



## Orion Minerals

ASX/JSE RELEASE: 28 July 2022

# June 2022 Quarterly Activities Report

### HIGHLIGHTS

- ▶ Key funding milestone achieved for the Prieska Copper-Zinc Project in the Northern Cape with a US\$87m funding package negotiated with Canadian streaming and royalty company Triple Flag to underpin the early production strategy announced last Quarter.
- ▶ Outstanding high-grade results received from in-fill drilling of the +105 Level Crown Pillar, supporting the early production strategy and making early mining, via open pit, increasingly attractive. Significant assays received to date include:
  - 7.46m at 9.24% Cu, 0.19% Zn, 0.44g/t Au and 17.46g/t Ag in OCOU164; and
  - 12.53m at 4.89% Cu, 0.04% Zn, 0.51g/t Au and 15.12g/t Ag in OCOU155.
- ▶ Permitting, metallurgical test work, mine and infrastructure design and community engagement activities progressed at the Okiep Copper Project in the Northern Cape.
- ▶ Exciting value-add beneficiation opportunity being evaluated after Orion secured an exclusivity agreement with Stratega Metals for the development of a specialist battery product refining facility in the Northern Cape using Stratega's licensed refining technology.
- ▶ The Stratega/TCM technology offers the potential to increase both metal recovery and the payability of metals produced in concentrate from polymetallic sulphide ores, such as Orion's Jacomynspan Nickel-PGE Project, Prieska Copper-Zinc Project and Okiep Copper Project.
- ▶ Capital raising commenced in June 2022:
  - Three-tranche placement to sophisticated and professional investors to raise up to \$20 million at 2.0 cents per share (being ZAR22 cents);
  - Committed funds for Tranche 1 and Tranche 2 total \$6 million, with commitments for Tranche 3 currently being progressed. Due to the downturn in global capital markets since the Company went into a trading halt on 10 June 2022, numerous potential participants have requested additional time to consider their involvement;
  - Together with other funding sources, the capital raise will put Orion in a strong position to access the recently announced US\$87 million funding package from Triple Flag Precious Metals to underpin the early production strategy for the flagship Prieska Copper-Zinc Mine; and
  - Funds to be used principally to progress mine dewatering, complete early production feasibility studies, battery precursor product production test work and continued exploration at Orion's portfolio of advanced base metal projects in South Africa.
- ▶ In addition to the capital raising, a Share Purchase Plan is offered to provide eligible shareholders with the opportunity to subscribe for new Shares in Orion at the same offer price as the Shares issued under the capital raising.

### **Orion's Managing Director and CEO, Errol Smart, said:**

"The June Quarter was another busy and productive period for Orion Minerals as we continued to work hard on several fronts to fast-track our two key South African base metals hubs through financing, development and into operation.

"Notwithstanding the extremely volatile and difficult conditions in global financial markets during the Quarter – and the significant short-term pull-back in commodity prices – we believe that Orion remains well placed to realise our ambition of becoming a fully-integrated mining and processing business that produces premium metal products with strong ESG credentials that are certified from point-of-source to market. The quality of our assets positions us to be a key supplier of future-facing metals for the impending global energy transition.

"Importantly, we achieved a major funding milestone for our flagship Prieska Copper-Zinc Project during the Quarter after successfully negotiating a US\$87 million funding package with the leading Canadian streaming and royalty finance company, Triple Flag. We have developed a strong working relationship with Triple Flag underpinned by a shared commitment to excellence in ESG, community engagement and the development of a new generation of mining projects that will deliver significant benefits for the future of South Africa.

"We have also continued to progress the capital raising initiated towards the end of the Quarter, and I would like to take this opportunity to thank existing and new investors who have supported this initiative, particularly considering the events that have unfolded in global financial markets since we embarked on the capital raising.

"The placement is being undertaken in three tranches to allow investors with whom we have had positive engagement in recent weeks some additional time to consider their participation. In addition, we're offering a Share Purchase Plan to allow our loyal existing shareholders to participate at the same offer price as the Shares issued under the Placement.

"The proceeds of the capital raising will allow us to complete the early mining feasibility studies and commence mine dewatering, which we consider the most important next step in the development of the Prieska Project.

"On the project development front, the Orion team continued to re-evaluate the Prieska Project development schedule to assess the potential to bring forward production – even on a reduced scale initially – at Prieska, as announced last Quarter. This could deliver a major breakthrough for the Project.

"Investigations into this early production scenario and the potential to extract remnant pillars have progressed well, with outstanding results received during the Quarter from in-fill drilling of the +105 Level Crown Pillar. Importantly, the grades intersected to date mostly exceed that of the average grade of the standing Inferred Resource estimate, making the early start of mining via an open pit an increasingly attractive opportunity.

"During the Quarter, we also advanced our beneficiation investigations by securing exclusive access to what we believe could be game-changing refining technology for the production of battery metal salts and fine carbonyl powders.

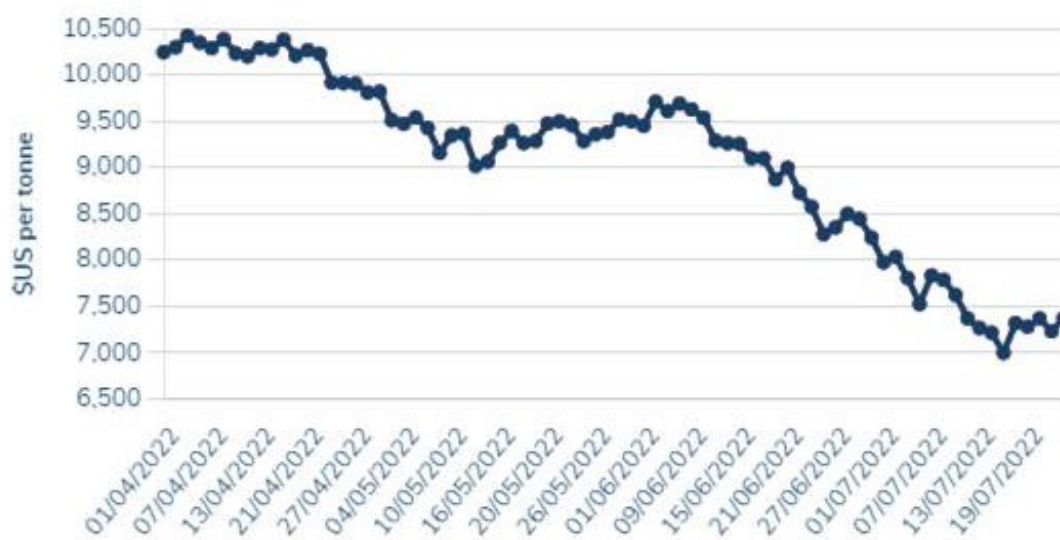
"Our agreement and earn-in right on the development of a refining facility in the Northern Cape comes as these products all experience surging demand within the burgeoning battery manufacturing sector. We are thrilled about this strategic partnership since the battery materials sector is a key focus for Orion due to its strong growth outlook and its pivotal role in driving reduced global carbon emissions."

### **Commodity Markets**

Recession fears, war in Europe, interest rate hikes and Chinese lockdowns all contributed to declining base metal prices during the Quarter. Copper – which is widely regarded as a barometer for global economic activity – peaked in March 2022 but has since been swept along by the bearish sentiment that caused all base metals prices to fall sharply towards the end of the June 2022 Quarter. Metal prices have since stabilised and analysts are projecting a recovery over coming months.

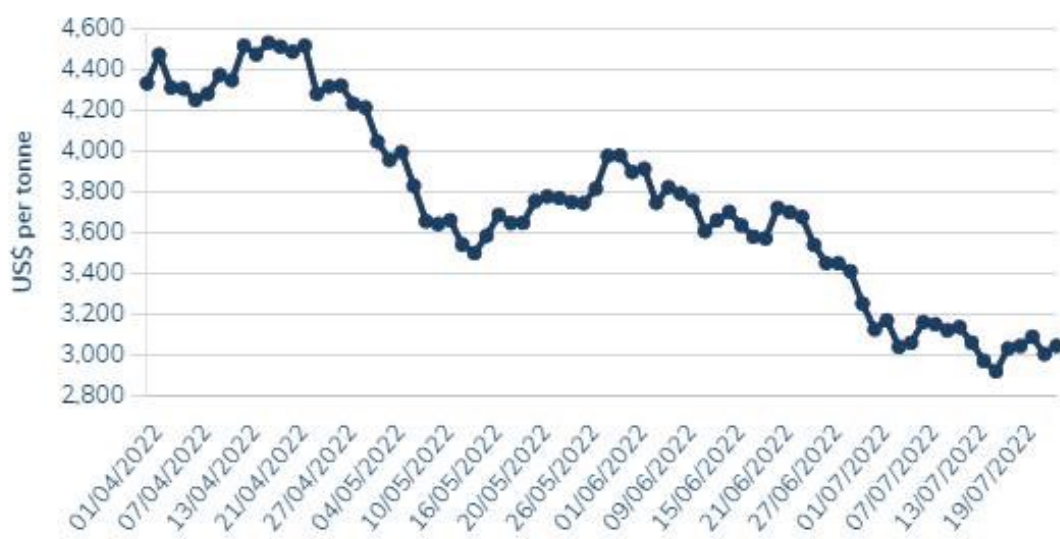
While zinc and nickel were not immune to the commodity price sell-off, the nickel market appears to have stabilised following the March 2022 “short-squeeze” price spike which resulted in a week-long suspension of nickel trading on the LME.

#### LME COPPER PRICES APRIL 2022 – JULY 2022



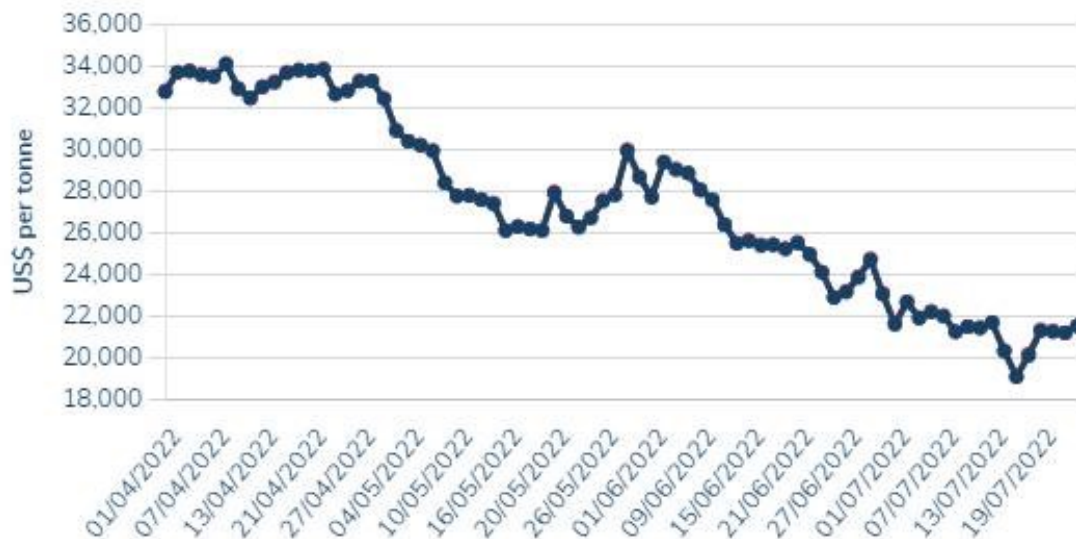
Source: London Metal Exchange

#### LME ZINC PRICES APRIL 2022 – JULY 2022



Source: London Metal Exchange

### LME NICKEL PRICES APRIL 2022 – JULY 2022



Source: London Metal Exchange

### Longer-Term Outlook Remains Strong

While prices fell during the Quarter, inventories of most metals also continued to fall sharply during the Quarter, reinforcing the longer-term robust outlook which is underpinned by surging demand for renewable energy applications as the global energy transition gathers pace. For example, LME copper inventories fell by 52%, zinc by 58% and nickel by 35% in the June 2022 Quarter.

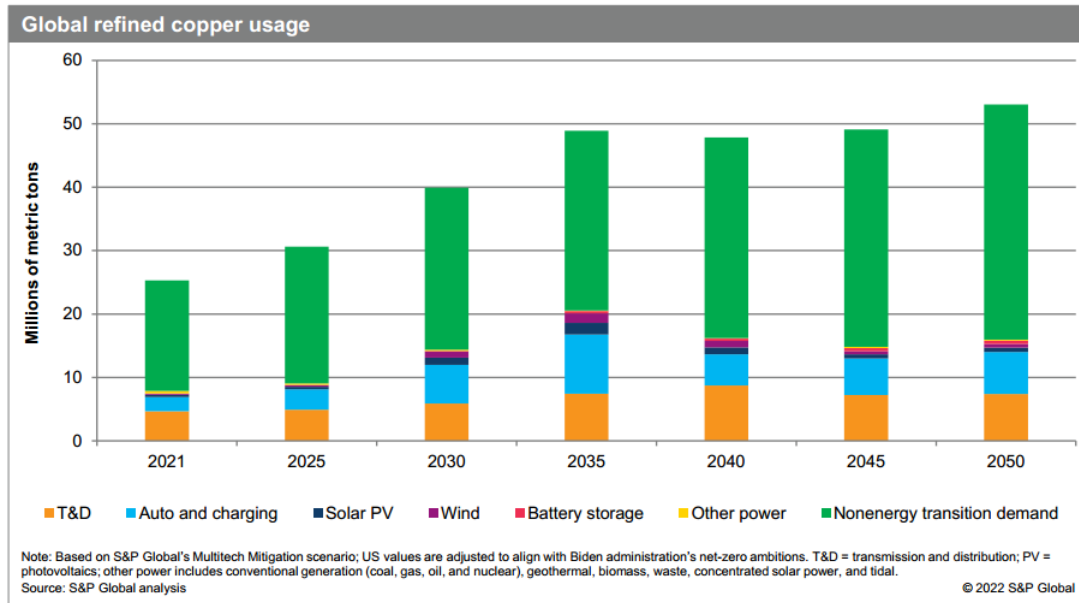
Importantly, while metal prices fell to their lowest values in nearly two years, they did in fact decline to a value above the metal prices used in Orion's 2020 Bankable Feasibility Study (**BFS-20**) for the Prieska Copper-Zinc Mine (**PCZM**). Orion's BFS-20 included metal price assumptions of US\$6,680/tonne Copper and US\$2,337/tonne Zinc, below the recent low prices of US\$6,998/tonne Copper and US\$2,920/tonne Zinc.

Vanessa Davidson, Director of copper research and strategy at the CRU Group, told delegates at the Prospectors and Developers' Association of Canada (PDAC) Conference that, in addition to very low industry stocks, copper projects were taking longer to develop due to stringent ESG requirements, more complex product characteristics and greater stakeholder demands. Acknowledging the growing demand for copper to power the green-energy transition, she said the world will require 5.3 million tonnes per annum (**Mtpa**) more copper by 2030, assuming a 2.1% per annum global growth rate.

This view was reinforced by S&P Global in an extensive report on the outlook for copper that was released on 15 July 2022. The key takeaway from the S&P report is a prediction that global copper demand will double from the current level of 25Mtpa to 50Mtpa by 2035, given its essential role in the electrification of the world and the global push for net-zero emissions by 2050.

S&P concluded that the push for net-zero could be "short-circuited" unless copper supply steps up in a meaningful way, with the forecaster estimating that another 25 Escondida-sized copper mines will be needed to meet the demand surge over the next decade and a half.

## S&P Forecast Global Copper Refined Usage – Driven by the Energy Transformation



Source: S&P Global – The Future of Copper Report, July 2022

### Impact on Capital Raising

On 22 June 2022, Orion announced a capital raising to underpin its Early Production Strategy at the flagship Prieska Copper-Zinc Project (**Prieska Project**). Thanks to the support of existing and new investors, the Company has received firm commitments for the first two tranches (~\$6 million) of a three-tranche placement targeting up to \$20 million at an issue price of 2.0 cents (being ZAR22 cents) per fully paid ordinary share (**Share**) and, in respect of the first two tranches, the issue of one option for every two Shares issued (exercise price of 2.5 cents (being ZAR27.5 cents) and an expiry date of 30 June 2023).

As evident in the graphs above, extreme volatility has been experienced in global commodity markets over recent months. Global financial markets have also been in turmoil since the Company entered into a trading halt for the capital raising on 10 June 2022. This has resulted in the capital raising being undertaken in three tranches, to provide additional time for potential participants in the third tranche to consider their involvement. Discussions with potential participants in Tranche 3 are continuing.

Considering the volatile and uncertain global economic and investment outlook, Orion is implementing prudent cost containment measures across the business.

A successful completion of the capital raising, together with other funding sources, will put the Company in a strong position to progress towards development of its key near-term production assets in the second half of 2022, helping to realise its vision of becoming a fully-integrated producer of future-facing metals in South Africa's Northern Cape Province.

The Company's key focus remains on commencement of mine dewatering and the completion of feasibility studies for the PCZM Early Production Scenario, progress the Feasibility Study on the Okiep Copper Project, the Company's second advanced near-term production asset in the Northern Cape and undertaking battery precursor product production test work on Jacomynspan nickel-copper-cobalt PGE Project, its third key asset in the Northern Cape.

In addition to working closely with Triple Flag, the Company is also continuing to progress discussions with banks, leading development financing agencies, and other financing institutions, in relation to funding the development of the fully permitted PCZM. Importantly, very good progress towards a funding package has been made recently following an extended period of due diligence and negotiations with a leading development financing agency.

Refer to the Corporate Section, for additional information in relation to the Capital Raising and funding.

## Operations Report

### Health and Safety, Environmental Management and Community Engagement

#### Health and Safety

No injuries were recorded during the Quarter. The hours worked for the Quarter and financial year to date are shown below:

**Table 1: Hours worked at the Group's Areachap and Okiep Copper Projects (South Africa).**

Category of Work	Hours Worked	
	Quarter	FY2022 Total
Exploration	31,361	82,081
Mine Re-Entry	11,679	32,250
Contractors	15,315	76,513
<b>Total</b>	<b>58,355</b>	<b>190,844</b>

The Lost-Time Injury Frequency Rate (**LTIFR**) per 200,000 hours worked is **0** for the June 2022 Quarter.

The Company continues to manage the risks from the COVID-19 pandemic in the workplace in line with government and industry guidelines. One COVID-19 positive case was reported during the Quarter, and the employee did not require hospitalisation.

The State of Disaster put in place in 2020 to curb COVID-19 infections was lifted by the South African Government as of 5 April 2022. With the pandemic now managed in terms of the National Health Act, the Department of Health issued regulations for the management of COVID-19 on 4 May 2022. As of 22 June 2022, the regulations regarding mask mandates, gatherings and border checks were repealed.

Orion continues to comply with all government regulations and industry guidelines in line with these changes.

#### Community and Stakeholder Engagement

##### Prieska Copper-Zinc Mine (PCZM)

##### Task Team Progresses Community Participation Framework for PCZM

The Task Team, formed after the community Bosberaad meeting in October 2021, has the responsibility of developing an implementation and monitoring plan for maximising host community (Siyathemba Municipality and Vanwyksvlei) employment and procurement. Aspirational targets have been set for 50% local employment, 30% local procurement and 40% contracting opportunities at PCZM.

The Task Team held breakaway meetings during the Quarter to focus on training and development and procurement at the mine. Feedback and progress from the meetings were presented at the Orion Siyathemba Stakeholder Engagement Forum (SEF). The Task Team is exploring opportunities to leverage Sector Educational and Training Authorities (SETAs) funding and training opportunities for the host community.

The Task Team and local businesses were provided with detailed information on PCZM's anticipated procurement requirements for the construction phase of the mine for analysis and further discussion.

##### Winner – Junior ESG Award for Enhanced Labour Standards

Orion was awarded the Junior ESG Award for Enhanced Labour Standards at the Investing in Africa Mining Indaba conference in Cape Town in May 2022, for establishing and promoting fair treatment and contributing to skills development in the local communities.



These awards highlight junior mining companies that excel in making a positive impact in the areas of Environmental, Social, and Governance (**ESG**) and recognise Orion's work in preparing host communities for the renewal of the mining industry in the Northern Cape province. This is the second major ESG award that has been awarded to Orion. The Company received the AAMEG (The Australian - Africa Minerals & Energy Group) Emerging ESG Leader Award in November 2020.

#### Photography for Local Youth Day Celebrations

To celebrate Youth Day on 16 June 2022, the Siyathemba Local Municipality held the second annual Youth Imbizo, along with various stakeholders including Local Government, the Pixley Ka Seme District Municipality, the Department of Sports Arts and Culture, and the Small Enterprise Development Agency (Seda). During the celebrations, youth from the community were able to share their views on the challenges they face and provide input into a Proposed Youth Development Plan to be tabled before the Council of Siyathemba. Orion sponsored the photographer for the day, while the Mulilo Community Trust funded the refreshments for the event.

#### Investigating the Establishment of a Siyathemba Community Radio Station

Orion is investigating the establishment of a community radio station, which would ultimately be run by the community. The Company has invited the regulatory body, the Independent Communications Authority of South Africa (ICASA), to conduct a workshop in Prieska to discuss the process of applying for a community radio station broadcasting licence.

#### Community Engagement at the Okiep Copper Project (**OCP**)

During the Quarter, the Nama Khoi Local Municipality endorsed the revised Social Labour Plan (**SLP**) which forms part of the Flat Mines (**SAFTA**) mining right application. The SLP sets out the local economic development projects and training commitments the Company will make to its employees and host communities with respect to this project and clears the way for the DMRE to grant the right.

Orion considers its relationships with local communities to be vital to the success of its projects and has also established the Nama Khoi Stakeholder Engagement Forum to exchange information and help outline a community participation framework. The first meeting of the Orion Nama Khoi Stakeholder Engagement Forum was held on in June 2022, with participation from all the local Ward Committees, the Local and District Municipalities and Orion management.

### **Environmental Management**

There was one environmental incident recorded during the Quarter. This was related to an oil spill incident from drilling activities at the Prieska Project. The incident was remedied and continues to be monitored.

At the Okiep Copper Project monthly dust fallout monitoring has been added to groundwater monitoring and compliance audits as part of pre-mining measurements.

### **Green Metals and Green Energy**

Orion's priority is developing its projects in a manner that promotes green production. In this endeavour, Orion has continued to advance discussions on collaborating with the Central Energy Corporation (**CENEC**) and juwi Renewables South Africa Pty Ltd, to establish renewable energy supply for the power requirements of mining operations at the Prieska Project. CENEC continues to advance its Prieska Power Reserve™ Project that seeks to establish a hydrogen production facility in the region, powered by renewable energy sources. The use of renewable energy at the Prieska Project has the potential to significantly reduce mine operating costs, with recent bids by South African renewable energy providers returning an average cost of just ZAR0.473 per kilowatt hour, compared with the 2020 base cost estimate of ZAR0.93/kWh used in the Prieska Bankable Feasibility Study (refer ASX/JSE release 18 November 2021).

## Prieska Mine Development and Exploration

### Prieska Copper-Zinc Project Development

Orion completed a highly successful Bankable Feasibility Study for the Prieska Project in May 2020 (**BFS-20**) (refer ASX/JSE release 26 May 2020). The BFS-20 outlined a plan to re-establish the Prieska Copper Mine, which was previously operated as an underground mine between 1971 to 1991. During this time, mine records show 46Mt of ore were mined from Prieska to produce 430kt of copper and 1.01Mt of zinc in concentrates.

While funding discussions for the Prieska Project, based on the BFS-20 plan, are in progress with banks and financial institutions, investigations into further enhancing the technical and commercial aspects of the Prieska Project progressing during the Quarter. As outlined last Quarter, Orion is investigating opportunities that have the potential to bring forward the start of production and revenue generation, potentially reducing the upfront external peak funding requirements of the Prieska Project.

Ongoing Feasibility Studies for an Early Production Scenario, comprise:

- Re-scheduling for upfront mining of the open pit (already included in the BFS-20 plan to occur at the end of the mine schedule);
- Assessment of the remnant pillars remaining from historical mining operations for potential opportunistic early extraction; and
- Preparation of a plan to commence the dewatering of the underground workings using a modular configuration, with the first modules being commissioned in CY2022, ahead of the scale-up to the full-scale pumping rate proposed in the BFS-20 plan.

The scenario that is being investigated is based on and maintains the core elements and material assumptions of the Prieska Deeps BFS-20 plan.

In May 2022, Orion signed non-binding term sheets with Triple Flag, for a US\$87 million secured funding package to advance the development of the PCZM (refer Corporate Section for further detail).

Studies currently underway aim to confirm the capital and operating costs of commissioning an initial phase of dewatering during CY2022, capable of dewatering at one-third of the full-scale capacity. This primary set-up is to be designed in a manner that retains the option to scale up to full capacity dewatering at the opportune time. Results of the assessment are expected during Q3 2022.

### Prieska Copper-Zinc Mine Exploration

#### 105 Level Resource In-fill Drilling

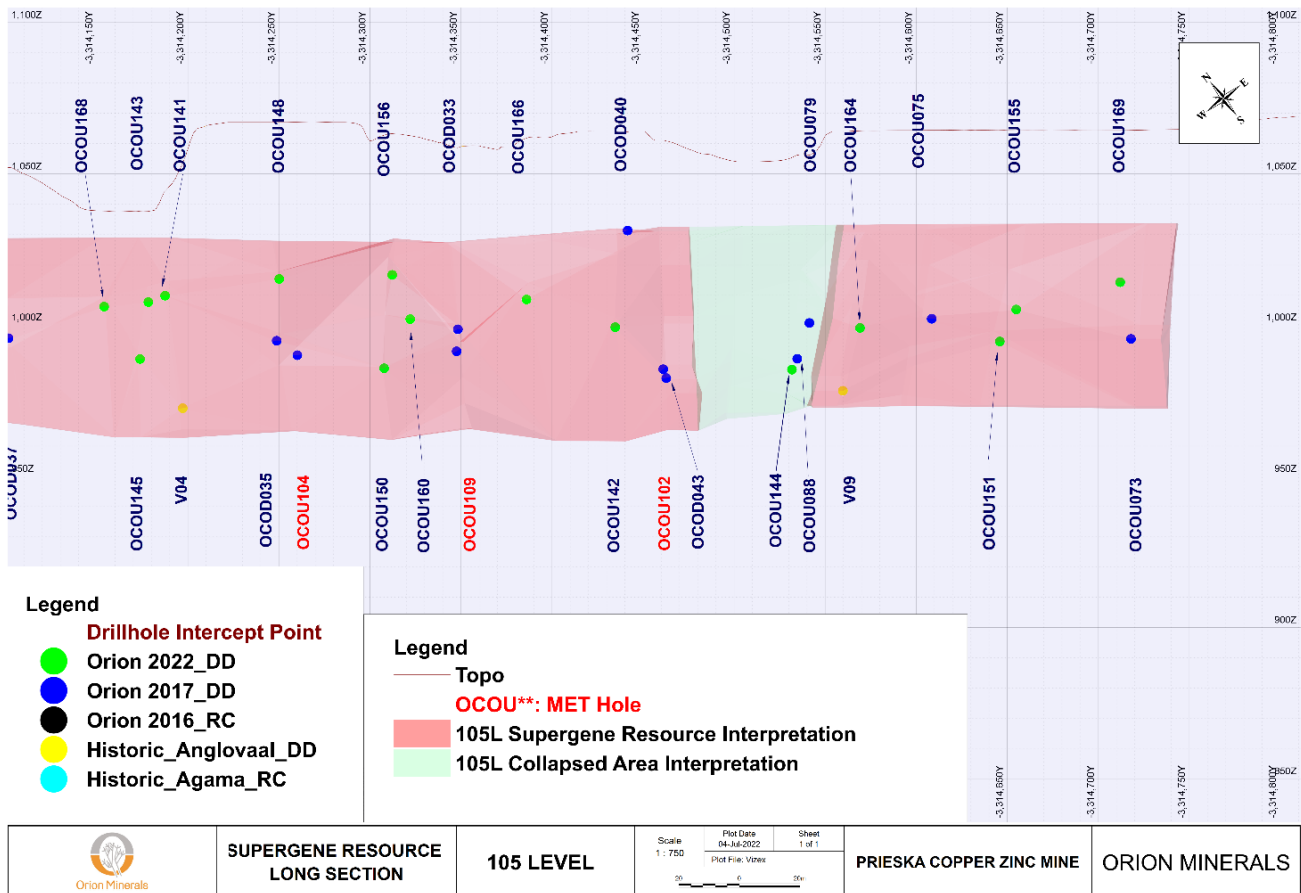
Resource in-fill drilling of the open pitable portion of the Prieska deposit, required to support the Early Mining Scenario, commenced in the March 2022 Quarter and was completed subsequent to the end of the June 2022 Quarter. The drilling program was aimed at providing enough data to upgrade the Inferred Mineral Resource portion of the +105 Level Crown Pillar supergene Resource to Indicated classification (refer ASX/JSE release 20 January 2022).

Fourteen holes (Figure 1) totalling 917.87m successfully intersected the mineralised zone with an additional five holes abandoned due to poor ground conditions and unacceptable core loss. Assay results have been received for thirteen of the fourteen holes. Results have confirmed the presence of enriched copper and gold mineralisation in the previously drilled supergene mineralisation which is currently classified as an Inferred Resource due to the wider-spaced drilling intersections (refer ASX/JSE release 11 July 2022). In-fill drill holes have returned high-grade copper intersections including:

- 7.46m at 9.24% Cu, 0.19% Zn, 0.44g/t Au, 17.46g/t Ag from 45.50m in OCOU164;
- 12.53m at 4.89% Cu, 0.04% Zn, 0.51g/t Au, 15.12g/t Ag from 43.52m in OCOU155;
- 6.05m at 5.52% Cu, 1.83% Zn, 0.26g/t Au, 17.18g/t Ag from 45.00m in OCOU142;



- 6.25m at 1.54% Cu, 0.16% Zn, 0.17g/t Au, 6.62g/t Ag from 62.00m in OCOU151;
- 3.10m at 2.10% Cu, 0.81% Zn, 0.25g/t Au, 6.76g/t Ag from 51.00m in OCOU148; and
- 3.40m at 6.91% Cu, 0.07% Zn, 0.21g/t Au, 4.84g/t Ag from 58.00m in OCOU156.



**Figure 1: Long section through the +105 Level Crown Pillar supergene Resource showing 2022 drilled area and historical drilling intercepts.**

The orebody model is currently being updated and the Resource will be re-estimated and re-classified where appropriate.

The updated Mineral Resource estimate will be used for open pit optimisation and updated Reserve estimation. The open pit, originally planned for mining after completion of the Deeps underground mining, is now being evaluated for early mining, concurrent with the dewatering of the Deeps.

#### Remnant Pillar Resource Definition Drilling

A remnant pillar resource definition drill program, aimed at confirming the historical survey records and providing sufficient data for Resource estimation, commenced in April 2022. The initial phase of the drilling campaign focuses on remnant pillars currently above the accumulated water level, which is approximately 294m below the surface. The planned program comprises 4,000m of Resource and metallurgical drill holes.

Previous underground mining was undertaken using long-hole open-stopping methods, without the use of any form of backfilling to stabilise the remaining voids. This meant a grid of pillars was left in place to provide geotechnical mine stability. The results of this program will inform the viability of extracting these pillars. Orion has also commenced a detailed study to assess whether the insertion of cemented paste fill in the surrounding voids would allow for some of these remnant pillars to be extracted without negatively impacting the long-term geotechnical stability.

## Okiep Copper Project Development and Exploration

### Okiep Project Development

#### Environmental Management

##### *Water Use Licence Application (WULA)*

The drafting of the WULA requires a number of studies to be completed by various Environmental Specialists. During the Quarter, the baseline air quality and dust fallout monitoring was completed, while monthly dust fallout monitoring in the project area is continuing. The only outstanding studies are the groundwater modelling and Geochemical Waste Classification works.

The Geochemical Waste Classification and Radiological Risk Classification on flotation tailings due to be deposited in the Tailings storage facility (**TSF**) are pending the availability of representative tailings samples from the Metallurgical Test Work Program. The Metallurgical Test Work Program is in an advanced stage, with samples for waste classification to be available in July 2022. Samples of Ore sorting discard material and waste rock mined in development have been received by the laboratory for waste classification of these additional waste streams.

Results of aquifer drilling and testing in and around the TSF and plant sites have been processed and preliminary analysis by the Geohydrologist has been completed. Indications from this work are that an unlined TSF could be motivated in terms of the “risk-based approach” option in the Water Use Licence application process. The drilling of four additional percussion holes is planned to provide additional confirmation data to demonstrate the low transmissivity of groundwater below and downstream of TSF footprint.

##### *Tailings Storage Facility (TSF)*

The TSF detailed design in the selected site is in progress (Figure 2). Geotechnical sampling of the underlying soils in the TSF footprint and surrounding areas has been completed and results from laboratory testing of these are awaited.

Detailed work on the embankment design using development waste rock and ore sorting discard rock is continuing. The facility will be designed as an unlined facility as there is a high level of confidence that this will be permitted, based on the groundwater study results available to date.

High-resolution terrain surveys have been completed to facilitate design of the stormwater diversion drains.



Figure 2: TSF detailed design in progress.

## Metallurgical Processing Plant

Following consistently encouraging simulation tests on various ore samples, diamond drill core samples were physically “sorted” in a full-scale sorting machine in RADOS’s works in Centurion, Gauteng. The results of this work confirmed simulation results seen previously. The sorter concentrate samples were sent for further milling and flotation test work, and the discarded material has been retained for further analysis and waste classification work.

A commercial proposal for the inclusion of ore sorters in the Processing Flowsheet by RADOS, including the expected performance and operating cost of their equipment, has resulted in Ore Sorting being included in the Process Flow Sheet for the Plant. The overall impact of Ore sorting on the process is a 30% discard of ore sorted (sub-grade material) resulting in a 35% increase in the grade reporting to Ore sorter concentrate.

A metallurgical test work program including milling, flotation and tailings classification is nearing completion. Following some initial scouting tests on ore from surface accumulations in the project area, milling and flotation tests have been conducted on samples of drill core pre-sorted by the RADOS ore sorter. Milling and flotation tests have separately determined the behaviour of ore from Flat Mines-North and Flat Mines-South, the first of the deposits to be mined.

Behaviour from both ore sources has proved similar, with overall copper recoveries >90% achievable at >30% copper content in concentrates produced. Milling particle size optimisation work is continuing to determine the most beneficial grind required in terms of overall recovery and concentrate grade produced.

The plant design is progressing in parallel with test work. The plant and surface infrastructure layouts are in advanced stage of completion, with detailed design of the various plant areas in progress.

## Mine Planning

The detailed Mine layouts of the Flat Mine North, South and East ore bodies have been completed and scheduling is in the process of optimisation using Mine Design Software. Costing of mine development and stope production is proceeding in parallel.

## Infrastructure

As reported previously, applications for the establishment of a 10 MVA Electricity supply point have been submitted to both Eskom and the local Nama Khoi Municipality. The return of a cost-estimate-letter from Eskom is overdue, now expected during Q3 CY2022.

The Nama-Khoi Municipal (**NKM**) leadership has recently confirmed their desire to provide electricity to the Project on commercially attractive terms. Orion and NKM are jointly drafting an MoU to guide the process of negotiations around future tariffs and capital costs to extend power to the Point of Supply.

## Land Access

A lease agreement with the Nama-Khoi Municipality for the use of Municipal Land for the construction of surface infrastructure required for the Mining Operation has been concluded and signed. In terms of the agreement, the New Okiep Mining Company has exclusive rights for the use of approximately 400 hectares of Municipal land on which most of the surface mining Infrastructure is to be located. This includes the Plant site, TSF, haul roads and power lines required for the project, effectively for the life of the Project.

Negotiations with other landowners, notably the Mora 11 lease, are ongoing and receiving considerable attention from Orion’s commercial team.

## New Okiep Mining Company Permitting

The status of the Mining Right and Prospecting Right Applications pertinent to the NOMC operations are as follows:

- Mining Right Application is being processed by the DMRE;
- Land access negotiations with the landowners in the Mining Right and adjacent Prospecting Right Areas are in progress; and
- SAFTA Prospecting Right Applications over the areas contiguous to the MRA area are still in process.

### **Okiep Copper Project Exploration**

Following the successful drilling program completed on the Koperberg – Carolusberg line of intrusives and drilling at Nous SkyTEM™ anomalies last Quarter (refer ASX/JSE release 28 April 2022), no additional field exploration activities were conducted at the OCP during the June 2022 Quarter.

Work continued with the digital compilation of historical drilling information over various old mines and prospects in the OCP area with the aim of remodelling of mineralisation and re-estimation of Resources.

### **Areachap Near-Mine Exploration**

#### **Jacomynspan Project and Metal Refining**

Orion is currently finalising its acquisition of the remaining minority interests in the Jacomynspan Nickel-Copper-PGE Project. The purchase of these interests, held by Namaqua Disawell companies, is currently being finalised after the extension of its agreement to consolidate ownership of the highly prospective project in March 2022 (refer ASX/JSE release 4 March 2022).

The Jacomynspan Nickel-Copper-PGE Project, which is located 65km north of the Prieska Project, has a delineated maiden Mineral Resource of 6.8Mt containing an estimated 39,480 tonnes of nickel, 23,070 tonnes of copper and 1,800 tonnes cobalt (refer ASX/JSE release 23 September 2021) at a cut off of 0.4% Ni.

During the Quarter, Orion signed an exclusivity agreement with Stratega Metals to undertake amenability test work on a 250kg sample of Ni-Cu-Co-PGE-Au concentrates from the Jacomynspan Project (refer ASX/JSE release 9 May 2022).

This agreement gives Orion the exclusive right to earn a 75% interest in Stratega by funding the establishment of a bespoke test work facility and demonstration plant at Orion's PCZM site.

Stratega has secured licencing for carbo-chloro metal vapour extraction technology (**CCMVT**), which separates refined carbonyl metal powders from the metal concentrates. The key reaction in CCMVT uses carbonyl (carbon monoxide), which is harvested from the air and recycled within a sealed, pressurised reactor vessel and the circuit then fed to distillation vessels to recover separated refined carbonyl metal powders.

The CCMVT refining process (Figure 3) promises very attractive characteristics including:

- A dry process using no water;
- Low energy consumption amenable to renewable energy power supply;
- Near zero emissions – only minor non-toxic waste products;
- Small compact plant with a very small footprint; and
- Production of metal products that trade at significant premiums to contained metal targeting the battery and specialist chemical industries.

These characteristics make it an ideal fit with Orion's ambitions to become a fully-integrated mining and processing business that produces premium metal products with strong ESG credentials that are certified from point-of-source to market.



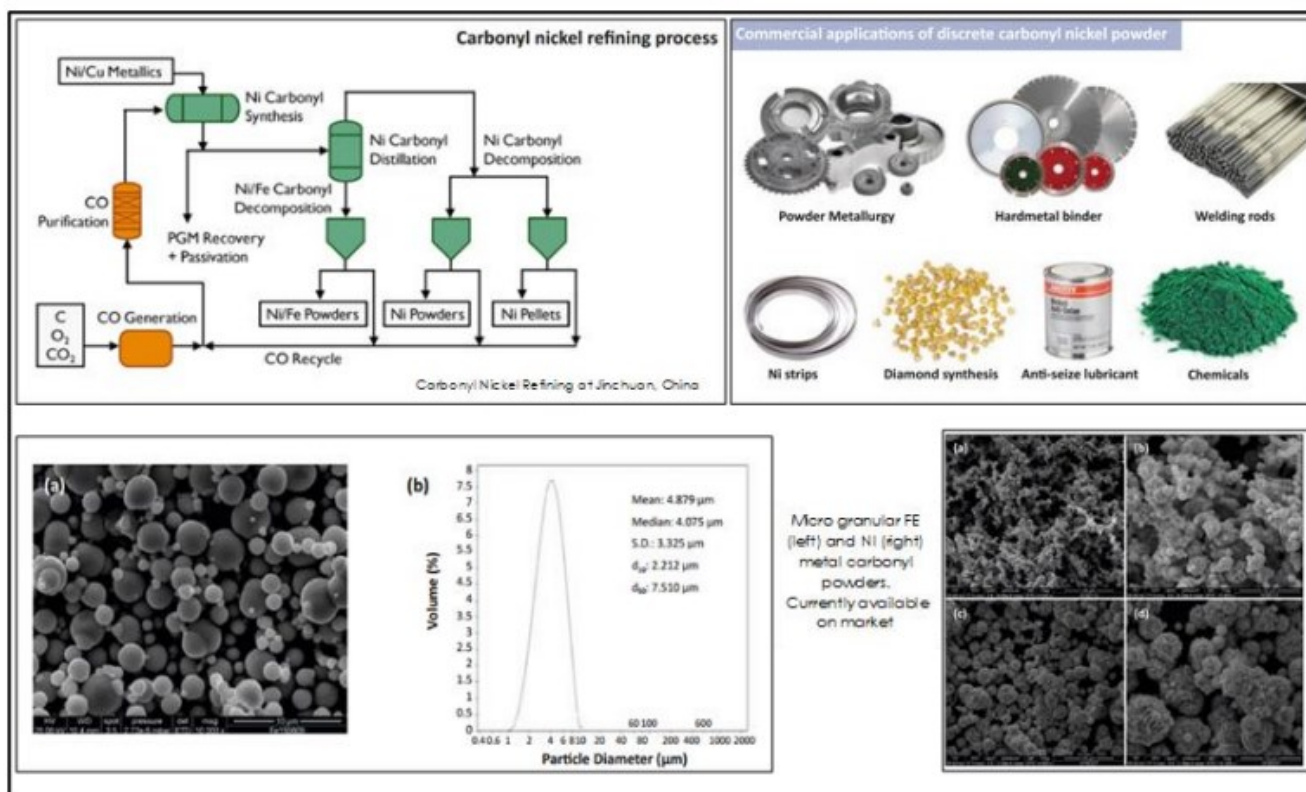


Figure 3: Carbonyl nickel refining process.

## Australian Projects

### Fraser Range – Nickel-Copper Projects (Western Australia)

The Fraser Range Project in Western Australia is a belt-scale project which is highly prospective for high-value magmatic nickel-copper-cobalt (Ni-Cu-Co) sulphide discoveries.

Orion maintains a sizeable tenement package in the Fraser Range Province of Western Australia in a joint venture with IGO Limited (ASX: IGO) (refer ASX release 10 March 2017). Under the terms of the joint venture, IGO is responsible for all exploration on the tenements and provides regular updates to Orion on activities and results.

Importantly, Orion maintains exposure to the ongoing exploration and development of the Fraser Range Project without the additional financial commitment, given that Orion is free-carried through to the first pre-feasibility study on any of the tenements.

During the Quarter, IGO stated that it remained committed to investing in growth through discovery. In its Macquarie Australia Conference presentation, IGO noted that its Fraser Range and Nova exploration represented almost 51% of its total \$65 million FY22 exploration budget (refer IGO ASX release 5 May 2022).

IGO undertook the following on the JV tenements during the Quarter:

- Heritage agreement negotiations continued with Central Desert Native Title Services (CDNT) on behalf of the Untiri Pulka (**UP**) and the Upurli Upurli Nguratja (**UUN**) Native Title Claims;
- Ground-based heritage field assessment continued over UP claim on Artemis, Praetorian, Porpoise, Millenium South and HA1 targets;
- An airborne heritage survey was completed over the UUN claim on NW Passage, Pennor North and CE targets;

- Drilling was undertaken at Achilles target with 16 air-core holes drilled for 318m. Assays were submitted and results received which are currently being reviewed (E69/2707);
- One air-core bottom-of-hole (BOH) sample from Angler target was selected for thin section preparation (E28/2462);
- Rehabilitation was undertaken at the Angler target on Boonderoo Station – 18 air-core holes;
- Re-sampling of air-core spoils in hole 21AFAC10410 was undertaken from 105-125m to detail zinc anomalism on the Angler target (E28/2462);
- A review and evaluation of geochemical assays from diamond drilling at the Bilby, Hook 1 and Hook 2 targets (E28/2367) was undertaken;
- Evaluation and structural interpretation of the Bilby (21AFDD104) off-hole EM anomaly was completed; and
- Integrated geological interpretation of geophysical, petrophysical and geochemical datasets was completed for E28/2367.

Work planned for Q1FY23 includes diamond drilling at the Pike North hole, analysis of the geochemical results from air-core drilling at the Angler target area (21AFAC10410), a moving loop electro-magnetic survey over the Pennor North and Porpoise target areas as well as a review of all exploration results within the JV tenement area.

### **Walhalla – Gold and Polymetals Project (Victoria)**

While the Walhalla-Woods Point District is best known for gold mining, high-grade copper-nickel and PGE mineralisation also occurs within the belt. Both the gold and copper-nickel-PGE mineralisation within this district are hosted within dykes from the Woods Point Dyke Swarm (WPDS), a series of ultramafic to felsic dykes occurring over a 75km long north-south belt.

No field or exploration work was carried out on the Walhalla Project during the Quarter. During the Quarter, the Company continued to progress its licence applications over prospective areas of Walhalla.

## **Corporate**

### **Cash and Finance**

Cash on hand at the end of the Quarter was \$4.0 million. Payments made to related parties and their associates during the Quarter was \$150k and relates to Director fees and consulting fees, as listed in Section 6 of the Company's Quarterly Cash Flow Report (Appendix 5B).

Following Quarter end, on 13 July 2022, Orion received \$0.5 million in cash, from receipt of funds from investors for Tranche 1 commitments of the capital raising, announced by Orion on 22 June 2022. Orion has also received commitments from investors for Tranche 2 of capital raising, to raise an additional \$2.9 million, subject to shareholder approval, to be sought at a general meeting of Orion shareholders on 18 August 2022 (see Capital Raising details below).

### **Triple Flag US\$87 million Funding Package**

During the Quarter, Orion took a pivotal step towards the development of its flagship Prieska Project in South Africa's Northern Cape Province after signing non-binding term sheets with TF R&S Canada Ltd. and Triple Flag International Ltd. (together **Triple Flag**), for a US\$87 million secured funding package. Non-binding term sheets have been signed with Triple Flag and are now being advanced under exclusivity to definitive agreements (expected in Q3 CY2022), with the funding package planned to underpin the Early Production Scenario for the Prieska Project announced in January (refer ASX/JSE release 20 January 2022). This includes a plan to bring forward production from the open pit while dewatering the underground mine in preparation for long-term operations.

The contemplated funding package comprises two components, being a precious metal stream



(**Precious Metal Stream**) and additional early funding (**Funding Arrangement**).

The Precious Metal Stream comprises US\$80 million (~\$110 million) of funding to be drawn down in tranches, alongside other bank and/or third-party funding during mine development. Orion will also receive payments of 10% of the value of delivered payable precious metal paid at spot LME pricing at the time of delivery.

The proposed stream rates for gold and silver to be delivered under the stream agreement are 84% of "Payable Gold" until 94.3k ounces of gold are delivered under the stream agreement, and 84% of "Payable Silver" until 5,710k ounces of silver are delivered, with each stream rate reducing to 50% after the respective milestones.

Orion and Triple Flag have also entered into a term sheet for an additional \$10 million Funding Arrangement, with such funding to be made available to Orion to complete the current early mining Feasibility Study (refer ASX/JSE release 20 January 2022) and to commence dewatering of the mine.

In addition to the completion of due diligence and entering into a definitive agreement, the Funding Arrangement drawdown will be conditional on Orion securing an additional \$20 million funding to execute the agreed work focused on early dewatering. The additional \$20 million may be secured as equity or other funding arrangement satisfactory to Triple Flag.

Under each of the Precious Metal Stream and Funding Arrangement, Prieska Copper Zinc Mine (Pty) Ltd (**PCZM**) and other obligors will agree to grant a first ranking security in favour of Triple Flag over certain assets and claims, with the security in respect of the Precious Metal Stream to be subordinated to Prieska Project financiers.

The term sheets are non-binding other than in respect of confidentiality, exclusivity until 31 January 2023 and transaction costs (amount payable to Triple Flag capped at US\$0.5 million).

A summary of the material terms of the Precious Metal Stream and Funding Arrangement are provided in Appendix 1 and 2 of the 9 May 2022 ASX/JSE release.

### **Capital Raising and Funding**

On 22 June 2022, the Company announced a capital raising to raise up to \$20M at 2.0 cents per share, to underpin the next phase of development of its portfolio of advanced base metal assets in South Africa's Northern Cape Province.

Thanks to the support of existing and new investors, the Company has received firm commitments for the first two tranches (~\$6 million) of a three-tranche Placement targeting up to \$20 million, to underpin its Early Production Strategy at the flagship Prieska Project.

The Placement will occur in three stages, being:

- Tranche 1: on 23 June 2022, 29 June 2022 and 13 July 2022, the Company issued a total of 156 million Shares at an issue price of 2.0 cents (being ZAR22 cents) to raise \$3.1 million (together with one free attaching option for each two Shares issued on the principal terms set out below (**Options**)), using the Company's 15% placement capacity under ASX Listing Rule 7.1 (**Placement One**);
- Tranche 2: the Company has received commitments from investors to raise \$2.9 million through the issue of 145 million Shares at an issue price of 2.0 cents (being ZAR22 cents) per Share (together with one free attaching Option for each two Shares issued on the terms set out below), including \$2 million from Orion non-executive Director Tom Borman and \$0.2 million from Orion's Chairman Denis Waddell (**Placement Two**). The issue of Shares and Options under Placement Two is subject to shareholder approval, to be sought at a general meeting of Orion shareholders on 18 August 2022; and

- Tranche 3: the Company may issue up to an additional 699 million Shares at an issue price of 2.0 cents (being ZAR22 cents) per Share to raise up to \$14 million (subject to shareholder approval, to be sought at a general meeting of Orion shareholders on 18 August 2022) (**Placement Three**). There are no Options attaching to any Shares that comprise Placement Three. Orion reserves the right to accept oversubscriptions.

The 151 million Options (being one option for every two Shares issued under Placement One or Placement Two) have an exercise price of 2.5 cents (being ZAR27.5 cents) and an expiry date of 30 June 2023. The Options are not transferrable and will not be quoted on the ASX or the JSE.

Successful completion of the capital raising, combined with other funding arrangements, will allow Orion to:

- Progress the development of the Company's PCZM, including the commencement of mine dewatering and the completion of feasibility studies for the PCZM Early Production Scenario;
- Progress the Feasibility Study on the OCP, the Company's second advanced near-term production asset in the Northern Cape;
- Undertake battery precursor product production test work on Jacomynspan nickel-copper-cobalt PGE Project, its third key asset in the Northern Cape; and
- Progress a significant exploration effort, both at the OCP and across numerous recently defined near-mine and regional exploration targets across the Areachap Province of the Northern Cape.

In addition to working closely with Triple Flag, the Company is also continuing to progress discussions with multiple banks and financing institutions, in relation to funding for the development of the fully permitted PCZM. Orion intends to fund the project's development through a combination of debt and equity, with the potential for streaming financing to reduce the equity contribution also being evaluated.

Refer to the Commodity Markets Section, for additional information in relation to the Capital Raising and funding.

#### Share Purchase Plan

In addition to the Placement announced on 22 June 2022, the Company also announced a share purchase plan (**SPP**) providing shareholders an opportunity to increase their shareholding in the Company at the same offer price as the Shares issued under the Placement.

The Company is offering its shareholders with a registered address in Australia, New Zealand, South Africa, the European Union (Germany and Netherlands), Jersey (Channel Islands), Mauritius, Seychelles, Singapore and the United Kingdom as at 7.00pm (Melbourne time) on 21 June 2022 (**Eligible Shareholders**) the opportunity to purchase Shares under a SPP.

Under the SPP, each Eligible Shareholder will be entitled to apply for parcels of new Shares from a minimum parcel of \$2,000 (or ZAR20,000) up to a maximum of \$30,000 (or ZAR330,000) without incurring brokerage or transaction costs. The issue price will be 2.0 cents per Share (being ZAR22 cents). This represents a 13% discount to the volume weighted average price of Orion's shares on the ASX during the 5 trading days immediately prior to the announcement date of the SPP.

The Company will issue up to 150 million SPP Shares under the SPP at an issue price of 2.0 cents per Share (ZAR22 cents) (being the same issue price as Shares issued under the Placement (refer above)). The SPP Shares will be issued at 2.0 cents per Share (ZAR22 cents). All SPP Shares will be quoted on either the ASX or JSE (for South African Eligible Shareholders) and will rank equally with other fully paid ordinary shares on issue. No shareholder approval is necessary in respect of the Shares issued under the terms of the SPP.

The SPP opened on 28 June 2022 and is expected to close on 5 August 2022. The SPP booklet containing further details of the SPP and application forms was released to the ASX and JSE on 28 June 2022 and has been sent to shareholders. Eligible Shareholders should read the SPP booklet before deciding whether to participate in the SPP.

## Timetable<sup>1</sup>

<b>Record Date</b>	7:00pm (Melbourne time) on 21 June 2022
<b>Share Purchase Plan offer opened</b>	28 June 2022
<b>Share Purchase Plan offer closes</b>	7:00pm (Melbourne time) and 10:00am (South African time) on 5 August 2022
<b>Share Purchase Plan allocation announcement and Scale-back (if any)</b>	12 August 2022
<b>Issue Date</b>	12 August 2022
<b>Quotation of New Shares</b>	15 August 2022
<b>Dispatch of holding statements (ASX)</b>	15 August 2022

<sup>1</sup> Orion may vary any of the above dates in its absolute discretion by lodging a revised timetable with the ASX and the JSE and Orion reserves the right to extend the Closing Date by up to 10 business days.

## Specialist battery product refinery facility – Stratega Metals Agreement

During the Quarter, Orion achieved a significant milestone in its strategy to create a fully-integrated base metal mining and processing business, producing high-value metals for the fast-growing battery materials sector, after entering into a Term Sheet that could see it acquire a cornerstone interest in a future base metal refining facility in the Northern Cape region of South Africa.

The Term Sheet contains binding exclusivity arrangements through which Stratega Metals (Pty) Ltd (**Stratega**) will undertake technical due diligence, including amenability test work, for the use of carbo-chloro metal vapour extraction technology (**CCMVT**) for base metal refining of polymetallic concentrates produced from Orion's Northern Cape projects (refer ASX/JSE release 9 May 2022).

During this 90-day exclusivity period, Orion is entitled to conduct amenability test work and due diligence, and during which Stratega and Orion may enter into a comprehensive earn-in agreement under which Orion may earn a 75-percent ownership in Stratega, by funding the establishment of a bespoke test work facility and demonstration plant, to be located at Orion's PCZM site.

Stratega has secured licencing from TCM Research Ltd (**TCM Research**) to use TCM Research's proprietary CCMVT technology. The CCMVT refining process promises very attractive characteristics including:

- A dry process using no water;
- Low energy consumption amenable to renewable energy power supply;
- Near zero immisions – only minor non-toxic waste products;
- Small compact plant with very small footprint; and
- Production of metal products that trade at significant premiums to contained metal targeting the battery and specialist chemical industries.

The CCMVT process is a derived from the modification of well-established refining technology used at refineries such as Vale's Sudbury Refinery in Canada, Norilsk Nickel Refinery in Russia and Jinchuan Metals in China. The key reaction in CCMVT uses carbonyl (carbon monoxide), which is harvested from air and recycled within a sealed, pressurised reactor vessel and circuit then feeding to distillation vessels to recover seperated refined carbonyl metal powders.

## Anglo American sefa Mining Fund – Loan

In November 2015, PCZM (a 70% owned subsidiary of Orion) and Anglo American sefa Mining Fund (**AASMF**) entered into a ZAR14.25 million loan agreement for the further exploration and development of

the Prieska Project (**Loan Facility**). Under the terms of the Loan Facility, on 1 August 2017, AASMF advanced ZAR14.25 million to PCZM. The key terms of the Loan Facility are:

- Loan amount: ZAR14.25 million (~\$1.27 million);
- Interest rate: Prime lending rate in South Africa; and
- Security: 29.17% of the shares held in PCZM by Agama Exploration and Mining (Pty) Ltd (a wholly owned subsidiary of Orion), have been pledged as security to AASMF for the performance by PCZM of its obligations in terms of the Loan Facility.

As at 30 June 2022, the balance of the Loan Facility was ZAR21.86 million (~\$1.96 million) (including capitalised interest). PCZM and AASMF are currently in negotiations to agree and settle a repayment plan in relation to the Loan Facility.

## Tenement Table

Tenement	Project	Ownership Interest	Change in Quarter	Joint Venture Partner
<b>South Africa</b>				
NC30/5/1/1/2/11850PR	Bartotrax	100%	---	---
NC30/5/1/2/2/10138MR	Prieska Copper-Zinc Mine	70%	---	---
NC30/5/1/2/2/10146MR	Prieska Copper-Zinc Mine	70%	---	---
NC30/5/1/1/2/11840PR	Doonies Pan	70%	---	---
NC30/5/1/2/2/10032MR	Namaqua-Disawell	25%	---	Namaqua Nickel Mining (Pty) Ltd
NC30/5/1/1/2/12216PR	Namaqua-Disawell	25%	---	Namaqua Nickel Mining (Pty) Ltd
NC30/5/1/1/2/10938PR	Namaqua-Disawell	25%	---	Disawell (Pty) Ltd
NC30/5/1/1/2/11010PR	Namaqua-Disawell	25%	---	Disawell (Pty) Ltd
NC30/5/1/1/2/12292PR	Masiqhame	50%	---	Masiqhame 855 (Pty) Ltd
NC30/5/1/1/2/12197PR	Okiep – Bokputs North	70%	---	---
NC30/5/1/1/2/11125PR	Okiep	100%	---	---
NC30/5/1/1/2/12357PR	Okiep	100%	---	---
<b>Western Australia</b>				
E28/2367	Fraser Range	30%	---	IGO Limited
E28/2378	Fraser Range	30%	---	IGO Limited
E28/2462	Fraser Range	30%	---	IGO Limited
E28/2596	Fraser Range	30%	---	IGO Limited
E39/1653	Fraser Range	35%	---	IGO Limited & Geological Resources Pty Ltd
E39/1654	Fraser Range	10%	---	IGO Limited & NBX Pty Ltd

This Quarterly Report is authorised by the Board.