23 June 2020

Dear Sir/Madam,

**OZ Minerals' Carrapateena Life of Province Plan Scoping Study**

Please find attached the OZ Minerals Carrapateena Life of Province Plan Scoping Study.

Sincerely,

**Michelle Pole**  
Company Secretary and Senior Legal Counsel

This announcement is authorised for market release by OZ Minerals' Managing Director and CEO, Andrew Cole.

**FOR FURTHER INFORMATION, PLEASE CONTACT:**

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EXECUTIVE SUMMARY
Cautionary Statement

The Life of Province Plan Scoping Study referred to in this announcement has been undertaken to determine the potential of the Carrapateena Province for future mining opportunities following Block Cave 2. It is based on low level technical and economic assessments that are not sufficient to support the estimation of ore reserves. Further exploration and evaluation work and appropriate studies are required before OZ Minerals will be in a position to estimate any ore reserves or to provide any assurance of an economic development case for future mining opportunities in the Carrapateena Province following Block Cave 2.

The Life of Province Plan Scoping Study is based on the material assumptions outlined below and in the Carrapateena Block Cave Expansion Pre-Feasibility Study Executive Summary release in June 2020 (to the extent that the assumptions in that release are relevant to the Life of Province Plan Scoping Study assumptions). These include assumptions about the availability of funding, which is expected to be sourced from a mix of operating cash flow and supported debt. While OZ Minerals considers all of the material assumptions to be based on reasonable grounds, there is no certainty that they will prove to be correct or that the range of outcomes indicated by the Life of Province Plan Scoping Study will be achieved. It is also possible that funding may only be available on terms that may be dilutive to or otherwise affect the value of OZ Minerals’ existing shares.

It is also possible that OZ Minerals could pursue other ‘value realisation’ strategies such as a sale, partial sale or joint venture of the projects covered by the Life of Province Plan Scoping Study. If it does, this could materially reduce OZ Minerals’ proportionate ownership of the projects covered by the Life of Province Plan Scoping Study.

The Scoping Study referred to in this report is based on low level technical and economic assessments, and is insufficient to support estimation of Ore Reserves, or provide assurance of an economic development as at this stage, or to provide certainty that the conclusions of the Scoping Study will be realised.

Given the uncertainties involved, investors should not make any investment decisions based solely on the results of these studies.

Forward Looking Statements

These materials include forward looking statements. For disclaimers and conditions on forward looking statements, please refer to page 3 of Carrapateena Block Cave Expansion Pre-Feasibility Study Executive Summary release (which are incorporated into this release by reference).
Resources and Reserves

The reserves and resource information in relation to the Carrapateena and Fremantle Doctor projects is sourced from:

- Carrapateena 2019 Mineral Resources and Ore Reserves Statement and Explanatory Notes, as at 30 June 2019, released on 12 November 2019
- Carrapateena Block Cave Expansion: Carrapateena 2020 Ore Reserves Statement, as at 31 May 2020 released on 23 June 2020

Copies of which are available at https://www.ozminerals.com/operations/resources-reserves/.

OZ Minerals confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and, in the case of estimates of Mineral Resources or Ore Reserves, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. OZ Minerals confirms that the form and context in which the Competent Person’s findings are presented have not been materially modified from the original market announcement.

Carrapateena Sub-Level Cave Production Targets Cautionary Statements

The production targets for the Carrapateena Sub-Level Cave initially appeared in the announcement entitled ‘OZ Minerals Carrapateena Feasibility Study Announcement and Update’ which was released to the market on 24 August 2017 and is available to view at www.ozminerals.com/media/asx. OZ Minerals confirms that all the material assumptions underpinning the production target in the original market announcement continue to apply and have not materially changed.

Carrapateena Block Cave Production Targets Cautionary Statements

The production targets for the Carrapateena Block Cave Expansion initially appeared in the announcement entitled ‘Carrapateena Expansion creates significant value uplift and unlocks long-life mining province’ which was released to the market on 23 June 2020 and is available to view at www.ozminerals.com/media/asx. OZ Minerals confirms that all the material assumptions underpinning the production target in the original market announcement continue to apply and have not materially changed.
Carrapateena Life of Province Plan Scoping Study

Introduction

Carrapateena is located in the highly prospective Gawler Craton in South Australia, approximately 160 km north of Port Augusta. The Carrapateena operation produced first concentrate in December 2019 and currently plans to mine and process a 91 Mt Ore Reserve by the sub-level caving method and is now ramping up to an expected 4.25 Mtpa production rate by the end of 2020, with throughput rates to target 4.7–5.0 Mtpa from 2023.

The Carrapateena Block Cave Expansion Pre-Feasibility Study (Pre-Feasibility Study) focused on the opportunity to realise further value from the Carrapateena copper-gold Mineral Resource.

The Pre-Feasibility Study concluded that there is the potential to deliver superior value for OZ Minerals’ stakeholders by replacing the bottom half of the current sub-level cave with a larger block cave, operable from 2026. Value is derived from increasing production throughput to 12 Mtpa from 2029 at a lower operational cost and cut-off grade than the sub-level cave, and from bringing forward the ability to mine higher-grade ore at the bottom of the orebody. This ore would have been otherwise mined closer to the end of the mine life, using the sub-level cave mining method alone. Initial expansion into Block Cave 1 (BC1) also enables ability to unlock further value with future expansion into lower grade areas such as Block Cave 2 (BC2) which is considered in the Pre-Feasibility Study.

The Carrapateena Mineral Resource was updated to 970 Mt at 0.5% copper in November 2019 (OZ Minerals, Carrapateena 2019 Mineral Resources and Ore Reserves Statement, as at 30 June 2019) and has been restated and used for the Pre-Feasibility Study (OZ Minerals, Carrapateena Block Cave Expansion Pre-Feasibility Study ASX Release, June 2020). Associated with the Pre-Feasibility Study is an update to the Carrapateena Ore Reserve to 220 Mt @ 1.3% CuEq1.

This Life of Province Plan was considered at a Scoping Study level, considering future potential of resource extensions, satellite deposits and exploration targets, including Carrapateena, Fremantle Doctor, The Saddle, and Khamsin; known collectively as the Carrapateena Province (as shown in Figure 1). The Life of Province Scoping Study has been carried out at a lower level of detail than the Carrapateena Block Cave Expansion Pre-Feasibility Study and has utilised the cost and schedule estimates developed for the Pre-Feasibility Study as the basis of its economic assessment. The Life of Province Plan is a material opportunity to further unlock the Carrapateena Province for many decades after BC2; providing the region with the potential for a multi-generational mine that delivers significant value for OZ Minerals’ stakeholders.

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1 220 Mt @ 1.3% CuEq formula: Copper equivalent is calculated using the formula CuEq % = (Cu % + ((Au g/t * Au US$/oz * Au Rec) + (Ag g/t * Ag US$/oz * Ag Rec)) * 100 / (2205 * Cu US$/lb * Cu Rec * 31.1)). The assumed prices are $2.91 US/lb for copper, $1246 US/oz for gold and $17.20 US/lb for silver. The recovery for the current reserve is assumed to be 90% for copper and 67% for gold and silver. In OZ Minerals’ opinion, Cu, Au and Ag can all be recovered and sold economically.
Figure 1: Carrapateena Province Copper Resource Deposits and Exploration Targets
Carrapateena Block Cave Expansion

The potential Carrapateena Life of Province is unlocked by the Carrapateena Block Cave Expansion announced in June 2020 (OZ Minerals, Carrapateena Block Cave Expansion Pre-Feasibility Study Executive Summary ASX Release, 23 June 2020) as shown in Figure 2. The Carrapateena Block Cave Expansion BC1 justifies investment in growth capital with suitable capital efficiency, economic return and value for OZ Minerals’ stakeholders. The expansion to a 12 Mtpa production rate and investment in infrastructure then lowers the capital hurdle and operating cost of future resource development and enables the potential for staged expansion into additional lower grade block caves, such as the Carrapateena Block Cave Expansion BC2. BC1 and BC2 form the basis of the Carrapateena Block Cave Expansion Pre-Feasibility Study.

The Carrapateena Block Cave Expansion is an incremental staged increase to the sub-level cave base case, with a large number of common components. Infrastructure at Carrapateena has been constructed for the existing sub-level cave base case, and provides a solid foundation for the proposed Carrapateena expansion, with staged expansion capital.

Stakeholder Value Creation

Throughout the Scoping Study the Carrapateena Life of Province Plan has been evaluated against the five OZ Minerals’ Value Creation Stakeholder groups and the OZ Way framework. As opposed to a traditional quantitative assessment, the Value Creation assessment has been carried out in a detailed qualitative manner, to fully explore and understand the value and impact the Carrapateena Life of Province Plan may have on associated stakeholders, including employees, government, community, shareholders and suppliers for the potential multi-generational mine.

Risk-Based Thinking and Assurance

The Carrapateena Life of Province Plan Scoping Study was undertaken using an Opportunity and Threat assessment process. Material opportunities included Green Mine (renewable energy and carbon reduction strategies), Ore Sorting (from mine to mill), Digital Technology (data analytics and digitalisation) and Future Workforce (Agile methods and remote operations). The material threats are Cost and Schedule, Cave Mining Incidents and Water Security. These risks and associated control plans have been included within the Scoping Study assessment, with a roadmap to pivot to future opportunities as technology develops and uncertainty reduces.

Risk management and assurance practices underpin the Scoping Study with a focus on further understanding the risk profile of the project as the assessment continues. All material opportunities and material threats identified during the Scoping Study have been escalated according to the OZ Minerals Risk Management Process Standard, which are then managed by the Project Team, and will be monitored by the OZ Minerals Board.
Agile Methodology and Minimum Viable Products

An Agile project methodology was used to deliver this study, developing OZ Minerals’ application of ‘being Agile’ and ‘doing Agile’ to help navigate continuous change in the world’s innovative and social environment.

In addition to the traditional study test work, Minimal Viable Products (MVPs) are underway at Carrapateena to gain momentum on the material opportunities, in the areas of Green Mine (solar supply and fleet electrification), Ore Sorting (mine feed scanning), Digital Technology (data analytics and machine learning) and Future Workforce (Agile and new ways of working). These projects are underway with the forward thinking of how they will provide opportunities into the Life of Carrapateena Province.

Project Overview


The potential quality and grade of the Exploration Target around Fremantle Doctor are conceptual in nature, and it is uncertain if further exploration will result in an updated estimation of the Mineral Resource, with further drilling and assessment required.

The potential Life of Province mine layout is shown in Figure 3. The Life of Province has potential to continue as a multi-generational province beyond the Carrapateena Block Cave Expansion. The sequence of the potential mining blocks would progress in the order they are discussed in this Executive Summary.

Block Cave 1 and Block Cave 2 Upside

Following Carrapateena Expansion BC1 and BC2, OZ Minerals intends to evaluate the potential for BC1 Upside and BC2 Upside by increasing BC1 height from the planned 600 m to a potential 1,000 m, and BC2 from the planned 400 m to 800 m.

It is anticipated that this upside material would be at lower grade than the original block caves due to the increasing height of draw and additional cave dilution later in the mine life. BC1 Upside and BC2 Upside are both 100% Inferred Resources3 based on the uncertain cave flow of the initial block caves at this point in time.

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**Block Cave South**

Carrapateena Block Cave South is a potential additional cave, directly abutting BC1 and BC2, however, at a slightly higher RL (see Figure 3). Block Cave South is based on the declared Carrapateena Resource, with material similar to BC2 and comprises 43% Measured and Indicated plus 57% Inferred Resources.

**Carrapateena Stopes**

There are a number of areas near the top of the current sub-level cave that have potential for a small quantity of supplementary tonnes through sub-level open stope mining method. These tonnes could be in addition to either the sub-level cave base case or the block cave expansion. The Carrapateena Stope material is based on the declared Carrapateena Resource and comprises a 100% Inferred Resource.

**Fremantle Doctor Block Caves**

Fremantle Doctor is located 2.4 km to the north-east of the Carrapateena deposit and situated within the boundary of the existing mining lease (see Figure 1). Fremanntle Doctor Central, Fremanntle Doctor West and Fremanntle Doctor East caves could be mined as macro blocks to optimise timing of value and growth capital, and minimise geotechnical threats (see Figure 3). The Fremantle Doctor caves are based on the Fremantle Doctor announcement⁴, with material similar to BC2, and comprises 27% Inferred Resource and 73% of the remaining area to be assessed, with additional drilling required post BC1 development.

Based on the Carrapateena Block Cave Expansion Pre-Feasibility Study and the Carrapateena Life of Province Scoping Study, there is the potential to update the Fremantle Doctor Resource with a lower cut-off grade based on reasonable prospects of block cave mining.

**Khamsin and The Saddle**

Khamsin⁵ is located to the north-west of the Carrapateena deposit, outside of the existing mining lease, and The Saddle⁵ is situated on the mining lease, between the Carrapateena deposit and Fremantle Doctor (see Figure 1). Based on the Exploration Target status of these two deposits, and the lower grade of the previously declared Khamsin Resource⁵, there is insufficient information to support a mine plan and they will be a subject to future drilling and study phases.

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⁴ See OZ Minerals announcement entitled ‘Fremantle Doctor Project Mineral Resource Statement and Explanatory Notes, as at 12 November 2018’ released on 12 November 2018 and available at: www.ozminerals.com/operations/resources-reserves/


⁶ See OZ Minerals announcement entitled ‘Initial 202Mt at 0.6% copper Resource for Khamsin’ released on 26 May 2014 and available at: www.ozminerals.com/media/asx/
Figure 2: Carrapateena Block Cave Expansion Pre-Feasibility Study Layout
Figure 3: Potential Carrapateena Life of Province Mine Layout
**Underground Infrastructure**

Additional mining blocks would utilise the existing underground infrastructure, with incremental mining growth capital required for the setup of each additional cave. Block Cave South would utilise the existing Crusher Station 3 via ore passes to the BC1 and BC2 horizon, as well as the existing Carrapateena ventilation and associated mine infrastructure (see Figure 3). Fremantle Doctor would be connected to the Crusher Station 3 Material Handling System via a lateral underground conveyor. The crusher station proposed at Fremantle Doctor would be the same type used for Crusher Station 3. Fremantle Doctor would require additional primary ventilation and preconditioning infrastructure.

**Surface Infrastructure**

The Carrapateena Life of Province Plan assumption would be to continue the use of the Expansion surface infrastructure and process plant. The parallel process plant, developed as part of the Carrapateena Block Cave Expansion, would continue to be used for the Life of Carrapateena Province at a rate of ~12 Mtpa.

The current tailings storage facility at Carrapateena has a potential capacity of 350 Mt which would be further assessed for use during the Life of Province Plan. Additional capacity would be required later in the Life of Province Plan, with a number of potential sites identified for further assessment.

Following mining of caves within the Carrapateena Resource, there is potential for depositions of tailings into the closed subsidence zone. An initial study has been completed which demonstrates it is technically feasible once mining of these caves has been completed. This option is to be assessed further.

**Approvals Strategy and Social Performance**

Carrapateena will focus on progressive regulatory approvals as the stages of the Carrapateena Province are studied, finalised and approved. The progressive regulatory approvals strategy will facilitate OZ Minerals to extend its approach to the agile adoption of new mining methods, technologies and innovative ways of thinking over an extended multi-generational mining life.

The existing approvals framework will be adapted to facilitate the chosen approval strategy in consultation with the Government of South Australia’s Department for Energy and Mining. Key focus areas for the approvals scope will most likely relate to the potential risks or impacts associated with future tailings storage and any associated effect on groundwater resources.

Working with key stakeholders, including the traditional owners, the Kokatha People, and local pastoralists, will continue to be a focus to ensure we continue to create value for our stakeholders.
Carrapateena Province Exploration Opportunities

Exploration potential remains within the Carrapateena Province, including Khamsin\(^7\) and The Saddle\(^7\) (see Figure 1), as well as other potential near-mine targets. These will be progressively assessed as part of the annual Life of Province planning with the OZ Minerals Group Exploration function.

Additional surface and underground drilling of potential mining blocks and nearby resources would occur following the ramp-up and steady-state of BC1 to further inform the Carrapateena Life of Province Plan pipeline.

Cost Estimates

The Carrapateena Life of Province Plan Scoping Study has been carried out at a lower level of detail than the Carrapateena Block Cave Expansion Pre-Feasibility Study and has utilised the cost and schedule estimates developed for the Pre-Feasibility Study as the basis of its economic assessment.

Financial Analysis

Financial analysis has been carried out on each of the mining blocks described in the Life of Province Plan Scoping Study, with all being potentially economically viable and meeting internal investment requirements. Based on the lower level of study, and further studies being required before any final investment decision, no detailed financial analysis has been provided in this Scoping Study Executive Summary.

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\(^7\) See OZ Minerals announcement entitled ‘Fourth Quarter Report 2018’ released on 24 January 2019 and available at: www.ozminerals.com/media/asx/
Life of Province Plan Project Execution

Future Carrapateena Life of Province Plan studies will focus on learnings from the sub-level cave operations, the potential development of BC1 and BC2, as well as staged studies and test work to progressively de-risk material opportunities and material threats for the Carrapateena Life of Province Plan. The Carrapateena Expansion Study team will maintain progressive work on mining, underground infrastructure, process plant, surface infrastructure, and tailings storage facility options as required. Also, regulatory approvals planning, and stakeholder engagement will continue to be a priority to support future optionality for the Carrapateena Life of Province Plan.

The Carrapateena Expansion Study team will continue to add skills and experience to complement the Carrapateena Operations team, adding to the depth of caving and project knowledge within OZ Minerals. This additional experience builds on extensive knowledge within the OZ Minerals team in delivering and ramping-up cave operations in Australia and internationally, helping de-risk delivery of the Carrapateena sub-level cave and future block cave expansions.

Next Steps

To meet optimal timeframes for a block cave transition, the Carrapateena Block Cave Expansion will progress to a higher level of evaluation which is outlined in the Carrapateena Block Cave Expansion Pre-Feasibility Study Executive Summary.

The Life of Province Plan for Carrapateena will continue to be updated through the annual business planning process for the Carrapateena Operations, at a lower level of detail.
Key Contributors

OZ Minerals would like to thank the following organisations for their contribution in the development of the Carrapateena Life of Province Plan Scoping Study:

- AECOM Australia
- BBE Consulting Australasia
- Boart Longyear
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