within 2 km of the proposed road;
- Suitable borrow pit material is available locally. Four 30,000 t borrow pits are proposed, and
- Four culverts have been assumed; the final design will dictate the actual number.

The road access team will either base themselves at the proposed temporary accommodation at the mine site or utilise the IGO Cosmos accommodation, which is available for use and is about a 40-minute drive

away. No decision has been made regarding the direction of the road construction. A detailed survey of the access road and design will be initiated during the DFS.

The access road design will accommodate B Double side tipper road transport, which will be used to transport ore between the mine and the refinery and for backhauling solid waste from Kwinana.

The transport route from the mine site to Kwinana is 602 km, with a B Double average speed of 72 to 75 km/h (full/empty) and a maximum payload of 61 t. Based on these parameters, an average fleet size of 7 trucks will be required, operating 330 days per year. Given the relatively proximity to the mine site and the road network between the site and Kwinana, a 72-hour active stockpile at Kwinana has been assumed as adequate to ensure a constant supply of ore to the operation.

### 1.8.3 Fencing and security

The need for security fencing around the mine and stockpile area will depend on the requirements of the environmental permit. To date, no requirements have been identified or costed.

### 1.8.4 Earthworks and drainage

The earthworks and drainage of the mining area have been estimated based on pricing provided by the mining contractors on a bulk cubic metre (bcm) basis.

### 1.8.6 Existing Services

No services currently exist at Lake Hope. Any electrical needs on site will be met by solar power.

## 1.9 Metallurgical test work

A composite master sample LHMET001, which was prepared for the Scoping Study in the Phase 1 bulk sampling programme, was continued to be used for the initial PFS test work (Figure 6).

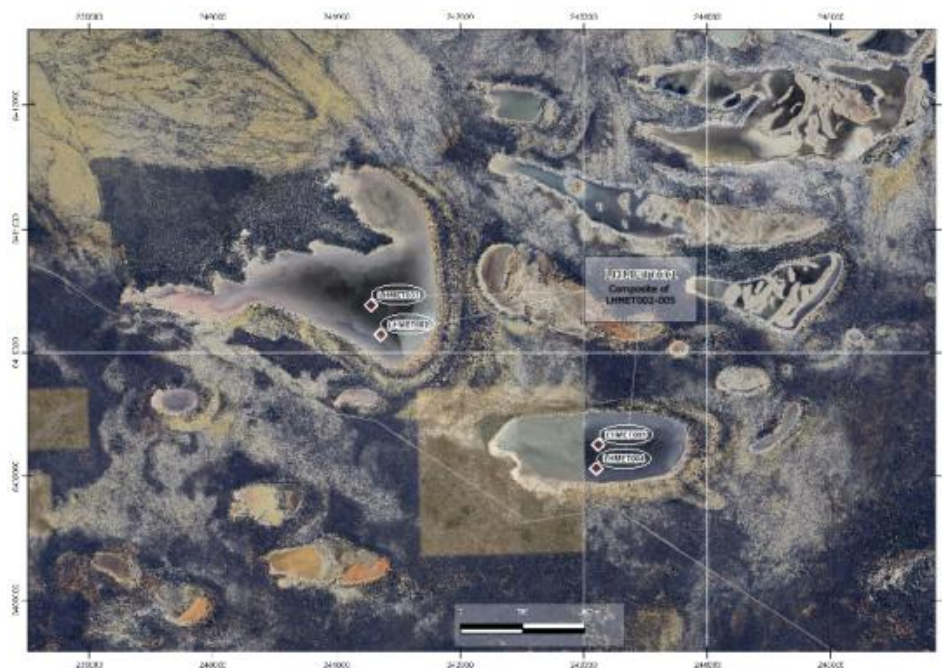


Figure 6. West Lake and East Lake Phase 1 Bulk Samples

However, since the early years of the mining schedule focus solely on the West Lake, a representative bulk sample from West Lake was produced to support the closing metallurgy for the PFS. A 61 kg composite sample (LHWBCOMPA) was made from a subset of 8 out of 13 x 200 kg bulk samples taken from West Lake during the

Phase 2 bulk sampling programme. The selected bulk samples were taken from the centre of the lake in areas of higher-grade alumina (Figure 7).

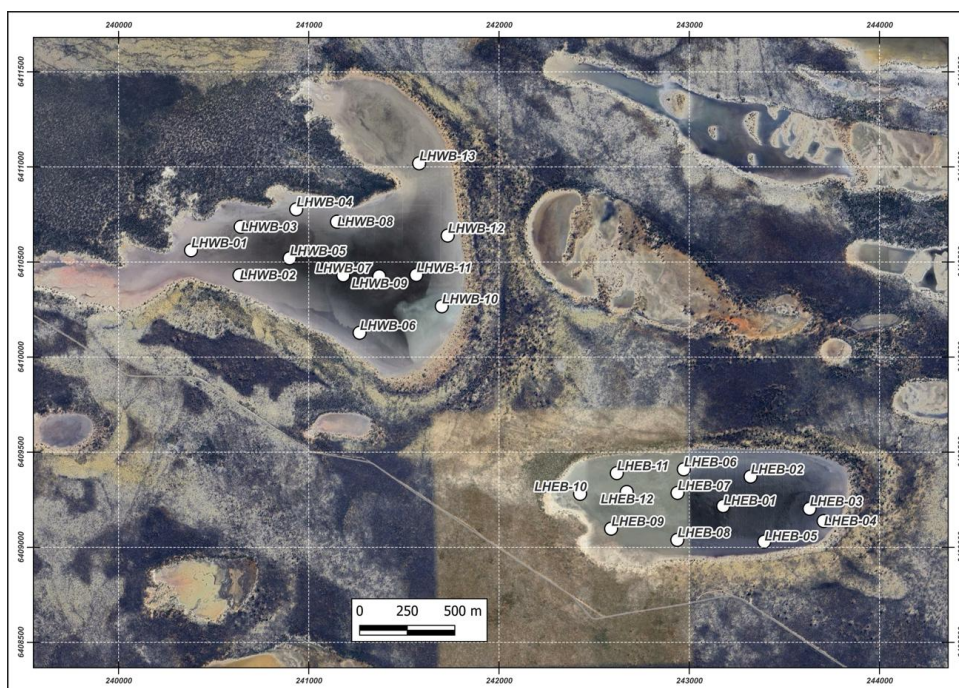


Figure 7. Phase 2 Bulk Samples

The results of this metallurgical test work supported a metallurgical recovery of 70.2% and provided greater detail and insight into the likely mineral components in the lakes. This allowed Impact to revise the lake mineralogy during the PFS, as reflected in Table 3. It should be noted that the mine scheduling and financial analysis assumes a slightly lower recovery figure of 69.8%, providing an additional, albeit marginal (0.5%), degree of conservatism.

Table 3. PFS Mineralogy

Name	Formula	PFS
K_alunite	$KAl_3(SO_4)_2(OH)_6$	44.3%
Na_alunite	$NaAl_3(SO_4)_2(OH)_6$	9.4%
H_alunite	$(H_3O)Al_3(SO_4)_2(OH)_6$	1.5%
kaolin	$Al_2Si_2O_5(OH)_4$	9.1%
Albite	$NaAlSi_3O_8$	0.30%
Muscovite	$KAl_2(AlSi_3O_{10})(F_{0.1}, OH_{0.9})_2$	1.5%
Biotite	$K(Mg_{0.5}, Fe_{0.5})_3(AlSi_3O_{10})(OH)_2$	1.50%
Serpentine	$Mg_3Si_2O_5(OH)_4$	0.61%
Sylvite	KCl	0.02%
K_Jarosite	$KFe_3(SO_4)_2(OH)_6$	2.7%
Goethite	$Fe(OH)_3$	1.57%



Name	Formula	PFS
Strengite	$\text{FePO}_4 \cdot 2\text{H}_2\text{O}$	0.06%
Ilmenite	$\text{FeTiO}_3$	0.02%
Rutile	$\text{TiO}_2$	0.03%
Hydrophilite	$\text{CaCl}_2$	0.07%
Gypsum	$\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$	0.1%
Crandallite	$\text{CaAl}_3(\text{PO}_4)_2(\text{OH})_5 \cdot \text{H}_2\text{O}$	0.05%
Epsom	$\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$	2.3%
Halite	$\text{NaCl}$	4.3%
Celestine	$\text{SrSO}_4$	0.23%

### 1.10 Process design basis

The refinery's basis of design (BOD) aligns with the testwork described above. It anticipates a metallurgical  $\text{Al}_2\text{O}_3$  recovery of 70.2%. The refinery's nameplate capacity is approximately 54,300 tpa of ROM ore, which is expected to yield a maximum production of 10,000 tpa of HPA, 24,900 tpa of Sulphate of Potash, and 19,500 tpa of tailings waste on a dry metric tonne basis, along with 80,000 tpa of liquid waste acid.

The process design assumes the following key parameters:

- Operating Days: 365
- Operation Hours per Day: 24
- Plant Availability: 91.3%
- Total Available Hours: 8,760
- Operating Hours per Year: 8,000
- Plant Feed Rate: 7.13 dtph
- Maximum production of HPA 4N 99.99% purity: 10,000 tpa
- Overall  $\text{Al}_2\text{O}_3$  metallurgical recovery: 70.2%

While mining is a seasonal activity, conducted during the dry season with the option to mine once every three years, haulage from the ROM ore stockpile occurs year-round. The ore is stockpiled at the refinery in a covered shed that provides sufficient space for loading and has a refinery inventory buffer capacity of three days.

## 1.11 Flowsheet selection

CPC Engineering developed the detailed process design criteria (PDC) and mass balance stream tables based on the METSIM model created by Strategic Metallurgy in collaboration with Impact.

The flowsheet is based on the Playa One Low-temperature Leach (LTL) process, which has produced 4N HPA at bench scale (ASX Release February 27<sup>th</sup> 2024). The Scoping Study was based on the Playa One sulphate process which is quite different (ASX Release February 19<sup>th</sup> 2024).

The LTL process is essentially a two-stage hydrometallurgical procedure. Stage 1 involves pre-treating the ore with potassium hydroxide at less than 90°C. This method removes potassium and sulphur from the ore, producing a potentially high-value by-product of liquid sulphate of potash (SOP) along with a solid residue that advances to Stage 2, where it is leached in hydrochloric acid at the same temperature of 90°C. The pregnant liquor solution (PLS) then undergoes two phases of crystallisation of aluminium chloro-hexahydrate (ACH) by increasing and decreasing the pH. The ACH is subsequently calcined to yield HPA.

Stage 2 of the process is an established method of production of HPA and is used commercially by two private Canadian producers of HPA (Polar Performance Materials and Advanced Energy Materials) and is offered under licence by Lava Blue, a Queensland based specialist in high-purity materials.

The flow diagram in Figure 8 details the process route for producing a 4N HPA product, as well as a potential Sulphate of Potash ("SOP") by-product.

Aside from the construction materials, most equipment is conventional and well understood; however, certain pieces of equipment are regarded as specialised and will require additional vendor testing during the later study and piloting stages.

Multiple vendors provide centrifuges, which are well established in hydrometallurgical mineral processing. However, they become somewhat specialised when considering the temperatures involved and the limits placed on construction materials for the highly corrosive environment.

Calcination will be highly specialised, particularly in the initial stage where the chloride is gassed off, resulting in an extremely aggressive corrosive environment. The vendor engaged for the PFS has invested significant time and resources in developing the necessary materials and design technology, which includes some piloting but has limited commercial application at this time.

Multiple vendors provide membrane purification technology solutions under low temperature and/or low acidity/alkalinity conditions. The specific duty of HCl purification will be a limiting factor; this has been discussed with potential vendors and considered in the process design conducted to date. This aspect of the process flowsheet will be a focus of the pilot plant development.

The SOP crystallisation is a commercially established process for which vendor packages for the whole process may be available. While this may limit the options in terms of supply, it will, however, decrease the risk of designing a bespoke process.

While 4N HPA has been produced during the test work programmes, no SOP has been generated for detailed analysis in the test work to date but is scheduled to be included during the pilot plant stage.

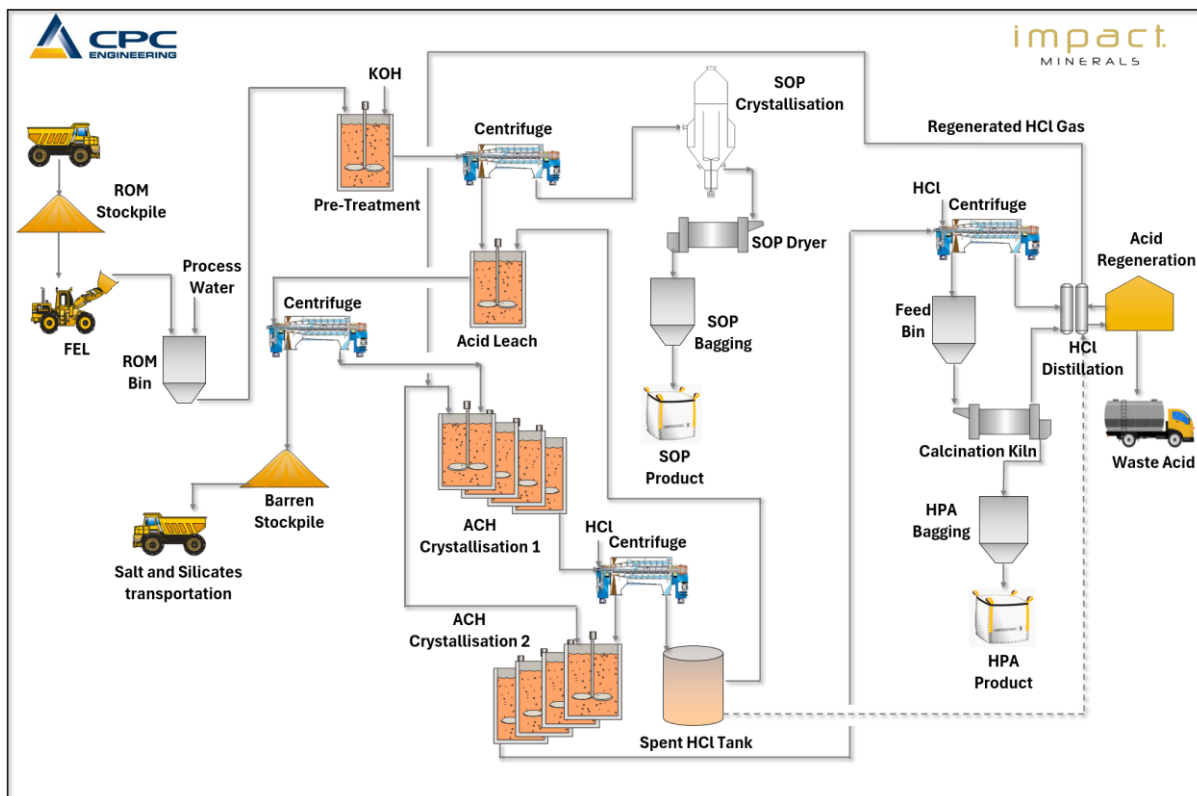


Figure 8. Process Flow Diagram

The final 4N HPA product is bagged and containerised and then sold under Ex-Works (EXW) Incoterms. Similarly, the SOP product will be bagged and sold to the local fertiliser market. Given that no SOP was produced during the test work programme, the SOP process production is based on current technological knowledge and attracts no revenue in the PFS.

### 1.12 Pilot Plant

In conjunction with CPC Engineering and Edith Cowan University (ECU), a micro and pilot plant are currently being designed with support from a \$2.87 million grant from the Federal Government's Cooperative Research Centres Projects (CRC-P) program (ASX Release October 22<sup>nd</sup> 2025). The plant will validate and optimise the commercial flowsheet while integrating Edith Cowan University's Membrane Selective Technology (MST) to maximise reagent and water recovery and minimise waste.

A subsequent pilot plant, which will produce HPA and SOP samples for potential customers, will provide key process and performance data for future studies.

The pilot plant will also be designed with the possibility for a subsequent modular scale-up in production capacity in mind. For example, it may be more capital efficient to consider building several smaller-scale refineries capable of producing, say, 2,000 tpa of HPA rather than an immediate scale-up to a 10,000 tpa refinery with the contingent financing requirements.

### 1.13 Project Implementation

An indicative (Level 1) project schedule has been developed based on information provided by several consultants regarding environmental permitting, mine site development, and refinery engineering, procurement, and construction. The commissioning and ramp-up of the commercial refinery assumes a McNulty Type 3 progression.

As indicated in Figure 9, the micro plant and pilot plant programme has been initiated with the assumption that construction will begin in Q3 2025, as anticipated. The DFS will be developed concurrently with the micro plant

and subsequent pilot plant, and commissioning of the commercial refinery is therefore scheduled for Q1 2031. No critical path analysis has been conducted on the consolidated schedule, and a level 3 development schedule will be produced during future studies.

Focus will be on the appropriate scale-up of production from the pilot plant, with the aim of developing a modular, smaller-scale refinery as an alternative to a full-scale up to a 10,000 tpa HPA refinery. This may lead to a significant reassessment of the project economics, significantly reducing the need for a large upfront capital expenditure.

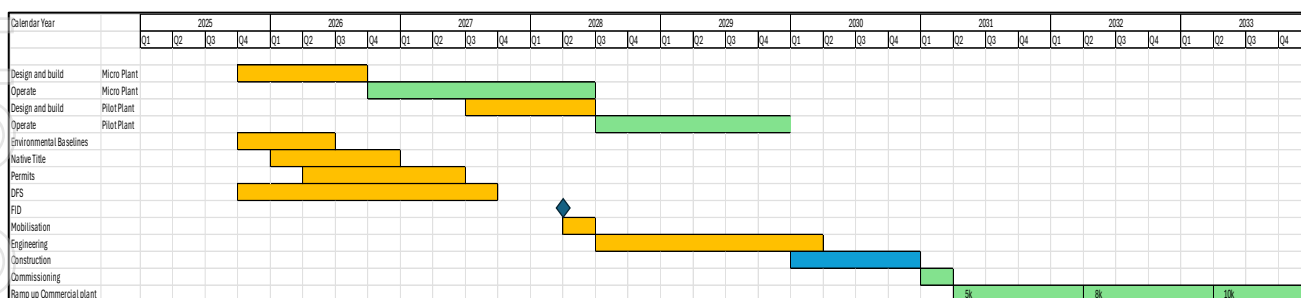


Figure 9. Indicative schedule

## 1.14 Marketing

The HPA market is experiencing strong demand growth driven by several key downstream applications, including:

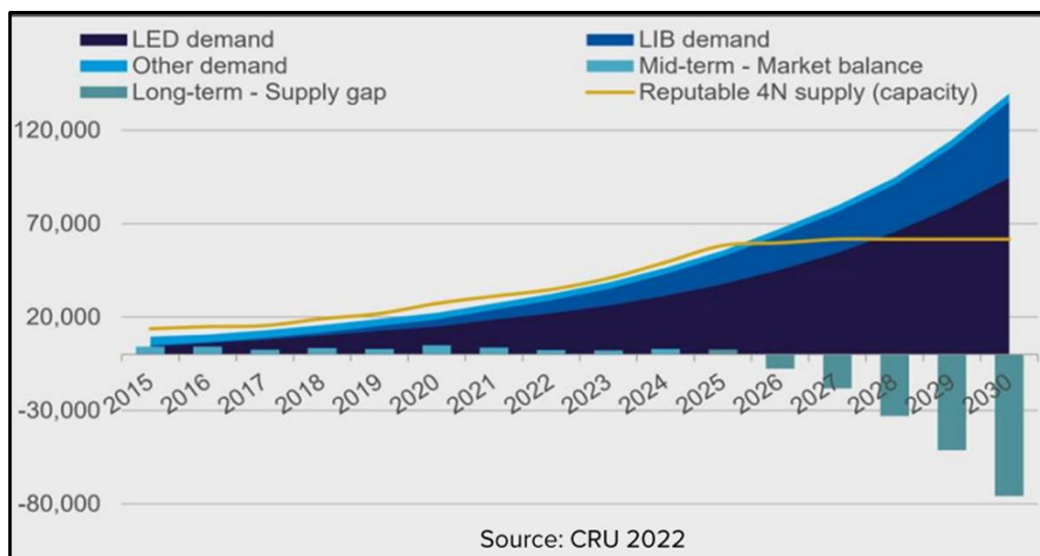
- **LED Applications:** HPA remains crucial in LED manufacturing as a sapphire substrate material and phosphor component. While this represents a mature market segment, the emergence of micro-LED technology is expected to drive additional future demand.
- **Semiconductor Industry:** The increasing sophistication of semiconductor manufacturing is creating new demand for HPA, particularly for artificial intelligence, quantum computing, robotics, electric vehicles and Internet of Things applications.
- **Lithium-ion Batteries:** Growing demand for electric vehicles and battery energy storage systems is driving significant HPA consumption in ceramic-coated battery separator and electrode coatings. HPA enhances battery safety, decreases anode and cathode degradation reactions, and increases cell lifetime. This sector represents one of the fastest-growing demand segments.
- **Sapphire glass:** used in a wide variety of applications including watch and smart device coverings and optics.
- **Advanced Ceramics:** The increasing use of biomedical implants, specialized electronics, lasers and industrial components is driving steady demand growth in this sector.

In addition to the existing applications, additional future end-use applications where HPA will demonstrate significant value in use are expected to be identified.

### 1.14.1 Global Supply and Demand of HPA

Research conducted by Grand View Research valued the 2024 HPA market at US\$4.63 billion and expects the market to grow at a compound annual growth rate of 23%, resulting in a US\$15.8 billion industry by 2030. The key demand industries cited for driving this growth include electric vehicles, light-emitting diodes, and semiconductors.

Additional market research conducted by CRU Group in 2022 has identified a potential HPA supply-side deficit for reputable 4N supply beginning in 2026 and continuing through to 2030 (Figure 10). This, along with rising input costs, is expected to exert upward pressure on HPA pricing.



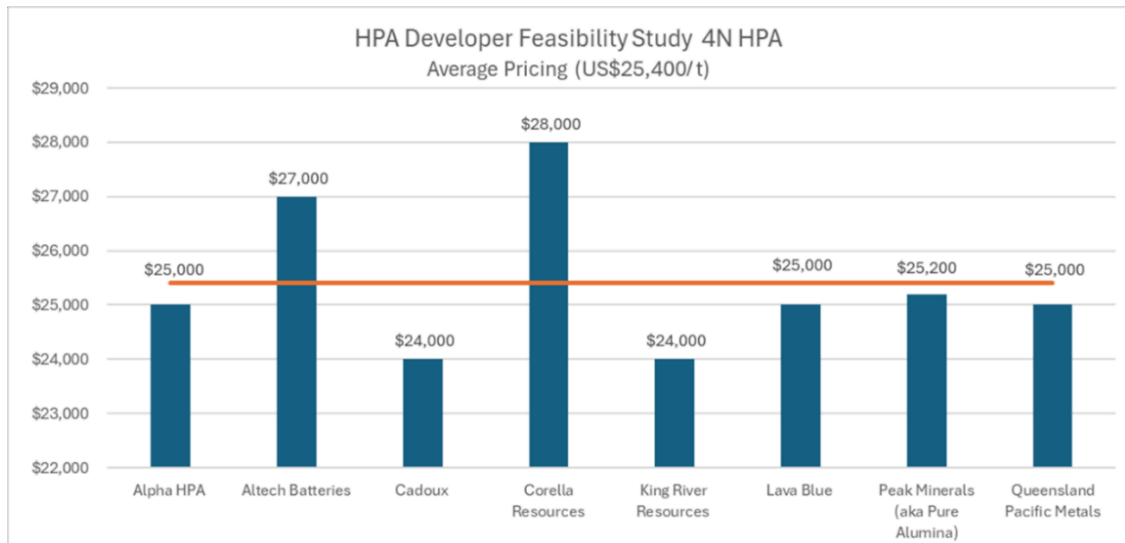
**Figure 10.** HPA supply demand balance deficit from CRU Group Source: [CRU via Alpha HPA](#)

### 1.14.2 HPA Pricing

In determining the HPA price for the financial model, Impact has chosen to use a conservative price of US\$22,000 per tonne ex-works, which aligns with the Scoping Study (ASX Release November 9<sup>th</sup> 2023). Planned customer engagement throughout the DFS will provide additional pricing inputs to validate market pricing. In addition, there may be some pricing upside subject to the HPA quality achieved, current peer market pricing, and expected supply shortage.

When reviewing pricing the following inputs were considered:

1. Scoping Study pricing – US\$22,000 per tonne ex-works
2. HPA developer peer project pricing average – US\$25,400 per tonne based upon published prefeasibility and definitive feasibility studies as per Figure 11.
3. Publicly reported independent 4N+ HPA price forecast – CM Group via Alpha HPA indicating a 4N+ HPA price range between US\$15,000 and US\$60,000 per tonne depending on the product specification and additional processing required.



**Figure 11.** 4N HPA developer study pricing Source: Various public PFS/DFS reports / Impact internal analysis. Note that Altech, Corella Resources and King River Resources are no longer in the HPA business.

### 1.14.3 By-Products

Sulphate of potash (SOP) is a potential by-product of the KOH HPA process. Although the test work has not advanced to final production, there is an established flowsheet for its development, making production technically feasible.

Although initial assays are encouraging, the extent of deleterious minerals present in its production has yet to be fully evaluated. SOP is the preferred form of potash since it contains both potassium and sulphur nutrients. Furthermore, it has a growing market in high-value horticulture—fruit, berries, vegetables, and tobacco—and generates a ~US\$200 price premium over Muriate of Potash (MOP) pricing (Figure 12).

#### SOP outlook



**Figure 12.** Argus SOP Premium US\$ Pricing over MOP

**Source:** Presentation - Argus Potash: global themes of 2024 and outlook for 2025 5 Feb 2025  
Julia Campbell, Potash Editor and David Riley, Manager, Potash Analytics



Initial customer engagement has yielded indicative pricing of approximately A\$1,100 per tonne, which closely aligns with the current Argus global SOP indicative pricing of around EUR600 CFR Europe (approximately A\$1,033) per tonne. During the pilot plant stage, Impact will manufacture SOP and provide customer samples to confirm product saleability.

The financial analysis presented in the PFS assumes that this product will be available under ex-works (EXW Incoterms) at no cost. At nameplate capacity, the potential benefit of producing 24,900 tonnes per annum (tpa) of saleable SOP at AUD\$1,031 per tonne would generate AUD\$25,696,800 annually. Assuming this sales price is EXW, then the revenue generated by the production and sale of SOP is equivalent to an operating cost offset of AUD\$2,570 per tonne of 4N HPA and justifies incorporating a test work programme within the proposed pilot.

### 1.15 Financial Evaluation

Impact commissioned NPVOne to conduct the PFS financial modelling based on inputs provided by various consultants.

The financial model includes royalty payments of 2.5% (Govt), 2% (Playa One), and an estimated 1% (Ngadju native title), as well as a corporate tax rate of 30%. The modelling also includes 10 years of the Critical Minerals Production Tax Incentive.

The PFS financial assessment of the Lake Hope Project, which includes a maiden JORC 2012 Ore Reserve Proved and Probable Ore Reserve estimate of 1.73 Mt at 26.0% Al<sub>2</sub>O<sub>3</sub>, clearly demonstrates the economic robustness of the Project with an estimated NPV<sub>10</sub> of AUD \$1,165M and an IRR of 47.5%. This financial assessment is based on real, financed, and post-tax analysis.

The key financial and physical performance indicators of the Project, assuming that SOP production will be available under ex works (EXW Incoterms) at zero cost, are outlined in Table 4 below.

**Table 4.** Key Financial and Physical Outcomes

Parameter	Units	Outcome
Average annual ore mining rate	dmt	54,300
Life of mine (LOM)	years	33
4N HPA Production (LOM)	t	323,640
Average annual production of 4N HPA	t	10,000
Revenue 4N HPA	AUD \$/ t	35,484
Revenue (LOM)	AUD \$M	11,484
Post-tax NPV <sub>10</sub> (real)	AUD \$M	\$1,165.7
Post-tax IRR	%	47.5%
CapEx (including contingency and owner's costs)	AUD \$M	\$259
Govt Royalties (LOM)	AUD \$M	287.1
Other Royalties (LOM)	AUD \$M	344.5
Corporate Tax (LOM)	AUD \$M	2,176

<b>Payback</b>	<b>Years</b>	<b>2.2</b>
<b>Average cash cost of production of 4N HPA over LOM</b>	<b>AUD \$/t</b>	<b>\$9,453</b>
<b>EBITDA (LOM)</b>	<b>AUD \$M</b>	<b>7,786</b>
<b>Net profit (LOM)</b>	<b>AUD \$M</b>	<b>5,148</b>

Although not included in the financial modelling, the revenue offset for the SOP of A\$2,570 per tonne of PA produced gives a Operating Cost of \$6,883 per tonne of HPA (US\$4,405 per tonne).

### 1.15.1 Financial model assumptions

Table 5. Key assumptions used in the financial model

<b>Parameter</b>	<b>Unit</b>	<b>Assumption</b>
<b>Time series used</b>	<b>Time</b>	<b>Annual</b>
<b>Weight Average Cost of Capital</b>	<b>%</b>	<b>10.0</b>
<b>Tax rate</b>	<b>%</b>	<b>30</b>
<b>Royalties</b>	<b>%</b>	<b>5.5</b>
<b>Critical Minerals Tax Offset</b>	<b>%</b>	<b>10% of OpEx for 10 years</b>
<b>FX</b>	<b>US / AUD</b>	<b>\$0.62</b>

### 1.15.2 Capital Costs

Capital costs have been estimated, as detailed in Tables 6 and 7. These have been prepared by Impact and CPC Engineering and include contingencies. The Owner's Costs associated with the mine site include the access road, ROM, and Process waste stockpile pricing provided by local civil contractors, with basic infrastructure costs provided from budget email quotations.

Table 6. Owner's Costs - Mine Site.

<b>Item</b>	<b>A\$ M</b>
<b>Access Road</b>	<b>6.7</b>
<b>Communication Tower, Diesel Tank and distribution, and Office Block</b>	<b>2.0</b>
<b>ROM ore and Waste Stockpile Area</b>	<b>2.3</b>
<b>Total</b>	<b>11.0</b>

CPC Engineering has developed the refinery and associated non-process infrastructure costs. Engineering and designs have been developed for the capital cost estimate to be calculated with an accuracy of  $\pm 30\%$ , a factor-based estimate in accordance with class 4 AACE. All estimated costs are based on the preliminary design generated to comply with the relevant Australian Standards. The design is based on a fit-for-purpose refinery with duty equipment throughout the facility. Cost estimates for this study were based on established vendor-supplied quotations and estimates gathered from previous projects on the CPC Engineering database.

The rates per unit for concrete, structural steel, plate work, and other commodities were estimated based on CPC's database, quotes obtained and factored from equipment. Installation cost estimates were determined using a factor of the supply costs.

**Table 7. Refinery.**

Item	A\$ M
<b>Direct Equipment Costs</b>	<b>146.4</b>
<b>Infrastructure</b>	<b>6.2</b>
<b>Indirect Costs</b>	<b>38.2</b>
<b>Owner's Costs</b>	<b>7.6</b>
<b>Contingency</b>	<b>49.6</b>
<b>Total</b>	<b>248.0</b>

During construction, owner costs are factored at 5% to cover expenses such as the project owner's team, foreign exchange (FX) variations, duties, taxes, and permit fees. In addition to this 5% factor in the construction capital costs, further owner costs are included in the financial model: an Environmental Liability Estimate of \$5.5M to be incurred in Year 33 (Mine Closure Bond), an Annual Mineral Restoration Fund payment of \$56k per annum, and 5.5% royalties (Govt - 2.5%, Playa One - 2%, and the Ngadju - 1%). Sustaining capital costs are assumed to be 1% for the first 5 years and then 2.5% of capital costs for subsequent years.

### 1.15.3 Operating Costs

Mine operational costs have been prepared from local contractor tender RFQ responses with a 10% contingency in the financial model. The mining costs are detailed in Tables 8 and 9 below. The initial mine establishment, mobilisation and demobilisation costs are identified separately to reflect the additional costs associated with the initial campaign. The mine establishment cost of A\$1.94M has been included in the financial model as a mine OpEx. This could also be classified as a CapEx item in future models and depreciated. The fuel adjustment reflects the change in diesel costs between the assumption included in the RFQ documentation, A\$1.00/litre incl fuel tax rebate and excl GST, compared with A\$1.20/litre in the financial model.

**Table 8.** PFS Production Operating Cost Estimate.

Cost Component	Item	Unit	Unit Cost A\$
Fixed (Initial Campaign)	Establishment (Yr 1)	\$ each	\$1,939,250
	Disestablishment	\$ each	\$0
	Mobilisation	\$ each	\$130,492
	Demobilisation	\$ each	\$72,476
	Labour and Manning	\$ each	\$1,494,540
	Plant and Equipment	\$ each	\$101,600
	Overheads & Other	\$ each	\$105,346
	Dewatering	\$ each	\$346,281
Fixed (ongoing Campaigns)	Establishment	\$ each	\$0
	Disestablishment (Yr 33)	\$ each	\$2,550,540
	Mobilisation	\$ each	\$97,395
	Demobilisation	\$ each	\$81,411
	Labour and Manning	\$ each	\$1,100,655
	Plant and Equipment	\$ each	\$76,200
	Overheads & Other	\$ each	\$88,500
	Dewatering	\$ each	\$368,755
Mining Variable	West Lake Area 1	\$/bcm	\$10.57
	West Lake Area 2	\$/bcm	\$10.57
	West Lake Area 3	\$/bcm	\$10.57
	West Lake Area 4	\$/bcm	\$11.57
	West Lake Area 5	\$/bcm	\$11.07
	West Lake HR Area 1	\$/bcm	\$12.57
	West Lake HR Area 2	\$/bcm	\$12.57
	West Lake HR Area 3	\$/bcm	\$12.07
	West Lake HR Area 4	\$/bcm	\$12.57
	West Lake (average)	\$/bcm	\$10.94
	East Lake	\$/bcm	\$11.34
Other Variable	HR Construction	\$/km	\$833,438
	HR Removal	\$/km	\$187,584
	Dewatering - Trenches	\$/m	\$61.23
	Dewatering - Pipework	\$/m	\$24.93
	Waste Backfill	\$/bcm	\$14.05
	Fuel adjustment	\$/bcm	\$0.99
Haulage	Ore	\$/t (wet)	\$94.68
	Process Waste	\$/t (wet)	\$94.68

Based on these costs and the mine schedule, the following estimate of mine OpEx was generated.

Table 9. PFS Mining Opex Summary

Cost Type	Cost Component	Total Opex (A\$M)
Fixed Costs	Site Establishment	1.9
	Mobilisation	1.7
	Demobilisation/Disestablishment	4.0
	Labour and Manning	20.1
	Plant and Equipment	1.3
	Overheads & Other	1.2
	Dewatering	4.8
Variable Costs	Mining	13.6
	HR Construction	4.9
	HR Removal	1.1
	Dewatering - Trenches	1.2
	Dewatering - Pipework	0.1
	Waste Backfill	5.9
	Fuel price adjustment	1.6
TOTALS	Total Opex	63.4
	\$/t mined (dry)	35.38
	\$/bcm mined	51.85
	\$/t HPA product	196

The refinery's operating costs at nameplate capacity and average ore feed grade have been estimated at A\$ 8,053.21 per tonne of 4N HPA as shown in Table 10. The OpEx is based on the PDC and mass balance generated from CPC based on the METSIM model provided by Impact and Strategic Metallurgy. Power, reagent, and consumable costs were derived from preliminary quotations from suppliers and utility agencies. A three-shift roster has been assumed for building up the shift numbers, with operating and maintenance staffing levels determined from first principles, utilising Impact's base rates, annual bonus, and legislated on-costs.

Table 10. PFS Processing Opex Summary

Item	A\$ M/a	A\$ / t HPA
Labour	18.22	1,842.15
Power	4.19	419.81
Reagents and Consumables	43.95	4,400.87
G & A	0.54	53.84
Vehicles	0.02	1.65
Maintenance (2.5%)	6.20	620.79
Contingency (10%)	7.31	732.11
Total	80.43	8,071.22

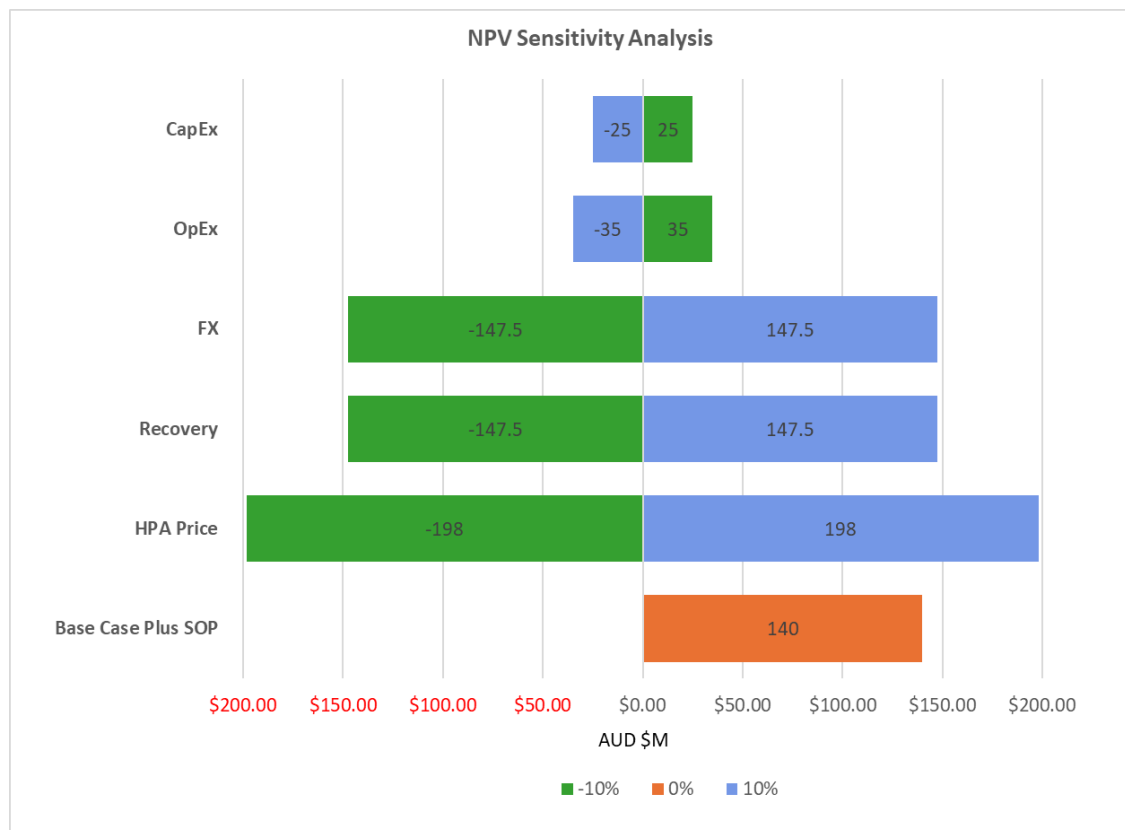


#### 1.15.4 Project Sensitivities

A financial sensitivity analysis was conducted to evaluate the potential impact on the project's economics by varying the key parameters of HPA price, recovery, foreign exchange (USD:AUD), operating expenses (OpEx), and capital expenditures (CapEx). The results of the analysis are displayed in Figure 13 and illustrate the project's greater sensitivity to HPA price, recovery, and the strength of the USD compared to the AUD, while showing less sensitivity to operating and capital costs.

The financial return is only moderately sensitive to the discount rate used in the analysis. The PFS used a rate of 10% which is more conservative than the discount rate used in the Scoping Study (8%). The higher discount rate was considered prudent and appropriate, considering the location, maturity of the Project and expected McNulty progression rating.

At a discount rate of 8% the NPV is \$1.525 billion, excluding the SOP and at a discount rate of 12% the NPV is \$961 million excluding the SOP.



**Figure 13. Project Sensitivities**  
(Note that the identical FX and recovery sensitivities are coincidental.)

#### 1.15.5 Cashflows over LOM

Cashflow generation over the LOM, as detailed in the Total within Table 11, is expected to be A\$7.34bn pre-taxation and financing costs. Note that the cashflow data in Table 11 reflects only the first 10 years of operation.

**Table 11. Project Estimated Cashflows, Total and first 10 years**

Cash Flow Statement													
FINANCIAL DETAILS	Unit	Totals	2030 Year	2031 Year	2032 Year	2033 Year	2034 Year	2035 Year	2036 Year	2037 Year	2038 Year	2039 Year	2040 Year
Cash-flow Summary			-1	1	2	3	4	5	6	7	8	9	10
Operating Surplus	\$m	7,793.1	0.0	95.9	184.5	238.7	244.2	244.2	238.3	244.0	244.0	238.0	243.8
Tax paid	\$m	2,182.0	0.0	20.4	47.3	63.8	65.8	66.1	63.6	65.7	66.2	64.8	67.0
CMPTI Offset (10%)	\$m	62.5	0.0	4.3	5.7	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
Tax on interest	\$m	21.8	0.0	3.7	3.4	3.1	2.8	2.5	2.1	1.7	1.3	0.8	0.3
CAPEX	\$m	445.1	259.0	2.5	2.5	2.5	2.5	2.5	6.2	6.2	6.2	6.2	6.2
Corporate Cost	\$m	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mine Closure Cost (Bond)	\$m	7.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Salvage Value	\$m	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Working Capital	\$m	0	0.0	6.7	7.4	4.4	0.6	0.0	0.6	0.6	0.0	0.6	0.6
<b>Project Cash-flow without financing and with tax</b>	<b>\$m</b>	<b>5,199.4</b>	<b>259.0</b>	<b>66.8</b>	<b>129.5</b>	<b>171.4</b>	<b>179.0</b>	<b>179.6</b>	<b>173.5</b>	<b>176.2</b>	<b>176.9</b>	<b>173.4</b>	<b>176.1</b>
Interest	\$m	72.6	0.0	12.4	11.5	10.5	9.4	8.2	7.0	5.7	4.2	2.7	1.1
Tax on interest (added back in)	\$m	21.8	0.0	3.7	3.4	3.1	2.8	2.5	2.1	1.7	1.3	0.8	0.3
Financing Cost	\$m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Project Cash-flow , inclusive financing and tax</b>	<b>\$m</b>	<b>5,148.5</b>	<b>259.0</b>	<b>58.1</b>	<b>121.4</b>	<b>164.0</b>	<b>172.4</b>	<b>173.9</b>	<b>168.6</b>	<b>172.3</b>	<b>173.9</b>	<b>171.5</b>	<b>175.3</b>
<b>Project Cash-flow without financing &amp; without taxes</b>	<b>\$m</b>	<b>7,340.4</b>	<b>259.0</b>	<b>86.6</b>	<b>174.5</b>	<b>231.7</b>	<b>241.0</b>	<b>241.6</b>	<b>232.7</b>	<b>237.1</b>	<b>237.7</b>	<b>232.4</b>	<b>236.9</b>
<b>Accumulated Cash Flows</b>			-1	1	2	3	4	5	6	7	8	9	10
accumulated: Project Cash-flow without financing & without taxes	\$m		259.0	172.4	2.1	233.8	474.8	716.5	949.2	1,186.2	1,423.9	1,656.4	1,893.3
accumulated: Project Cash-flow without financing and with tax	\$m		259.0	192.2	62.8	108.6	287.6	467.2	640.8	817.0	993.8	1,167.2	1,343.3
accumulated: Project Cash-flow , inclusive financing and tax	\$m		259.0	200.9	79.5	84.5	257.0	430.8	599.5	771.8	945.6	1,117.1	1,292.5
<b>Payback Calculation</b>			-1	1	2	3	4	5	6	7	8	9	10
acc. discounted CF w/o tax w/o financing	%	10	246.9	164.8	20.1	152.7	315.8	464.2	594.0	714.0	823.3	920.2	1,009.9
Payback period	years	2.2			2.2								

## 1.16 Key Risks and Opportunities

Risk management is a planned and systematic process of identifying, assessing, monitoring, controlling, and communicating risks in a way that adds value to the business. The PFS has undertaken a preliminary Risk Assessment. This process has produced a Risk and Opportunity Register that will be carried over to future stages of the Project.

### 1.16.1 Summary of Major Risks

Variability Test Work – while the samples used for process test work were an aggregate of several drill core samples, further work must be undertaken to assess the variability within the different sections of the evaporate. Throughout the PFS, the understanding of the deposition and mineralogy across the lakes has improved significantly.

No vendor test work was undertaken during the PFS stage. This presents a risk of vendors quoting equipment that may not function properly and/or is sized incorrectly, potentially leading to cost and schedule impacts in later phases.

Key areas of focus are:

- Evaporators and Crystallisers;
- Centrifuges and potentially high-speed separators;
- Calciner; and
- HCl distillation and recovery (membranes)
- Suitability of scale muncher and conveyor systems for handling the specific properties of the evaporite, including its flowability, abrasiveness, and potential for clogging; and
- Reagent recoveries and recycle process liquors via locked cycle testing during pilot-scale testing.

The impact of geopolitical uncertainty due to trade tariffs currently being floated by the USA may create a significant escalation in steel and copper prices in the future, as well as disrupt semiconductor manufacturing and supply. Fluctuation in raw material prices has not been incorporated into the CapEx estimate submission, as the global trade uncertainties should dissipate prior to the conclusion of the DFS. The project is relatively insensitive to variances in CapEx and Opex.

### 1.16.2 Summary of Major Opportunities

Through the Risk and Opportunity review, the PFS has identified several potential opportunities that the project will explore in the next phase.

The base case for the Lake Hope project is to manufacture 4N HPA. During the DFS stage, IPT will explore opportunities to create higher purity 4N5+ and 5N products through the pilot plant, which will enhance the economics of the Definitive Feasibility Study.

Impact will pursue a 12-month stockpile programme to evaluate the seasonal effects of weather on stockpile integrity, surface runoff, and ore slumping. This should involve transport simulations to analyse the risks of material buildup and discharge safety via side tipper trucking.

Output from the pilot facility may produce findings that offer significant positive benefits to the larger commercial refinery design. These may be associated with plant operability, process optimisation, acid recovery and waste acid management, and construction materials, specifically the calciner, through piloting this section of the pilot plant with a potential vendor.

The project should conduct all necessary in-house and vendor supply process tests to ensure that the process flowsheet is not overdesigned and that anticipated design parameters are met or exceeded. If reductions in the process design can be achieved, this may lead to significant reductions in the size, cost, and delivery of the vendor equipment.

The current energy balance is preliminary in nature, and the potential for energy recovery has not been incorporated into the design. In addition, the project's energy supply includes gas for calcining, distillation, evaporation, and crystallisation. The use of electricity as an alternate heat source should be assessed in the DFS. By 2030, the percentage of renewable power within Synergy's electrical energy mix is expected to provide significant ESG benefits as well as potential OpEx benefits.

## 1.17 Recommendations

As the PFS phase concludes, several key recommendations should be investigated as the project moves into the next phase. The majority of these will be covered during the pilot test work.

### 1.17.1 Geology Modelling

Future work on mineralogy and geology of the playa systems in the Lake Hope resource area should include the following:

- **Mineralogical Estimation:** A robust mineralogical estimation system based on metallurgical testing and mineralogical reconciliation exercises. The objective is to convert interpolated block-wide element concentrations into the respective mineral modalities. This will aid in determining any potential phases that may accommodate refractory alumina.
- **Mineral Distributions:** Investigate whether the estimated modalities of minerals – especially aluminous phases – exhibit any form of spatial heterogeneity. If any mineral hosts of refractory alumina have been identified, a mineral modality model of Lake Hope will enhance optimisation and mine scheduling.
- **Hydrology:** Using the lake-morphology model above, perform a more thorough analysis of lake hydrology. Ultimately, this will provide estimates of seasonal and annual ingoing and outgoing water flux which will inform dewatering studies for mining.

**Future Exploration Potential:** The combined understanding of lake morphology, the processes that shape them, and their influence on mineral distributions will yield an informed model for targeting mineral systems that may be used to uncover other playa lakes prospective for alumina.

### 1.17.2 Mining

It is recommended that the following activities are undertaken during and/or leading up to the DFS:

- Conduct a detailed groundwater and hydrological study to enhance the understanding of the groundwater model, assess potential water volumes, and more accurately quantify the dewatering management requirements for mining operations.
- Include a comprehensive range of options to manage both groundwater inflows and surface water runoff from the pit, along with the necessary approvals to permit the various management options available.
- Consider expanding the mining and miscellaneous tenure to encompass East Lake and nearby areas, including minor satellite lakes, to ensure mining tenure over the East Lake deposit is available in time for mining. This will also support ancillary mining activities that may involve borrow material sourcing and pit water management requirements.
- Conduct a comprehensive geotechnical study of the mine, focusing on lake bearing capacities and trafficability under various conditions, including evaluations of available borrow fill material for Trunk haul road construction requirements.
- Conduct further test pit exercises on site to enhance understanding of the behaviour of excavated mining areas during and after digging, including material handling characteristics, stockpile designs, and stockpile performance over time.
- Review and optimise the mined quantities according to a minimum stockpile balance requirement, which should be established from a comprehensive assessment of the overall ROM pad and the design and construction methodology of the ROM ore stockpile.

- Enhance understanding of process waste backfill requirements to incorporate into the DFS with greater detail and ensure that any environmental approval processes are advancing as needed for project development timelines.
- Continue engaging with mining contractors regularly and consider an Early Contractor Involvement (ECI) process to create an opportunity for enhancing mining contractor buy-in to the project while providing the necessary support to meet DFS-level mining study requirements.
- The short-term nature of the mining campaign strategy presents a significant impediment to contractor interest and may necessitate a different style of contract structure to operate the mine.
- An ECI phase potentially coupled with a pre-qualification tender should help increase the interest of potential contractors and assist in determining whether any fundamental mining assumptions, operating, and/or financial strategies need to be changed for the project to move forward.

### 1.17.3 Process Testwork

Pre-feasibility level test work has been completed, demonstrating that the KOH process can produce HPA and providing confirmatory data to calibrate and optimise the process model at a validation level. This will be consolidated and optimised through further test work and simulations in the pilot plant and subsequent DFS. The following areas will be pursued:

- The KOH leach testwork will fine-tune the dosage and quantify the response to variations in ore. Temperature and pulp density are minor parameters but should be examined in more detail. The optimum dose will be applied where the alunite decomposition is found to maximise or plateau.
- Ore variability test work will be conducted to determine the effects of ore grade on the process's performance, particularly concerning recovery and reagent consumption or bleeds. Bulk ore samples will also be collected to assess the physical properties relevant to the design and sizing of the materials handling section.
- The PFS HCl leach testwork has established that temperature is the most important variable, with HCl strength being secondary; the trade-offs and optimisation will need to be better understood. The upper temperature may be limited by HCl volatility, but there is confidence in approaching the target temperature of 90°C. The HCl strength may or may not be important and will interact with the performance of the HCl recovery circuit – these responses need to be identified.
- The HCl recovery relies on established proprietary membrane technology to maximise the elimination of impurities in the waste acid stream, coupled with two-stage distillation to facilitate the reconcentration of the acid before recycling. The testing is likely to involve confirmatory testing by the vendor based on liquors from the test work or on an appropriate synthetic liquor to mitigate the challenges of shipping actual acidic liquors.
- The process development in the pilot plant will review the opportunity to increase the recovery of HCl through advances in membrane technology, thereby reducing the percentage of HCl in the waste acid stream. Test work on the waste acid stream from the pilot plant can be conducted, along with simulations for neutralising and treating this stream, in order to recycle it back into the process or discharge it through the Sepia Depression Ocean Outlet Landline (SDOOL) or a similar wastewater scheme.
- ACH precipitation will be evaluated in greater detail to examine the trade-offs between the number of stages and reagent recovery to robustly achieve 4N or better quality. Additionally, the sizing produced from the ACH precipitation will be tested with measures to optimise it as



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closely as possible to the final size specification. Jet milling is still assumed to be ultimately required, but the less that is needed, the better.

- The current design uses gas as the heat source in the calcination, evaporation, and crystallisation areas of the plant. During the DFS, the use of electric heating will be studied along with opportunities for heat recovery, which are currently excluded in the PFS.

#### **1.17.4 Final product specification and marketing**

- Once the pilot plant is established, customer engagement can begin in earnest.
- It will be necessary to develop skills in end product specification which includes precipitation kinetics, calcination, polishing and jet milling.
- Research and development into sapphire production.



Dr Michael G Jones  
Managing Director

JORC Code, 2012 Edition – Table 1  
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 (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</li><li>• Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li><li>• Aspects of the determination of mineralisation that are Material to the Public Report.</li><li>• Description of ‘industry standard’ work.</li></ul>	<ul style="list-style-type: none"><li>• Mineralisation comprises light brown to light grey, dense, plasticine-consistency salt.</li><li>• The salt is a nanometre sized colloidal precipitate of various sulphates including alunite, clays and silica.</li><li>• Sampling comprised two methods: hand auger drilling and push-tube drilling.</li><li>• Samples were generally of 0.5m in length (generally 3-4kg in weight) or under geological control, with the whole sample bagged in plastic bags sealed with cable ties.</li><li>• Sample preparation and analysis was completed at a commercial laboratory (Intertek WA) using industry standard practices.</li><li>• Mineralisation comprises a flat-lying evaporitic lake sequence and is bound by the margins of the lake by sand dunes.</li></ul>																														
<b>Drilling techniques</b>	<ul style="list-style-type: none"><li>• Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).</li></ul>	<ul style="list-style-type: none"><li>• Auger drilling using a 70mm hand auger with spoon bit within dry clay horizons.</li><li>• Auger samples recovered by removing cut salt clay from the drill bit.</li><li>• Push tube drilling using 55mm and 65mm PVC tubes hammered into salt.</li><li>• Samples recovered from push tubes by hammering or cutting the salt interval out of the tube.</li><li>• Core is unoriented.</li><li>• Drill hole summary</li></ul> <table><thead><tr><th>Deposit</th><th>Year</th><th>Hole Type</th><th>No of Holes</th><th>Metres</th></tr></thead><tbody><tr><td>West Lake</td><td>2021</td><td>Auger</td><td>3</td><td>4.50</td></tr><tr><td>East Lake</td><td>2021</td><td>Auger</td><td>7</td><td>7.50</td></tr><tr><td></td><td></td><td>sub-total</td><td>10</td><td>12.00</td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td>West Lake</td><td>2022</td><td>Auger</td><td>4</td><td>4.78</td></tr></tbody></table>	Deposit	Year	Hole Type	No of Holes	Metres	West Lake	2021	Auger	3	4.50	East Lake	2021	Auger	7	7.50			sub-total	10	12.00						West Lake	2022	Auger	4	4.78
Deposit	Year	Hole Type	No of Holes	Metres																												
West Lake	2021	Auger	3	4.50																												
East Lake	2021	Auger	7	7.50																												
		sub-total	10	12.00																												
West Lake	2022	Auger	4	4.78																												

Criteria	JORC Code explanation	Commentary				
				Push Tube	49	32.71
				sub-total	53	37.49
		East Lake	2022	Auger	10	17.34
				Push Tube	22	14.13
				sub-total	32	31.47
		West Lake	2023	Auger	81	97.65
				Push Tube	29	23.12
				sub-total	110	120.77
		East Lake	2023	Auger	69	83.90
				Push Tube	19	11.56
				sub-total	88	95.46
		West Lake	2024	Push Tube	45	22.36
		East Lake	2024	Push Tube	2	1.00
		West Lake		Auger	88	106.93
				Push Tube	123	78.19
				sub-total	211	185.12
		East Lake		Auger	86	108.74
				Push Tube	43	26.69
				sub-total	129	135.43
				<b>Total</b>	<b>340</b>	<b>320.55</b>
<b>Drill sample recovery</b>	<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</li> </ul>	<ul style="list-style-type: none"> <li>Auger sample quality is considered good based on visual observation of salt consistency, moisture, and recovery.</li> <li>Auger sample recovery was observed to be good to excellent with no wet samples.</li> </ul>				

Criteria	JORC Code explanation	Commentary
	<p><i>samples.</i></p> <ul style="list-style-type: none"> <li><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></li> </ul>	<ul style="list-style-type: none"> <li>Core recovery for Push tube sample is based on measurement of the material in the Perspex tube compared to hole depth. Measured vs recovered length was near 100% in all cases.</li> <li>The push tube method is considered more appropriate for the type of deposit.</li> <li>Qualitative auger recovery data precludes observing any relationship between metal grade and recovery for this method.</li> </ul>
<b>Logging</b>	<ul style="list-style-type: none"> <li><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></li> <li><i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i></li> <li><i>The total length and percentage of the relevant intersections logged.</i></li> </ul>	<ul style="list-style-type: none"> <li>100% of holes logged visually by Playa One and Impact personnel on 5-10cm increments for colour, grain size, moisture and stiffness.</li> <li>Photography of intact core specimens exists for 40 holes. For push tube holes where core was not intact enough to be meaningful, no photos were taken.</li> <li>Photographs of 168 holes were taken.</li> <li>Logging is qualitative in nature as the grain size is too fine to allow visual identification of mineralogy even under hand lens or electron microscope.</li> <li>X-ray diffraction analysis was undertaken on 100 samples. XRD was used to infer mineralogical composition to a minimal level of confidence and infer mineral percentages for samples via regression of XRF assays.</li> </ul>
<b>Sub-sampling techniques and sample preparation</b>	<ul style="list-style-type: none"> <li><i>If core, whether cut or sawn and whether quarter, half or all core taken.</i></li> <li><i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i></li> <li><i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i></li> <li><i>Quality control procedures adopted for all sub-sampling stages to maximise. representivity of samples.</i></li> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>0.5m sampling intervals were utilised where practicable.</li> <li>Whole core sample intervals were submitted for analysis</li> <li>Samples were dried, crushed to 1mm and then riffle split to give a 300g sub sample that was then pulverised to 80% passing 75 microns, which homogenised the clay.</li> <li>Limited pulverising QAQC has been undertaken to ensure laboratory homogenisation of the samples.</li> <li>No wet samples were encountered. Most samples would be classed as moist clay.</li> <li>Sample preparation techniques are considered appropriate.</li> <li>49 Field duplicates were taken. For auger drilling this involved sampling 50% to each duplicate from the opposite sides of the auger. A video is available to show this</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<p>process.</p> <p>For the push tube drilling, cores were cut in half with a knife to produce a duplicate of the sample.</p> <ul style="list-style-type: none"> <li>Sample sizes are appropriate to grain size of the material being sampled.</li> </ul>
<b>Quality of assay data and laboratory tests</b>	<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 (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</li> </ul>	<ul style="list-style-type: none"> <li>Samples were assayed via lithium borate fusion and XRF quantification via FB1/XRF10 or FB1/XRF30. The technique is considered a total digest technique.</li> <li>The assay method is considered appropriate for the material and elements reported.</li> <li>Samples were assayed by laser sizer, reporting 100% of particles &lt;16 microns. Scanning electron microscope imagery demonstrates particle sizes of 40-300 nanometres. Laser sizing is considered incapable of adequately measuring the natural particle sizes.</li> <li>Ten pulps were assayed for specific gravity via gas pycnometer.</li> <li>34 solid clay samples from test pitting were measured for SG via wax immersion, with a minimum SG of 1.83.</li> <li>Moisture content was measured by LOD/GR1 on 34 solid mud samples obtained by test pitting, and 90 clay sub-samples, showing an average moisture content of 27%.</li> <li>46 field duplicate samples from push tube holes LHP162-208 were assayed (3% of sample population). Duplicates showed acceptable deviance for 44 of the duplicates (+/- 10%).</li> <li>No CRMs exist which are an exact matrix match for the lake clays. Bauxite and iron ore CRM's were used to check laboratory Al<sub>2</sub>O<sub>3</sub> performance.</li> <li>Five replicates of Bauxite Certified Reference Material GBAP-16 were inserted blindly in the sample runs. Laboratory performance was within published ranges for all elements except Loss on Ignition and SiO<sub>2</sub>.</li> <li>Four replicates of Iron Ore standard GIOP-128 were assayed, with results within acceptable parameters.</li> <li>No field blanks were submitted. This is not material.</li> <li>Internal laboratory checks included assaying</li> </ul>



		<p>of internal standards, duplicates, and blanks.</p> <ul style="list-style-type: none"> <li>• Laboratory assays of GBAP-16 were within range of company supplied GBAP-16 CRMs.</li> <li>• Laboratory performance of blanks were acceptable.</li> <li>• Laboratory duplicates were within acceptable variability.</li> </ul>
<b>Verification of sampling and assaying</b>	<ul style="list-style-type: none"> <li>• <i>The verification of significant intersections by either independent or alternative company personnel.</i></li> <li>• <i>The use of twinned holes.</i></li> <li>• <i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></li> <li>• <i>Discuss any adjustment to assay data.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Mike Jones MD of Impact made two visits to site to review the drilling and core samples.</li> <li>• No independent verification has been completed.</li> <li>• 53 auger holes were twinned by push tube and were similar in grade, with minor variation (~1-2% Al<sub>2</sub>O<sub>3</sub>).</li> <li>• Discrepancies between assay averages of auger and push tube holes are considered related to drilling method as well as assay methodology.</li> <li>• Drill holes were logged in the field on 5-10cm basis with data recorded into a notebook and transcribed into digital format.</li> <li>• Data is stored in a Datashed relational database and is backed up physically and virtually.</li> <li>• No adjustments to primary assay data have been made except for MnO% which is below detection limit.</li> <li>• Where an assay is below detection limit a value of ½ of the lower detection limit is used.</li> </ul>
<b>Location of data points</b>	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>Specification of the grid system used.</i></li> <li>• <i>Quality and adequacy of topographic control.</i></li> </ul>	<ul style="list-style-type: none"> <li>• 272 auger holes and push tube holes surveyed by LJ21 RTK DGPS to 0.03m triaxial accuracy.</li> <li>• 68 push tube and auger holes surveyed by handheld GPS to +/-3m accuracy.</li> <li>• No downhole surveys were undertaken. Holes are vertical and generally &lt;2m long ie minimum chance of significant deviation.</li> <li>• Datum is MGA94 Zone 51 South.</li> <li>• Topographic control is based on the DGPS measurements, but it should be noted that the mineralisation is a lake deposit and therefore can be considered almost flat.</li> <li>• A centimetre resolution digital terrain model of the entire tenement has been completed.</li> </ul>

<b>Data spacing and distribution</b>	<ul style="list-style-type: none"> <li>• <i>Data spacing for reporting of Exploration Results.</i></li> <li>• <i>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.</i></li> <li>• <i>Whether sample compositing has been applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Spacing is a nominal offset 200m x 100m grid</li> <li>• Downhole sampling is generally 0.5 m to 0.75 m.</li> <li>• No sample composites were collected for primary assays.</li> <li>• The observed logging demonstrates excellent continuity of mineralisation between adjacent holes.</li> <li>• Continuity is sufficient to support reporting of a Mineral Resource.</li> </ul>
<b>Orientation of data in relation to geological structure</b>	<ul style="list-style-type: none"> <li>• <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></li> <li>• <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></li> </ul>	<ul style="list-style-type: none"> <li>• Vertical drilling of flat lake beds results in orthogonal penetration angle.</li> <li>• Down hole widths are true widths, and therefore no sampling bias has been introduced.</li> </ul>
<b>Sample security</b>	<ul style="list-style-type: none"> <li>• <i>The measures taken to ensure sample security.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Samples were sealed in individually numbered plastic bags with zip ties.</li> <li>• Where necessary plastic bags were packed in polyweave sacks and sealed with a zip tie.</li> <li>• Samples were delivered to the laboratory directly by company personnel to ensure complete chain of custody.</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>• <i>The results of any audits or reviews of sampling techniques and data.</i></li> </ul>	<ul style="list-style-type: none"> <li>• No audits or reviews of sampling techniques and data have been completed.</li> </ul>

## Section 2 Reporting of Exploration Results

Criteria listed in the preceding section also apply to this section

<b>Criteria</b>	<b>JORC Code explanation</b>	<b>Commentary</b>
<b>Mineral tenement and land tenure status</b>	<ul style="list-style-type: none"> <li>• <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</i></li> </ul>	<ul style="list-style-type: none"> <li>• E63/2086 Lake Hope.</li> <li>• MLA63/684 (application).</li> <li>• L63/99 (application).</li> <li>• E63/2318</li> <li>• E63/2319</li> <li>• E63/2370</li> </ul>

Criteria	JORC Code explanation	Commentary
	<p><i>national park and environmental settings.</i></p> <ul style="list-style-type: none"> <li><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></li> </ul>	<ul style="list-style-type: none"> <li>E63/2492 (application)</li> <li>E63/2493 (application)</li> <li>E74/779</li> <li>100% Playa One Pty Ltd. Impact has the right to earn an 80% interest in Playa One by completing a Pre-Feasibility Study.</li> <li>Native Title Agreements are in place with Native Title parties.</li> <li>No known impediment to exploitation is known.</li> <li>No national parks, nature reserves or other licenses interact with E63/2086L63/99 or M63/684.</li> <li>StandardAccess Agreement with Kingsland Minerals in place for L63/99.</li> <li>MLA63/684 100% Playa One Pty Ltd and has been applied for subject to the Earn In Agreement.</li> </ul>
<b>Exploration done by other parties</b>	<ul style="list-style-type: none"> <li><i>Acknowledgment and appraisal of exploration by other parties.</i></li> </ul>	<ul style="list-style-type: none"> <li>Nil</li> </ul>
<b>Geology</b>	<ul style="list-style-type: none"> <li><i>Deposit type, geological setting and style of mineralisation.</i></li> </ul>	<ul style="list-style-type: none"> <li>Evaporite salt deposit.</li> <li>Salt lakes within evaporitic basins within the granite terrane of the Yilgarn Craton, Western Australia.</li> <li>Lacustrine evaporite sulphate salts hosted within flat-lying sheet deposits.</li> </ul>
<b>Drill hole Information</b>	<ul style="list-style-type: none"> <li><i>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:</i></li> <li><i>easting and northing of the drill hole collar.</i></li> <li><i>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar.</i></li> <li><i>dip and azimuth of the hole</i></li> <li><i>down hole length and interception depth and hole length.</i></li> <li><i>If the exclusion of this information is justified on the basis that the information is not</i></li> </ul>	<ul style="list-style-type: none"> <li>All drill hole and sample assay data has been reported previously (ASX Release June 19<sup>th</sup> 2023).</li> <li>Further information is provided in the attached report by H and S Consultants.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<i>Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</i>	
<b>Data aggregation methods</b>	<ul style="list-style-type: none"> <li><i>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.</i></li> <li><i>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.</i></li> <li><i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i></li> </ul>	<ul style="list-style-type: none"> <li>Intersections containing multiple samples are weighted by length into a total intersection.</li> <li>No lower cut-off grade as it is possible all of the material can be mined.</li> <li>No upper cut-off is used as the material is homogeneous with no extreme values.</li> </ul>
Criteria	JORC Code explanation	Commentary
<b>Relationship between mineralisation widths and intercept lengths</b>	<ul style="list-style-type: none"> <li><i>These relationships are particularly important in the reporting of Exploration Results.</i></li> <li><i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i></li> <li><i>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').</i></li> </ul>	<ul style="list-style-type: none"> <li>All intervals are true width as they are vertical holes drilled into flat-lying mineralisation.</li> </ul>
<b>Diagrams</b>	<ul style="list-style-type: none"> <li><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></li> </ul>	<ul style="list-style-type: none"> <li>A map showing the project location has been included.</li> <li>Maps showing exploration results are provided.</li> </ul>
<b>Balanced</b>	<ul style="list-style-type: none"> <li><i>Where comprehensive reporting</i></li> </ul>	<ul style="list-style-type: none"> <li>All assay data has been reported previously</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>reporting</b>	<i>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>	(ASX Release June 19th 2023).
<b>Other substantive exploration data</b>	<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>	<ul style="list-style-type: none"> <li>Metallurgical testing was undertaken by ISO accredited metallurgical testing laboratories.</li> <li>Commercially sensitive data on metallurgy is not reported.</li> </ul>
<b>Further work</b>	<ul style="list-style-type: none"> <li>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul style="list-style-type: none"> <li>Further drilling may be undertaken to increase the Measured Resource.</li> <li>Definitive Feasibility Studies will be completed in Q1 2028.</li> </ul>



### Section 3 Estimation and Reporting of Mineral Resources

Criteria listed in the preceding section also apply to this section

Criteria	JORC Code explanation	Commentary
<b>Database integrity</b>	<ul style="list-style-type: none"> <li>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 Resource estimation purposes.</li> <li>Data validation procedures used.</li> </ul>	<ul style="list-style-type: none"> <li>Data collated by Impact from hardcopy logging as a series of Excel spreadsheets.</li> <li>Logging data is validated by Impact's database manager and then imported into the Impact DataShed database.</li> <li>Responsibility for the data resides with Impact.</li> <li>Data supplied to HSC as a series of CSV files for collars, surveys, alteration, lithology, assays (XRF &amp; XRD) and density.</li> <li>HSC has compiled an MSAccess database for the Lake Hope deposits that was then linked to the Surpac mining software for further work.</li> <li>Database checks completed by HSC include: <ul style="list-style-type: none"> <li>Data was imported into an MSAccess database with indexed fields, including checks for duplicate entries, unusual assay values and missing data.</li> <li>Additional error checking using the Surpac database audit option for incorrect hole depth, sample/logging overlaps and missing downhole surveys.</li> <li>Manual checking of logging codes for consistency, plausibility of drill hole trajectories and assay grades. Modifications made to lithology codes for easier use in interpretation.</li> </ul> </li> <li>Assessment of the data confirms that it is suitable for resource estimation.</li> </ul>
<b>Site visits</b>	<ul style="list-style-type: none"> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	<ul style="list-style-type: none"> <li>Roland Gotthard, Consultant Geologist &amp; Project Manager for Impact completed numerous site visits, undertook and supervised the logging and sampling, and all geological mapping.</li> <li>No site visit to the project was completed by HSC due to time and budgetary constraints.</li> </ul>
<b>Geological interpretation</b>	<ul style="list-style-type: none"> <li>Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.</li> <li>Nature of the data used and of any assumptions made.</li> <li>The effect, if any, of alternative interpretations on Mineral Resource estimation.</li> </ul>	<ul style="list-style-type: none"> <li>Interpretation of the drillhole database allowed for the generation of 3D mineral constraining solids on 50m spaced N-S sections for both West Lake and East Lake deposits.</li> <li>Definition of the wireframes was relatively straightforward with snapping of strings to drillholes at the appropriate downhole</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li><i>The use of geology in guiding and controlling Mineral Resource estimation.</i></li> <li><i>The factors affecting continuity both of grade and geology.</i></li> </ul>	<p>position allowing for a reasonable level of confidence.</p> <ul style="list-style-type: none"> <li>A single mineral zone was defined for each deposit using the lake surface boundary and the geological logging of alunite in conjunction with Al<sub>2</sub>O<sub>3</sub>, SiO<sub>2</sub>, K<sub>2</sub>O, Fe<sub>2</sub>O<sub>3</sub> and SO<sub>3</sub> grades plus geological sense eg tapering margins. A nominal 20% Al<sub>2</sub>O<sub>3</sub> was used to define the base of mineralisation.</li> <li>A 2D digital plan outline of the two lake deposits was taken from Impact's geological mapping and used to constrain the mineral wireframe.</li> <li>The drilling has generally reached the base of mineralisation. Some of the earlier holes stopped short of the mineral base. An occasional drillhole has terminated in granitic alunite material.</li> <li>Where the base of mineralisation was not necessarily intersected in the drilling the interpreted basal surface was horizontally extrapolated from nearby holes which had passed through the mineralisation.</li> <li>The basic geological model of a flat lying stratiform alunite lake bed deposit appears to be reasonable and appropriate for resource estimation.</li> <li>Alternative interpretations are possible for the mineral zone definition but are unlikely to significantly affect the estimates.</li> <li>The style of mineralisation and the orebody type means there is a strong horizontal control to the alunite grade &amp; geological continuity.</li> </ul>
<b>Dimensions</b>	<ul style="list-style-type: none"> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>Mineralisation is flat lying.</li> <li>Mineral Resource dimensions are: <ul style="list-style-type: none"> <li>West Lake: areal extent 1.65km by 1.6km with an average thickness from the sampling of 0.95m, maximum depth is 1.6m and a surface area of 1.33Mm<sup>2</sup>.</li> <li>East Lake: areal extent 1.6km by 0.65km with an average thickness from the sampling of 0.98m, maximum depth is 2.0m and a surface area of 0.76Mm<sup>2</sup>.</li> </ul> </li> <li>Mineralisation is exposed at surface.</li> </ul>
<b>Estimation and modelling techniques</b>	<ul style="list-style-type: none"> <li><i>The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining,</i></li> </ul>	<ul style="list-style-type: none"> <li>The estimation technique employed by HSC for both deposits was a standard 3D block model with Ordinary Kriging of composited assay data.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<p><i>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.</i></p> <ul style="list-style-type: none"> <li>• <i>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</i></li> <li>• <i>The assumptions made regarding recovery of by-products.</i></li> <li>• <i>Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).</i></li> <li>• <i>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</i></li> <li>• <i>Any assumptions behind modelling of selective mining units.</i></li> <li>• <i>Any assumptions about correlation between variables.</i></li> <li>• <i>Description of how the geological interpretation was used to control the resource estimates.</i></li> <li>• <i>Discussion of basis for using or not using grade cutting or capping.</i></li> <li>• <i>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Surpac mining software was used for the geological interpretation, compositing and the block model validation and reporting. The variography and Ordinary Kriging were completed using the GS3M software.</li> <li>• A nominal 0.5m composite interval was employed, generated using the mineral wireframe and the 'best fit' option in Surpac (considerably reduces the number of residual samples). The mineral zone was treated as a hard boundary during estimation.</li> <li>• Al<sub>2</sub>O<sub>3</sub> was modelled separately for both lake deposits. Other elements including some deleterious elements that were modelled include CaO, Cl (West Lake only), F, Fe<sub>2</sub>O<sub>3</sub>, K<sub>2</sub>O, LOI, MgO, Na<sub>2</sub>O, P<sub>2</sub>O<sub>5</sub>, SO<sub>3</sub>, SiO<sub>2</sub>, TiO<sub>2</sub> and moisture.</li> <li>• H&amp;SC considers the Ordinary Kriging technique to be an appropriate estimation technique for this type of mineralisation based on visual observations of the drilling data and the outcomes from the summary statistics for the composite data.</li> <li>• No top cuts were applied to the data due to an absence of extreme values and low coefficients of variation for the modelled elements.</li> <li>• A total of 251 and 212 composites, for the West Lake and East Lake respectively, of variable length were used to estimate the mineralised lake sediments.</li> <li>• Domaining was limited to the 3D outline of the mineral zone.</li> <li>• No assumptions were made regarding the recovery of any by-products.</li> <li>• 2D variography in the X (E-W) and Y (N-S) directions was performed using the composite data. Grade continuity was reasonable for the West Lake and modest to weak for the East Lake.</li> <li>• Drill holes are spaced on a relatively regular grid with a nominal spacing of 100m by 100m.</li> <li>• Block dimensions are 50m by 50m in the X &amp; Y directions with 0.75m in the Z direction. No sub-blocking was considered necessary with the Mineral Resources reported using a partial percent volume adjustment generated by the mineral wireframes.</li> <li>• The X- and Y-axis dimensions were chosen based on the 100m spaced drilling.</li> </ul>

Criteria	JORC Code explanation	Commentary
		<p>Discretisation was set to 5 x 5 x 2 (X, Y &amp; Z respectively).</p> <ul style="list-style-type: none"> <li>Grade interpolation used an expanding 3D search pass strategy with the search parameters taking in the geometry of the mineralisation, the drill spacing and the variography. Modelling consisted of two sets of 3 search passes. The minimum search used was 150m by 150m (X &amp; Y) and 0.5m (Z) and expanding in 150m increments to 600m by 600m. The minimum number of data was 6 samples for Pass 1 decreasing to a minimum of 1 data for Pass 6. The search orientations were horizontal in keeping with the geometry of the mineralisation.</li> <li>The maximum extrapolation of the estimates is 360m.</li> <li>The estimation procedure was reviewed as part of an internal H&amp;SC peer review.</li> <li>No deleterious elements have been factored into the reporting of the Mineral Resources.</li> <li>The final block model was reviewed visually by HSC and it was concluded that the block model fairly represents the grades observed in the drill holes. HSC also validated the block model statistically using a variety of histograms and summary statistics.</li> <li>Initial resource models using the gridded seam technique were completed for both the West and East Lake deposits. prior to the supply of the 2023 drilling data. The East Lake gridded seam model showed no significant difference with the eventual 2023 model on account of the new drilling being infill drilling. The West Lake gridded seam model indicated a very similar grade to the eventual 2023 model with the larger size of the current model due to a new area to the north being drilled, plus increased depths due to the new infill drilling.</li> <li>Validation confirmed the modelling strategy as acceptable with no significant issues.</li> <li>No production has taken place so no reconciliation data is available.</li> </ul>
<b>Moisture</b>	<ul style="list-style-type: none"> <li>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</li> </ul>	<ul style="list-style-type: none"> <li>Tonnages are estimated on a dry weight basis.</li> <li>Moisture was determined by using the laboratory process LOD105/SG Loss on drying at 105°C for 12 hours.</li> <li>154 samples weighing between 20 and 80g were collected with an average moisture</li> </ul>

Criteria	JORC Code explanation	Commentary
		content of 16.6% for the West Lake and 23.9% for the East Lake.
<b>Cut-off parameters</b>	<ul style="list-style-type: none"> <li>The basis of the adopted cut-off grade(s) or quality parameters applied.</li> </ul>	<ul style="list-style-type: none"> <li>The reported Mineral Resources are constrained to the mineral wireframe with a partial percent volume adjustment for the block in contact with the wireframe.</li> <li>No cut-off grade was applied, although the mineral wireframe had been designed to a nominal 20% Al<sub>2</sub>O<sub>3</sub> cut off along with geological sense.</li> <li>The Mineral Resources are reported to a maximum depth of 1.8m below surface as part of the consideration for “reasonable prospects for eventual of economic extraction”.</li> <li>The lack of a cut-off grade at which the resource is quoted reflects an intended bulk-mining approach.</li> </ul>
<b>Mining factors or assumptions</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>HSC’s understanding is that the deposits will be mined using a bulk mining open pit scenario.</li> <li>Mining method, as advised by Impact, is likely to be a track mounted scraper or grader with a low ground bearing capacity, removing modest increments of material (up to 25cm or so) on a 3-5 year campaign strategy. Track mounted trucks will be used to remove the mineralisation from mined area.</li> <li>The model block size (50m by 50m) is the effective minimum mining dimension for this estimate.</li> <li>Any internal dilution has been factored in with the modelling and as such is appropriate to the block size.</li> <li>Groundwater impacts can be managed.</li> </ul>
<b>Metallurgical factors or assumptions</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>XRD mineralogy has identified alunite and kaolinite as the major minerals present with localised accumulations of silica, generally on the periphery of the deposit. Other minor mineral components include opaline silica, feldspar and mica.</li> <li>HSC’s understanding is that the mined material will be subject to a standard processing technique for this type of commodity and deposit.</li> <li>A simple wash and filtering to recover the alunite mud will be followed by a low temperature pre-treatment leach, acid leaching crystallisation and purification</li> </ul>



Criteria	JORC Code explanation	Commentary
	Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	<p>followed by calcining to produce HPA.</p> <ul style="list-style-type: none"> <li>No screening of coarse material is necessary as the grain size of the material is 100% &lt;16 microns for the vast majority of the lake mud.</li> <li>It is assumed that there will be no significant problems in generating a High Purity Alumina product at scale. HPA has been produced numerous times by this process at the bench scale.</li> <li>No penalty elements have been identified in the work so far.</li> </ul>
<b>Environmental factors or assumptions</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>The landscape comprises sand dunes up to ~10m height, with low relief.</li> <li>The area lies within flat terrain with broad watercourses and dry bed lakes.</li> <li>Vegetation comprises eucalyptus marri scrub to 12m height, heath, and scrub, with significant gum trees around the eastern dune areas, typical of that part of Western Australia.</li> <li>The mud itself and associated groundwater are very acidic with a pH of 3 as measured in situ. Accordingly whilst there may be some acid mine drainage it will be the same as the natural conditions thus limiting environmental rehabilitation. However, further field studies and ground water monitoring are required.</li> <li>The groundwater is naturally hypersaline and acidic and will require appropriate management.</li> <li>There are large flat areas for tailings and ROM pad development.</li> </ul>
<b>Bulk density</b>	<ul style="list-style-type: none"> <li>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.</li> <li>The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vughs, porosity, etc.), moisture and differences</li> </ul>	<ul style="list-style-type: none"> <li>Density data was supplied as a series of selected samples with the density sampling being completed by two methods, both of which are considered appropriate for the deposit type: <ul style="list-style-type: none"> <li>Individual push tube samples ranging between 30 and 70 cm long. With the inside diameter of tube known i.e. volume, and the weight of sample is known wet density can be calculated. A total of 141 samples were collected but of those only 120 samples had wet and dry density recorded. Dry density was the result of oven-drying the samples at 105°C for 12 hours.</li> </ul> </li> </ul>

Criteria	JORC Code explanation	Commentary
	<p><i>between rock and alteration zones within the deposit.</i></p> <ul style="list-style-type: none"> <li>• <i>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</i></li> </ul>	<ul style="list-style-type: none"> <li>○ Small scale surface pitting produced 36 'sample cubes' from the top 20cm of each lake. Density was determined using the weight in air/weight in water method (Archimedes Principle) on waxed sealed samples.</li> <li>• Loss on drying was performed at 45°C and 105°C. Given the uniform volume of the push tube samples, the SG Residue (45°C) and SG Dry (105°C) are calculated with the residue and dry weights.</li> <li>• For the push tube samples an average value for wet density for the West Lake was 1.86t/m<sup>3</sup> with an average dry density value of 1.49t/m<sup>3</sup> whilst for the East Lake the wet density average was 1.87t/m<sup>3</sup> and the dry density average was 1.37 t/m<sup>3</sup>. The wet density average values for the surface cubes was 1.88t/m<sup>3</sup> for the West Lake and 1.80t/m<sup>3</sup> for the East Lake (no dry density data was available). Measured density showed a very subtle increase with depth.</li> <li>• Using the 120 push tube samples a regression equation using Conditional Expectation was developed to generate dry density from wet density (using the rank X upon Y option) and is listed as follows: <b>Dry density = 0.9182*(Wet density) – 0.2359</b></li> <li>• This equation was applied to all the wet density data for both deposits and resulted in a total of 177 dry density samples. These samples were used for the grade interpolation of wet and dry density using Ordinary Kriging. Search ellipse parameters for the density modelling comprised an initial 180m by 180m by 0.5m with 8 minimum data and 4 octants expanding to 500m by 500m by 5m with a minimum of 4 data and 2 octants. Maximum number of data was 20 in all cases. A horizontal search ellipse was used.</li> <li>• Any mineral zone blocks with missing density data were allocated a default density relevant to the surrounding block grades. For very marginal mineral zone blocks and the basement weathered granite a default density value of 2.1t/m<sup>3</sup> was added.</li> </ul>
<b>Classification</b>	<ul style="list-style-type: none"> <li>• <i>The basis for the classification of the Mineral Resources into varying confidence categories.</i></li> <li>• <i>Whether appropriate account</i></li> </ul>	<ul style="list-style-type: none"> <li>• Mineral Resources have been classified on sample spacing, grade continuity, QAQC data and geological understanding.</li> <li>• All other relevant factors have been taken into</li> </ul>

Criteria	JORC Code explanation	Commentary
	<p>has been taken of all relevant factors (i.e. 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).</p> <ul style="list-style-type: none"> <li>Whether the result appropriately reflects the Competent Person's view of the deposit.</li> </ul>	<p>consideration eg drilling methods, density data, topography etc.</p> <ul style="list-style-type: none"> <li>Estimation search Pass 1 is classified as Measured Resources, Pass 2 is classified as Indicated Resources whilst Pass 3 is used to allocate Inferred Resources.</li> <li>The classification appropriately reflects the Competent Person's view of the deposit.</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>The results of any audits or reviews of Mineral Resource estimates.</li> </ul>	<ul style="list-style-type: none"> <li>No audits have been completed.</li> <li>The estimation procedure has been reviewed as part of an internal HSC peer review including check models.</li> </ul>
<b>Discussion of relative accuracy/confidence</b>	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</li> </ul>	<ul style="list-style-type: none"> <li>The relative accuracy and confidence level in the Mineral Resource estimates are considered to be in line with the generally accepted accuracy and confidence of the nominated Mineral Resource categories. This has been determined on a qualitative, rather than quantitative, basis, and is based on the Competent Person's experience with similar deposits.</li> <li>The geological nature and interpretation of the deposit, the grade interpolation technique, the composite/block grade comparison (block model validation) and the modest coefficients of variation lend themselves to a reasonably high level of confidence in the resource estimates.</li> <li>The Mineral Resource estimates are considered to be reasonably accurate globally, but there is some uncertainty in the local estimates due to the current drillhole spacing, which may not pick up some small scale clustering of grade and/or localised domains of different grade.</li> <li>No mining of the deposit has taken place so no production data is available for comparison.</li> </ul>

## Section 4 Estimation and Reporting of Ore Reserves

Criteria listed in the preceding section also apply to this section

Criteria	JORC Code explanation	Commentary
<b>Mineral Resource estimate for conversion to Ore Reserves</b>	<ul style="list-style-type: none"> <li>Description of the Mineral Resource estimate used as basis for the conversion to Ore Reserve.</li> <li>Clear statement as to whether the Mineral Resources are reported in addition to, or inclusive of, the Ore Reserve.</li> </ul>	<ul style="list-style-type: none"> <li>The Mineral Resource for Lake Hope was updated and provided to the ASX on 19 November 2024 and forms the basis of this Ore Reserve. The Mineral Resource update was reported in accordance with JORC Code 2012.</li> <li>The total Mineral Resource includes a total of 2.79 Mt of Measured, Indicated and Inferred resources at an average grade of 25.1% Al<sub>2</sub>O<sub>3</sub>.</li> <li>The Competent Person for the Mineral Resources is Mr Simon Tear (Consultant with H&amp;S Consultants).</li> <li>The Mineral Resources are inclusive of the Ore Reserves.</li> </ul>
<b>Site Visits</b>	<ul style="list-style-type: none"> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	<ul style="list-style-type: none"> <li>Mr Joel van Anen of TME Mine Consulting (Competent Person) visited the site on 30 April 2024. During this visit the West Lake deposit was inspected including historic and recent bulk test pits, proposed Mine Infrastructure Area including ROM Pad, as well as western, southern and northern lake margins. Mineralised clay samples from the lake were also viewed.</li> </ul>
<b>Study Status</b>	<ul style="list-style-type: none"> <li>The type and level of Study to enable Mineral Resources to be converted to Ore Reserves.</li> </ul>	<ul style="list-style-type: none"> <li>The maiden Ore Reserve estimate is based on a Pre-Feasibility Study (PFS) released to the market on June 17<sup>th</sup> 2025.</li> <li>The PFS has been prepared to an accuracy of ±30% in accordance with an AACE Class 4 estimate using Measured, Indicated and Inferred Mineral Resources across a 33-year Life of Mine (LOM) schedule to produce 10,000tpa of 99.99% Al<sub>2</sub>O<sub>3</sub> (4N) High Purity Alumina (HPA).</li> <li>Application of material modifying factors commensurate with a PFS level of accuracy have determined that the Lake Hope Project (Project) to have reasonable prospects of being technically achievable and economically viable.</li> <li>The PFS was compiled with input from specialist consultants and vendors: <ul style="list-style-type: none"> <li>Acacia Management Consultancy</li> <li>By Design</li> </ul> </li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>○ Joseph Casella</li> <li>○ H and S Consultants</li> <li>○ Integrate Sustainability</li> <li>○ TME Mine Consulting</li> <li>○ ALS</li> <li>○ Strategic Metallurgy</li> <li>○ CPC Engineering</li> <li>○ NPV ONE</li> </ul> <ul style="list-style-type: none"> <li>• Detailed financial modelling completed for the PFS supports this Ore Reserve estimate. Modelling shows that the Ore Reserve is economically robust at the assumed 4N HPA price of US\$22,000/t. The 4N HPA price is supported by market analysis and benchmarking against published study prices of other HPA developers.</li> <li>• It should be noted the economic analysis for the Ore Reserve estimate does not include revenue from the Inferred resource or unclassified materials included within the mine designs and LOM schedule which make up 3.6% of the total mineral inventory tonnes.</li> </ul>
<b>Cut-off parameters</b>	<ul style="list-style-type: none"> <li>• The basis of the cut-off grade or parameters applied.</li> </ul>	<ul style="list-style-type: none"> <li>• Commensurate with the Mineral Resource Estimate, the Ore Reserve has no cut-off grade applied, which is appropriate due to the nature of the proposed mining methods and mine design process.</li> <li>• Mine designs target &gt;25% Al<sub>2</sub>O<sub>3</sub> material for mining and processing.</li> <li>• All mineral inventory within the mine designs is bulk mined to target depths and sent to the run-of-mine (ROM) stockpile for haulage to the Process Plant, inclusive of all classified resources and unclassified materials.</li> </ul>
<b>Mining Methods and Assumption</b>	<ul style="list-style-type: none"> <li>• The methods and assumptions used as reported in the Study (ie; either by application of appropriate factors by optimisation or by preliminary or detailed design).</li> </ul>	<b>Mining Methods and Design</b> <ul style="list-style-type: none"> <li>• Small scale conventional truck and shovel mining methods are proposed for Lake Hope which includes articulated dump trucks (40t payload) and 50 t class excavators to achieve the mining duty.</li> <li>• Contract mining operations are assumed for the PFS, with budget pricing received</li> </ul>



Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>• The choice, nature and appropriateness of the selected mining method(s) and other mining parameters such as pre-strip, access, etc.</li> <li>• The assumptions made regarding geotechnical parameters, grade control and pre-production drilling.</li> <li>• The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).</li> <li>• The mining dilution factors used.</li> <li>• The mining recovery factors used.</li> <li>• Any minimum mining widths used.</li> <li>• The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.</li> <li>• The infrastructure requirements of the selected mining methods.</li> </ul>	<p>from reputable mining contractors to support the mining cost estimate.</p> <ul style="list-style-type: none"> <li>• The mineralisation is unconsolidated clay. No drill or blast is required.</li> <li>• Mining areas are broken up into mining panels for sequence extraction (similar to strip mining). Panel sequence directions vary depending on area design, location and access from primary haul roads. All excavation activities take place directly from the lake surface.</li> <li>• Excavation of designated panels of mineralisation will be achieved by top loading from the lake surface to target depths in a retreat fashion.</li> <li>• The full thickness of target mineralisation would be excavated (~0.75-1.25m average for both deposits) with no selective digging required.</li> <li>• Minimum mining widths are not applicable to the deposit due to the mine designs and mining methods proposed.</li> <li>• High Precision GPS (HPGPS) will be installed on the excavator to assist with achieving target dig depths.</li> <li>• Primary haul roads will be constructed across the Lakes using borrow material to provide suitable main haul routes from active mining areas to the ROM Pad, delineate mining areas, as well as enable ongoing access to manage in-pit groundwater, access mine voids for backfill, and to facilitate mining area extraction sequences. Primary haul roads are removed once the ore underneath is sequenced for mining and either re-used or dumped into mining voids</li> <li>• No surface waste dumps are required.</li> <li>• Groundwater management will include dedicated personnel and equipment, and incorporate a mix of mining area perimeter trenches, in-pit sumps, pump and dewatering pipeline to transfer in-pit water away from the active mining areas to adjacent lakes, mining voids, and /or evaporation ponds. The water management plans are like those employed in mineral sand mining</li> </ul>

Criteria	JORC Code explanation	Commentary
		<p>operations. Detailed groundwater and water management studies will be undertaken during the next study phase.</p> <ul style="list-style-type: none"> <li>• Ore will be hauled to the ROM for stockpiling until loaded onto double road-trains for transport to the Kwinana based Process Plant</li> <li>• Process waste is backhauled from the Process Plant to site and stockpiled adjacent to the ROM. Mining fleet are used to backfill the process waste into available mining voids.</li> </ul> <p><b>Grade Control</b></p> <ul style="list-style-type: none"> <li>• Infill drilling across designed mining panels will form part of the grade control strategy.</li> <li>• All grade control samples will be assayed via XRF fusion analysis.</li> <li>• Target depth excavation design based on grade control data will be supported by appropriate survey controls and HPGPS on the mining excavator.</li> <li>• Mineralisation is visually distinctive and provides another form of control in excavation management.</li> </ul> <p><b>Pit Optimisation</b></p> <ul style="list-style-type: none"> <li>• The proportional resource block model (Mineral Resource Estimate November 2024) has been used for the PFS mining study and as the basis for the Ore Reserve estimate.</li> <li>• Pit optimisation was undertaken in Hexagon's Project Evaluator software to assess the resource economics and sensitivities (with and without Inferred mineralisation), as well as to assess varying cut-of grades to validate the &gt;25% Al<sub>2</sub>O<sub>3</sub> mine design strategy.</li> <li>• The difference in pit optimisation results with or without Inferred mineralisation is immaterial to the mine design outcomes and resource economics.</li> <li>• Conventional sensitivity analysis was completed on variations to the main cost and revenue parameters between -30% and +30% at 10% increments.</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>Pit optimisation results support the &gt;25% Al<sub>2</sub>O<sub>3</sub> mine design strategy as the best economic decision for the deposit with the current process design and flowsheet.</li> </ul> <p><b>Mine schedule</b></p> <ul style="list-style-type: none"> <li>The PFS LOM schedule was developed from the total mineral inventory inclusive of Inferred Mineral Resource and unclassified materials to achieve the processing throughputs required to produce 10,000tpa of HPA product. Year 1 and Year 2 production ramp-up targets are 5,000t and 8,000t of HPA respectively.</li> <li>Mining takes place on a campaign basis over the summer months. Campaigns are annual for the first three years before becoming three-yearly. Average mining production for the three-yearly campaigns is 167 kt.</li> <li>Haulage operations operate continuously throughout the year, drawing down on the ROM stockpile with mining replenishing stockpile balances during the planned campaigns.</li> <li>Only Proved and Probable Ore Reserves are used as ore within the LOM schedule and financial modelling for the purposes of the Ore Reserves, with Inferred Mineral Resource and unclassified material treated as waste which has been economically carried by the Ore.</li> <li>The LOM schedule assumes average operation of the mining fleet and is based on first principles productivity estimates benchmarked against other equivalent sized operations.</li> </ul> <p><b>Dilution and Ore Loss</b></p> <ul style="list-style-type: none"> <li>Dilution is a result of the mine design process and is dependent on the material included to achieve the &gt;25% Al<sub>2</sub>O<sub>3</sub> target. Distal waste is the main contributor to dilution within planned designs (i.e. base of mineralisation, lake surface and mineralisation extremities) The PFS mineral inventory contains a total of 1.2% dilution.</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>Ore loss was calculated within the mine schedule optimisation software based on estimates of excavation edge loss over time (slumping, mining breaks, water saturation etc.) and surface loss (0.25m) from primary haul roads being removed from the lake surface when required for ore mining underneath. Ore loss estimates are based on total loss over the total mineral inventory, and applied separately to main mining area tonnages (~1.4%) and haul road mining area tonnages (~20%) within the schedule calculation. Total ore loss from the PFS LOM schedule is 1.4%.</li> </ul> <p><b>Geotechnical</b></p> <ul style="list-style-type: none"> <li>The clay layer is relatively hard and is assumed to be trafficable during summer.</li> <li>No detailed geotechnical study addressing Lake trafficability or lake clay bearing capacities have been completed to date.</li> <li>Lake bearing capacity calculations for the proposed mining fleet for the PFS have been inferred from an available clay dataset located in equivalent ground conditions. This has allowed for preliminary bearing capacity calculations and estimated Factor of Safety's (estimated bearing capacity / maximum ground pressure) for each type of mining equipment to be completed for the PFS, and support the use of the following proposed mining fleet; <ul style="list-style-type: none"> <li>50t class excavator</li> <li>40t payload dump truck</li> <li>30t class loader</li> <li>20t class motor grader</li> <li>50t class track dozer</li> </ul> </li> <li>A detailed geotechnical study to quantify site specific conditions for Lake Hope and validate mining fleet assumptions will be undertaken in the next study phase.</li> </ul> <p><b>Infrastructure</b></p> <ul style="list-style-type: none"> <li>Mining contractors will supply and establish the majority of the infrastructure</li> </ul>

Criteria	JORC Code explanation	Commentary
		<p>requirements to service the mining scope of work.</p> <ul style="list-style-type: none"> <li>It is proposed that Impact will provide the designated areas within an established Mine Infrastructure Area (MIA) for contractors use. In addition, Impact will provide fuel facilities, communication, accommodation and messing, and water supply.</li> <li>A new 16 km access road will connect the MIA with the Norseman-Hyden Road, This will be constructed by earthworks contractors as part of the construction program.</li> </ul>
<b>Metallurgical Factors or Assumptions</b>	<ul style="list-style-type: none"> <li>The metallurgical process proposed, and the appropriateness of that process to the style of mineralisation.</li> <li>Whether the metallurgical process is well-tested or novel in nature.</li> <li>The nature, amount, and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied, and the corresponding metallurgical recovery factors applied.</li> <li>Any assumptions or allowances made for deleterious elements.</li> <li>The existence of bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.</li> <li>For minerals defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet specifications?</li> </ul>	<ul style="list-style-type: none"> <li>The metallurgical treatment of Lake Hope mineralisation is via a hydrometallurgical process developed specifically for the particular aluminous clay deposits found on Lake Hope.</li> <li>Two processing pathways were tested and developed with each proving feasible and effective but differing in operating cost and capital but both an appropriate method for conversion into high purity alumina.</li> <li>Both processes are novel.</li> <li>The selected process, (ASX release 27 February 2024), involves a two stage process, the first being a preparation stage of hydrometallurgical transformation of the major aluminous mineral and removal of soluble species. Intermediate alumina minerals are recovered for subsequent leach as well as a secondary pregnant liquor (PLS) of potassium sulphate or sulphate of potash (SOP).</li> <li>The secondary PLS is treated in a conventional SOP crystallisation circuit using established technology.</li> <li>The SOP crystallisation given its well established status has not been tested in the PFS, but examination of the PLS in terms of quantity and quality gives no indication that SOP of saleable quality cannot be produced with the envisaged equipment and at the expected cost.</li> </ul>



Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>The intermediate alumina minerals and gangue are leached in acidic medium to liberate most of the alumina, though some is refractory within the gangue minerals.</li> <li>This produces a primary PLS and the process solids waste stream.</li> <li>The primary PLS is purified using 'industry standard' HCl gas sparging technology. The resultant alumina chloride salt is calcined to produce alpha-HPA at 99.99% or better purity.</li> <li>HCl gas sparging is well understood and used in the High Purity Alumina industry to purify intermediate alumina salts. Other aspects of the hydrometallurgical process are individually well understood and are used in a novel combination to achieve the desired HPA purity.</li> <li>Validation testing and optimisation test work for the selected process was undertaken by Impact Minerals Limited (2023-2025) at ALS Metallurgy and Strategic Metallurgy.</li> <li>Recovery of up to 80% of alumina has been achieved by metallurgical testing. Impact has assumed 70% recovery factor for the PFS.</li> <li>Extensive evaluation of the host clay mineralogy reconciled against the block model XRF based data, informed by the hydrometallurgical testwork and XRD assessment has identified and quantified the alumina refractory minerals in the resource underpinning the recovery expectations.</li> <li>Metallurgical modelling was undertaken by Strategic Metallurgy to derive chemical and thermal performance data. This has informed cost and metallurgical factors to a level of accuracy commensurate with a PFS.</li> <li>High purity alumina produced by bench scale laboratory testwork through the PFS for both processing pathways has achieved the process purity specifications for 4N (99.99% <math>\text{Al}_2\text{O}_3</math>) HPA (ASX releases on 19 and 27 February 2024). The focus</li> </ul>

Criteria	JORC Code explanation	Commentary
		<p>now is to optimise the selected pathway and look to further reduce the level of contaminants in the final product during the planned pilot testwork program.</p> <ul style="list-style-type: none"> <li>• Sampling and test work to date have not shown any deleterious elements in the mineralisation or HPA produced from the metallurgical process. Arsenic, chrome, iron, sodium contents meet specifications for 4N HPA.</li> <li>• No bulk or pilot scale test work has been completed to date. A pilot scale plant is planned to be constructed in 2025 with additional testing around SOP and for reagent consumption optimisation to commence in advance of this and continue the pilot once running.</li> <li>• The recent HiPurA® acquisition (ASX release 23 April 2025) is independent of the Lake Hope processing pathway selected for the PFS. Impact will look to conduct future test work to evaluate the compatibility of Lake Hope feedstock with the HiPurA® process. The results of this may lead to an expanded work scope during the next study phase</li> </ul>
<b>Environmental</b>	<ul style="list-style-type: none"> <li>▪ The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where appropriate, the status of approvals for process residue storage and waste dumps should be reported.</li> </ul>	<ul style="list-style-type: none"> <li>• Baseline flora and fauna studies were completed in 2023. The studies indicated low likelihood of Priority Ecological Communities, Threatened species or listed flora and fauna. A follow up work program is scheduled for September 2025, to map, describe and locate any potential TEC's, PEC's and environmental impacts of the proposed Lake Hope mining operation.</li> <li>• Discussions continue with regards to the mining proposal, site selection and regulatory framework which would apply to any proposed mining and hydrometallurgical facilities. Impact has scheduled initial consultation meeting with the regulator and will work to address the normal process of environmental review.</li> <li>• An initial heritage survey of the Lake Hope tenement was attended by</li> </ul>

Criteria	JORC Code explanation	Commentary
		<p>traditional owner representatives and recognised knowledge holders from the native title party in June 2023. No archaeological or mythological sites were found to interact with the proposed mining envelope or ROM pad location. Further heritage surveys will be required over infrastructure and access routes.</p> <ul style="list-style-type: none"> <li>• There will be no waste dump on site as all material excavated from the lake bed will comprise of ore.</li> <li>• Test pitting and geotechnical studies are scheduled for 2025 to investigate clay stability and groundwater effects on excavations.</li> <li>• The study has assessed the waste products from the hydrometallurgical facility and has identified the waste products as relatively benign. The study assumes backfilling into the mine voids but will consider options for disposal of plant residues based on feedback from regulators.</li> <li>• The mining voids not backfilled are proposed to be left open as a salt lake and will naturally rehabilitate.</li> <li>• There are very reasonable grounds to expect that all necessary environmental project approvals will be received within the timeframes required for commencement of construction within the current proposed development timeline.</li> </ul>
Infrastructure	<ul style="list-style-type: none"> <li>• The existence of appropriate infrastructure; availability of land for plant development, power, water, transportation, labour, accommodation; or the ease with which infrastructure can be provided or accessed</li> </ul>	<ul style="list-style-type: none"> <li>• The study has assessed a variety of potential locations for the plant location and considered that Kwinana is the most suitable location</li> <li>• Initial engagement with Kwinana Strategic Investment Authority has indicated suitable land will be available.</li> <li>• Kwinana has a sophisticated logistical capacity, a skilled workforce, a supply of fresh water albeit somewhat limited, an integrated scheme power grid and proposed renewable energy supplies and</li> </ul>

Criteria	JORC Code explanation	Commentary
		<p>facilities; natural gas is available, excellent communication links.</p> <ul style="list-style-type: none"> <li>Consultation with Qube Logistics Pty Ltd has indicated the Hyden-Norseman Road to Kwinana is a suitable transportation route for road train bulk transport of mined material. It is an approved N4.3 tandem drive RAV network, suitable for double road trains at 61t capacity.</li> </ul>
<b>Costs</b>	<ul style="list-style-type: none"> <li>The derivation of, or assumptions made, regarding projected capital costs in the Study</li> <li>The methodology used to estimate operating costs</li> <li>Allowances made for the content of deleterious elements.</li> <li>The assumptions made of commodity prices- for the principal products and co-products.</li> <li>The source of exchange rates in the Study.</li> <li>Derivation of transport charges.</li> <li>The basis for forecasting or source of treatment charges and refining charges, penalties for failure to meet specification, etc</li> <li>The allowances made for royalties payable, both government and private.</li> </ul>	<ul style="list-style-type: none"> <li>CAPEX costs for the process plant and associated non process infrastructure costs have been developed by CPC Engineering. Engineering and design have been developed for the capital cost estimate to be calculated with an accuracy of <math>\pm 30\%</math>, a factor based estimate in accordance with Class 4 AACE estimate.</li> <li>All estimated costs are based on the preliminary design that has been generated to comply with the relevant Australian Standards. The design is based on a fit-for-purpose plant design with duty equipment throughout the plant. Cost estimates for this study were based on established vendor supplied quotations and estimates gathered from previous projects on the CPC Engineering database.</li> <li>The rates per unit for concrete, structural steel, plate work and other commodities were estimated based on CPC's database, quotes obtained and factored from equipment. Installation cost estimates were determined with a factor of the supply costs.</li> <li>The Project has a Life of Mine of 33 years.</li> <li>OPEX costs associated with the conceptual production target were estimated using a combination of costs built up from first principles metallurgical modelling, vendor quotes, benchmarked rates received from consultants and benchmarking against similar projects in Australia.</li> <li>Mining costs are based on budget pricing from three reputable mining contractors</li> </ul>

Criteria	JORC Code explanation	Commentary
		<p>that are suitably scaled for the proposed scope of work. Submissions were evaluated, and final unit rate selections determined of use in the PFS mining cost estimate. The mining costs have a validity date of Q1 2025.</p> <ul style="list-style-type: none"> <li>• Transport costs are based on estimated provided by Qube Logistics Pty Ltd, a vendor consultancy, for a variety of road transport routes, trucking configurations, and data based on mass transport models provided by Impact Minerals, accurate to <math>\pm 15\%</math> in 2023 dollars. A competitive price was obtained as part of the Mining Contractor Budget pricing exercise with a validity date of Q1 2025. An average of the two provided haulage unit rates have been used for the haulage cost estimation.</li> <li>• Royalties payable are 2.5% to the State of Western Australia. A further 2% royalty will be payable to Playa One Pty Ltd upon certain conditions outlined in the acquisition agreement and an allowance of 1% royalty to the Ngadju. In addition, 10 years of Critical Minerals Tax offset has been included in the financial modelling.</li> <li>• All estimates presented here are for the total project and do not take into account the Company's current and future ownership of the Project under the acquisition agreement entered into with Playa One Pty Ltd.</li> <li>• The USD:AUD foreign exchange rates in the financial model is assumed constant at USD:AUD 0.62:1.</li> </ul>
<b>Revenue Factors</b>	<ul style="list-style-type: none"> <li>• The derivation of assumptions made regarding revenue factors including head grade, metal or commodity prices, exchange rates, transportation and treatment charges, penalties, nett smelter returns, etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Reagent and product prices were sourced from publicly available data, industry research reports including quoted CRU Research reports, HPA and boehmite market research by independent analysts (Golden Dragon Capital) and discussions with market participants, traders and representatives.</li> <li>• Impact assumes HPA prices of US\$22,000 per dry tonne for 4N HPA.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>The derivation of assumptions made of metal or commodity prices of the principal metals, minerals and co-product.</li> </ul>	<ul style="list-style-type: none"> <li>The head grade of mineralisation proposed to be treated averages 25.9% over the life of mine, with an average grade &gt;26.6% Al<sub>2</sub>O<sub>3</sub> during the first 10 years.</li> <li>An ExWorks (or mine gate sale) is assumed for HPA revenue</li> <li>By-product and reagents are commercially sensitive, but are informed by industrial and fertiliser industry research and public chemical market indices.</li> <li>Impact assumed ramp-up of the mine and hydrometallurgical facility would result in reduced revenue for the first three years of production.</li> </ul>
<b>Market Assessment</b>	<ul style="list-style-type: none"> <li>The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.</li> <li>A customer competitor analysis along with likely market windows for the product.</li> <li>Customer specification, testing and acceptance requirements prior to accepting a supply contract.</li> </ul>	<ul style="list-style-type: none"> <li>4N HPA prices are quoted relative to a 99.99% (4N) Al<sub>2</sub>O<sub>3</sub> specification. Other factors affecting saleability include particle size distribution, particle morphology, porosity and surface area.</li> <li>Analyst and industry participants quote 4N HPA at US\$24,000 to US\$26,000 per tonne.</li> <li>Penalty elements within the allowable maximum contaminant specification vary by application.</li> <li>Impact's analysis concurs with the sighted analyst reports..</li> <li>HPA is used in LED diodes, micro-LED's, technical glasses and batteries. Precursor chemicals are used as catalysts, in electronics and lithium battery separators.</li> <li>Analyst reports derive a prospective supply deficit in HPA from 2027 with CAGR of at least 15% per annum projected.</li> <li>Suppliers of HPA are based in Japan, China, Europe and North America, with new supply in Australia in 2027.</li> <li>Supply of HPA is constrained due to the high costs of entering production and protracted qualification periods.</li> <li>New supply is proposed from several sources which implies near term supply</li> </ul>



Criteria	JORC Code explanation	Commentary
		<p>balance but long-term supply deficit assuming market growth is maintained.</p> <ul style="list-style-type: none"> <li>• HPA is traded on a contract basis between producers and end-users.</li> <li>• End users require a period of qualification trialling of new HPA inputs prior to accepting supply. HPA suppliers often tailor their product to meet end-user requirements.</li> <li>• Memorandum of Understandings and/or non-binding offtake agreements are unlikely until pilot plant testwork and production of additional 4N HPA samples for vendor testing occurs. Larger samples will support and provide more certainty in extended discussions with potential customers. The lack of such agreements are not detrimental to the Project or Ore Reserve estimate given the preceding market conditions as outlined.</li> </ul>
<b>Economic</b>	<ul style="list-style-type: none"> <li>• The inputs to the economic analysis to produce the nett present value (NPV) in the study, the source and confidence of these economic inputs, including estimated inflation, discount rates, etc.</li> <li>• NPV ranges and sensitivity variations in the significant assumptions and inputs.</li> </ul>	<ul style="list-style-type: none"> <li>• The inputs to the NPV estimations are described in the body of the ASX release and in the NPV table.</li> <li>• A sensitivity analysis of NPV variance with key assumptions is provided.</li> <li>• The NPV has been determined using the Discounted Cash Flow method.</li> <li>• For the PFS a discount rate of 10% has been used. Variation of the discount rate is discussed in the body of the report.</li> <li>• The financial model is in real terms.</li> <li>• The model is based on yearly increments, with an assumption of 'as in operation' in 2031.</li> <li>• No inflation was applied to costs or commodity prices.</li> <li>• The Project was treated as its own tax entity on a 100% Project basis.</li> <li>• Royalties payable are 2.5% to the State of Western Australia. A further 2% royalty will be payable to Playa One Pty Ltd upon certain conditions outlined in the acquisition agreement and an allowance of 1% royalty to the Ngadju. In addition, 10 years of Critical Minerals Tax offset has been included in the financial modelling.</li> </ul>

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		<ul style="list-style-type: none"> <li>Australian corporate tax rate was applied as per the federal government corporate tax rate of 30.0%.</li> <li>Sensitivities were run at +/- 10% on Revenue, OpEx, CapEx and FX with NPV<sub>10</sub> ranges between US\$1,060M and US\$1,545M. Variation in NPV is dominated by the HPA price with the highest NPV achieved at +10% HPA price.</li> </ul>
<b>Social</b>	<ul style="list-style-type: none"> <li>The status of agreements with key stakeholders and matters leading to social license to operate.</li> </ul>	<ul style="list-style-type: none"> <li>Playa One Pty Ltd has a Native Title and Heritage Protection Agreement in force. This agreement is able to be converted to a Mining Agreement upon negotiation of a compensation package with affected native title parties. Impact has the right to earn 80% of Playa One Pty Ltd and can assume the Native Title agreement via appropriate notification.</li> <li>An Aboriginal Cultural Heritage and Archaeological Survey was undertaken in June 2023 on Lake Hope and meetings have been held with the traditional owners to inform them of the Project progress.</li> <li>No impediments have been identified in terms of Aboriginal cultural heritage to exploitation of the Lake Hope resource.</li> <li>Public impact assessments on the proposed transport route are yet to be completed</li> <li>Environmental and community related assessments for the proposed hydrometallurgical facility will also be required prior to approval</li> <li>Impact has adopted the World Economic Forums framework for ESG obligations (ASX release 9 October 2023)</li> <li>Ongoing stakeholder consultations and engagement requirements have been integrated into the project development schedule.</li> </ul>
<b>Other</b>	<ul style="list-style-type: none"> <li>Identified naturally occurring risks.</li> <li>Status of material legal agreements and marketing agreements.</li> </ul>	<ul style="list-style-type: none"> <li>No naturally occurring risks have been identified.</li> <li>No marketing agreements are in place at this stage, however discussions are</li> </ul>

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	<ul style="list-style-type: none"> <li>Status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government statutory approvals. There must be reasonable grounds to expect that all necessary government approvals will be received within timeframes anticipated in the pre-feasibility or feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the resource is contingent.</li> </ul>	<p>underway with marketing consultants and potential offtake partners.</p> <ul style="list-style-type: none"> <li>A preliminary Risk Assessment was undertaken for the PFS with no insurmountable risks having been identified. The risk assessment process produced a Risk and Opportunity Register that will be carried over to future stages of the Project.</li> <li>A mining lease and miscellaneous lease have been applied for covering the site access road, borrow pits, MIA, and West Lake resource which is the first area to be mined (ASX release 12 August 2024).</li> <li>General Purpose Leases for water, transport access and associated infrastructure will likely be required. Impact expects that no material impediment would occur in the grant of such licenses.</li> <li>Discussions with councils are at an early stage with respect to allocating land or transport routes.</li> <li>Agreement with the Ngadju Native Title group is required prior to grant of the Mining Lease.</li> <li></li> <li>There are very reasonable grounds to expect that all agreements will be finalised and tenements granted within the timeframes required for commencement of construction.</li> <li>An access agreement for the pending miscellaneous lease where it overlaps with adjacent exploration tenements has been signed with the relevant tenement holders.</li> </ul>
<b>Classification</b>	<ul style="list-style-type: none"> <li>The basis for classification of the Ore Reserves into varying confidence categories.</li> <li>Whether the result appropriately reflects the Competent Person's view of the deposit.</li> <li>The proportion of Probable Ore Reserves that have</li> </ul>	<ul style="list-style-type: none"> <li>Ore Reserves reported here are classified as both Proved and Probable as they are derived from Measured and Indicated Mineral Resources in accordance with the JORC Code (2012).</li> <li>All the Measured Resource inside the scheduled mine designs is used to derive the Proved Ore Reserve.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<p>been derived from Measured Mineral Resources (if any).</p>	<ul style="list-style-type: none"> <li>All the Indicated Resource inside the scheduled mine designs is used to derive the Probable Ore Reserve.</li> <li>The Proved Ore Reserve estimate is fully contained within all optimised pit shell results across a large range of Revenue Factors (RF's); being RF0.30 to RF1.0</li> <li>The Ore Reserve classifications are further supported by: <ul style="list-style-type: none"> <li>Robust economics of the Project achieved from the Measured and Indicated discounted cashflow analysis at varying revenue prices</li> <li>Mine designs and processing strategy target &gt;25% Al<sub>2</sub>O<sub>3</sub></li> <li>The nature of the deposit geology and mining methods proposed</li> </ul> </li> <li>The results of the Ore Reserve estimate reflect the Competent Person's view of the deposit.</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>The results of any audits or reviews.</li> </ul>	<ul style="list-style-type: none"> <li>Contributing PFS reports have been reviewed by appropriate technical personnel.</li> <li>No formal audit has been completed on the PFS Mining Study component or the Ore Reserve Estimate.</li> </ul>
<b>Discussion of relative accuracy/ confidence</b>	<ul style="list-style-type: none"> <li>Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve 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 reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.</li> </ul>	<ul style="list-style-type: none"> <li>Reporting of the project Ore Reserve considers; <ul style="list-style-type: none"> <li>the Mineral Resources compliant with the JORC Code 2012 Edition,</li> <li>the conversion of these resources into an Ore Reserves, and</li> <li>the costed mining plan capable of delivering ore to the process plant from a LOM schedule</li> </ul> </li> <li>A PFS was prepared at an overall level of accuracy of the order of ±30% (Class 4 AACE estimate) and the material modifying factors are at a level of confidence that would allow an Ore Reserve to be estimated in accordance with the JORC Code 2012..</li> <li>Dilution of the mine design mineral inventory is included in the Ore Reserve estimate. An allowance for ore loss was</li> </ul>

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	<ul style="list-style-type: none"> <li>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.</li> <li>Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.</li> <li>It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available</li> </ul>	<p>accounted for in the LOM schedule results. All the Mineral Resources intersected by the mine designs classified as Measured and Indicated Resource has been converted to Proved and Probable Ore Reserves after consideration of all mining, metallurgical, social, environmental, statutory and financial aspects of the Project. The PFS financial assessment of the Project, encompassing an updated JORC 2012 Ore Reserve Proved and Probable of 1.73 Mt at 26.0% Al<sub>2</sub>O<sub>3</sub>, clearly demonstrates the economic robustness of the Project with an estimated NPV10 of A\$1,165M and IRR of 47.5%. This financial assessment is based on real, financed and post-tax analysis terms</p>