



## Orion Minerals

ASX/JSE RELEASE: 28 January 2022

# December 2021 Quarterly Activities Report

## HIGHLIGHTS

### Project Development

- ▶ Commenced investigations, to be completed by June 2022, into bringing forward the start of production from the Prieska Copper-Zinc Project (Early Production Scenario), by:
  - re-scheduling open pit mining to occur during the development phase of the Deeps Mine;
  - assessing the potential of mining the remnant pillars; and
  - evaluating the potential to phase the implementation of mine dewatering, so that a reduced scale setup can begin late in 2022, ahead of the full project being commissioned for construction.
- ▶ Advanced feasibility studies for the Flat Mines at the Okiep Copper Project, due for completion by June 2022. Together, with the Prieska Project Early Production Scenario, these studies aim to provide Orion with additional information to determine the optimal route to its first copper production, allowing it to take advantage of strong copper market conditions and support funding for the broader Prieska Deeps development.
- ▶ Funding activities continued, with the Independent Technical Expert's Review of the updated Prieska Bankable Feasibility Study nearing completion.
- ▶ Discussions with South Africa's Department of Mineral Resources and Energy continued, with the aim of expediting the grant and execution of the SAFTA Mining Right under application for the Flat Mines (Okiep Copper Project).
- ▶ Orion commenced discussions with the Central Energy Corporation (CENEC) to investigate the potential inclusion of the Prieska Copper-Zinc Project as part of CENEC's landmark Prieska Power Reserve™ Project. The collaboration paves the way for the Prieska Project to be entirely powered by renewable energy and green hydrogen sources.

### Exploration

- ▶ Initial assays from the maiden drilling program at the Okiep Copper Project delivered very positive results, confirming the presence of shallow high-grade copper mineralisation and demonstrating the potential for additional high-grade mineralised lenses at depth.
- ▶ Diamond drilling on Orion's Masiqhame Prospecting Right, located in the Northern Cape Province, intersected sulphide mineralisation up-dip of a high-priority target detected by a recent fixed-loop survey electromagnetic (FLEM) survey over the Bokspuits Project. Uncontrollable deflection of the drill hole resulted in the hole being stopped above the target.
- ▶ A follow-up ground EM survey at Bokspuits has confirmed that the conductor intensifies and continues onto the adjacent Bokspuits North Prospecting Right and the EM anomaly remains open to the north.
- ▶ Diamond drilling commenced to test compelling nickel targets at the IGO-ORN JV in Fraser Range, Australia.

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

*"The December Quarter was another productive period for Orion Minerals as we pushed ahead with high impact exploration, engineering and feasibility studies at our two flagship projects, the Prieska Copper-Zinc Project and the Okiep Copper Project.*

*"To capitalise on the current positive market conditions, we have fast-tracked our assessment of an early production strategy for the Prieska Copper-Zinc Project based on moving the open pit development to the start of the mine plan. Early open pit production at Prieska, together with the opportunity for early production from the Okiep Flat Mines, that we added to our portfolio earlier in 2021, could enable us to deliver first copper production from both the Prieska and Okiep mining operations within the next 24 months, while also significantly de-risking both projects and providing a profitable production platform with strong near-term growth from advanced expansion projects.*

*"Our two base metals hubs in South Africa's Northern Cape Province, position us to deliver critical metals for the global energy transformation with opportune timing. With copper prices close to record highs and demand set to outstrip production for the foreseeable future, the timing is perfect for Orion. Exercising the option to acquire and consolidate Okiep was a major step forward in our strategy to become a diversified, new-generation base metals producer.*

*"Our engineering and permitting teams are making good progress on both projects and we anticipate being able to provide market updates on this work shortly."*

**Commodity Markets**

Base metals performed strongly in 2021 with copper ending the year 25.7% higher and zinc gaining 31.5% during the year. Demand for base and battery metals continues to be driven by the global transition towards greener and cleaner technologies, while ongoing supply-side constraints helped support significant price increases.

Copper and zinc prices jumped sharply by mid-October 2021, with the copper price breaching its previous record in May 2021 and surging to a new high of US\$10,572 per tonne as stockpiles hit a 47-year low. The metal last set a record in 2011 around the peak of the commodities super cycle, sparked by China's economic growth and internal infrastructure investment.

The renewed interest in copper has been fuelled by global efforts to cut carbon emissions. This surging demand for green metals has put a strain on supply while new mine production has been slow to arrive. This has further strengthened the investment case for advanced, brownfields projects such as Orion's Prieska Copper-Zinc Project (**Prieska Project**) and Okiep Copper Project (**OCP**), both of which have significant infrastructure and can be brought into production relatively quickly.

**LME Copper Price Chart – 2021**



Source: London Metals Exchange

Goldman Sachs has described copper as 'the new oil' because electric cars need several times more copper than their internal combustion engine-powered counterparts. CRU has noted that demand from green energy applications is expected to account for 40% of the growth in refined copper demand in 2022, and that this will remain the key demand driver in the coming years.

Copper prices are forecast to moderate slightly in 2022, yet remain supported over the long-term, as demand outpaces supply.

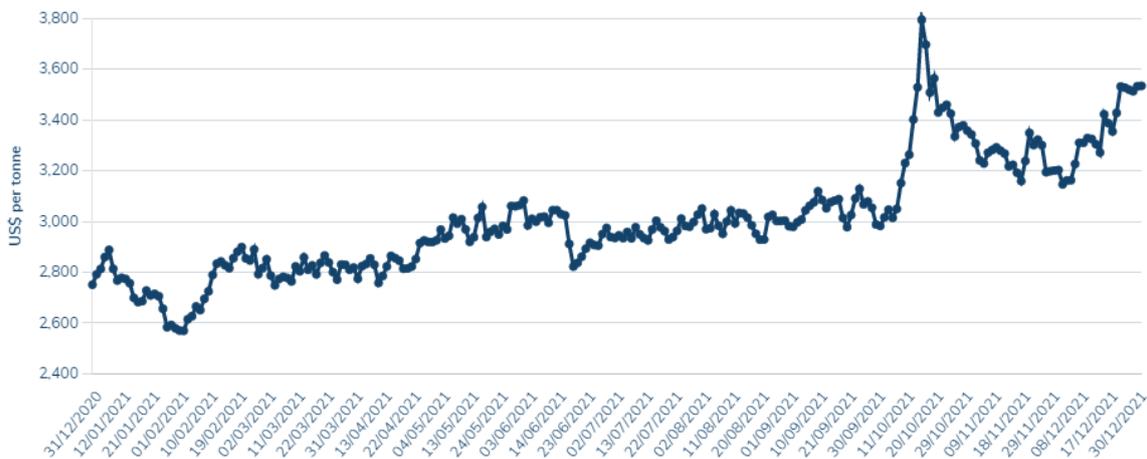
### Analysts' copper price forecasts

	Dec 21	Mar 22	Jun 22	Sep 22	Dec 22	2021	2022	2023	2024	2025
ANZ (\$/t)	10,000	10,500	10,000	9,600	9,750	8,800	9,990	-		
Commerzbank (\$/t)	10,000	9,800	9,800	9,500	9,500	9,400	9,650	-		
Commerzbank (\$/lb)	4.54	4.45	4.45	4.31	4.31	4.26	4.38	-		
Goldman Sachs (\$/t)	10,500	-	-	-	-	9,550	11,875	12,000	14,000	15,000
Goldman Sachs (\$/lb)	-	-	-	-	-	4.33	5.39	5.44	6.35	6.80
Scotiabank (\$/lb)	-	-	-	-	-	4.15	4.25	4.25		
Société Générale	8,500	7,500	8,000	8,000	-	9,250	8,250	-		
World Bank						9,300	8,800	8,200	7,500	7,544

Source: capital.com

Three-month zinc prices on the London Metal Exchange (**LME**) rose to US\$3,835 a tonne in mid-October 2021, after surging a record 20.4% a week earlier to close at its highest price since June 2007. The surge in zinc prices came on the back of news that Belgium-based Nyrstar was cutting production by up to 50% at its three European zinc smelters and Glencore, which also has three zinc smelters in Europe, planned to adjust production to save energy costs.

### LME Three-Month Zinc Prices – 2021



Source: London Metals Exchange

Supply concerns are expected to continue to support zinc prices into 2022. S&P Global believes zinc prices will remain elevated throughout the year with fewer mines expected to start up in 2022-2025 — especially in China, where mined zinc is estimated to decline to 3.8Mt this year.

## Operations Report

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

#### Health and Safety

Another injury free Quarter was achieved. The hours worked for the Quarter ending December 2021 and the total for FY2022 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	12,819	33,463
Mine Re-Entry	2,448	5,784
Contractors	26,496	46,859
<b>Total</b>	<b>41,763</b>	<b>86,106</b>

The Lost-Time Injury Frequency Rate (**LTIFR**) per 200,000 hours worked is 0 for the 2021 calendar year.

Orion continues to manage the risks from the COVID-19 pandemic in line with government regulations and industry guidelines across all its operations. The South African Government eased COVID-19 restrictions to Adjusted Alert Level 1 effective from 1 October 2021 and maintained that level, with minor adjustments, to the end of the Quarter.

Six COVID-19 infections have been reported among employees and contractors for the Quarter, with no cases requiring hospitalisation. The Company continues to encourage vaccination and other measures including working from home, social distancing, periodic screening, and testing for possible infection to reduce the risk of transmission in the workplace.

#### Community and Stakeholder Engagement

##### Establishment of a Community Participation Framework

The Prieska Copper-Zinc Mine (**PCZM**) held a two-day externally facilitated strategic meeting with host community representatives and business forums during October 2021. At the meeting, areas of collaboration were identified which would benefit all and strengthen working relationships in Siyathemba.

Attendees agreed on aspirational targets for host community participation within the next five years, which were set out in a Community Participation Framework. Targets were agreed for community employment and procurement and sub-contracting opportunities for host community businesses. The framework targets will be achieved subject to the mine's operating requirements, fair costing that will not impact its finances, efficient delivery of high-quality goods and services, and maximising stakeholder benefits and shareholder returns.

Orion anticipates that the framework will create the opportunity for local small enterprises to grow as standalone businesses or via joint ventures with larger established suppliers.

##### COVID-19 Vaccination Drive

Orion initiated the Siyathemba Vaccination Drive, which was rolled out in Prieska at the end of November 2021, to encourage community members to play their part in fighting COVID-19 by being vaccinated. 486 community members were vaccinated through this initiative. The vaccine drive was facilitated by the National Health Laboratory Service's Vaccination Outreach, community health care workers and volunteers from Hospice Moeder Theresa. Vaccine doses were made available by the Bill Pickard Hospital, utilising the vaccine fridge donated by Orion.

While the Omicron infection was first identified in Southern Africa, the region reached an early peak and by mid-January 2022, was reporting low baseline infection levels in South Africa. Orion's site operations have had little or no direct impact resulting from COVID, however international travel restrictions are presenting a challenge for financing discussions.

#### Bicycles for Humanity Western Australia "Scholar Mobility" rollout at Prieska schools

The "Scholar Mobility" project rollout continued during the Quarter, with the distribution of pre-loved bicycles donated by Bicycles for Humanity Western Australia, helmets donated by Mulilo and reflectors donated by the Provincial Department of Education, to four schools in Prieska.

The bicycles were allocated for use by deserving students, including those who have long distances to travel between home and school. Students at another four schools including those in Marydale, Niekerkshoop and Van Wyksvlei, will be receiving their bicycles in early 2022.

Orion sponsored Prieska-born athlete and Olympian, Chederick van Wyk, is providing a valuable role as an ambassador and role model for the Northern Cape youth and is assisting with bicycle project deployment.

#### Commencement of Nama Khoi community consultations

Community liaison and consultation have commenced in the Nama Khoi District Municipality. This follows Orion's exercise of its exclusive option to acquire a controlling interest in the majority of the properties comprising the OCP, located approximately 570km north of Cape Town in the Northern Cape Province of South Africa.

A Community Liaison Office has been established in the town of Springbok, one of the key economic hubs in the municipality.

During the Quarter, several community consultation meetings were conducted with the Nababeep town community to discuss the Local Economic Development projects contained in an updated Social and Labour Plan submitted to the Department of Mineral Resources and Energy as part of Orion's application to fast-track the grant of the Southern African Tantalum Mining (Pty) Ltd (**SAFTA**) Mining Rights for what is known as the Okiep Flat Mines.

Orion will continue its community consultation process through the formation of a stakeholder engagement forum for the Nama Khoi Municipal Region in the March 2022 Quarter.

### **Environmental Management**

There were no environmental incidents reported during the Quarter.

### **Green metals and green energy**

Orion recognises that climate change is one of the key global challenges of our time. In line with its commitment to play a key role in the green metals revolution, Orion has commenced consultations with juwi Renewable Energies Pty Ltd (**juwi**) and the Central Energy Corporation (**CENEC**) with a view to ensuring that the Prieska Project is powered entirely by renewable energy and green hydrogen sources.

CENEC plans to construct a mega-scale renewable energy hub for the Prieska district in the Northern Cape Province of South Africa. The Prieska Power™ Reserve is a large-scale initiative aimed at generating electrical energy from renewable sources and storing this energy as green hydrogen and ammonia on a long-term basis. The project intends to achieve energy independence and to avoid the constraints and limitations of the national electricity grid.

Having access to this hub would help Orion achieve Carbon Net-Zero at the Prieska Project and could establish Prieska as one of the world's lowest carbon emission sources of copper and zinc. Orion already has an agreement with the renewable energy company juwi to investigate the construction of our own renewable energy generation plant at the mine and the CENEC collaboration is advancing as an

extension of the work already done to establish a bespoke solar and wind power generation project for the Prieska Mine.

## Prieska Mine Development and Exploration

### Prieska Copper-Zinc Project Overview

Orion's flagship Prieska Project is in the financing and pre-development stage. An updated Bankable Feasibility Study (**BFS**) was completed in the June Quarter 2020 (refer ASX/JSE release 26 May 2020).

An Independent Technical Review of the BFS, conducted by the bankers appointed Independent Technical Experts, is nearing completion. The review is part of ongoing advanced funding discussions and will be an important milestone in progressing financing arrangements.

Discussions with multiple banks and financing institutions continued during the Quarter. 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.

Discussions are also progressing with parties who have expressed an interest in financing an early commencement of dewatering and/or potential production acceleration initiatives, ahead of senior debt financing of the Prieska Deeps Project.

### Prieska Operation – Activities Subsequent to the Updated Bankable Feasibility Study

#### Project Planning

Orion is investigating opportunities to accelerate the commencement of production from Prieska (refer ASX /JSE release, 20 January 2022).

The Company's strategy is to capitalise on the positive near-term base metals market and focus on 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 project.

On this basis, the Company's senior management team has focused on the following plan and opportunity assessment (**Early Production Scenario**), comprising:

- re-planning 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. The work to fully evaluate and quantify this opportunity are expected to be completed by mid-2022.

Early production from PCZM, together with production from Okiep's Flat Mines, would mean that Orion could produce first copper within the next 24 months. This is a year earlier than the project execution plan outlined in BFS-20, which is estimated to achieve first production within 33 to 38 months.

#### Process Plant Operations

Orion continued to investigate opportunities for acquiring pre-owned processing plant equipment that may contribute to further reducing the time and cost to construct and commission both the Okiep and Prieska Projects. Orion has also secured and paid deposits on the two larger mills planned to be installed at the Prieska Project.

Orion has signed an agreement with Minerals Operations Executive (Pty) Ltd (**Minopex**) to manage the processing plant operation. The running and management of the plant laboratory will also fall within the scope of Minopex's work.

#### EPCM and Underground Mining Contracts

The process for selecting a preferred engineering, procurement and construction management (**EPCM**) and an underground mining contractor are expected to be progressed in the coming Quarters, in line with progress with financing activities. The EPCM selection process was extended to consider input from potential debt funders, while the selection of the underground mining contractor required consultation with interested parties to determine appropriate contracting arrangements, payment mechanisms and localisation strategies. A detailed mine planning process, currently underway, will provide the scope of work supporting the anticipated initial five-year underground mining contract.

### **Okiep Copper Project**

#### **Okiep Copper Project Overview**

The OCP is a significant growth opportunity with the potential to become a second base metal production hub for Orion in the Northern Cape alongside the Prieska Project. Orion exercised its exclusive option to acquire a controlling interest in the majority of the properties comprising the OCP in August 2021 (refer ASX / JSE release 2 August 2021). It has also applied for additional Prospecting Rights to supplement the OCP mineral rights.

The mineral rights holding of the OCP are intended to be held by two newly-formed Orion companies, namely the New Okiep Exploration Company (Pty) Ltd (**New Okiep Exploration Co**) (initially 100% Orion) and the New Okiep Mining Company (Pty) Ltd (**New Okiep Mining Co**) (initially 56.3% Orion : 43.7% Industrial Development Corporation (**IDC**)). Both entities will, in future, include empowerment partners in compliance with Mining Charter 2018.

In the September 2021 Quarter, the IDC signalled its intention to become a key strategic partner with Orion in the development of the New Okiep Mining Co (a subsidiary of Orion) and the OCP. This newly-created Orion subsidiary will hold the SAFTA assets and will be responsible for advancing its development as a potential second base metals production hub for the company in the Northern Cape region.

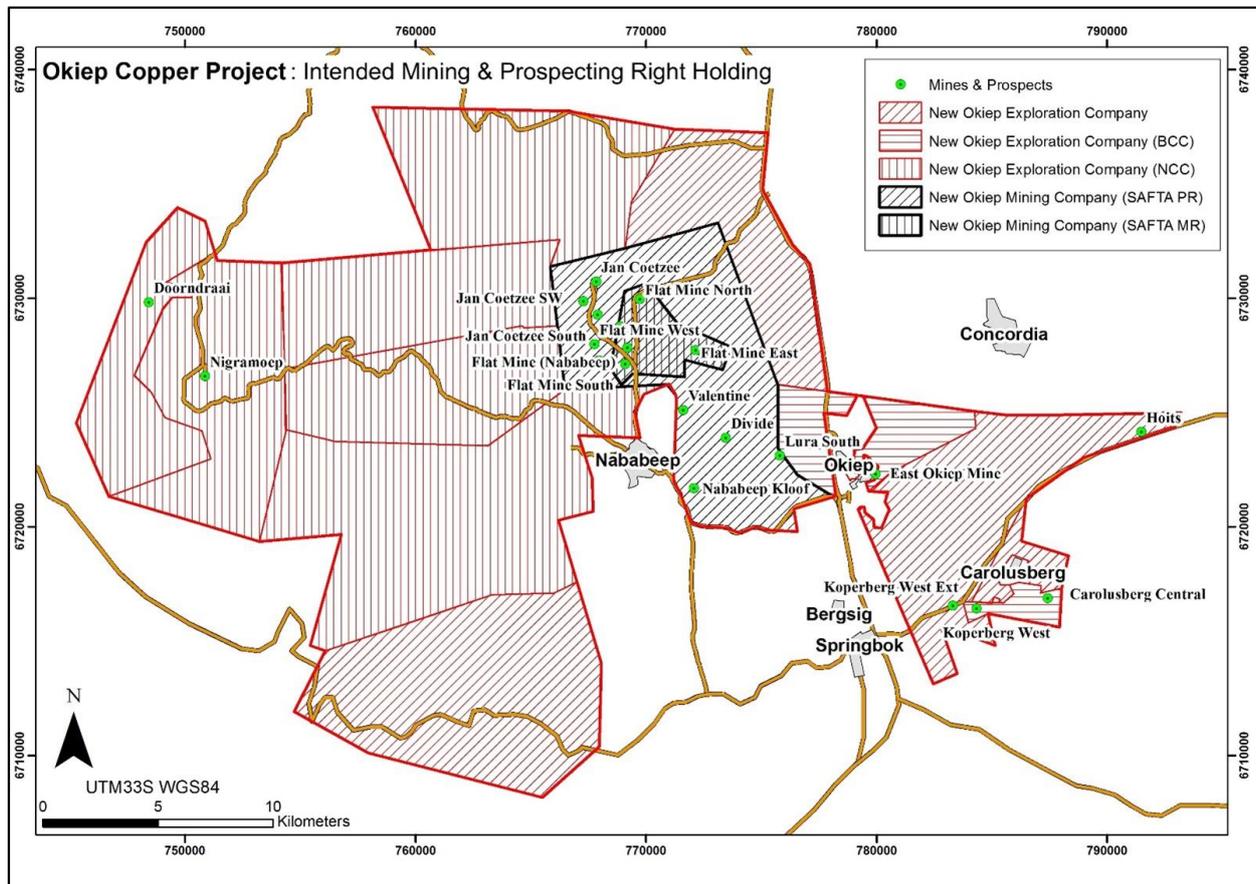


Figure 1: Location of the Okiep Copper Project (OCP) Mineral rights.

## Okiep Copper Project Operational Activities

### Mine Planning

The geological models for the Flat Mines Project Orebodies have been reviewed and detailed mine planning and scheduling is underway by Sound Mining (Pty) Ltd, who have been appointed to undertake the detailed mine planning, scheduling and mining engineering to be included in the BFS. The detailed mine plan is scheduled for completion by the end of the March 2022 Quarter.

### Infrastructure

#### Power Supply

Applications for the establishment of a 10MVA Electricity supply point have been submitted to Eskom and the local Nama Khoi Municipality. In terms of the national electricity supply regulations, either entity could potentially supply power to the new development. Proposals for the supply of power for the project are expected in early 2022.

#### NababEEP Mine Offices

Occupation of the ex-OCC mine offices at NababEEP is complete. Security and access control facilities have been upgraded. A standby diesel generator is in the process of being installed to mitigate against the occasional load shedding and other power cuts that are experienced.

### Environmental Management

#### Water Use Licence Application (WULA)

The drafting of the WULA requires a number of studies to be completed by various environmental specialists. The following specialist studies have been completed over the Mining Right Area:

- Soils and hydrogeology;

- Surface water ecosystems;
- Biodiversity impact assessment; and
- Heritage impact assessment.

The following work is in an advanced stage:

- Hydrology, groundwater and stormwater studies; and
- Baseline air quality dust fall-out monitoring.

#### Tailings Storage Facility (TSF)

The TSF site selection study was expanded to include possible sites outside of the Mining Right Application area. A total of nine possible sites were evaluated in a study completed by Epoch, the engineering company appointed to undertake the TSF design.

The TSF site 1 (C) has been selected as the site for construction. Drilling of pezometer holes around the TSF site for ground water impact monitoring is nearing completion, while sterilisation drilling of the TSF basin commenced in January 2022.

#### **New Okiep Mining Company Permitting**

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

- SAFTA Prospecting Right Applications over the areas contiguous to the MRA area are in process.
- Mining Right Application is being processed by the Department of Mineral Resources and Energy (**DMRE**). The reviewed Social and Labour Plan has been presented to the community and, following community approval, a final acceptance letter from the Nama Khoi Municipality is expected by the end of the March Quarter 2022.
- Land access negotiations with the landowners in the Mining Right and adjacent Prospecting Right Areas have commenced.

#### **Okiep Copper Project Exploration**

Due diligence programs at the OCP validated approximately 25% of the historical Newmont/Goldfields-era Okiep Copper Company (**OCC**) resource estimate data base of unmined mineralisation. In order to validate the remaining data base, Orion commenced confirmation drilling in August 2021. The maiden drilling program was designed to initially target near-surface mineralisation close to major infrastructure and existing mine development on the historical Koperberg – Carolusberg line of intrusives.

The Carolusberg Complex was the biggest contributor to historical mining in the Okiep Copper District, delivering 38Mt grading 1.54% Cu out of the reported total of 105Mt mined over the past 100 years. Historical mine records show that Carolusberg Deeps contributed 16Mt at a head grade of 2.05% Cu (refer ASX/JSE release 3 August 2021).

Orion is currently exploring prospects with known copper mineralisation along strike of Carolusberg, applying an exploration model derived from structural interpretation of the Carolusberg Mine mineralisation. The current drilling program also includes twin and in-fill drilling to verify historical drilling results and to allow future resource estimation.

To date, 1,900m of the 3,500m planned diamond drilling program has been completed, representing 16 of the 26 planned holes. Assay results from 39 samples have been received and reported (refer ASX/JSE release 11 January 2022). Further drill holes are currently being logged and sampled by Orion's geological team, prior to dispatch to ALS Laboratory in Johannesburg.

Results from these first assays have confirmed the historical drill results for high-grade near-surface sulphide copper mineralisation and, more importantly, have also confirmed Orion's geological hypothesis for a model for intrusive bodies arranged in en-echelon down-dip side-stepping lenses.

Historical drilling focused on drilling down-dip projections, without adequately testing the probable side-stepping of mineralised lenses as was encountered at the 38 million tonne Carolusberg Deeps mine, which sits along strike from and on the same structure as Okiep.

This potential for offset, high-grade lenses that continue down-dip below the extensive, shallow historical mining on the 5km strike Carolusberg line, presents an exciting exploration opportunity.

Drill testing of this down-dip position has been elevated as a high-priority focus for 2022, alongside testing of electromagnetic (**EM**) targets identified through the recent SkyTEM™ survey.

A major SkyTEM™ survey to define high-priority targets for undiscovered mineralisation was completed in late 2021 and the processed and finalised data has identified several high priority anomalies which have now been modelled for further follow-up.

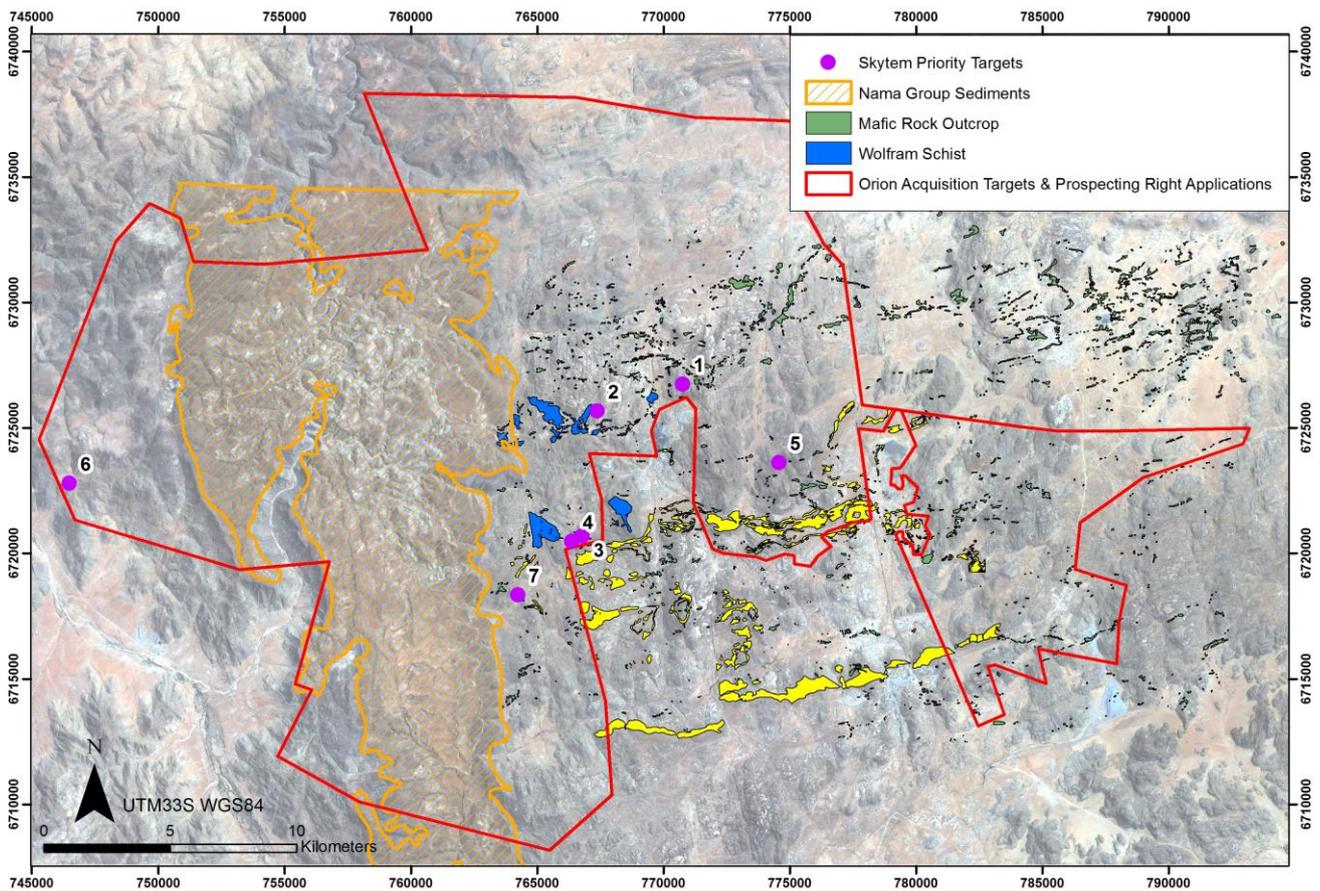


Figure 2: Plan showing OCP area of interest and location of the identified SkyTEM™ anomalies.

### Near-Mine Exploration

Within the Areachap Belt, Orion holds a 1,790km<sup>2</sup> land-holding that offers outstanding potential for the discovery of both Volcanogenic Massive Sulphide (**VMS**) mineralisation and intrusive Ni-Cu-PGE mineralisation.

Near-mine projects are those projects within prospecting rights held by PCZM (Dooniespan), Vardocube (Pty) Ltd and Bartotrax (Pty) Ltd. VMS deposits worldwide tend to occur in clusters and apart from the sizable Prieska Deposit, five smaller deposits have previously been discovered on the near-mine project areas.

These deposits include Annex, explored by Anglovaal between 1969 and 1981; the PK1, PK3 and PK6 deposits on Dooniespan (Kielder Prospects), explored by Newmont South Africa between 1976 and 1979; and the Ayoba mineralisation discovered by Orion in 2018.

During the Quarter, the Company did not carry out any work on the Near-Mine exploration area.

## **Regional Exploration**

At a regional level, exploration work continued on the Masiqhame Prospect and the Namaqua-Disawell Prospect.

### **Masiqhame Prospect**

Assay results were received for the previously reported pyrrhotite mineralisation, from 824m to 843m, intersected in OBPD004 at the Bokspuits prospect (refer ASX/JSE release 28 October 2021). No material base metal or precious metal values were returned for the zone.

A DHEM survey was completed in OBPD004 to EOH 902.02m which confirmed that the most conductive part of the conductor was in the footwall of the drill hole at depth. A decision was taken to deflect off the mother hole and then steer the hole using a Reflex navigational drilling down-hole motor.

Two deflections were drilled with assistance of directional wedges and down hole steering motors, however the hole trajectories deviated unacceptably from target and drilling was suspended pending further technical evaluation.

### **Namaqua-Disawell Prospecting Rights**

At Namaqua-Disawell, further mapping was conducted over FLEM conductor HP3 in licence NC10938PR with gossanous float and occasional highly pyritiferous quartzite being observed.

During the Quarter, access agreements were renewed for farm portions covered by Prospecting Licence NC10938PR and NC11010PR within the Namaqua-Disawell project area (Figure 3). A new access agreement was also negotiated for the recently granted Prospecting Licence Bokspuits North (Figure 3).

Standpipe collar installation and drill site rehabilitation was completed for the Jacomynspan prospect, straddling Prospecting Licences NC10938PR and NC11010PR. The rehabilitation work was audited by an environmental consultant in November 2021.

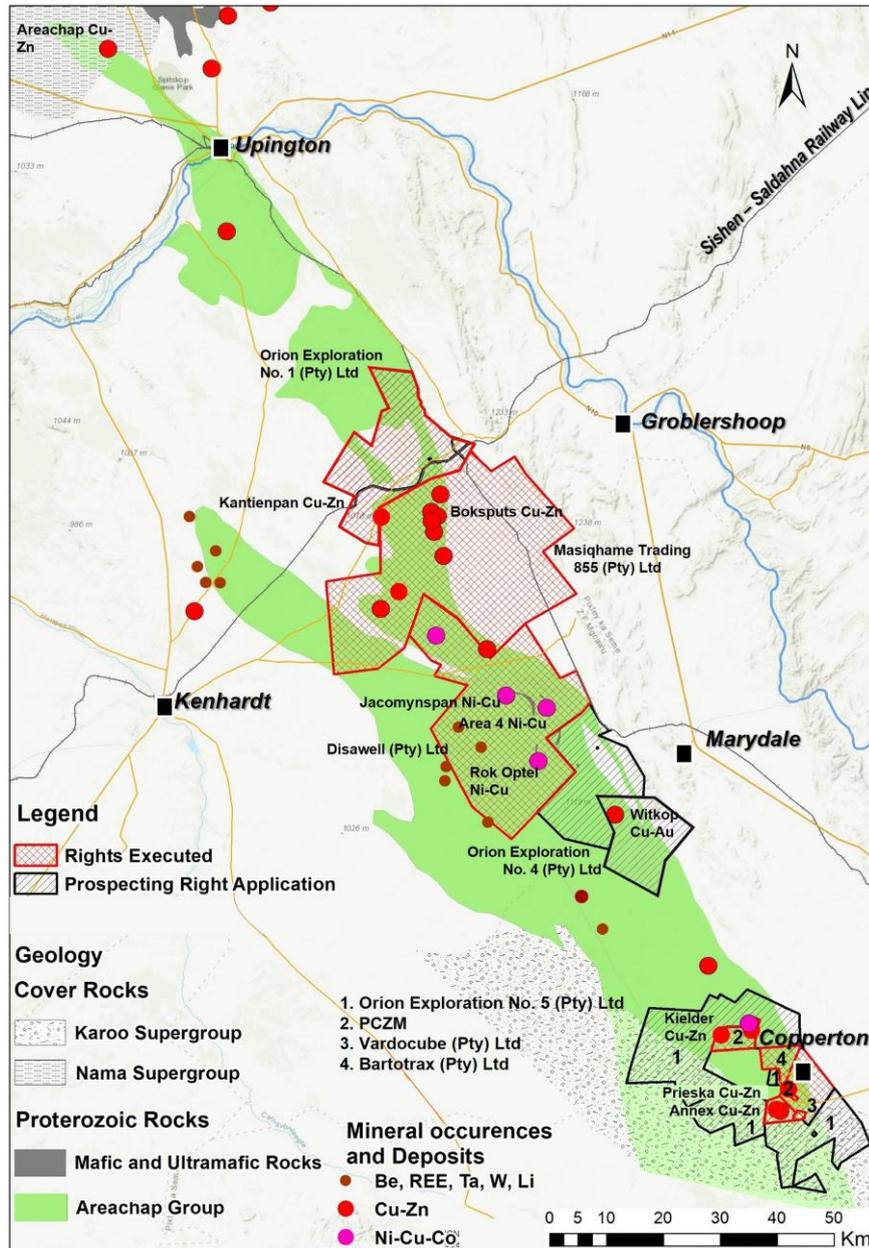


Figure 3: Regional geology map of the Areachap Belt showing prospecting rights held and under application by the Company and noted mineral occurrences as per published data from South African Council for Geoscience.

## Australian Projects

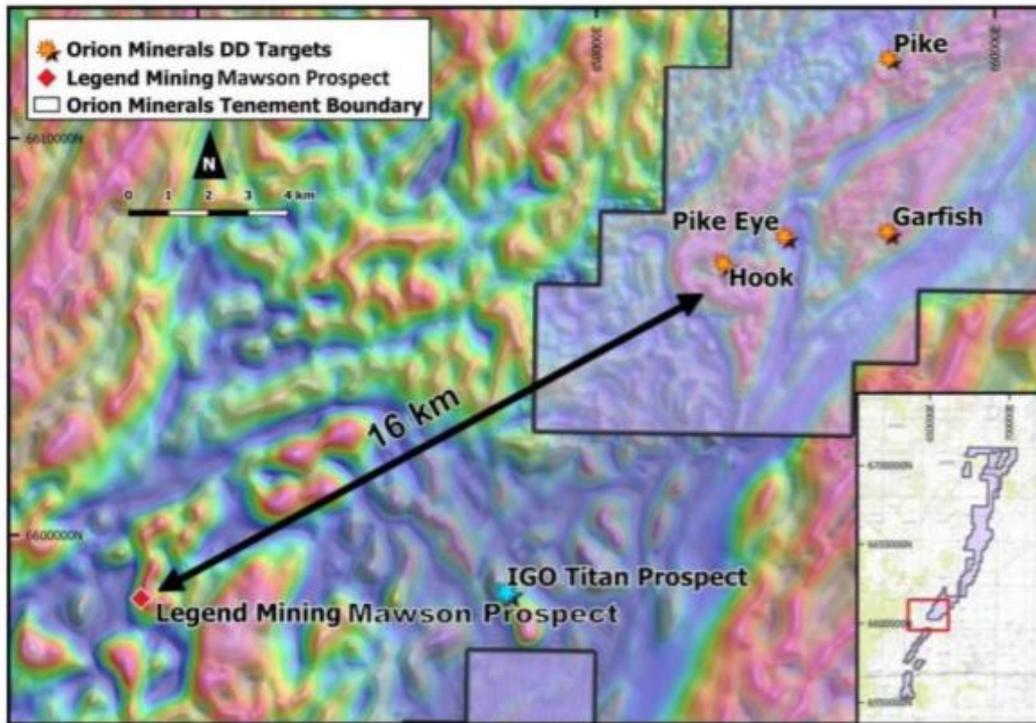
### Fraser Range – Nickel-Copper Projects (Western Australia)

Orion maintains a sizeable tenement package in the Fraser Range Province of Western Australia in joint venture with IGO Limited (ASX: IGO). 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.

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

A drilling program aimed at testing number of high-priority magmatic nickel-copper targets within the IGO-ORN JV tenement E28/2367 commenced during the Quarter.

Drilling has thus far intersected graphitic sulphidic schists with no material base metal values reported. E28/2367 includes the highly prospective Pike, Bilby (formerly Pike Eye), Pike North, Hook and Garfish targets, located along trend just 16km north-east of the recently confirmed Mawson nickel-copper discovery (Figure 4). The intrusive rocks hosting nickel mineralisation at Legend Mining's nearby Area D discovery also occur within a bedded meta-sediment package containing graphitic units.



**Figure 4: IGO-ORN Fraser Range Joint Venture tenements showing regional aeromagnetic image and locality of the Pike Prospects relative to nearby Legend Mining Mawson Prospect.**

During the Quarter, IGO completed the following exploration activities on the JV tenements, including:

- Review of the bulk geochemical analyses at the Angler target (E28/2462);
- Air-core drilling partially completed over the Calypso target (E28/2596);
- Diamond drilling at the Hook 1 & Hook 2 and Bilby targets (E28/2367);
- Two Moving Loop Electromagnetic (MLEM) surveys partially covering E39/1654 and E39/2707; and
- Three DHEM surveys were conducted on all diamond drill holes.

The data from the MLEM is being interpreted by IGO and the diamond core samples have been submitted for geochemical analysis. A review of the geological observations and DHEM results was pending at Quarter-end.

Heritage agreement negotiations continued between IGO and the Native Title Party, covering land within E28/2462. MLEM surveys were able to proceed while the heritage agreement continues to be negotiated, in order to achieve compliance with licence conditions. It is anticipated that agreements will be finalised during the March 2022 Quarter.

Other planned works for the coming Quarter include planning and logistics preparation for the 2022 field season, rehabilitation of the drill pads and access around Kanandah and Boonderoo stations and detailed geological logging and sample selection for geochemical assay for the Hook 1, Hook 2 and Bilby drill-holes. This will then lead onto geological and structural interpretation of core logging, geophysical surveys (such as DHEM) and geophysics data from Hook 1, Hook 2 and Bilby and subsequent conclusions and recommendations.

## 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 Victoria 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 \$10 million. Payments made to related parties and their associates during the Quarter was \$164k and relates to Director fees and consulting fees, as listed in Section 6 of the Company's Quarterly Cash Flow Report (Appendix 5B).

### 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 (~\$1.23 million);
- Interest rate: Prime lending rate in South Africa;
- Repayment date: 30 April 2022; 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 31 December 2021, the balance of the Loan Facility was ZAR21.09 million (~\$1.83 million) (including capitalised interest).

### Annual General Meeting

The Annual General Meeting of shareholders of the Company was held on 25 November 2021, with all resolutions put to shareholders passed by a poll.

## 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
NC30/5/1/1/2/00816PR	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.