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# ASX ANNOUNCEMENT

# Nifty Copper Project Restart Study

# HIGHLIGHTS

- Current copper price ~USD4.60/lb
- Oxide C1 costs of USD1.91/lb and C3 costs of USD2.82/lb
- Average production of 25,000 tpa copper cathode
- Oxide cathode production 146,100 tonnes copper metal
- Pre-production capital AUD149M
- Positive engagement with Financiers now accessing final study and extensive data room
- NPV <sup>@7%</sup> of AUD277M with an IRR of 37% (post tax)
- Mineral Resource Estimate (MRE) to include 2021 drilling & inferred resource conversion
- Oxide mine life 2023-29 at ~6.3 years (pre-MRE upgrade) with sulphide potential +20yrs
- Metallurgical testwork confirms 85% recovery in Retreat and 90% in Oxide Pit material
- Free cashflow AUD544M
- Payback in 3 years
- Regulatory approvals submitted and on track
- Sulphide heap leach metallurgy testwork commenced

# NEXT STEPS

- Finalise the Financing of the project during Q2 2022
- Update the Mineral Resource and in pit inventory, including expansion options
- Complete financing and final government approvals post FID
- Commence refurbishment and construction post finance and government approvals
- Plate copper metal in the second half of 2023

Cyprium Metals Limited (ASX: **CYM**, **Cyprium**, or the **Company**) is pleased to announce the results of the Restart Study for the Nifty Copper Project which has highlighted a robust initial oxide project with the potential for strong financial returns.

The Nifty Copper Project is 100% owned by Cyprium and the Restart Study results are reported on a project post-tax basis with all currency quoted in Australian dollars (AUD) unless otherwise specified.



The basis of the analysis is the JORC 2012 Mineral Resource Estimate released in November 2021 (refer to CYM ASX release dated 17 November 2021 titled 'Updated Nifty Copper Mineral Resource Estimate') and <u>does not</u> include the recent released drilling results from the within the South-West and South-East of the presented pit shape. The study considers and includes measured and indicated resources and does not include inferred resources contained within the pit shape.

Managing Director Barry Cahill commented:

"We are very pleased to announce the results of the Nifty Copper Project Restart Study. The fundamentals of the project are robust, which excludes the addition of an updated Mineral Resource Estimate to be completed in the coming months and the conversion of inferred resources during the pit mining.

Metallurgical optimisation continues to have success with our heap leach metallurgy knowledge clearly showing an improved treatment path for the oxide material considering over 200,000 tonnes of copper metal cathode has already been extracted and produced using a heap leach process on this site.

A great effort by the team to get this study completed within a year of acquiring the project. We now look forward to getting the finance completed and accelerating construction to plating copper metal by the second half of next year."

#### **Cautionary Statement**

The Restart Study referred to in this ASX announcement is intended to be used for the process of financing the construction of the Nifty Copper Project by outlining the technical, commercial and profit potential aspects of the Project. The technical and economic study has a number of sections of study that have accuracy ranges from  $\pm$  5% to  $\pm$  20% depending on the materiality of the section. The overall accuracy of the Study is judged to be in the order of  $\pm$  10% which would enable the estimate of ore reserves. Notwithstanding that the information contained in this release is accurate in presenting the investment case determined from the Study it remains a summary and it is not possible to release to the market all the background data and studies undertaken to compile it. Further there is information omitted from this summary (and from the background data) that directly relates to Cyprium's intellectual property in the project, which it is therefore not possible to release.

The project NPV and favourable economic outcome considers and includes re-treatment of and copper production from the historical heap leach material, however the 2012 JORC Code is unable to be applied to accommodate the existing historical heap leach material in terms of Mineral Resource classification. The tonnes and grade of the material is based on historical production reconciliation as a heap leach quantity ought to be, that is a stockpile of material less the physical metal extracted thereof.

The open pit ore mined has been calculated and considered as applicable to be quoted as an open pit reserve including only measured and indicated resources used in the determination of the quantity and grade. However, under the JORC 2012 Code, the Company is unable to quote as such as the economics are linked to the treatment of heap leach material which is outside a JORC classification as described in the point above.

The directors of the Company consider this to be a fair and balanced summary of the study undertaken. However, given the uncertainties involved in any study of this type, and the assumptions made, investors should not make any investment decisions based solely on the results of the Restart Study and/or the summary contained herein.



#### **Forward Looking Statements**

All dollar amounts are in Australian dollars unless otherwise indicated.

This announcement may contain certain statements and projections provided by or on behalf of Cyprium Metals Limited with respect to the anticipated future undertakings. These forward-looking statements reflect various assumptions made by or on behalf of Cyprium.

Accordingly, these statements are subject to significant business, economic and competitive uncertainties and contingencies associated with the mining industry which may be beyond the control of Cyprium which could cause actual results or trends to differ materially, including but not limited to price and currency fluctuations, geotechnical factors, drilling and production results, development progress, operating results, reserve estimates, legislative, fiscal and regulatory developments, economic and financial market conditions in various countries, approvals and cost estimates, environmental risks, ability to meet funding requirements, share price volatility. Accordingly, there can be no assurance that such statements and projections will be realised. Cyprium makes no representations as to the accuracy or completeness of any such statement of projections or that any forecasts will be achieved.

Additionally, Cyprium makes no representation or warranty, express or implied, in relation to, and no responsibility or liability (whether for negligence, under statute or otherwise) is or will be accepted by Cyprium or by any of their respective officers, directors, shareholders, partners, employees, or advisers as to or in relation to the accuracy or completeness of the information, statements, opinions or matters (express or implied) arising out of, contained in or derived from this announcement or any omission from this announcement or of any other written or oral information or opinions provided now or in the future to any interested party or its advisers. In furnishing this announcement, Cyprium undertakes no obligation to provide any additional or updated information whether as a result of new information, future events or results or otherwise.

Nothing in this material should be construed as either an offer to sell or a solicitation of an offer to buy or sell securities. It does not include all available information and should not be used in isolation as a basis to invest in Cyprium.

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# Refer to the Investor Presentation accompanying this announcement for further Important Notices and Disclaimers



#### Nifty Copper Project Restart Study Summary

Cyprium Metals is pleased to present the Restart Study for the Nifty Copper Project. The study demonstrates a robust heap leach solvent extraction-electrowinning (SX-EW) operation in the initial stage of the project. The Restart is focused around the first phase of heap leach retreat and oxide open pit, and it is envisaged that the life will extend to the sulphide stage of the open pit with a considerably larger resource available. The sulphide study has already commenced with design optimisation and metallurgical testwork currently being undertaken.

# Introduction to Nifty

The Nifty Copper Project comprises ~266km<sup>2</sup> of mineral tenements of which ~234km<sup>2</sup> is granted as a State Agreement Act Mining Lease (M271SA) and the remainder are pending conversions from three mining lease applications (covering the East Nifty bore field extensions) to mining leases. There are many miscellaneous licenses held by third parties which co-exist on the properties covering existing bore fields, and other essential mine infrastructure including a gas spur pipeline.

The tenure is held via Cyprium's 100%-owned subsidiary, Paterson Copper Pty Ltd, with the Nifty mine and infrastructure and associated tenure held by Cyprium's operating subsidiary Nifty Copper Pty Ltd. The Paterson Copper Pty Ltd assets are in the northeast Pilbara region of Western Australia, approximately 330km east-southeast of Port Hedland and 65km west of the Telfer Gold Mine.

The Nifty operation has produced more than 700,000 tonnes of copper metal between commencement of the oxide operation in 1993 and November 2019, when the mine was placed into care and maintenance. The single deposit is still ranked in the top twenty copper mineral resources by insitu copper metal tonnes in Australia, with considerable potential to increase this further.

A 2012 JORC compliant Mineral Resources estimate of 732,200 tonnes contained copper within an open pit mine, with substantial infrastructure including:

- 2.8 Mtpa sulphide concentrator (in care and maintenance since November 2019).
- 25 ktpa copper cathode heap leach SX/EW facility (in care and maintenance since January 2009).
- 21 MW gas turbine power station and gas pipeline.
- Water supply and reticulation systems including multiple bore fields.
- Mine village with a capacity of approximately 400 persons.
- Sealed all weather airstrip.
- Upgraded 4G communications infrastructure.

Restart of the heap leach SX/EW facility at the historic Nifty Copper Operation will involve the following:

- Recommencement of open pit mining.
- Refurbishment of existing heap leach agglomeration, stacking/materials equipment, and irrigation systems.
- Refurbishment of the existing leach pads to place new oxide material on for leaching.
- Construction of additional leach pad capacity for retreatment of the existing heap leach pad material.
- Refurbishment of existing SX-EW facilities.
- Re-instatement of supporting reagent/utility systems.



# Table 1: Summary of Project Metrics

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Mineral Resource				
- Oxide			Mt	11.9
- Sulphide			Mt	33.9
- Total			Mt	45.9
- Oxide Contained Coppe	r	1.1%	Kt	135.5
- Sulphide Contained Cop	per	1.8%	Kt	596.7
- Total Contained Copper		1.6%	Kt	732.2
Open Cut Waste mined		Strip ratio 6.0	Mt	52.9
Open Cut Ore mined			Mt	8.8
Re-treat ore tonnes stacked			Mt	17.1
Total ore stacked			Mt	25.9
Average Grade			%	0.65
Average Recovery			%	87.3
Copper Metal Cathode Producti	on Capacity		Ktpa	25.0
Copper Metal Cathode Produced	d		Kt	146.1
Copper Metal Cathode Produced	d		Mlbs	322.0
Life of Oxide Heap Leach Operat construction)	ion (post		Years	6.3
Revenue			USD/lb	4.08
C1 Costs			USD/lb	1.91
C2 Costs			USD/lb	2.56
C3 Costs			USD/lb	2.82
M1 Margin			%	113
M2 Margin			%	59
M3 Margin			%	45
Pre-production Capital Expendit	ure		AUDM	149.3
Operating Cash Flows (EBITDA)			AUDM	822.8
Free Cash Flows (EBIT)			AUDM	543.7
NPV Pre-Construction (after tax)	@7% discount rate		AUDM	277.3
IRR (after tax)			%	37
Project payback post construction	on		Years	3.0
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# **Cyprium Strategy**

Cyprium was established with the objective of acquiring Australian based copper assets, which have the potential to produce London Metal Exchange (LME) Grade A copper metal cathode on site via heap leach processing. Producing copper metal cathode has a number of advantages over the conventional copper concentrates. Copper metal cathode is directly saleable as a finished product to a broader range of customers throughout Asia and globally, realising higher sales prices, rather than copper in concentrates which require further downstream smelting and refining processing. Heap leach processing to produce copper cathodes has lower capital and operating costs, lower transport costs due to the reduced shipping quantities and government royalty rates are half the rate for concentrates. Producing a directly saleable copper metal cathode in Australia also mitigates jurisdictional uncertainties and smelter access issues.

The Nifty acquisition which completed during the first quarter of 2021, was a key to Cyprium achieving its near-term copper cathode production objective, that also included the massive undeveloped Maroochydore copper-cobalt project, which we expect will ultimately follow the same copper cathode production route plus the production of cobalt cathode as a by-product. Cyprium's Murchison copper-gold project will also be developed as a copper cathode project with gold as a by-product. As it stands, Cyprium has now acquired three of the largest undeveloped prospective copper cathode assets in Australia, providing the right product in the ideal jurisdiction, with a long-term production pipeline.

Cyprium intends to commence with a heap leach SX-EW operation at Nifty to retreat the current heap leach pads as well as the remnant open pit oxide and transitional ores. Open pit mining operations of the extensive sulphide mineral resource will continue, and subject to confirmatory metallurgical test work that is economically favourable, to be processed via a sulphide heap leach operation or if economically superior returns, will be treated via the existing concentrator at Nifty.

Further details of Cyprium's projects (other than Nifty) are contained at the back of this announcement.

# **Copper Market Analysis**

The LME three-month copper price climbed above USD10,000 per tonne during February and March 2022, within a broad upward trend to prices for the red metal. Despite this, a backdrop of fluctuating prices in early 2022 is being driven by changes in monetary policy by major central banks in response to USD strength, contrasting economic indicators, the spread of COVID-19 and copper supply concerns ruminating within Latin America.

Many involved in the copper metal industry have concluded that over the period 2023-2026, the refined copper market will remain in deficit, supported by healthy demand growth as copper demand continues to benefit from a growing exit from a carbon-based economy and increased decarbonisation activity. It is this backdrop that has many analysts predicting that the 2026 price for copper is likely to average above USD10,000 per tonne.

#### **Environment and Social**

The project is situated within the Little Sandy Land System and is characterised by sandplains with linear and reticulate dunes supporting shrubby hard and soft spinifex grasslands. Approvals for the commencement of operations at Nifty Copper Project were first submitted by Western Mining Corporation (WMC) to the Western Australian Department of State Development in 1992.

Variations to approvals have been given for the subsequent expansions to the operation including the increased capacity of the SX-EW plant and the heap leach pads through the periods of ownership by both WMC and Straits Resources Limited. The approval and development of an underground mine and concentrator was subsequently obtained by Aditya Birla Minerals Limited following the purchase of the project in 2003 and the project operated under this operating scenario from January 2004 until the operation was placed into care and maintenance in November 2019.

Flora and fauna surveys were first conducted on the site in September 1992 and have been revisited many times in response to specific project development variation approvals. Cyprium undertook detailed flora



and vegetation and fauna assessments in 2021 as support for the application of clearing permits for the construction of new heap leach pads. This work included a comprehensive desktop reconnaissance assessment followed by field surveys and targeted searches for conservation significant flora and fauna.

Considering the uniformity of the landforms present within the study area and across the Great Sandy Desert bioregion, any species of significance encountered are expected to occur in significant numbers outside of the site and should not be just unique or restricted to the areas surrounding the Nifty project. The fauna survey confirmed earlier studies and found evidence of two fauna species of significance from the survey area, and these have both been previously identified in the immediate area.

The rehabilitation of the operation remains covered by an AUD6M unconditional performance bond administered under the Mining Act 1978 (WA) and held against the tenement given that it is located within a State Agreement Mining Lease. The current system applied to all new and existing projects whereby rehabilitation of the tenement/s is covered by the Mining Rehabilitation Fund Act 2012 (WA).

Early heritage surveys and visits completed in the early 1980s appear to be the first heritage work completed in the Nifty region of the Great Sandy Desert. As far back as 1976 (before the opening of the Telfer gold mine), coordinated visits or introductory field surveys comprising archaeologists were undertaken to understand the indigenous heritage of the Throssell Range area. Specific heritage surveys were conducted in 1992 and identified several locations of cultural significance greater than 15kms from the mine site and have been adequately controlled by strictly enforcing no public use of the privately developed access roads.

The Traditional Owners involved in the survey work, and who had first-hand knowledge of the region, outlined that Nifty was located within the traditional lands of the Waukarlykarly Group and that the primary language spoken was Nyangumarta. The Traditional Owners considered it to be poorly watered which was occupied on an occasional basis for undertaking activities only when rainfall temporarily filled the ephemeral water supplies.

In September 2002, the Federal Court of Australia made a determination that the Martu people hold Native Title rights and interests in respect of the region surrounding Nifty. In 2002, the Federal Court did not make a determination in respect of native title over those areas covered by the mining leases granted before 1994 (including M271SA). A second determination was made by the Federal Court in 2013 in relation to the areas which were not determined in 2002, the effect of which was that native title was found to exist over the whole of the determination area but that the rights conferred on the mining tenement holders were exclusive rights to conduct mining operations which would prevail over native title rights and interests to the extent that their exercise is wholly inconsistent with the continued exercise by the Traditional Owners of their native title rights and interests.

Cyprium has in place an executed Indigenous Land Use Agreement with the Western Desert Lands Aboriginal Corporation who hold the Native Title Rights on trust for the Martu People. This ILUA is in the process of being registered under the NTA. The terms of the ILUA is binding on Cyprium and WDLAC and cover the access, exploration, development and production on Cyprium's Project Tenure. The tenure granted prior to 1994 is excluded from the ILUA.

Cyprium recognises the Martu as the traditional owners, users, and managers of the land in the Nifty region, and the eventual return of the land to the Martu People at final relinquishment. Cyprium is engaging with the Martu as a key stakeholder of Nifty.

#### **Regulatory Approvals and Permitting**

Government approvals are required for the restart project scope. Nifty is located on a State Agreement Act tenement and Ministerial Approval is required to amend the project size and operating life.

There is a requirement for clearing permits for the new clearing required for the new heap leach pads and an amendment to a current approval for the extension to the waste rock landform. There is an amended Mining Proposal required for the restart of the open pit, pads and SX-EW which includes submission of a Project Management Plan and a Mine Closure Plan. There is an amended Works Approval required for the



restart of the SX-EW and the new heap leach pads and an amendment to the Water Licence for the change in water extraction method from underground. There are also a number of smaller permits required around the restart of the mining operation, that require reactivation or renewal.

The overarching Works Approval proposal for the restart has been submitted to the Department of Water and Environmental Regulation and outlines that the project will involve excavating, crushing, agglomerating, stacking and retreatment of current heap leach material – relocated from the current (to be refurbished) leach pads to new pads constructed in a new location. It will also involve a cutback on the current open pit to provide new ore feed to the heap leach pads of two different types of copper ore, oxide and transitional.

The Proposal outlines that Cyprium will use existing facilities as most of this infrastructure has been maintained and has been approved by the Department of Water and Environmental Regulation under Operating Licence number L6617/1992/15.

Five other proposals have been lodged with respect to the activities to be undertaken by the restart to operations (see below). Cyprium has previously identified delays in the processing times for regulatory approvals (refer to CYM ASX Announcement on 6 December 2021), which resulted in rescheduled project timelines in response to this situation. If the Company experiences delays in obtaining the below permits/approvals, it will update the proposed timing for carrying out the Proposal.

Permit / Item	Legislation	Department Desription St		Submission Status	Date Lodged
Works Approval and Licence	Environmental	Department of Water & Environmental Regulation (DWER)	Amended Prescribed Activities Licence to enable processing	Lodged	8th March 2022
Native Vegetation Clearing Permit	Protection Act (1986)	Department of Mines Industry Regulation & Safety (DMIRS)	Authorises the clearing of native vegetation for project development	Lodged	14th November 2021
Mining Proposal	Mining Art (1078)	Department of Mines Industry Regulation & Safety (DMIRS) Approval for mining activities and construction of mine infrastructure		Lodged	21st February 2022
Mine Closure Plan	Mining Act (1978)	Department of Mines Industry Regulation & Safety (DMIRS)	Defines rehabilitation and closure accompanying the Mining Proposal	Lodged	21st February 2022
Project Management Plan	Mines Safety & Inspection Act (1994)	Department of Mines Industry Regulation & Safety (DMIRS)	Project safety plan approval	Lodged	20th January 2022
26D Licence to Alter Water Abstraction Methods of an Existing Licence	Rights in Water and Irrigation Act (1914)	Department of Water & Environmental Regulation (DWER)	Change in abstraction mechanism under the existing water licence	Lodged	25th February 2022

The restart of the Nifty Copper Project provides a great opportunity for Cyprium and all the project stakeholders to reboot all aspects of the operation including the gradual rehabilitation of the current disturbed landforms over its potential extended life.

#### **Geology and Mineral Resource Estimate**

The Nifty deposit was discovered in the early 1980s by WMC and is a sediment hosted copper deposit hosted within the Neoproterozoic sub-greenschist facies of the Paterson Orogen, immediately to the east of the Archaean Pilbara Craton and had a pre-mining global resource of approximately 100Mt @ 1.7% Cu (0.5% Cu cut-off).

Copper mineralisation occurred/s as both supergene oxide, sulphide, and transitional mineralisation to a depth of approximately 300m and as stratabound hypogene sulphides hosted by carbonaceous and dolomitic shales, principally within the Nifty carbonate member, to a depth of approximately 600m. The mineralisation is a structurally controlled, chalcopyrite-quartz-dolomite replacement of carbonaceous and



dolomitic shale within a folded sequence. The copper mineralisation is largely confined to the northern limb and keel of a significant syncline.

Weathering has altered the mineralisation to a depth of about 200m and therefore three main styles of copper mineralisation occur at Nifty:

- 1. Oxide dominated mineralisation consisting of malachite, azurite, cuprite, and native copper which extends to depths of up to 100m below the surface.
- 2. Supergene secondary sulphide mineralisation occurs overlying the base of oxidation. This style of mineralisation is dominated by chalcocite and occurs typically between 100m and 200m below the surface.
- 3. Primary sulphides occur in quartz-dolomite altered carbonates and shales. The primary copper mineral is chalcopyrite with minor covellite and bornite. Pyrite is a common gangue mineral but only occurs with chalcopyrite on the margins of the deposit. The primary sulphide mineralisation is located mainly in the keel of the syncline.

Cyprium announced an updated Mineral Resource Estimate update (MRE) on 17 November 2021, where one model encapsulating the entire Nifty mineralisation was produced using all available information. This allowed a better assessment of the mineralisation that could provide future feedstock to a heap leach operation given that it is very likely that the heap leach or oxide component of recent estimates (by the previous owners) has not been updated since at least 2012.

Coincident drillhole planning was completed during the process to fill in gaps of sparse near-surface drilling over the deposit. The results of these drilling programmes will be included in an updated MRE during the first half in 2022.

Ore	Cut- Off		Measur	ed		Indicat	ed		Inferre	d		Total	
Source	%Cu	Ore Mt	Grade %Cu	Metal t Cu									
Oxide	0.4	1.1	1.2	12,300	0.3	1.1	3,300	0.2	0.9	1,700	1.6	1.1	17,300
Lower Saprolite	0.4	1.3	0.9	12,200	0.4	0.8	3,000	0.2	0.8	1,200	1.8	0.9	16,300
Transition	0.4	0.2	0.7	1,500	0.2	0.7	1,000	0.2	0.7	1,200	0.5	0.7	3,700
Chalcocite	0.4	4.3	1.2	53,800	2.3	1.2	28,400	1.4	1.2	16,100	8.0	1.2	98,300
Total Oxide	0.4	7.0	1.2	79,700	3.1	1.1	35,600	1.9	1.1	20,100	11.9	1.1	135,500
Sulphide	0.75	19.6	1.8	351,200	9.2	1.8	161,900	5.1	1.6	76,900	33.9	1.8	596,700
ΤΟΤΑΙ	L	26.5	1.6	431,000	12.3	1.6	197,500	7.0	1.5	97,100	45.9	1.6	732,200

# **Heap Leach Retreatment**

There is a compelling opportunity to reclaim and retreat the historic heap leach pads to extract the residual copper and value contained within the existing historic material first stacked in 1993 and ceased stacking in 2006. The heap leach retreat segment of the project restart is a significant source of copper feed to the SX-EW plant in conjunction with the heap leachable ore mined from the first phase of a return to open pit mining.

The Nifty heap leach operated with varying degrees of success from 1993 until early 2009 and during this time had three owners, Western Mining Corporation Ltd, Straits Resources Ltd and Aditya Birla Minerals Limited who between them produced 219,076 tonnes of copper metal as cathodes. From January 2009



until entering care and maintenance in November 2019, copper concentrate was produced for export to an Indian smelter.

Stacking of new ore onto the leach pads stopped during the latter part of 2006 and after this time, there was some ore rearrangement as the site personnel attempted to extract more copper from the early pads of the WMC era. Material was continuously leached until 2008 when it was deemed uneconomic to continue and final copper was stripped in early 2009. It was generally recognised at the time that the copper remaining on the heaps was potentially recoverable however the then owner was focused on producing a copper concentrate from the underground mine to feed its smelter located in India. The historic heap leach pads are generally regarded as a heterogeneous stockpile as there is little uniformity in the material stacked. There were approximately sixty individual pads formed and the results from metallurgical accounting produced from physical measurement, assay results and calculations estimate the current inventory of the historic heap leach pads to be:

17.16 Mt @ 0.53%Cu (~91Kt tonnes of copper metal)

To facilitate the retreat of the historic heaps, the remnant material will be relocated to newly constructed heap leach infrastructure located adjacent to the existing facilities. Material will be reclaimed using front end loaders to a self-contained mobile feeder/stacker unit feeding an overland conveyor transporting to a mobile screening unit to size all material to 20mm.

The sized, crushed, and screened material will be transferred to an agglomeration unit via a combination of overland and grasshopper conveyors. Once conditioned, the remnant material will then be moved to a radial stacker, again via a combination of overland and grasshopper conveyors, and stacked to a height of 6m from the front of the heap leach pad cell through to the rear of each cell in an uninterrupted pass.

# Mining and Ore Reserve Estimate

Open pit mining operations are planned to be re-established to provide heap leachable ores to the redeveloped existing heap leach pad. The original project commenced with open pit mining in 1993 and was focused on the relatively high-grade part of the oxide mineralisation but closed in 2006 when open pit economics became marginal and site focus was on the large and rapidly developing underground sulphide operation.

The costs, metallurgical recoveries, and copper pricing used in the optimisation to form the basis of a mine design has been based on analysis and test work completed for this study. Further inputs and information have been provided from Cyprium's in-house database constructed from previous and specific experience in evaluating and developing similar SX-EW copper projects elsewhere.

The open pit optimisations using Whittle software were carried out using only measured and indicated mineral resources in line with JORC (2012). Inferred Resources have not been included in the open pit design and will be subject to further drilling to convert to a measured and indicated mineral resource category. Most of the inferred category has resulted from a paucity of close-spaced drilling information and may be upgraded and hauled as ore to the processing circuit should results be favourable.

The planned mine operating philosophy adopts a staged approach via an initial oxide open pit that targets remnant oxide and transitional copper mineralisation before encountering increased volumes of secondary sulphides. This forms a key basis for the processing schedule where the copper mineral species is considered for the development of pad specific leaching curves.

The proposed mining sequence is best described as dividing the open pit into east and west cutbacks. The eastern cutback will be developed first to access higher grade ore near surface and will encroach into the influence of the existing underground subsidence zone. Further discrete phases and cutbacks will need to be developed in such a manner as to deal with any geotechnical stability issues in the subsidence zone to re-establish a stable berm batter configuration.

The optimum open pit shell is based on the maximum un-discounted operating cashflow which reached a depth of 10,085mRL or approximately 225m below surface. The chosen shell used for the detailed mine



plan contains 8.8Mt of process feed at 0.87% Cu for approximately 76.4kt of stacked recovered copper metal. Approximately 52.9Mt of waste is contained within this open pit shell which equates to a waste to ore stripping ratio of 6:0.

The overall slope angles within the proposed pit will vary between 30 - 38 degrees, similar to the historic open pit and reviews of the available structural and rock mass data indicates inter-ramp angles of up to 50 degrees may be possible within certain domains of the final excavation.

The planned operating areas are large enough to support two mining fleets directing waste and ore to distinctly separate facilities. The offices and facilities on site are sufficient to accommodate both Cyprium mining employees and the mining contractor.

#### **Metallurgy and Mineral Processing**

Over time, Nifty was established as a robust oxide and secondary sulphide heap leach operation capable of producing approximately 25,000tpa of copper metal as cathodes (LME Grade A with a purity of more than 99.999% copper metal) via SX-EW processing.

The initial heap leach project capacity was developed at 16,500tpa of Grade A LME copper cathode, which was subsequently expanded in two steps to 18,000 tpa. and then to 25,000 tpa.

The SX-EW plant will be refurbished with modern technological improvements, to return the Nifty operation to cathode production through the treatment of remnant oxides while at the same time using the considerable body of sulphide leaching experience from within the company to bring the total heap leaching process up to Cyprium's best practice operating systems.

The current mine plan treats only remnant copper rich mineralisation that has previously been mined and treated via SX-EW processing at Nifty. This Re-start Study only includes ore types that have previously been beneficiated on site.





The Nifty operation has demonstrated successful treatment of the mineralisation over a period of sixteen years. On this basis, metallurgical testwork is not required on the open pit oxide mineralisation as it is proven and well understood.

Cyprium commissioned ALS Metallurgy Services (ALS) to undertake a metallurgical study to evaluate aged heap leach samples collected during a trenching exercise completed at Nifty during the second quarter of 2021. A 650kg consignment of remnant heap leach pad samples packed into 210-litre plastic lined steel drums was first received at the independent laboratory in May 2021. The contents of the drums were agglomerated and loaded into Perspex columns to complete leaching tests where a testwork regime investigated the extraction potential of the remaining copper via a simulated heap leach process using various reagents as lixiviants.

The testwork targeted copper recoveries of 85%, recovery times of 360 days under actual production leaching conditions, reduced acid consumption and reduced polymer agglomerant consumption.

Four individual column tests (3x2m and 1x6m height) with specific individual objectives and test conditions were conducted during 2021. These test cells have returned results for the finalisation of a system of reagent addition to be used in the treatment of the remnant heap leach pads.

Optimisation testwork, currently underway, will enable a scalable solution to be designed for the agglomeration, curing, stacking and irrigation of the historic heap leach material based on this work. Initial results of the optimisation columns will result in reduced reagents consumptions from those already anticipated in this study. Further optimisation testwork will be conducted on new oxide ore via diamond core drilled in 2021 and currently in the laboratory.

There will be two leach pad circuits on site producing copper in solution to the plant namely, the rehandling, retreatment and stacking of the existing historic leach pads and the mining, crushing, agglomeration and stacking of newly mined oxide material from the expanded historical open pit.

# Water Supply

Nifty is located on the western margin of the Great Sandy desert in the East Pilbara region of Western Australia where climatic conditions are arid with highly variable rainfall, peaking between December and March, and dominated by tropical cyclones. Evaporation is high in the Nifty region, with average monthly evaporation exceeding average monthly rainfall in all months. However, during intense summer rain events, rainfall may exceed evaporation and therefore apart from cyclonic periods, summers are typically hot and dry, with cool mild winters.

There are several different hydrogeological environments in the vicinity of the Nifty operation that maintain water supplies for the operation. Two important sources for maintaining water supplies for operations are a fractured rock aquifer system, in weathered and altered shale, which is being dewatered and mined (Nifty Mine aquifer) and an alluvial aquifer (the Nifty Palaeochannel) to the east of the mine. A third water source is an alluvial aquifer (the '10K' aquifer) in sands 10 km southeast of the mine is used for potable water supply.

The first decade of operations at Nifty concerned open pit mining only and the dewatering was initially achieved using a combination of production bores (located in-pit and ex-pit), and in-pit sumps. However, the dewatering focus changed with the development of the underground mine in 2004 due to the need to drawdown groundwater for mining purposes rather than for the production of a steady supply of water matched to the needs of the project.

A water balance model was commissioned for the restart and redevelopment and a preliminary model has been completed to understand the existing supplies in the shorter term for planning purposes.



#### Infrastructure and Logistics

The Nifty site has extensive infrastructure in place and is commensurate with a remote operation located in the Northwest of Australia. The twenty-nine years since operations first commenced has seen this mine site embark on several phases of project development in direct relation to the ongoing development of the copper resource.

Each phase has necessitated the construction of new and additional support infrastructure to augment that already developed and often included the expansion and refurbishment of other older and more fundamental installations.

Nifty is accessed via its own unsealed road that it maintains, with the last government maintained road ceasing at Woodie Woodie, which is located 54km to the west, or via the on-site sealed all-weather airstrip that is rated for jet aircraft. There is a 400-person village on site, which is currently being refurbished and an upgrade to 4G communications facilities which is due to be completed by mid-March 2022.

Two significant milestones have improved logistics at Nifty since the commencement of operations in 1993. These are the completion of the Rippon Hills Road in 1999 and the installation of the Nifty Gas pipeline in 2005.

Most of the developed infrastructure has remained in place since the operation was placed into a care and maintenance regime during November 2019. Support facilities were generally left idle with minimal maintenance undertaken prior to Cyprium taking control of the asset at the end of March 2021.

Since acquiring the Nifty copper project, Cyprium instituted a site maintenance and refurbishment programme that was specifically targeted at key components of the SX-EW system and associated infrastructure required to support the recommissioning of the heap leach and SX-EW operation. This programme included a camp facilities refurbishment to meet the immediate and future needs of the site.

# **Project Development Schedule**





#### **Economic Analysis**

Onen Cut Ore mined	N 4+	0.0
Open Cut Ore mined	Mt	8.8
Re-treat ore tonnes stacked	Mt	17.1
Total ore stacked	Mt	25.9
Average Grade	%	0.65
Average Recovery	%	87.3
Copper Metal Cathode Production Capacity	ktpa	25.0
Copper Metal Cathode Produced	Kt	146.1
Copper Metal Cathode Produced	Mlbs	322.0
Life of Oxide Heap Leach Operation (post construction)	Years	6.3
Revenue	USD/lb	4.08
C1 Costs	USD/lb	1.91
C2 Costs	USD/lb	2.56
C3 Costs	USD/lb	2.82
Pre-production Capital Expenditure	AUDM	149.3
Operating Cash Flows (EBITDA)	AUDM	822.8
Free Cash Flows (EBIT)	AUDM	543.7
NPV Pre-Construction (after tax) @7% discount rate	AUDM	277.3
IRR (after tax)	%	37
Project payback post construction	Years	3.0

The pit optimisation only includes material from the measured and indicated category of the current Nifty Mineral Resource Estimate, that was released by Cyprium on 17 November 2021, which does not include any assay results from the Nifty west and southeast drilling programmes undertaken during 2021. The pit optimisation excludes inferred material.

Pre-operations capital expenditure is estimated at AUD149 million, and including working capital and other site costs, the project funding required is estimated at AUD193 million. The SX-EW annual production capacity is 25,000 tonnes per annum copper cathode and the oxide heap leach operation post construction life of mine is 6.3 years.

C1 operating costs are USD1.91/lbs and all in C3 costs are USD2.82/lbs, to provide a post capital free cash flows of AUD544 million, a post-tax Net Present Value of AUD277 million, an Internal Rate of Return of 37% and a project payback of 3 years.

Sensitivities	Base Case	Sensitivity	Cash Flow <sup>1</sup>	NPV <sup>2</sup>	IRR <sup>2</sup>
Cu Price	USD9,000/t	USD1,000	AUD195m	AUD101m	+12%
Cu Price		USD10,000/t	AUD1,947m	AUD379m	49%
AUD/USD FX AUD/USD FX	0.75	5% 0.7125	AUD92m AUD1,845m	AUD48m AUD325m	+6% 43%
C1 Costs C1 Costs	USD1.91/lbs	10% USD2.10/lb	AUD(82)m AUD903m	AUD(61)m AUD216m	(7)% 30%
Capital Costs Capital Costs	AUD279m	10%	AUD(28)m AUD307m	AUD(25)m AUD252m	(4)% 33%
<sup>1</sup> Pre-tax cash flows <sup>2</sup> After tax cash flows					



The project cash flows and forecast returns are very sensitive to the movement in the LME Copper price and AUD/USD FX rate which has been based on an LME Copper price of USD9,000 per tonne and an AUD/USD FX rate of 0.75. The LME Copper price has been regularly trading above USD10,000 per tonne during 2022 and the AUD/USD FX rate in a range of 0.70 - 0.74 during 2022, which at market current pricing provides considerable upside against the upwards operating and capital cost trends that the industry is currently experiencing.

# Opportunities

- 1. Only known significant near-term copper development project in Australia at present.
- 2. The open pit shape contains 1.2MT at 0.8% copper of inferred resources (9,600 copper metal tonnes insitu) that have the potential to provide extra copper tonnes to the heap leach. The cost of the material in this study classifies and costs that material as waste.
- 3. The drilling conducted by Cyprium and released to the market in late 2021 and early 2022 has not been included in the Mineral Resource Estimate and is expected to add copper tonnes to the inventory and convert existing copper metal classifications to higher confidence. This new estimate will be available in H1 2022.
- 4. Reagent consumptions are currently being optimised in the laboratory and so far, indications are good. The optimisation tests are being undertaken on a representative trench sample and high grade and low-grade composite sonic samples. A chalcopyrite sample is also being tested under the proposed regime. Results are expected in H1 2022. Further optimisation testwork will be conducted on new ore from the oxide pit via diamond core currently in the laboratory.
- 5. The sulphide project will extend the mine life substantial as either a sulphide heap leach operation or a concentrator operation. These studies have commenced and are currently in a design optimisation and metallurgical test work phase.



#### **Detailed Cost Breakdowns**

Heap Leach Pad Construction & Earthworks	AUDM		38.0
Supply Costs			
Concrete	AUDM	2.5	
Mechanical Equipment	AUDM	25.8	
Structural Steel	AUDM	1.3	
Piping, SPIs & Manual Valves Supply	AUDM	2.4	
Electrical Equipment	AUDM	19.9	
Buildings	AUDM	0.3	52.2
Freight	AUDM		3.5
Installation Costs			
Structural Mechanical & Piping	AUDM	10.1	
Preliminary & General	AUDM	2.9	
Commissioning	AUDM	0.7	13.7
Engineering			
Structural Mechanical & Piping	AUDM	3.2	
Electrical	AUDM	2.0	5.2
Owners Costs	AUDM		2.5
Direct Construction Expenditure	AUDM		115.1
Indirect Pre-operations Capital Expenditure			
Camp refurbishment and re-start study costs	AUDM	4.7	
Owners construction & commissioning general & administration	AUDM	13.9	
Pre-strip mining costs	AUDM	10.6	
Other sustaining capital expenditure	AUDM	5.0	34.2
Total Pre-operations Capital Expenditure	AUDM		149.3

Direct construction costs are AUD115 million for the establishment of heap leach pads and the refurbishment of the SX-EW processing plant. A further AUD34 million will be incurred to complete the AUD10 million camp refurbishment project, Cyprium development personnel and site administration costs, together with pre-strip mining activities.



# Sustaining Capital (Life of Oxide Pit)

Heap Leach Pad Construction & Earthworks	AUDM	39.5
Pre & Deferred stripping mining costs	AUDM	57.3
Crushing and conveyor costs	AUDM	25.8
Other sustaining capital expenditure	AUDM	7.2
Total Post Construction Sustaining Capital Expenditure	AUDM	129.8

Post operations sustaining capital expenditure requirements include construction of further heap leach pads, deferred stripping costs for open pit cutbacks, and crushing circuit and conveyors which are being acquired over a 3-year period in line with pad and cell construction schedule.

#### Revenue

Recovered Copper – Heap Leach Re-treat	Kt	77.3
Recovered Copper – Open Cut	Kt	68.8
Recovered Copper – Total	Kt	146.1
Copper Price	USD/t	9,000
Copper Price	USD/lb	4.08
Exchange Rate	AUD/USD	0.75
Copper Revenue – Heap Leach Re-treat	AUDM	927.5
Copper Revenue – Open Cut	AUDM	825.0
Copper Revenue – Total	AUDM	1,752.5

Revenue has been based on an LME Copper price of USD9,000 per tonne and an AUD/USD FX rate of 0.75 resulting in AUD1.75 billion of copper sales revenue over the oxide life of mine of 6.3 years.



#### **Operating Cost Estimates**

Mt		17.1
AUD/t		1.00
%		0.53
Kt		90.9
%		85
Kt		77.3
Mt		52.9
Mt		8.8
AUD/t		3.71
AUD/t		4.20
Waste / Ore		6.03
%		0.87
Kt		76.4
%		90
Kt		68.8
Kt		146.1
AUDM		17.2
AUDM		36.9
AUDM	196.2	
AUDM	(64.7)	131.5
AUDM		185.6
AUD/t		1,271
	AUD/t % Kt % Kt % Kt AUD/t AUD/t Waste / Ore % Kt % Kt Kt Kt Kt AUDM AUDM AUDM AUDM	AUD/t % Kt % Kt % Kt Mt AUD/t AUD/t AUD/t Waste / Ore % Kt % Kt % Kt % AUDM AUDM AUDM AUDM AUDM AUDM AUDM AUDM

The existing heap leach pads have been crushed and stacked so minimal mining costs are required to transfer this material to new heap leach locations.

The majority of the mining costs will be incurred on the open pit, which delivers 8.8 million tonnes of the 11.9 million tonnes mineral resource for crushing, agglomeration and stacking of heap leach pads. Waste material costs for a pre-strip and cutbacks have been capitalised for amortisation of the life of the oxide pit.



#### Variable Costs

Heap Leach Re-treat		
Stacked Copper	Kt	90.9
Recovery	%	85
Recovered Copper	Kt	77.3
Crushing	AUDM	9.1
Agglomeration, Stacking & Heap Leach	AUDM	173.1
Solvent Extraction	AUDM	8.9
Electrowinning	AUDM	1.6
Power	AUDM	20.7
Total Variable Costs – Heap Leach Re-treat	AUDM	213.4
Cost per tonne produced	AUD/t	2,761
Open Cut		
Staked Copper	Kt	76.4
Recovery	%	90
Recovered Copper	Kt	68.8
Crushing	AUDM	11.4
Agglomeration, Stacking & Heap Leach	AUDM	82.1
Solvent Extraction	AUDM	7.9
Electrowinning	AUDM	1.5
Power	AUDM	18.4
Total Variable Costs – Open Cut	AUDM	121.3
Cost per tonne produced	AUD/t	1,764
Total Variable Costs	AUDM	334.7
Cost per tonne produced	AUD/t	2,292

Variable operations costs include crushing, agglomeration, stacking and irrigation of the heap leach pads, along with the operating of the SX-EW plants and power supplied by a gas fuelled turbine. Agglomeration of the heap leach re-treat is just over double than the fresh open pit due the quantity of material stacked being approximately double at 17.1 million tonnes of re-treat material at a lower grade than the 8.8 million tonnes of ore sourced from the open pit.



# Fixed Costs

Full Time Cyprium Employees – steady state		
General Management		10
Mining / Crushing Stacking		17
Maintenance & Engineering		59
Processing		33
Technical Services (incl Geo & Mining)		18
OHS		6
Environment		3
Commercial		9
Community		4
Projects		5
Total Full Time Cyprium Employees		164
Pre-production Fixed Costs expensed	AUDM	22.3
Site Based Salaries (incl. on-costs)	AUDM	163.1
Recruitment	AUDM	1.5
Flights	AUDM	28.2
Catering	AUDM	19.4
Freight	AUDM	10.4
Insurance	AUDM	19.9
Power	AUDM	4.5
Production Fixed Costs	AUDM	20.2
Other General and Administration	AUDM	11.1
Total Fixed Costs	AUDM	300.6
Cost per tonne produced	AUD/t	2,058

Just over half of the fixed costs relate to site operational and support personnel costs with the remainder being incurred for flights, catering, onsite metallurgical laboratory, insurance and other site support costs. Non-construction related pre-operations fixed costs have been expensed.



#### **Royalties and Realisation Costs**

Royalties			
WA State Gov't Royalty - Cathode	%		2.5
South 32 Royalty	%		1.5
South 32 Production Hurdle & Historical production	t	800k	715k
Stacked Copper	Kt		167.3
Recovered Copper – Total	Kt		146.1
Royalty Costs			
WA State Gov't Royalty - Cathode	AUDM		42.4
South 32 Royalty	AUDM		10.6
Total Royalty Costs	AUDM		53.0
Realisation Costs			
Freight to Port	AUDM		17.1
Port Logistics and Handling	AUDM		15.9
International Freight	AUDM		14.8
Assay Costs	AUDM		8.0
Total Realisation Costs	AUDM		55.8
Total Royalty & Realisation Costs	AUDM		108.8
Cost per tonne produced	AUD/t		745

State government royalties for copper cathode are payable at 2.5% of the sales proceeds (5% for copper concentrates). There is also a third-party royalty agreement payable at 1.5% of the sales proceeds of Nifty which exceeds 800,000 tonnes of contained copper over the life of mine, which is 714,908 tonnes of contained copper up to the mine being placed on care and maintenance in November 2019.

Realisation costs include freight costs from site to customers located in Asia, third party assay costs, port logistics and handling charges.



	Key Project Metrics
	Mineral Resource
	- Oxide
	- Sulphide
	- Total
$(\bigcirc)$	- Oxide Contained Copper
	- Sulphide Contained Copper
(15)	- Total Contained Copper
	Open Cut Waste mined
$(\mathcal{O}\mathcal{O})$	Open Cut Ore mined
	Re-treat ore tonnes stacked
	Total ore stacked
	Average Grade
adi	Average Recovery
	Copper Metal Cathode Production Capacity
	Copper Metal Cathode Produced
$\bigcirc$	Copper Metal Cathode Produced
	Life of Oxide Heap Leach Operation (post construction)
	Revenue
(15)	C1 Costs
	C2 Costs
	C3 Costs
	M1 Margin
	M2 Margin
	M3 Margin
ΠΠ	Pre-production Capital Expenditure
	Operating Cash Flows (EBITDA)
	Free Cash Flows (EBIT)

- OxideMt11.9· SulphideMt33.9- TotalMt45.9- Oxide Contained Copper1.1%Kt135.5· Sulphide Contained Copper1.8%Kt596.7- Total Contained Copper1.6%Kt732.2Open Cut Waste minedStrip ratio 6.0Mt8.8Re-treat ore tonnes stackedMt8.8Re-treat ore tonnes stackedMt25.9Average GradeMt25.9Average Grade%0.65Average Grade%0.65Average Recovery%87.3Copper Metal Cathode Production CapacityKtpa25.0Copper Metal Cathode ProducedMlbs322.0Life of Oxide Heap Leach Operation (post construction)WISD/Ib4.08Cl CostsUSD/Ib4.08Cl CostsUSD/Ib2.56C3 CostsUSD/Ib2.56C3 CostsUSD/Ib2.56M1 Margin%59M3 Margin%45Pre-production Capital ExpenditureAUDM45.9M3 Margin%45Pre-production Capital ExpenditureAUDM822.8Free Cash Flows (EBITDA)AUDM822.8Free Cash Flows (EBITDA)AUDM633.7NPV Pre-Construction (after tax) @7% discount rate%37Prolect pawback post constructionYears3.0	Mineral Resource			
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- Oxide Contained Copper1.1%Kt135.5- Sulphide Contained Copper1.8%Kt596.7- Total Contained Copper1.6%Kt732.2Open Cut Waste minedStrip ratio 6.0Mt52.9Open Cut Ore minedKt17.18.8Re-treat ore tonnes stackedMt25.9Average GradeMt25.9Average GradeMt25.9Average RecoveryKt36.3Copper Metal Cathode ProducedKt46.1Copper Metal Cathode ProducedKt146.1Copper Metal Cathode ProducedMilbs322.0Life of Oxide Heap Leach Operation (post construction)Years6.3CostsUSD/lb4.08C1 CostsUSD/lb1.91C2 CostsUSD/lb2.56G3 CostsUSD/lb2.56M1 MarginM59M3 MarginM59M3 MarginM45Pre-production Capital ExpenditureAUDM419.3Operating Cash Flows (EBITDA)AUDM343.7NPV Pre-Construction (after tax) @7% discount rate%37IRR (after tax)%37	- Sulphide		Mt	33.9
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Open Cut Waste minedStrip ratio 6.0Mt52.9Open Cut Ore minedMt8.8Re-treat ore tonnes stackedMt17.1Total ore stackedMt25.9Average Grade%0.65Average Recovery%87.3Copper Metal Cathode Production CapacityKtpa25.0Copper Metal Cathode ProducedKt146.1Copper Metal Cathode ProducedMlbs322.0Life of Oxide Heap Leach Operation (post construction)Years6.3RevenueUSD/Ib4.08C1 CostsUSD/Ib1.91C2 CostsUSD/Ib2.56C3 CostsUSD/Ib2.56M Margin%113M2 Margin%59M3 Margin%45Pre-production Capital ExpenditureAUDM422.8Free Cash Flows (EBITDA)AUDM543.7NPV Pre-Construction (after tax) @7% discount rate%37IRR (after tax)%37	- Sulphide Contained Copper	1.8%	Kt	596.7
Open Cut Ore minedMt8.8Re-treat ore tonnes stackedMt17.1Total ore stackedMt25.9Average Grade%0.65Average Recovery%87.3Copper Metal Cathode Production CapacityKtpa25.0Copper Metal Cathode ProducedKt146.1Copper Metal Cathode ProducedMlbs322.0Life of Oxide Heap Leach Operation (post construction)Years6.3RevenueUSD/lb4.08C1 CostsUSD/lb1.91C2 CostsUSD/lb2.56C3 CostsUSD/lb2.82M1 Margin%113M2 Margin%59M3 Margin%45Pre-production Capital ExpenditureAUDM822.8Free Cash Flows (EBITDA)AUDM543.7NPV Pre-Construction (after tax) @7% discount rate%37	- Total Contained Copper	1.6%	Kt	732.2
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Copper Metal Cathode ProducedMlbs322.0Life of Oxide Heap Leach Operation (post construction)Years6.3RevenueUSD/lb4.08C1 CostsUSD/lb1.91C2 CostsUSD/lb2.56C3 CostsUSD/lb2.82M1 Margin%113M2 Margin%59M3 Margin%45Pre-production Capital ExpenditureAUDM149.3Operating Cash Flows (EBITDA)AUDM543.7NPV Pre-Construction (after tax) @7% discount rate%37IR (after tax)%37	Copper Metal Cathode Production Capacity		Ktpa	25.0
Life of Oxide Heap Leach Operation (post construction)Years6.3RevenueUSD/lb4.08C1 CostsUSD/lb1.91C2 CostsUSD/lb2.56C3 CostsUSD/lb2.82M1 Margin%113M2 Margin%59M3 Margin%45Pre-production Capital ExpenditureAUDM822.8Free Cash Flows (EBITDA)AUDM543.7NPV Pre-Construction (after tax) @7% discount rate%37IR (after tax)%37	Copper Metal Cathode Produced		Kt	146.1
construction)Image: construction of the sector	Copper Metal Cathode Produced		Mlbs	322.0
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IRR (after tax) % 37				
	Project payback post construction		Years	3.0



The pit optimisation only includes material from the measured and indicated category of the current Nifty Mineral Resource Estimate, that was released by Cyprium on 17 November 2021, which does not include any assay results from the Nifty west and southeast drilling programmes undertaken during 2021.

Pre-operations capital expenditure is estimated at AUD149 million, and including working capital and other site costs, the project funding required is AUD193 million. The SX-EW annual production capacity is 25,000 tonnes per annum copper cathode and the oxide heap leach operation post construction life of mine is 6.3 years.

Revenue has been based on an LME Copper price of USD9,000 per tonne and an AUD:USD FX rate of 0.75, C1 operating costs are USD1.91/lbs and all in C3 costs are USD2.82/lbs, to provide a free cash flows after capital expenditure of AUD544 million, a post-tax Net Present Value of AUD277 million, an Internal Rate of Return of 37% and a project payback of 3 years.

# **Cash Flows**

Revenue	AUDM	1,752.5
Total operating costs	AUDM	(820.9)
Royalties & Realisation	AUDM	(108.8)
Operating Cash Flows	AUDM	822.8
Direct Construction Expenditure	AUDM	(115.1)
Other sustaining capital expenditure	AUDM	(34.2)
Pre-operations Capital Expenditure	AUDM	(149.3)
Post Construction Sustaining Capital Expenditure	AUDM	(129.8)
Total Capital Expenditure	AUDM	(279.1)
Free Cash Flows after Capital Expenditure	AUDM	543.7
Rehabilitation costs	AUDM	(14.0)
Sale of assets	AUDM	100.0
Net Pre-tax Cash Flows	AUDM	629.7
Income tax	AUDM	(187.8)
Net Cash Flows	AUDM	441.9

Operating cash flows are estimated with an M1 margin of 113%, generating operating cash flows of AUD823 million and free cash flows after capital expenditure of AUD544 million. After taking into consideration the sale of the surplus plant and equipment, mine rehabilitation activities, tax losses and income taxes payable, the Nifty Restart Project net cash flows are estimated at AUD442 million.



# Key Risks

Please note that the Restart Study referred to in this announcement involves certain risks and uncertainties. The future performance of the Company, including its ability to implement proposals coming out of the Restart Study, will be influenced by a range of factors, many of which are largely beyond the control of the Company and the Directors. By way of example, some of the key risks specifically related to the Restart Study include the nature and extent of the impact of COVID-19 on the forecasts detailed in the Restart Study, the ability of the Company to secure sufficient labour as required to implement its proposals, and the ability of the Company to secure the permits/approvals outlined in this announcement in a timely manner.

# This ASX announcement was approved and authorised by the Board on Cyprium Metals Limited.

# For further information:

Barry Cahill Managing Director

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Follow the Company developments through our website and social media channels:



# **Competent Person**

The information in this report that relates to the estimation and reporting of the Nifty Mineral Resource estimate dated 16 November 2021 is based on and is an accurate representation of the recent work completed by CSA Global Pty Ltd that has been reviewed and compiled by Mr. Terry Burns who is a Fellow and Chartered Professional of the Australasian Institute of Mining and Metallurgy (107527). Mr. Burns is currently the Study Manager for the Nifty Restart on behalf of Cyprium Metals Limited, in which he is also a shareholder. Mr. Burns has sufficient experience which is 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 (CP). Ms Felicity Hughes has also compiled the work for CSA Global and is an Associate of CSA Global Pty Ltd and a Member of the Australasian Institute of Mining and Metallurgy (106498). Ms. Hughes has sufficient experience which is relevant to the activity which she is undertaking to qualify as a Competent Person which is relevant to the style of deposit under consideration and type of deposit under consideration and to the activity which she is undertaking to qualify as a Competent Person (CP). Ms. Hughes and Mr. Burns both consent to the inclusion in the report of the matters based on this information in the form and context in which it appears.



# **About Cyprium Metals Limited**

Cyprium Metals Limited (ASX: CYM) is an ASX listed company with copper projects in Australia. The Company has a highly credentialed management team that is experienced in successfully developing sulphide heap leach copper projects in challenging locations. The Company's strategy is to acquire, develop and operate mineral resource projects in Australia which are optimised by innovative processing solutions to produce copper metal on-site to maximise value.

The Company has projects in the Murchison and Paterson regions of Western Australia that is host to a number of base metals deposits with copper and gold mineralisation.

#### **Paterson Copper Projects**

This portfolio of copper projects comprises the Nifty Copper Mine, Maroochydore Copper Project and Paterson Exploration Project.

The Nifty Copper Mine ("Nifty") is located on the western edge of the Great Sandy Desert in the north-eastern Pilbara region of Western Australia, approximately 330km southeast of Port Hedland. Nifty contains a 2012 JORC Mineral Resource of 732,000 tonnes of contained copper <sup>i</sup>. Cyprium is focussed on a heap leach SX-EW operation to retreat the current heap leach pads as well as open pit oxide and transitional material. Studies will investigate the potential restart of the copper concentrator to treat open pit sulphide material.

The Maroochydore deposit is located ~85km southeast of Nifty and includes a shallow 2012 JORC Mineral Resource of 486,000 tonnes of contained copper <sup>ii</sup>. Aeris Resources Limited (ASX: AIS, formerly Straits Resources Limited) holds certain rights to "buy back up to 50%" into any proposed mine development in respect of the Maroochydore Project, subject to a payment of 3 times the exploration expenditure contribution that would have been required to maintain its interest in the project.

An exploration earn-in joint venture has been entered into with IGO Limited on ~2,400km<sup>2</sup> of the Paterson Exploration Project. Under the agreement, IGO is to sole fund AUD32 million of exploration activities over 6.5 years to earn a 70% interest in the Paterson Exploration Project, including a minimum expenditure of AUD11 million over the first 3.5 years. Upon earning a 70% interest, the Joint Venture will form and IGO will free-carry Paterson Copper to the completion of a pre-feasibility study (PFS) on a new mineral discovery.

# **Murchison Copper-Gold Projects**

Cyprium has an 80% attributable interest in a joint venture with Musgrave Minerals Limited (ASX: MGV) at the Cue Copper-Gold Project, which is located ~20km to the east of Cue in Western Australia. Cyprium will freecarry the Cue Copper Project to the completion of a definitive feasibility study (DFS). The Cue Copper-Gold Project includes the Hollandaire Copper-Gold Mineral Resources of 51,500 tonnes contained copper <sup>iii</sup>, which is open at depth. Metallurgical test-work has been undertaken to determine the optimal copper extraction methodology, which resulted in rapid leaching times (refer to 9 March 2020 CYM announcement, "Copper *Metal Plated*", https://cypriummetals.com/copper-metal-plated/).

The Nanadie Well Project is located ~650km northeast of Perth and ~75km southeast of Meekatharra in the Murchison District of Western Australia, within mining lease M51/887.

The Cue and Nanadie Well Copper-Gold projects are included in an ongoing scoping study, to determine the parameters required to develop a copper project in the region, which provides direction for resource expansion work.

<sup>&</sup>lt;sup>i</sup> Refer to CYM ASX announcement dated 17 November 2021 "Updated Nifty Copper Mineral Resource Estimate"

<sup>&</sup>lt;sup>ii</sup> Refer to MLX ASX announcements: 10 March 2020, "Nifty Copper Mine Resource Update" and 18 August 2016, "Annual Update of Mineral Resources and Ore Reserves"

iii Refer to CYM ASX announcement: 29 September 2020, "Hollandaire Copper-gold Mineral Resource Estimate"





Cyprium Metals project locations