



Orion Minerals

ASX/JSE RELEASE: 29 April 2022

March 2022 Quarterly Activities Report

HIGHLIGHTS

Project Development

- ▶ An early production assessment for the Prieska Copper-Zinc Project has been fast-tracked, with investigations into phasing the project development to bring forward the first concentrate production and evaluate remnant pillar mining potential, expected to be completed by Q3 2022.
- ▶ Resource in-fill drilling commenced at the 105 Level supergene resource at Prieska to support potential early production from open pit mining.
- ▶ 6,000m underground diamond drilling program underway, targeting remnant pillars at Prieska, with a Mineral Resource update expected to be estimated by Q3 2022.
- ▶ Discussions with banks and financiers regarding the financing for the Prieska Deeps Project are continuing in parallel with the engineering assessment of the early works opportunities.
- ▶ Discussions also initiated with potential financiers who have expressed interest in funding the early dewatering and production plan.
- ▶ Orion extended an agreement to consolidate ownership of the highly prospective Jacomynspan Nickel-Copper-PGE Project to provide additional time for the owners to discuss a potential expanded and revised transaction, whereby additional prospective Southern African nickel projects may be combined with the Jacomynspan Project.

Exploration

- ▶ Successful maiden drilling program completed on the Koperberg – Carolusberg line of intrusives at the Okiep Copper Project, with 25 diamond drill holes completed.
- ▶ Assay results have confirmed historically reported drill results and highlighted the presence of significant shallow mineralisation, including:
 - 7.76m at 1.94% Cu from 29.7m including 4.1m at 2.01% Cu from 33.3m in OKED064; and
 - 9.02m at 1.45% Cu from 103.08m including 5.9m at 1.86% Cu from 103.08m in OKWED068.
- ▶ Orion has made a new copper-nickel discovery within its Okiep Copper Project with the first drill hole undertaken to test a SkyTEM™ anomaly with coincident magnetic and electromagnetic (EM) anomalies at the Nous Prospect, providing strong validation for Orion's modern exploration methodology.

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

"The March 2022 Quarter was a productive period for Orion, with several highly significant developments across our business which we expect will deliver important outcomes in the second half of 2022. Key among these was our decision to investigate early production at the Prieska Copper-Zinc Project by rescheduling the order of development to bring the open pit construction forward. This, together with the mining of underground pillars, should allow us to produce our first concentrate 14 months earlier than originally envisioned in the 2020 Bankable Feasibility Study (BFS-20).

"An underground drilling campaign commenced to improve the confidence in our Mineral Resources' estimates for the portion of the Prieska deposit planned for open pit mining, as well as to evaluate the benefits of extracting some of the mineralised pillars left behind from previous mining. We expect results from the early production study by Q3 2022, which will provide a clear roadmap for our future production pathway.

"As part of the early production investigation, we are also preparing a plan to commence the dewatering of the underground workings using a modular configuration. This phased plan would allow us to start dewatering the Prieska Mine shaft during the current calendar year, ahead of the scale-up to the full-scale pumping rate outlined in the BFS-20 plan.

"In parallel with our work at Prieska, we have also commenced the work to establish the Okiep Copper Project (OCP) as a second copper concentrate production hub. We believe that the complementary combination of these projects will accelerate our journey to becoming a major copper producer in South Africa's Northern Cape Province and transform Orion into a significant international base metals mining house at an optimal time in the global market cycle for critical future-facing commodities.

"Further exploration drilling at OCP has led to the exciting discovery of a previously unknown copper-nickel mineralised mafic intrusive at the Nous Prospect. This is the first discovery in the district in more than 40 years – and it is directly attributable to the use of modern geophysics, followed by mapping and detailed ground surveys. Our early exploration success underscores the huge potential upside in the Okiep region.

"During the Quarter, we also extended an agreement to consolidate ownership of the highly-perspective Jacomynspan Nickel-Copper-Cobalt Project, located 80km north-west of Prieska. This extension gives us time to discuss a revised, expanded transaction, affording us the opportunity to include additional prospective Southern African nickel prospects into the project. Nickel, an essential component in electric vehicle batteries, fits well into our strategy of being a green metals producer. We are also progressing investigation of technologies to extract the precursor battery metal products and generate premium product for sale with a local refining/beneficiation plant"

Commodity Markets

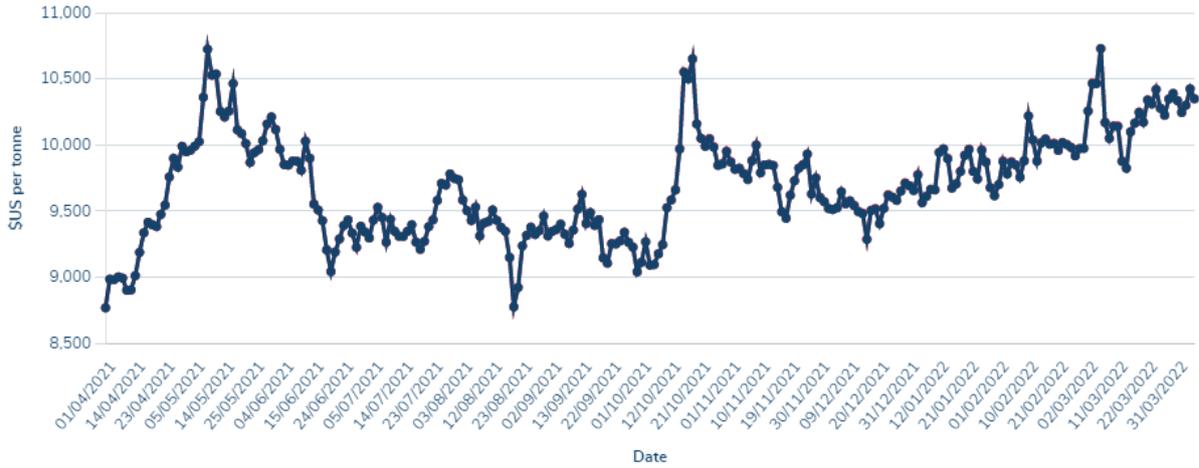
News of Russia's invasion of Ukraine, rising inflationary pressures in the developed world and a slowing Chinese economy, buoyed base metals prices in the first three months of 2022. Growing concerns about supply disruption and historically low global stockpiles saw copper touch USD10,910 per tonne in early March 2022.

The record intraday high set on 7 March 2022, came on the back of historically low global inventories with falling inventories in LME-registered warehouses adding to metal supply fears. At 69,825 tonnes, copper stocks were the lowest since 2005.

At the recent World Copper Conference, global commodity forecaster CRU predicted that the annual copper supply deficit would be 6 million tonnes per annum for the next decade, with an estimated investment of USD100 billion required in new mine developments to meet the new demand requirement – much of which is driven by the renewable energy sector and global decarbonisation push.

The squeeze on the LME also saw zinc inventories drop to 142,528 tonnes in March 2022. Disruption of zinc concentrate supplies due to the suspension of large zinc mines because of the COVID-19 pandemic and persistent environmental restrictions in China, has helped drive the price higher. By the end of March 2022, benchmark zinc futures on the LME ended at USD4,027, having gained nearly 14% since the beginning of the year.

LME Copper Price Chart



Source: London Metals Exchange

LME Zinc Price Chart



Source: London Metal Exchange

LME Nickel Price Chart



Source: London Metal Exchange

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	17,257	50,720
Mine Re-Entry	14,787	20,571
Contractors	14,339	61,198
Total	46,383	132,489

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

The Company continues to manage the risks from the COVID-19 pandemic in the workplace in line with government and industry guidelines. Three COVID-19 positive cases were reported during the Quarter, none of which required hospitalisation.

South Africa remained at Alert Level 1 in January 2022, with changes to adjusted Alert Level 1 coming into effect on 1 February 2022. These changes related to relaxations in isolation requirements and timeframes. Further adjustments were implemented from 22 March 2022, which related to further easing of restrictions on the use of masks, maximum allowable venue capacities and COVID-19 testing requirements for international travel. Orion has adjusted its COVID-19 policies in line with these changes.

Community and Stakeholder Engagement

Prieska Copper-Zinc Mine (PCZM)

Niekerkshoop and Marydale sports day

A sports day was held in December 2021, at the RD Williams Primary School Grounds in Prieska with local soccer and netball players from Prieska, Niekerkshoop and Marydale. The event follows the successful community sports day held in Siyathemba in 2019.

The tournament, which hosted 56 participants, was sponsored by Orion, the Department of Transport, Safety, and Liaison (**DTSL**), SAPS Prieska, and the Siyathemba Local Football Association. Teams from Marydale and Niekerkshoop participated in seven-a-side soccer and netball tournament during the sports tournament. Orion and DTSL jointly contributed towards the refreshments and transport for the event.

B4H scholar mobility rollout to schools

Orion continued the rollout of its "Scholar Mobility" project in January 2022, by distributing 40 more bicycles to four schools across Marydale, Vanwyksvlei, Niekerkshoop and an outlying area of Prieska. The bicycles were allocated for use to deserving students, including those who have long distances to travel between home and school.

The pre-loved bicycles were donated by Bicycles for Humanity Western Australia (B4H) and were brought to Prieska by Orion, while helmets were donated by Mulilo and reflectors were donated by the Provincial Department of Education. Orion previously distributed bikes to five schools in Prieska in June and October 2021.

HIV/Aids awareness and educational campaign

Health care workers from Siyathemba Niekerkshoop Clinic held an awareness and educational campaign in December 2021, to mark World Aids Day and remind the community of the importance of fighting the disease and the stigmas around infection.

The campaign emphasised the need for HIV/Aids counselling, prevention of mother-to-child transmission, treatment options and the importance of infected patients maintaining their health. The awareness campaign culminated in Orion, Municipal Councillors, the South African Police Service, Niekerkshoop Youth Development Centre, and the Department of Health's clinic, erected a sign saying "Niekerkshoop vs Aids" on the side of a nearby mountain.

The aim of the painting on the mountainside was to bring the community together and commit to preventing new infections, stopping discrimination, and ending preventable deaths associated with HIV/Aids in the community by 2030.

Establishment of a Community Participation Framework for PCZM

The Task Team, which was formed at the collaborative Bosberaad held in October 2021, held three independently facilitated meetings during the Quarter to outline how it will function and to finalise its terms of Terms of Reference. These Terms of Reference are the rules that will govern how the Task Team will operate as it carries out its responsibilities of developing an implementation and monitoring plan for the targets of maximising host community employment and procurement. Orion has agreed to work towards the aspirational target of achieving host community participation of 50% in employment, 30% in the procurement of goods and services and 40% in subcontracting opportunities at PCZM.

The Task Team will report on its progress to the PCZM and Orion management, the Business Chambers, the Orion Siyathemba Stakeholder Engagement Forum (**OSSEF**) and the Department of Minerals and Energy (**DMRE**).

The Task Team also visited PCZM in March and were taken on an underground tour to witness current activity and gain insight into how the mine will operate once it has been developed. After the visit, the PCZM Task Team members discussed the aspirational targets and agreed on the terminology and classification of a "host community", which will mean the areas of the Siyathemba Local Municipality and Vanwyksvlei.

The Task Team discussions were held in a positive spirit with constructive input received from all the participants. Further meetings to unpack procurement and skills development and training in more detail, are planned during the June 2022 Quarter.

The OSSEF also met during the Quarter and the meeting was well attended by representatives from the new Council, law enforcement, community interest groups, Orion management and shareholders. Both platforms aim to make sure that the communities of Siyathemba and Vanwyksvlei have meaningful participation in the economic development brought about by the Prieska Copper-Zinc Mine.

Employment and community training and development program opportunities at PCZM

Orion is assessing the merits of early production at the Prieska Copper-Zinc Mine and has engaged Murray & Roberts to conduct underground confirmation drilling to test the grade and extent of the mineral deposit to mine. Underground drilling began in February 2022 and will continue until Q32022.

In support of Orion's commitment to host community participation, Murray & Roberts interviewed candidates from the Orion database and employed thirteen people from the host community. These community members are being exposed to specialist underground exploration drilling. Murray & Roberts will also be providing underground competency training for a further six community members during the drill program and, together with Orion, will be offering 10 learnership opportunities at the Murray & Roberts Training Centre later in 2022.

During the Quarter, the occupational assessment process continued, with 40 host community participants undergoing the Dover Test (competency assessment for potential machinery and equipment operators).

Community engagement at Okiep Copper Project

During the Quarter, several additional community consultation meetings were conducted with the NababEEP town community to discuss the Local Economic Development projects contained in the updated Social and Labour Plan (SLP) submitted to the DMRE as part of Orion's application for the grant of the Southern African Tantalum Mining (Pty) Ltd (**SAFTA**) Mining Right for what is known as the Flat Mines Project. Nama Khoi Local Municipality endorsement of the SLP projects was received at the end of the Quarter, paving the way for the Mining Right to be granted by the DMRE.

Consultation continued with the new Ward Committees, established following the Local Elections in November 2021, with the objective being to constitute an Orion stakeholder engagement forum for the Nama Khoi Municipal Region in the June 2022 Quarter.

Orion reopened an existing water borehole at NababEEP. This additional resource has been made available to the Nama Khoi Municipality for community use. This water should go some way to assisting communities which have been experiencing water supply challenges.

Environmental Management

There were no environmental incidents reported during the Quarter.

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).

The combination of renewable energy, and access to green hydrogen and ammonia in the Northern Cape, has also facilitated discussions with base metal refining technology providers, for the investigation of potential value accretive refining and production of high value pre-cursor metal products used as feed for battery manufacturing plants. These pre-cursor metal products trade at a premium to LME metal prices and present a potential business opportunity, possibly in JV with specialist refinery businesses.

Prieska Mine Development and Exploration

Prieska Copper-Zinc Project Overview

While discussions with various parties on funding the construction of the Prieska Project based on the 2020 Bankable Feasibility Study (**BFS-20**) plan progress, the technical and commercial aspects of the project continue to be improved to incorporate opportunities as they are identified. Currently high copper and zinc prices favour getting the Prieska Project into production earlier than was planned in the BFS-20 plan. This early start aspect is being investigated while the baseline BFS-20 plan continues to be advanced concurrently.

Prieska Operation – Activities Subsequent to the Updated Bankable Feasibility Study

Early Mining Scenario Project Planning

In January 2022, Orion commenced workstreams to assess the merits of bringing forward the start of concentrate production from the Prieska Copper-Zinc Project to take advantage of the near-term high copper and zinc prices. The investigations are also assessing the merits of staggering the construction

program, such that full-scale production is reached in phases and peak funding requirements to achieve full production are significantly reduced. The dewatering of the underground workings is being considered to be started at a reduced pumping rate, ahead of a Final Investment Decision for the full-scale project construction, as outlined in the BFS-20 (refer ASX/JSE release 20 January 2022).

The assessment of these opportunities (Early Production Scenario) include the following main workstreams:

- 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.

Maintaining the core elements and material assumptions of the Prieska Deeps BFS-20 plan, this work is expected to be completed by Q3 2022.

Open pit mining

While extraction of the shallow supergene sulphide ore by open pit mining is included in the BFS-20 plan, it is only scheduled to commence from Year 13 of the mine life when the tonnage milled from underground steps down from the 200,000 tonnes per month to 100,000 tonnes per month.

The BFS-20 envisioned using only one of two installed mills for the open pit mining phase, and for the mining and processing of the 1.12Mt of supergene sulphide open pit ore to take place over two years (refer ASX/JSE release 26 May 2020).

As part of the Early Production Scenario opportunity assessment, a feasibility level study is underway to assess the merits of bringing forward the open pit mining to the start of the Prieska Project mine plan. This would allow concentrate production via the earlier commissioning of the first mill, while the second mill is being installed and other long-lead time capital projects for commencement of the Prieska Deeps Mine are completed.

In the BFS-20, the start of production is planned for Month 33 in the project development schedule. The current study aims to assess the impact of open pit production occurring concurrently to the long lead time elements of the Deeps Projects, such as mine dewatering, shaft refurbishment, underground infrastructure construction and stope preparation, all of which are independent of open pit mining.

The Early Production Scenario plan is currently evaluating whether the sulphide ore processing plant can be commissioned by Month 19, approximately 14 months ahead of the original BFS-20 schedule.

A high-priority underground drilling program on the +105 open pit has commenced to provide sample density sufficient to upgrade the Mineral Resource classification in accordance with JORC Code (2012) reporting guidelines. The program is expected to be completed by August 2022 and updated Mineral Resource and Ore Reserve estimates available shortly thereafter.

Remnant pillar evaluation

Mine records, plans and recent investigations confirm that previous underground mining was undertaken using long-hole open-stopping methods, without the use of any form of backfilling to stabilise the remaining voids. A grid of pillars was left in place to provide geotechnical mine stability.

Based on positive preliminary assessments, Orion has 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.

A 4,000m underground diamond drilling program, aimed at confirming the historical survey records and providing sufficient data for resource estimation, has commenced. This program targets the pillars above the current water level (300m below surface, Figure 1), and subsequent resource estimation is expected to be completed during Q3 2022.

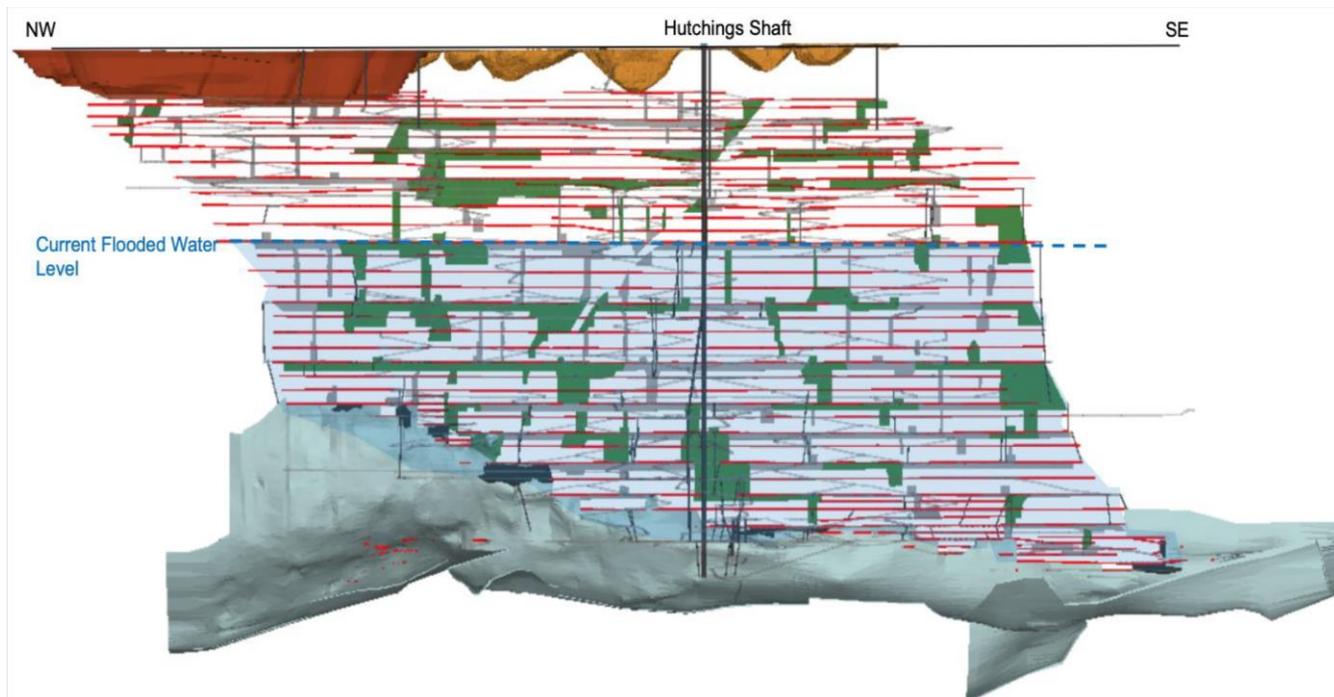


Figure 1: Isometric view showing the historically mined stopes and remaining pillars.¹

Mine dewatering

Early commencement of mine dewatering through the adoption of a modular approach is being investigated so that the dewatering setup, including water treatment, can be established in a phased and scalable configuration (Figure 2).

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 setup 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 also expected during Q3 2022.

¹ Refer ASX/JSE release 26 May 2020.

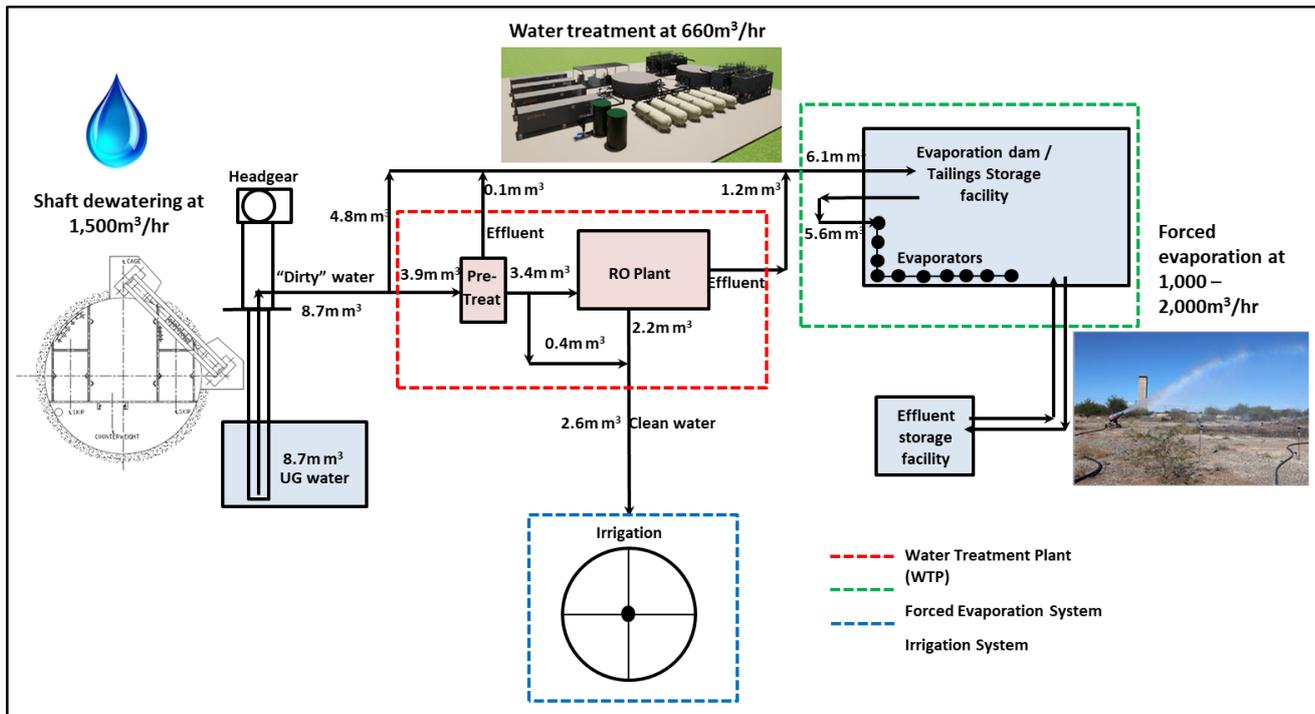


Figure 2: The mine dewatering configuration contemplated in the BFS-20 plan is shown. Approximately 9 million m³ of water would be pumped out of the mine over a 12-month period, at an average pumping rate of 1,500m³/hr. Some 45% of the water would be diverted for treatment to allow it to be used for agricultural purposes, while the remainder would be dispersed using forced evaporation. Implications of phasing the establishment of this configuration by commencing with a reduced-scale module capable of future expansion are being assessed.

Project Construction Preparation and Detailed 5-Year Planning of BFS-20 Plan

Orion has also been advancing with preparations for executing the Prieska Project as contemplated in the BFS-20 plan. This work has involved:

- compiling a detailed mining plan for the first 5-years of underground mining;
- continuing with preparation of project management Project Charter, developing the project procurement framework and formulating the technology roadmap;
- continue to secure critical long lead equipment that includes the rock and men and materials winders, as well as the ore processing SAG and ball mills;
- advancing key supply contracts – bulk power, bulk water and construction management.

Discussions with banks and financiers regarding the financing for the Prieska Deeps Project are continuing in parallel with the engineering assessment of the early works opportunities. In addition, discussions have been initiated with potential financiers who have expressed interest in funding the early dewatering and production plan.

Prieska Copper-Zinc Mine Exploration

105 Level Resource In-fill Drilling

Resource infill drilling of the open pitable portion of the Prieska deposit, required to support the Early Mining Scenario, commenced during the Quarter (Figure 3). An 800m drilling program is planned to provide enough data to upgrade the Inferred Mineral Resources portion of the 105 Level Resources to Indicated status (refer ASX/JSE release 20 January 2022). An additional 210m of drilling is planned to generate supergene material for metallurgical samples, with a further 60m of drilling planned as hole extensions into the hanging wall for geotechnical studies.



Figure 3: Long section showing current PCZM 105 Level resources with schematic illustration of infill hole intersections for upgrade of supergene Resource from Inferred to Indicated status.

A total of 134m of drilling was achieved in this Quarter (Figure 4).

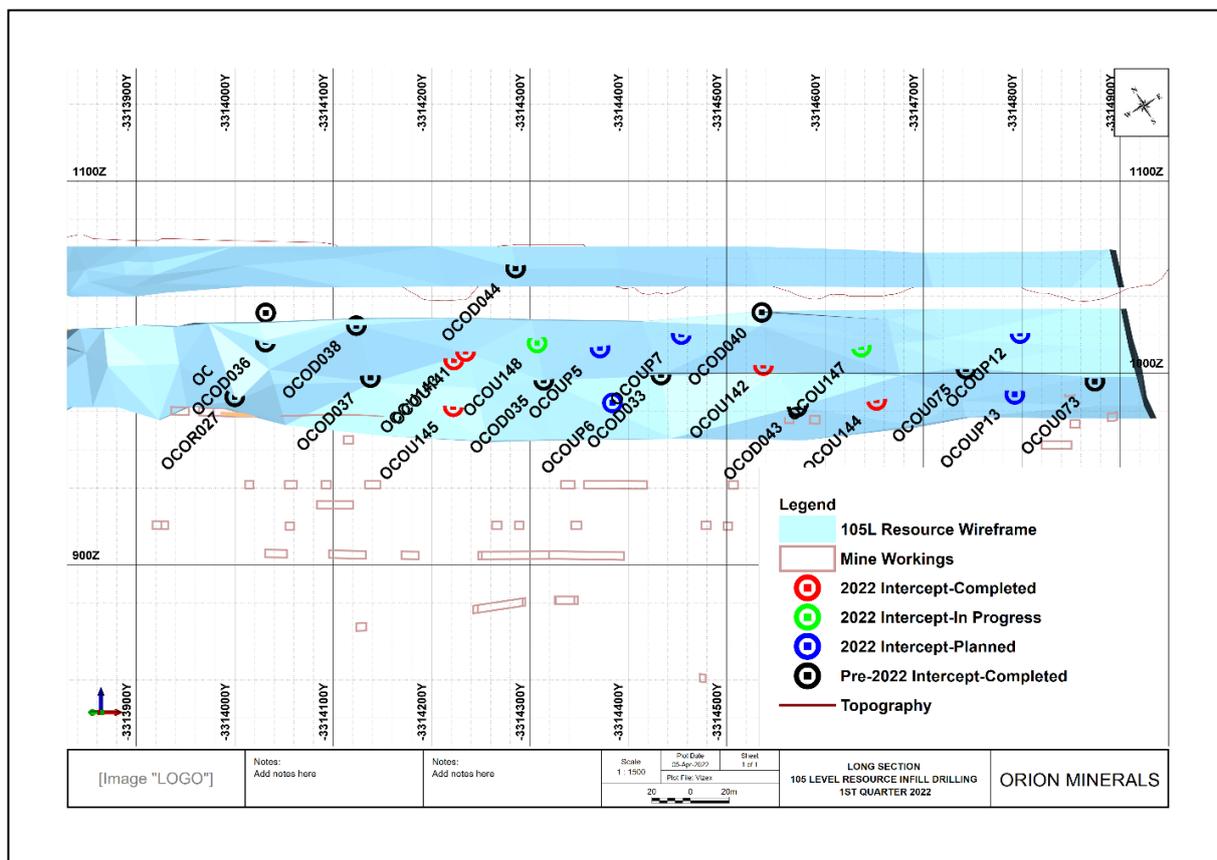


Figure 4: Long section showing the PCZM 105 Level supergene resource area with existing and planned drilling intercepts.

Remnant Pillar Resource Definition Drilling

A remnant pillar Mineral Resource definition drilling program is planned to run concurrently with the 105 Level Resource infill drilling program. This initial phase of the drilling campaign is focused on those remnant pillars currently above the accumulated water level, which is approximately 294m below surface (Figure 5). The program comprises a potential total meterage of 4,000m of Mineral Resources and metallurgical sample collection drill holes. The program commenced in April 2022.

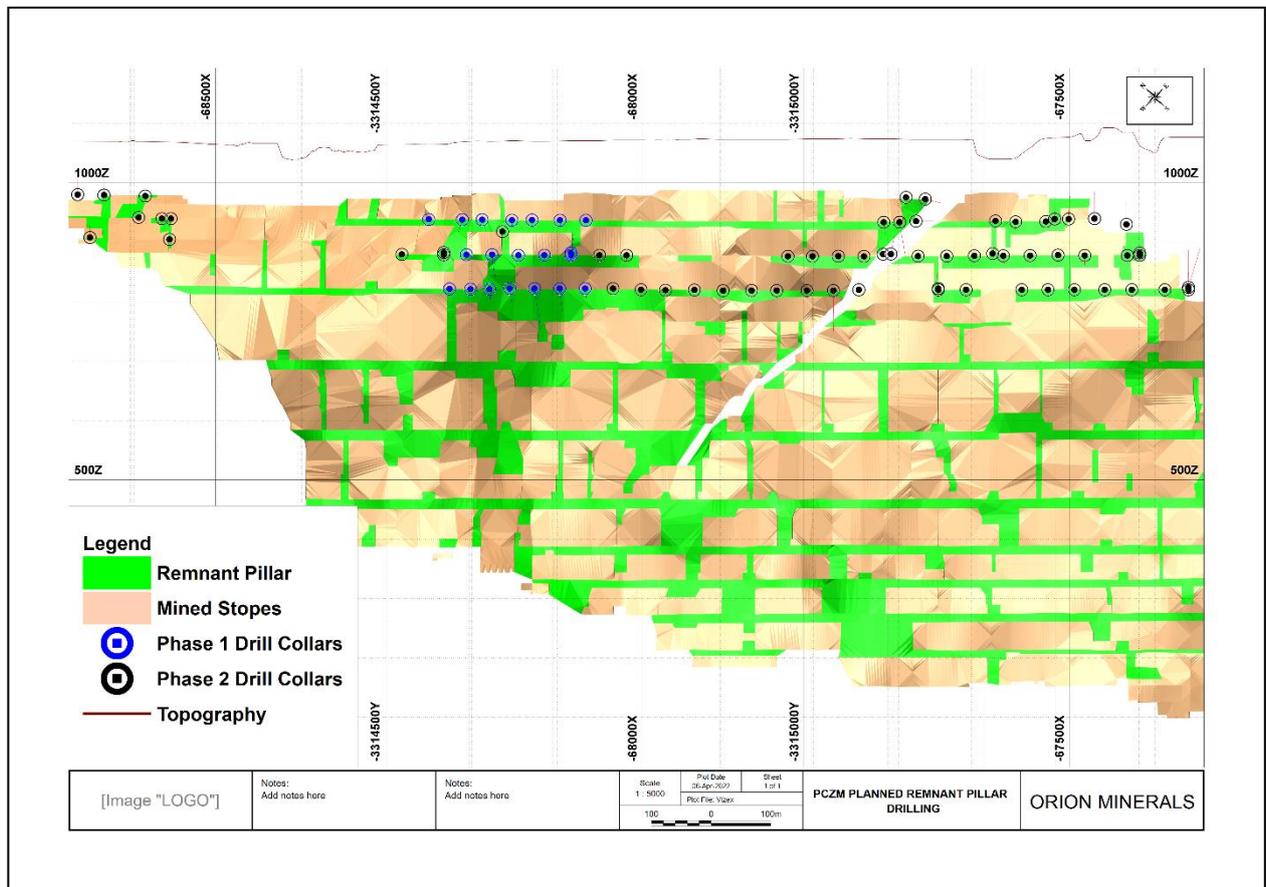


Figure 5: Longitudinal section showing the remnant pillars in the PCZM and planned drilling collars.

Okiep Copper Project

Okiep Copper Project Operational Activities

Environmental Management

Water Use Licence Application (WULA): The drafting of the WULA requires a number of studies to be completed by various Environmental Specialists. In addition to the studies previously reported, the Hydrology and Stormwater Management specialist study was completed over the Mining Right Area during the Quarter.

The following work is due for completion in the June 2022 Quarter:

- Groundwater modelling and impact assessment;
- Geochemical characterisation and waste classification;
- Radiological risk classification; and
- Baseline air quality dust fall-out monitoring.

Tailings Storage Facility (TSF): The TSF detailed design in the selected site TSF1C is in progress. Optimisation of the embankment location has been completed and geotechnical sampling of the TSF wall foundations and basin has been initiated.

The design of the TSF will be a "total impoundment lined facility", where walls will be built using mechanically placed waste rock and ore-sorting reject material, instead of flotation tailings. A portion of the flotation tailings will be used underground in backfilling of mined-out areas to reduce the TSF footprint.

Drilling of holes around the TSF site for ground water impact monitoring and sterilisation drilling of the TSF basin has been completed. Testing of these holes for baseline water quality and yield has been completed. Data is being used for the groundwater modelling and impact assessment of the mining operations.

Metallurgical Processing Plant

RADOS Ore-Sorting Test work: The potential to upgrade run-of-mine ore prior to milling and flotation is being investigated in conjunction with RADOS (Pty) Ltd, manufacturers of ore-sorting equipment.

Following encouraging simulation tests on diamond drill core, samples of ore were tested on a full-scale sorting machine in RADOS's works in Centurion, Gauteng. The results of this work confirmed simulation results seen previously.

A commercial proposal for the inclusion of ore sorters in the Processing Flowsheet is being drafted by RADOS, including the expected performance and operating cost of their equipment.

A metallurgical test work program including milling, flotation and tailings classification is underway. Samples from surface accumulations of ore from prior mining, as well as diamond drill core from the core library have been sent to Suntech Laboratories to confirm the results of prior test work undertaken on the various ore bodies planned to be mined in the Flat Mines Project.

The objective is to determine the variance, if any, of the milling and flotation behaviour of the various ore sources, as well as provide sufficient samples of flotation tailings for waste classification and backfill characterisation studies.

Mine Planning

Sound Mining (Pty) Ltd has been contracted to undertake the detailed mine planning, scheduling and Mining Engineering to be included in the BFS.

The detailed Mine Plan layouts have been submitted to the Mine Project Staff for approval. Optimisation of the stope and pillar layouts is being undertaken to improve extraction rates and run-of-mine delivery grades where possible.

The positions of the surface portals for the declines have been finalised, with the possible installation of conveyors in the new declines for Flat Mines South and East being accommodated in the design, in line with Orion's strategy to minimise our carbon footprint through the reduction of haulage using diesel driven trucks.

Infrastructure

Power Supply: Applications for the establishment of a 10 MVA electricity supply point have been submitted to both 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. Draft proposals have been received from Eskom, although further internal approvals from Eskom Transmission are required before final proposals will be delivered.

Negotiations with the Nama Khoi Municipal (**NKM**) Management are gathering momentum and in-principle agreement has been obtained. Details around tariffs and credit for upgrades to NKM infrastructure are still to be finalised.

Land Access

In-principle permission has been received from NKM Management for the use of municipal land for the construction of surface infrastructure required for the mining operation. A formal long-term agreement has been drafted but is yet to be concluded.

Community Liaison

Liaison with the NKM Executive team, as well as the community at large, continues. After a process of consultation with communities and political bodies, the endorsement of the Social and Labour Plan (required for progression of the Mining Right Application) was finally received from the NKM Management.

New Okiep Mining Company (NOMC) 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. The reviewed Social and Labour Plan has been accepted and the letter from the NKM Executive has been received and forwarded to 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 Mining Right Application area are still in progress.

Okiep Copper Project Exploration

Koperberg - Carolusberg line of intrusions

The exploration drilling program at the OCP is designed to test and expand mineralisation intersected in historical drilling. Drilling is currently focused on the Koperberg - Carolusberg line of intrusives. The first phase of drilling was completed during the March 2022 Quarter, with assay results received and reported subsequent to Quarter end.

The Carolusberg Complex was the biggest contributor to historical mining in the Okiep Copper 2 District, delivering 38Mt grading 1.54% Cu out of the reported total of 105Mt mined over the past 100 years (refer ASX/JSE release 21 May 2021). 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 Carolusberg Mine mineralisation.

The drilling program included twin and infill drilling to verify historical drill results and allow updated Resource estimation. The completed program comprised 25 diamond holes for 3,411m.

Assay results confirm historically reported mineralisation, with high-grade copper mineralisation close to surface. Results include:

- 10.36m at 1.84% Cu from 58.98m in OKWD100;
- 5.71m at 1.93% Cu from 72.85m and 4.76m at 3.99% Cu from 95.08m in OKWD102;
- 4.69m at 2.05% Cu from 49.22m in OKWD105;
- 5.76m at 1.46% Cu from 21.38m in OKWD109;
- 7.76m at 1.94% Cu from 29.65m in OKED064;
- 9.02m at 1.45% Cu from 103.08m in OKED068; and
- 5.69m at 1.45% Cu from 135.75m and 5.08m at 1.31% Cu from 159.30m in OKWED069.

Significantly, drilling also intersected a new mineralised zone at Koperberg West, supporting Orion's geological model, with a high-grade intercept of 4.76m at 3.99% Cu (from 95.08m in hole OKWD102) (refer ASX/JSE release 11 January 2022).

Historical drilling focused on drilling down-dip projections, without fully testing the probable sidestepping of mineralised lenses as was encountered at the 38Mt 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 a very exciting exploration opportunity. Drill testing this down-dip position has been elevated to a high priority focus for 2022, alongside the testing of EM targets identified through our recent SkyTEM™ survey.

Nous Prospect

Three diamond drill holes were completed at the Nous Prospect (for a total of 363.03m) on SkyTEM™ anomaly Target 4. The Nous Prospect encompasses two adjacent SkyTEM™ anomalies associated with magnetic anomalies. The prospect is located approximately 5km south-west of the historical Nababeep Mine which has recorded historical production of >2Mt (Figure 6) (refer ASX/JSE release 2 February 2021).

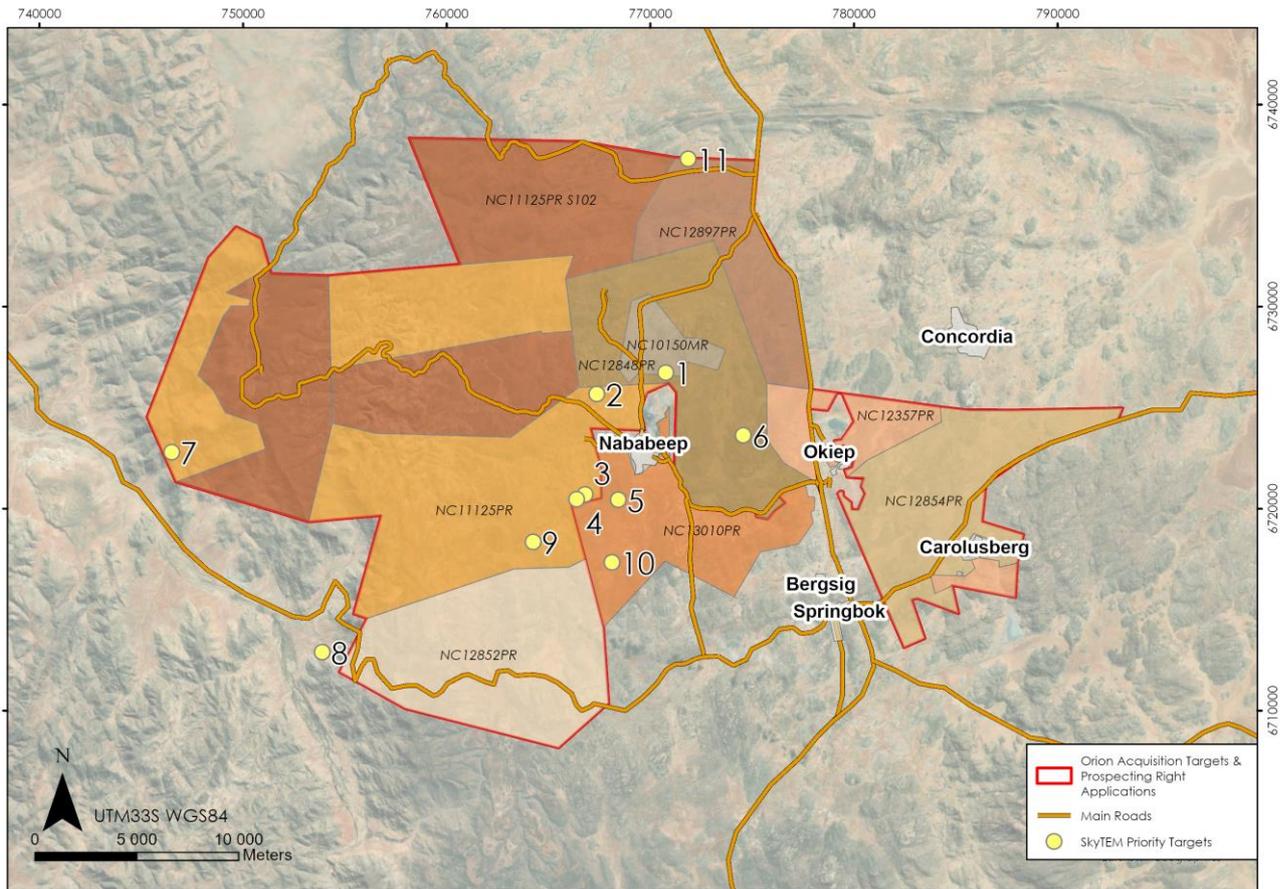


Figure 6: Locality map of SkyTEM™ priority Targets 1-7, within OCP Prospecting and Mining Rights.

The first diamond drill hole (OND001) completed at the Nous Prospect intersected mafic-intrusive-hosted copper sulphide-nickel mineralisation over a drill width of 10m from 31.72m down-hole (refer ASX/JSE releases 28 April 2022 and 24 February 2022). The mineralisation intersected occurs as blebs, veins and massive sulphide (80-100%) lenses of pyrrhotite–chalcopyrite over widths of 1-25cm in drill core within the magnetite rich, mafic intrusive host.

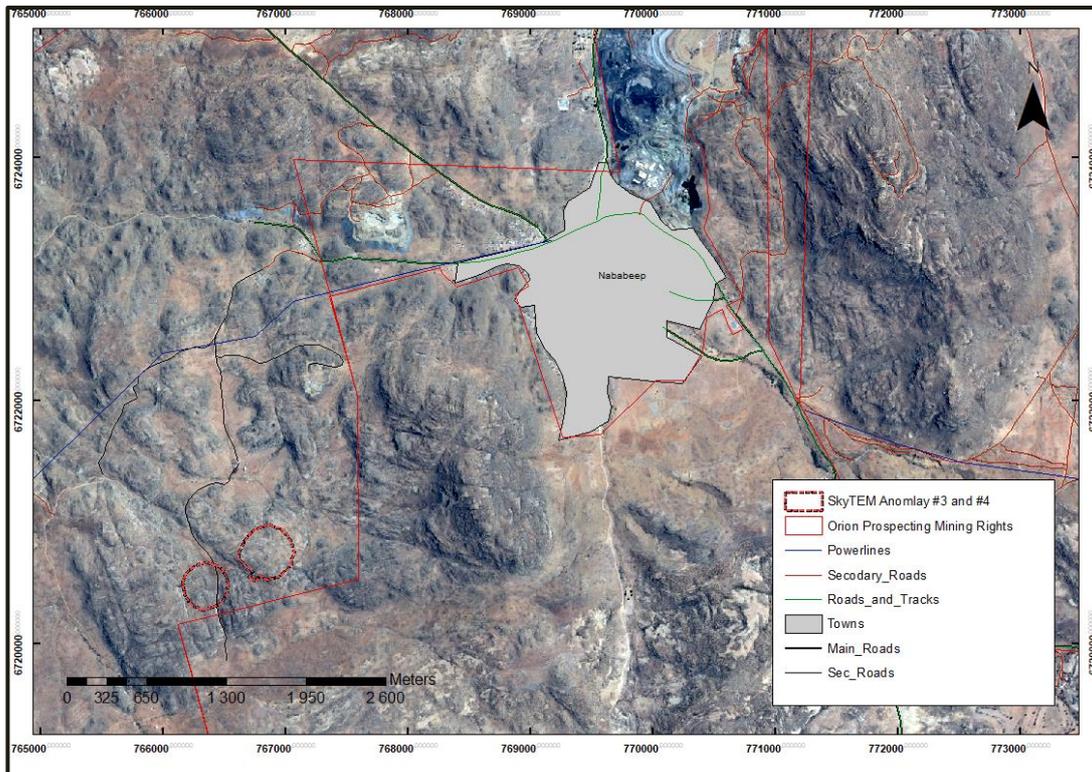


Figure 7: Locality of Targets 3 (right) and 4 (left) SkyTEM™ anomalies on Nous Prospect outside NababEEP.

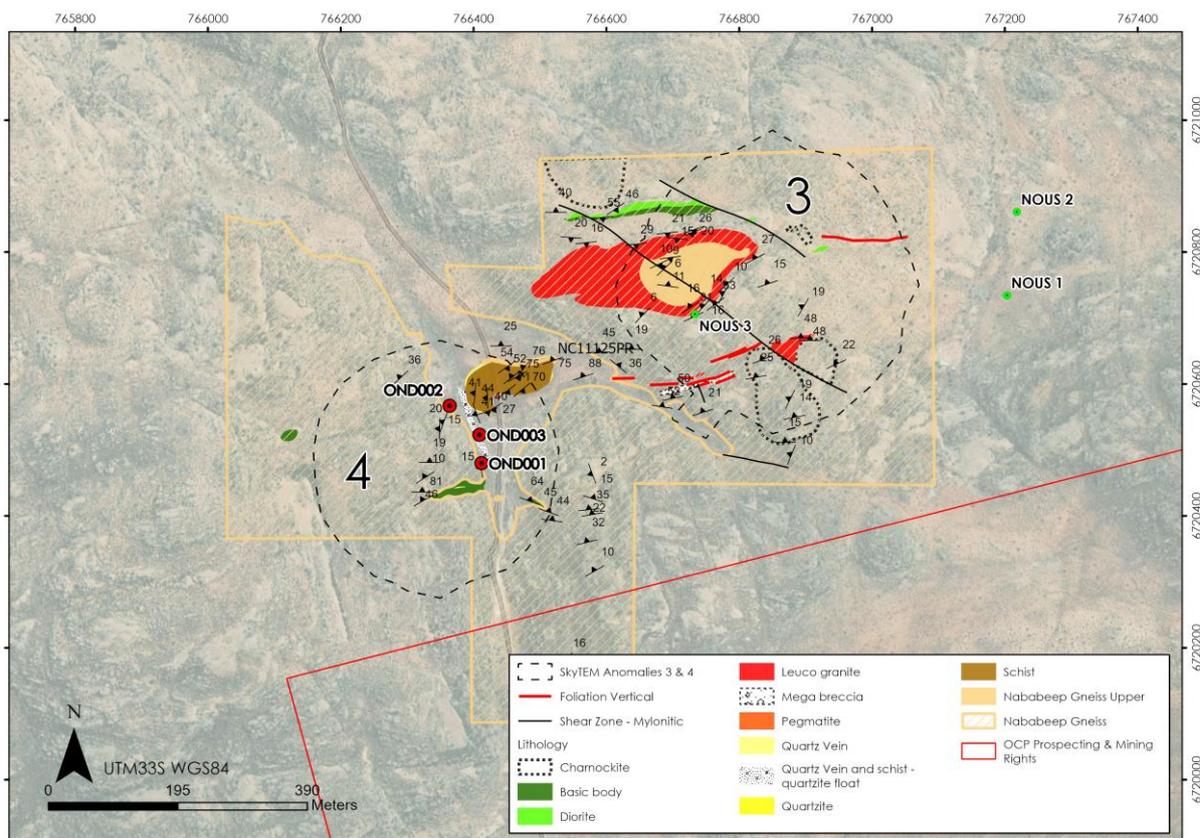


Figure 8: Map of the Nous prospect showing drill localities at Targets 3 and 4.

Drill hole OND001 intersected 10m at 0.67% Cu and 0.07% Ni from 31.70m including 3.87m at 0.91% Cu and 0.07% Ni from 33.45m (refer ASX/JSE release 28 April 2022). Importantly, veins of semi-massive to massive pyrrhotite sampled in the hole assayed up to 0.40% Ni, indicating high nickel tenors in the pyrrhotite (Table 2) and the potential for valuable nickel credits in mineralisation hosted within pyrrhotite-rich copper deposits in the OCP.

Table 2: High nickel values in pyrrhotite rich zones in hole OND001.

Hole ID	From (m)	To (m)	Width (m)	Cu (%)	Ni (%)
OND001	31.70	32.33	0.63	1.02	0.27
	34.08	34.28	0.20	1.42	0.40
	35.29	35.63	0.34	0.60	0.10
	40.70	41.00	0.30	0.46	0.24

Holes OND002 and OND003 intersected granitic gneiss and meta sediments. Massive pyrrhotite lenses devoid of base metals occurred in hole OND003.

A down hole EM survey of OND001 detected an in-hole conductor where the mineralisation occurs, confirming EM to be effective in detecting pyrrhotite-bearing copper deposits in the OCP. With this concept now proven, drilling has now started on Target 3 at Nous, where a steeply dipping conductor spatially associated with the required host structures is targeted (Figures 9 and 10). From geophysical interpretation, the Target 3 conductor seems substantially bigger and more conductive than the Target 4 conductor.

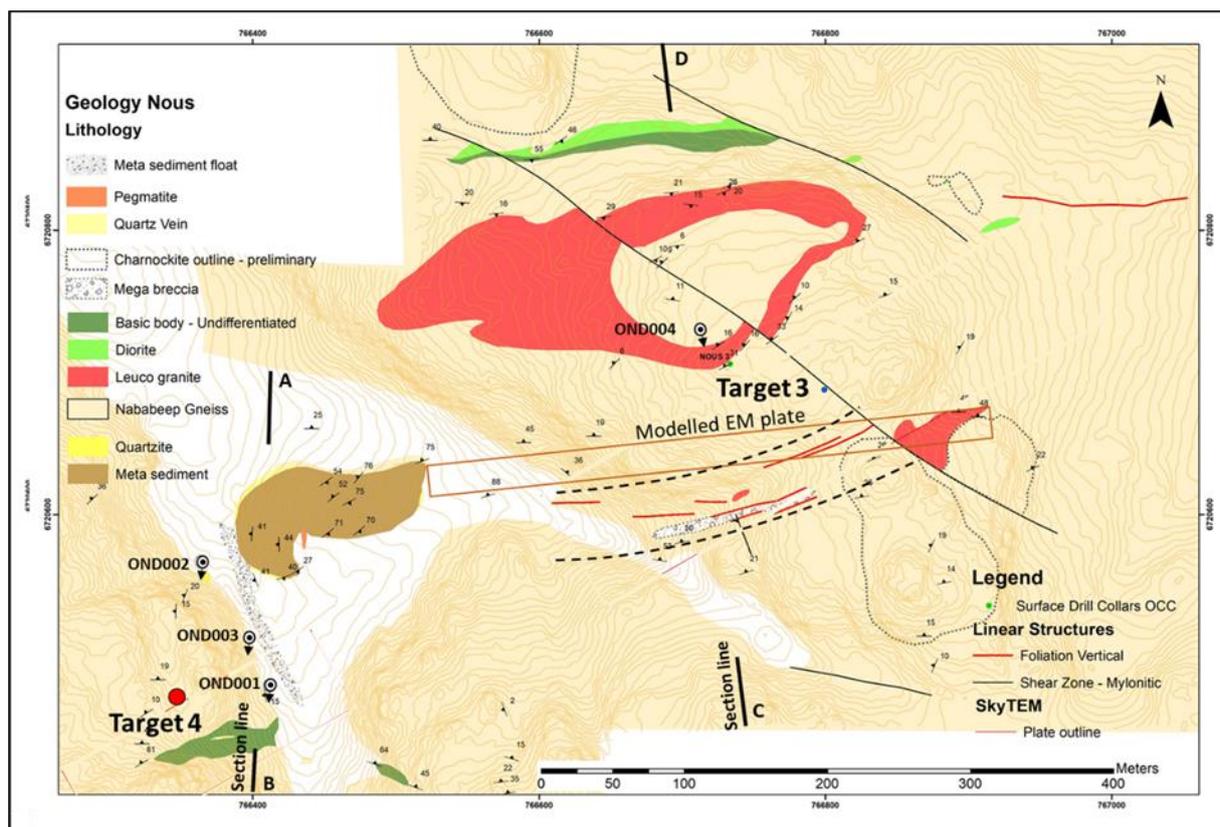


Figure 9: Geological map of the Nous Prospect showing Targets 3 and 4 and section lines.

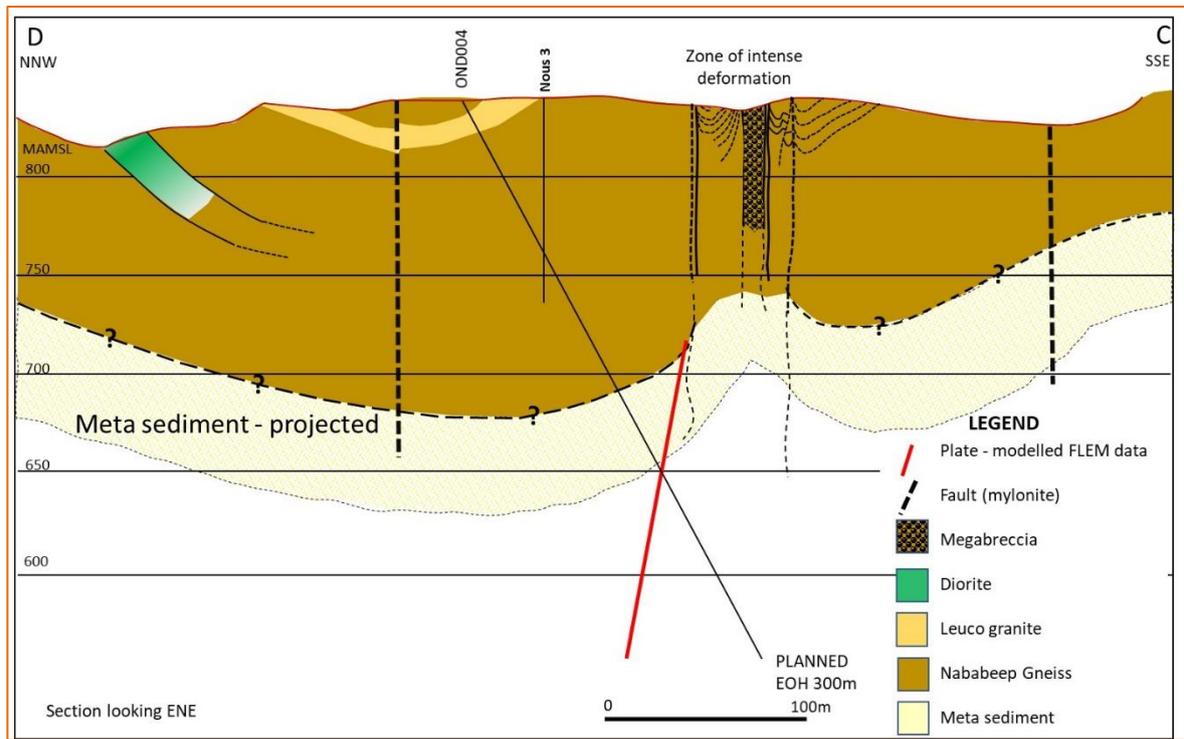


Figure 10: Cross-section looking east through Target 3 on the Nous Prospect showing the steeply dipping conductor and the projected hole OND004 that is in progress.

Historical Digital Data Compilation

A program of digital data capture from scanned historical information for Orion's current ground holdings and application areas has been ongoing since early 2021.

The emphasis to date has been on capturing historical drilling information to reinterpret geological models and assess remaining Resources in historically mined and explored areas. The program also includes digitising historical mine workings, capture of pertinent geological features (such as steep structures) and historical geophysics.

Out of 78 identified historical prospects, no data has been located for 11, while 31 have been partially/fully captured and 18 have not yet been captured.

Work is now focusing on consolidation of historical drilling information and prioritising a timely completion of remaining areas.

Areachap Near-Mine Exploration

Within the Areachap Belt, Orion holds a 1,790km² 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 during the Quarter, as outlined below.

Masiqhame Prospect

Exploration for the Quarter included infill and extension soil sampling on the Bokspuits prospect where copper soil anomalies were discovered in 2020, and on the Bokspuits East prospect, where Orion geologists previously discovered an ultramafic intrusive with elevated nickel values (using a calibrated, handheld Niton XRF instrument).

In total, 153 soils samples have been collected over the Bokspuits "main" grid, while 474 samples were collected over the Bokspuits East grid. The collected soils are being screened to -75 mesh size and analysed onsite using a handheld Niton XRF instrument. Field mapping at Bokspuits East prospect is ongoing.

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) (refer ASX/JSE 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 an exposure to the ongoing exploration and development of the Fraser Range Project without additional financial commitment, given that Orion is free carried through to the first pre-feasibility study on any of the tenements.

High-impact diamond drilling commenced at the Fraser Range Project in the previous Quarter. The assay results are still pending and will be interpreted in conjunction with the detailed geological information acquired for the holes drilled during the program.

During the Quarter, the following exploration activities were conducted by IGO on the Orion JV tenements:

- Processing and interpretation of Wai-iti North and South ground geophysical surveys (E39/1454 & E39/2707);
- Review of the bulk geochemical analyses at Calypso target (E28/2596);
- Down Hole Electromagnetics (DHEM) processing and interpretation at Hook 1 & Hook 2 and Bilby targets (E28/2367);
- Geological and structural logging of diamond cores drilled in the December 2021 Quarter; and
- Continuous planning and coordination for heritage agreements with the Upurli Upurli Ngunatja (UUN) Native Title Claimants.

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 \$5.97 million. Payments made to related parties and their associates during the Quarter was \$144k and relates to Director fees and consulting fees, as listed in Section 6 of the Company's Quarterly Cash Flow Report (Appendix 5B).

During the Quarter, the Company continued to progress discussions with multiple banks and financing institutions, in relation to funding for the development of the fully permitted Prieska Copper-Zinc Mine. 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.

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 (~\$1.31 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 31 March 2022, the balance of the Loan Facility was ZAR21.49 million (~\$1.98 million) (including capitalised interest). PCZM and AASMF are currently in negotiations to agree and settle a repayment plan in relation to the Loan Facility.

Jacomynspan Sale Agreement

During the Quarter, the Company reached an agreement to extend the final completion deadline date of a previously announced transaction to acquire the remaining vendor interests at its highly prospective **Jacomynspan Nickel-Copper-PGE Project**, located 65km north of its Prieska Copper-Zinc-Project in South Africa (**Jacomynspan Project**).

The Company and the other current shareholders in the Jacomynspan Project have extended the date by which the agreement must become unconditional from 30 April 2022 to 29 July 2022, with the extension providing additional time for the parties to discuss a potential expanded and revised transaction whereby additional prospective Southern African nickel projects may be combined with the Jacomynspan Project (refer ASX/JSE release 4 March 2022).

Tenement Table

Tenement	Project	Ownership Interest	Change in Quarter	Joint Venture Partner
South Africa				
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%	---	---
Western Australia				
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.