



ASX ANNOUNCEMENT

3rd April 2023

CATHODE PRECURSOR SCOPING STUDY UNDERWAY

- Specialist team of independent consultants engaged to undertake updated Scoping Study at Mt Thirsty
- Scoping Study to assess several optimisations, including the adoption of HPAL and production of pCAM
- Precursor Cathode Active Material (pCAM) is a high-value product made of cobalt, nickel & manganese
- pCAM is also an essential constituent used in the manufacturing of high-performance lithium-ion batteries
- Mt Thirsty uniquely positioned to potentially produce pCAM, containing all three elements (Co, Ni & Mn)
- Addition of pCAM and HPAL to the Mt Thirsty project could potentially transform project economics
 - Comparable HPAL projects typically receive Co and Ni of recoveries of 90% and 92%, respectively¹
 - pCAM typically receives a ~50% pricing premium over intermediary products (MHP / MSP)²
- Updated JORC (2012) Mineral Resource Estimate (MRE) expected in April 2023
- Updated Scoping Study and associated project economics are expected in early-mid July 2023
- Scoping Study to provide foundation for future studies and potential consolidation to support an IPO

Greenstone Resources Limited (**ASX:GSR**) (**Greenstone** or the **Company**) is pleased to announce that it has commenced a Scoping Study (**Study**) and Mineral Resource Estimate (**MRE**) incorporating a number of recently identified project optimisations, including the adoption of High-Pressure Acid Leaching (**HPAL**) and the addition of a cathode precursor plant to produce a Precursor Cathode Active Material (**pCAM**).

The Mt Thirsty Co-Ni-Mn-Sc project is located 16 kilometres North-Northwest of Norseman, Western Australia (50% Greenstone Resources, 50% Conico Limited) and is supported by a network of existing infrastructure (road, rail, port & power). The Project hosts the Mt Thirsty cobalt-nickel-manganese-scandium deposit with a current JORC Resource of 26.9Mt at 0.126% cobalt, and 0.54% nickel for which a Pre-Feasibility Study (**PFS**) was previously completed (see ASX Announcement: GSR 20/02/2020).

The previously released PFS employed atmospheric leaching resulting in lower metal recoveries and was also completed during a period of subdued commodity prices, serving to understate the potential of the Project to provide a low-cost, ethical and sustainable source of cobalt and nickel outside of the Democratic Republic of the Congo and Russia. Since the completion of the PFS in early 2020, a number of project optimisation opportunities have subsequently been identified which may have a material impact on the Project economics, including the adoption of HPAL and the production of a pCAM product.

PRECURSOR CATHODE ACTIVE MATERIAL (pCAM)

A precursor cathode active material (pCAM) is a substance that is used in the production of cathode materials for lithium-ion batteries, which are commonly used in electric vehicles. A pCAM is typically composed of a combination of cobalt, nickel, and manganese, along with other chemical additives that help to improve the performance and stability of the battery. Cathode materials are one of the key components of lithium-ion batteries required to decarbonise the

¹ Based on comparable projects (ASX:NC1 22/12/2022; ASX:CLQ 25/06/2018)

² See Figure 1



global economy, as they determine the performance characteristics of the battery, such as energy density, power density, and cycle life.

The Mt Thirsty cobalt-nickel-manganese-scandium project is uniquely positioned containing all three of the principal constituents to produce the preferred 811 nickel-cobalt-manganese pCAM product (eight parts nickel, one part cobalt, and one part manganese). Importantly, the adoption of pCAM provides the ability to produce a significantly higher value product which typically receives a ~50% pricing premium over the intermediary product (MHP / MSP) the Project was previously envisaged to produce (Figure 1). As such the production of pCAM has the potential to increase both payable metal content and as a result also increase revenue.

NICKEL PRODUCT PAYABLE VS. SPOT PRICE

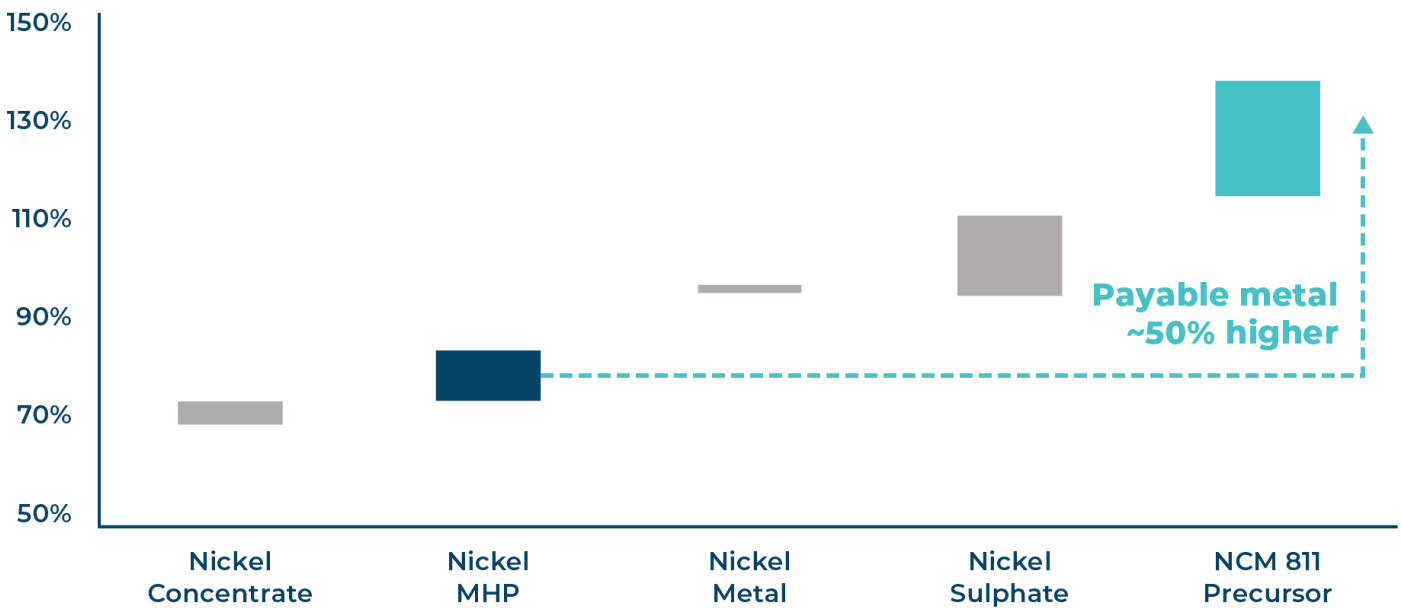


Figure 1: Illustration of nickel product payability vs metal spot price³

HIGH PRESSURE ACID LEACHING (HPAL)

High pressure acid leaching is a process used to typically extract nickel, cobalt, manganese and scandium from oxide orebodies. During the HPAL process, the oxide ore is mixed with sulfuric acid and subjected to high temperatures and pressures in an autoclave vessel. The acid dissolves the metals from the ore, forming metal sulfate solutions, which are then subjected to a series of chemical and physical processes to separate and purify the respective metals.

Numerous improvements have in HPAL have been realised over the past five years following the rapid adoption in Indonesia following the export ban on unrefined nickel ores. The new fifth generation of HPAL operations in Indonesia are being constructed at US\$30-35,000 per annual tonne of nickel, compared to an average of closer to US\$100,000 per annual tonne of nickel for the previous generation four plants⁴. These later generation plants are now ramping-up to nameplate capacity in less than 12 months (Figure 2).

³ ASX:BSX 16/09/2022; Greenstone Analysis (25th & 75th percentile, last three years, 22% contained nickel, Shanghai Metals Market)

⁴ <https://www.theassay.com/articles/analysis/the-rise-and-rise-of-indonesian-hpal-but-can-it-continue/>



TIMELINE OF HPAL RAMP-UP

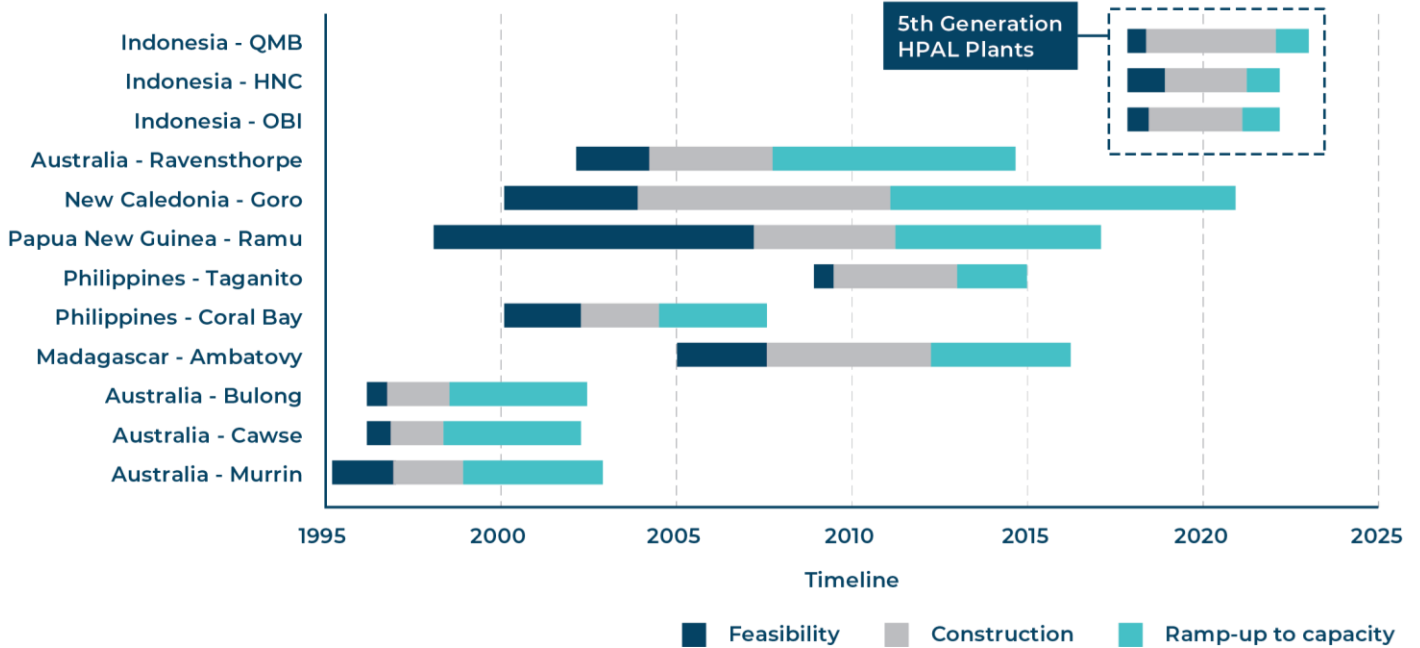


Figure 2: Timeline of HPAL plants from feasibility study to nameplate production⁵

The adoption of high-pressure acid leaching at Mt Thirsty is expected to materially improve both cobalt and nickel recoveries, serving to increase the amount of sellable metal and therefore increase life of mine revenue. The previously completed pre-feasibility study (ASX Announcement 20/2/2020) had elected to utilise atmospheric leaching, however despite extensive metallurgical test work, cobalt and nickel recoveries only averaged 74.3% and 22.3%, respectively. Comparable HPAL projects in Australia typically receive cobalt and nickel recoveries of 90.1% and 92.3%, respectively⁶.

The identification of scandium in the most recent drill campaign serves to highlight the potential to add a valuable by-product revenue stream, and while insufficient data currently exists to support the inclusion of scandium in the forthcoming mineral resource estimate update, the HPAL test work will still assess the ability to produce a scandium oxide product.

OVERVIEW OF PROPOSED FLOWSHEET

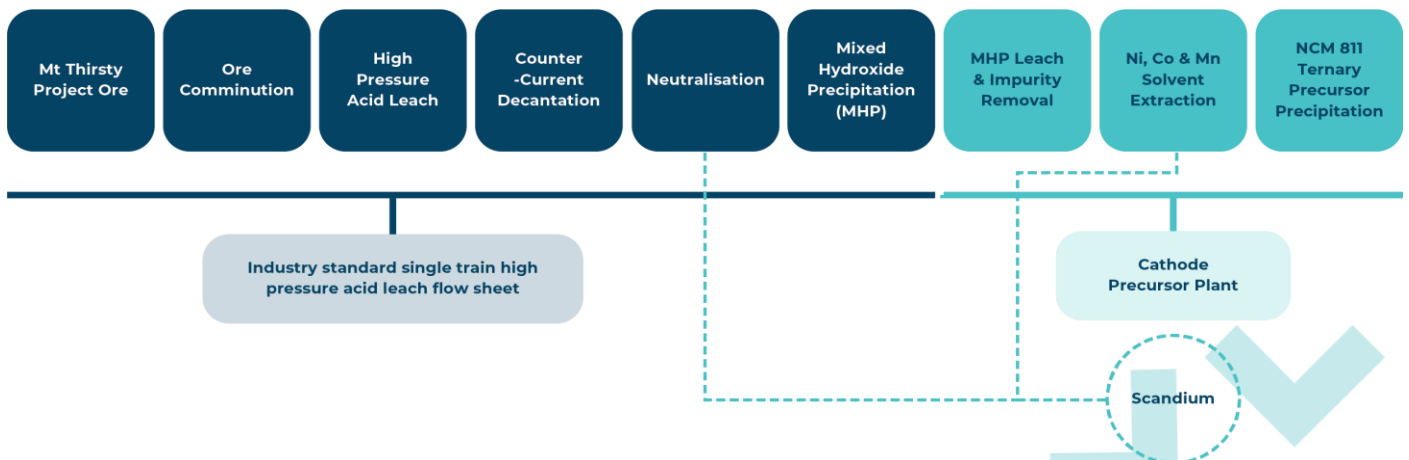


Figure 3: Overview of HPAL and pCAM flowsheet

⁵ Wood Mackenzie

⁶ ASX:NC1 22/12/2022; ASX:CLQ 25/06/2018



SCOPING STUDY

A specialist team of independent consultants has been engaged to undertake a Scoping Study at Mt Thirsty, including Simulus Pty Ltd (**Simulus**) and WSP Australia Pty Limited (**WSP**).

Simulus is a leading hydrometallurgy and mineral processing services group that specialises in metallurgical testwork, process simulation, engineering studies and the development of hydrometallurgical flowsheets. Simulus bring extensive HPAL experience having been involved in the assessment, development, design, commissioning or operation of 22 nickel projects over the past 19 years.

WSP is a full-service mining consultancy with a global team of over 4,400 dedicated mining professionals covering geology, resource estimation, mining, processing and environmental. WSP’s mining team (formally Golder Associates) have extensive experience with the Mt Thirsty project, having previously undertaken the most recent mineral resource estimates and tailings design. As part of the Scoping Study, WSP will be undertaking an updated mineral resource estimate, mine design, tailings management plan and associated site infrastructure design.

The Scoping Study is already underway and is expected to be completed by early-mid-July (Figure 4). It is expected that the Scoping Study will provide a foundation for the future consolidation and IPO of the Mt Thirsty project later this year, followed by a Pre-Feasibility study, that will target a low-cost, ethical and sustainable source of cobalt and nickel outside of the Democratic Republic of the Congo and Russia.

INDICATIVE SCOPING STUDY TIMELINE

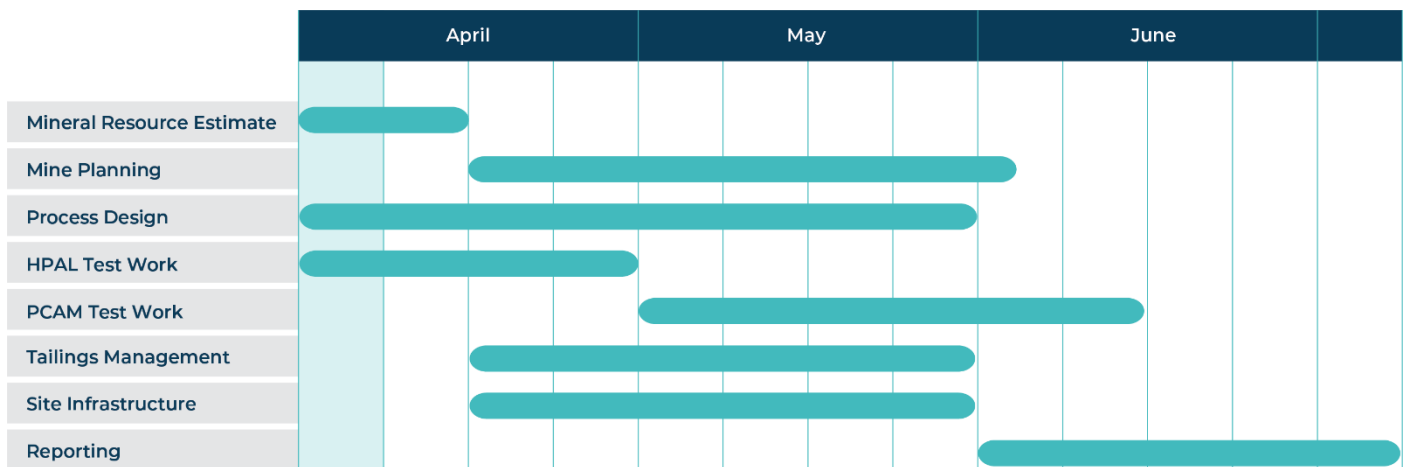


Figure 4: Indicative Scoping Study project timeline to completion.

This announcement is authorised by the Board of Directors.

- END -

Chris Hansen

Managing Director & Chief Executive Officer

Greenstone Resources Limited

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RESOURCES & RESERVES

The Mt Thirsty Joint Venture (MTJV) is located 16 kilometres North-Northwest of Norseman, Western Australia (50% Greenstone Resources, 50% Conico Limited).

The Project contains the Mt Thirsty cobalt-nickel oxide deposit with a JORC Resource of 26.9Mt at 0.126% cobalt, and 0.54% nickel. A Pre-Feasibility Study (PFS) of the Project was completed and announced to the ASX on 20 February 2020. In addition to the Co-Ni oxide deposit, the Project also hosts nickel sulphide mineralisation potential.

Mt Thirsty Joint Venture Mineral Resources (50%)

Mineral Resource	Cut-off (Co%)	Wet Tonnes (Mt)	Moisture (% wet t)	Dry Tonnes (Mt)	Co (%)	Ni (%)	Mn (%)	Fe (%)
Mt Thirsty Indicated	0.06	31.20	27%	22.8	0.121	0.53	0.79	21.30
Mt Thirsty Main Inferred	0.06	3.50	27%	2.5	0.103	0.45	0.66	19.10
Mt Thirsty Main Sub Total	0.06	34.70	27%	25.4	0.119	0.52	0.77	21.10
Mt Thirsty North Inferred	0.06	2.00	27%	1.5	0.092	0.55	0.48	19.40
Total	0.06	36.70	27%	26.9	0.117	0.52	0.76	20.90

Refer to ASX Announcement 9/9/2019 for full details of the Mineral Resource Estimate.

Mt Thirsty Joint Venture Ore Reserve (50%)

Mineral Resource	Cut-off (Co%)	Wet Tonnes (Mt)	Moisture (% wet t)	Dry Tonnes (Mt)	Co (%)	Ni (%)	Mn (%)	Fe (%)
Mt Thirsty Probable	Approx. 0.07% Co (Variable)	25.90	27%	18.8	0.126	0.54	0.80	21.60

Refer to ASX Announcement 20/2/2020 for full details of the Ore Reserve Estimate.

Competent Persons for the Mt Thirsty Cobalt Nickel Project

Project and Discipline	JORC Section	Competent Person	Employer	Professional Membership
Mt Thirsty Geology	Exploration Results	Glenn Poole	Greenstone Resources	MAusIMM
Mt Thirsty Resource Estimation	Mineral Resources	David Reid	Golder Associates Pty Ltd	MAusIMM
Mt Thirsty Metallurgy	Exploration Results and Ore Reserves	Peter Nofal	AMEC Foster Wheeler Pty Ltd trading as Wood	FAusIMM
Mt Thirsty Mining	Ore Reserves	Frank Blanchfield	Snowden Mining Industry Consultants Pty Ltd	FAusIMM

The information in this announcement which relates to Exploration Results and geological interpretation at Mt Thirsty is based on information compiled by Mr Glenn Poole an employee of Greenstone Resources Limited who is a Member of the Australasian Institute of Mining and Metallurgy. Mr Poole consents to the inclusion in the announcement of the matters based on their information in the form and context in which it appears.

The information in this announcement which relates to Mineral Resources is based on information provided to and compiled by Mr David Reid, a Competent Person who is a full-time employee of Golder Associates Pty Ltd, and a Member of the Australasian Institute of Mining and Metallurgy. Mr Reid has sufficient relevant experience to the style of mineralisation and type of deposits under consideration and to the activity for which he is undertaking to qualify as a Competent Person as defined in the JORC Code (2012 Edition). Mr Reid consents to the inclusion in the announcement of the matters based on his information in the form and context in which it appears.

The Company is not aware of any new information or data that materially affects the information presented and that the material assumptions and technical parameters underpinning the estimates continue to apply and have not materially changed. The company confirms that the form



and context in which the Competent Persons' findings are presented have not been materially modified from the original market announcements.

DISCLAIMER & CAUTIONARY STATEMENTS

The interpretations and conclusions reached in this announcement are based on current geological theory and the best evidence available to the authors at the time of writing. It is the nature of all scientific conclusions that they are founded on an assessment of probabilities and, however high these probabilities might be, they make no claim for complete certainty. Any economic decisions that might be taken based on interpretations or conclusions contained in this report will therefore carry an element of risk. This announcement contains forward-looking statements that involve several risks and uncertainties. These forward-looking statements are expressed in good faith and believed to have a reasonable basis. These statements reflect current expectations, intentions or strategies regarding the future and assumptions based on currently available information. Should one or more of the risks or uncertainties materialise, or should underlying assumptions prove incorrect, actual results may vary from the expectations, intentions and strategies described in this report. No obligation is assumed to update forward-looking statements if these beliefs, opinions, and estimates should change or to reflect other future developments.

REFERENCES TO PREVIOUS ANNOUNCEMENTS

In relation to the details of the PFS announced on 20/02/2020, Greenstone confirms that all material assumptions underpinning the production target and forecast financial information from the production target, as reported on 20/02/2020, continue to apply and have not materially changed. A proportion of the production target uses inferred mineral resources. There is a low level of confidence associated with inferred mineral resources and there is no certainty that further exploration will result in the determination of indicated mineral resources or that the production target itself will be realised.

The mineral resource estimates in this announcement were reported by the Company in accordance with ASX Listing Rule 5.8 on 9/9/2019. The Company confirms it is not aware of any new information or data that materially affects the information included in the previous announcement and that all material assumptions and technical parameters underpinning the estimates in the previous announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

The ore reserve estimate in this announcement was reported by the Company in accordance with ASX Listing Rule 5.9 on 20/20/2020. The Company confirms it is not aware of any new information or data that materially affects the information included in the previous announcement and that all material assumptions and technical parameters underpinning the estimate in the previous announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

