Cautionary Statement

The Scoping Study referred to in this ASX release has been undertaken for the purpose of initial evaluation of a potential development of the Minyari Dome Project in the Paterson Province region of Western Australia. It is a preliminary technical and economic study of the potential viability of the Minyari Dome Project. The Scoping Study outcomes, production target and forecast financial information referred to in this release are based on low accuracy level technical and economic assessments that are insufficient to support estimation of Ore Reserves. The Scoping Study has been completed to a level of accuracy of ± 35% in line with a scoping level study accuracy. While each of the modifying factors was considered and applied, there is no certainty of eventual conversion to Ore Reserves or that the production target itself will be realised. Further exploration and evaluation work and appropriate studies are required before Antipa will be in a position to estimate any Ore Reserves or to provide any assurance of an economic development case. Given the uncertainties involved, investors should not make any investment decisions based solely on the results of the Scoping Study.

Of the Mineral Resources tonnage scheduled for extraction in the Scoping Study production plan approximately 72% are classified as Indicated and 28% as Inferred during the 7+ year evaluation period. There is a low level of geological confidence associated with Inferred Mineral Resources and there is no certainty that further exploration work will result in the determination of Indicated Mineral Resources, or that the production target itself will be realised. Inferred Resource tonnage comprises 25% of the production schedule in the first four years of operation. Antipa confirms that the financial viability of the Minyari Dome Project is not dependent on the inclusion of Inferred Resources in the production schedule.

The Mineral Resources underpinning the production target in the Scoping Study have been prepared by a competent person in accordance with the requirements of the JORC Code (2012). The Competent Person's Statement can be found immediately prior to Appendix A of this ASX release. For full details of the Mineral Resources estimate, please refer to Antipa ASX release dated 2 May 2022. Antipa confirms that it is not aware of any new information or data that materially affects the information included in that release. All material assumptions and technical parameters underpinning the estimates in that ASX release continue to apply and have not materially changed.

This release contains a series of forward-looking statements. Generally, the words "expect", "potential", "intend", "estimate", "will" and similar expressions identify forward-looking statements. By their very nature forward-looking statements are subject to known and unknown risks and uncertainties that may cause our actual results, performance or achievements, to differ materially from those expressed or implied in any of our forward-looking statements, which are not guarantees of future performance. Statements in this release regarding Antipa's business or proposed business, which are not historical facts, are forward-looking statements that involve risks and uncertainties, such as Mineral Resource estimates, market prices of gold, capital and operating costs, changes in project parameters as plans continue to be evaluated, continued availability of capital and financing and general economic, market or business conditions, and statements that describe Antipa's future plans, objectives or goals, including words to the effect that Antipa or management expects a stated condition or result to occur. Forward-looking statements are necessarily based on estimates and assumptions that, while considered reasonable by Antipa, are inherently subject to significant technical, business, economic, competitive, political and social uncertainties and contingencies. Since forward-looking statements address future events and conditions, by their very nature, they involve inherent risks and uncertainties. Actual results in each case could differ materially from those currently anticipated in such statements. Investors are cautioned not to place undue reliance on forward-looking statements, which speak only as of the date they are made.

Antipa has concluded that it has a reasonable basis for providing these forward-looking statements and the forecast financial information included in this release. This includes a reasonable basis to expect that it will be able to fund the development of the Minyari Dome Project upon successful delivery of key development milestones and when required. The detailed reasons for these conclusions are outlined throughout this ASX release (including the Funding section of this announcement) and within the Risks and Opportunities Section of the Appendix. While Antipa 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 Scoping Study will be achieved.

To achieve the range of outcomes indicated in the Scoping Study, pre-production funding estimated to be approximately A$275M may be required. There is no certainty that Antipa will be able to source that amount of funding when required. It is also possible that such funding may only be available on terms that may be dilutive to or otherwise affect the value of Antipa's shares. It is also possible that Antipa could pursue other value realisation strategies such as a sale, partial sale or joint venture of the Minyari Dome Project. This could materially reduce Antipa's proportionate ownership of the Minyari Dome Project.

No Ore Reserve has been declared. This ASX release has been prepared in compliance with the current JORC Code (2012) and the ASX Listing Rules. All material assumptions, including sufficient progression of all JORC modifying factors, on which the production target and forecast financial information are based have been included in this ASX release.

STRONG MINYARI DOME SCOPING STUDY OUTCOMES

Antipa Minerals Limited (ASX: AZY) (**Antipa** or the **Company**) is pleased to announce the key outcomes of the Scoping Study[1] completed on its 100%-owned Minyari Dome Gold Project located in Western Australia's Paterson Province. Minyari Dome is located within 35km of Newcrest Mining's Telfer gold-copper-silver mine and processing facility and 54km along strike from Greatland Gold-Newcrest's Havieron gold-copper development project.

The Scoping Study has confirmed the technical and financial robustness of a stand-alone gold mining and processing operation at Minyari Dome. It presents the preliminary evaluation of such a development at Minyari Dome based on the May 2022 Mineral Resource estimate, which is expected to grow significantly via current and planned future drilling.

Scoping Study highlights

- **Initial combined open pit and underground mine schedule of 21.4 Mt at 1.6 g/t Au (1.1 Moz gold).**
- **7+ years initial processing life at nameplate 3 Mtpa throughput.**
- **Simple, non-refractory metallurgy allows standard CIL process plant with 90% gold recovery.**
- **Total initial gold output of 975 koz, with an average of 170 koz p.a. for the first five years.**
- **Forecast average All-In-Sustaining-Cost (AISC) of A$1,475/oz (US$1,062/oz).**
- **Total pre-production capital cost of A$275M (includes pre-production mining of A$68M).**
- ***Pre-tax* NPV$_7$ of A$392M and 34% IRR (at US$1,750/oz gold and 0.72 A$/US$).**
- ***Post-tax* NPV$_7$ of A$278M and 29% IRR (at US$1,750/oz gold and 0.72 A$/US$).**
- **Post-tax payback of approx. 2.5 years from first production.**
- **Latent potential to boost economics with resource upside and by-product opportunities.**

Key potential upside drivers

- **Clear and substantial upside to mine schedule and operating life from:**
  - **Targeted further down-plunge extensional success at Minyari and WACA;**
  - **Delineation and incorporation of existing satellite resources (plus further growth);**
  - **Drill-out of recent discoveries at GP01, Minyari North and WACA East; and**
  - **New major deposit and satellite discoveries across the Minyari Dome Project.**
- **Further exploration success also delivers immediate potential to push-back final two years of lower grade stockpile processing.**
- **Additional project optimisation including potential copper and cobalt by-product outputs.**

Next steps

- **Board approval to advance to Pre-Feasibility Study (PFS), scheduled completion Q4 CY2023.**
- **Aggressive growth drilling programme at Minyari Dome commenced in June and running through H1 CY2023; updated resource expected Q3 CY2023 and to be incorporated into PFS.**

1 All Scoping Study results are approximate. Cost estimates are subject to Scoping Study level of accuracy of ± 35%

The Scoping Study is based on the May 2022 Minyari Dome Mineral Resource Estimate (**MRE**) (JORC 2012) of 33.9 million tonnes at 1.60 g/t gold, 0.19% copper, 0.54 g/t silver and 0.03% cobalt for 1.8 million ounces of gold, 64,300 tonnes of copper, 584,000 ounces of silver and 11,100 tonnes of cobalt.

A summary of the Scoping Study highlights is outlined below with further detail provided in the Appendix attached to this announcement.

Antipa's Managing Director, Roger Mason, commented:

"The Scoping Study has demonstrated a technically robust and commercially attractive stand-alone gold mining and processing development at our flagship 100%-owned Minyari Dome Project. Critically, this is just the beginning for Minyari Dome. Project economics are hugely leveraged to future resource growth, from both extensional and greenfield drilling opportunities.

An aggressive growth drilling programme was commenced in June at Minyari Dome, focused on testing of open pit targets with the objective of extending high-grade mine-life. Substantial and immediate opportunity for such further discoveries exists across the Minyari Deposit Keel Zone, Minyari South, Sundown, Minyari North, GP01, along with several high-prospectivity geophysical and soil greenfield targets across the tenure. This drilling programme is planned to continue through the second half of calendar 2022, with the next update of the Minyari Dome Mineral Resource Estimate targeted for around the middle of calendar year 2023.

Alongside this drilling and resource work, and as a direct function of the Scoping Study outcomes, the Antipa Board has approved the commencement of a Pre-Feasibility Study on Minyari Dome. The PFS is planned to incorporate the next Mineral Resource Estimate update into the mine scheduling, as well as progress a range of other upside opportunities identified as part of the Scoping Study – including the obvious by-product metal potential that exists. The PFS is scheduled for completion during Q4 CY2023.

Over the last 18 months, Antipa has started to truly unlock the potential of Minyari Dome. We have delivered a 250% increase to the Mineral Resource Estimate for the project, accompanied by a pipeline of further high-prospectivity gold-copper greenfield targets. Given the latent further value capable of being added via the drill bit, we remain committed to continuing a substantial exploration programme across our 144km^2 of tenure at Minyari Dome.

Strategically, Minyari Dome is also primely located just 35km from Newcrest's Telfer 22Mtpa processing facility. While a stand-alone development of Minyari Dome is our base case, and was the subject of this Scoping Study, we will naturally continue to assess all potential third-party pathways that might offer greater risk-weighted value for Antipa shareholders."

Introduction

Antipa is assessing the potential to develop the Minyari Dome gold-silver-copper-cobalt Project in the Paterson Province in north-west Western Australia. The Project is located approximately 35 kilometres (**km**) from Newcrest Mining Ltd's Telfer gold-copper-silver mine and mineral processing facility, 450km east of the regional hub of Port Hedland and 1,700km north-east of Perth (Figures 1 and 12). The closest town is Marble Bar, approximately 280km west of the Project Area.

Existing material infrastructure capable of servicing the Project includes:

- Two-lane bitumen roads from Port Hedland to Telfer Access Road turnoff, via Marble Bar.
- Two-lane gravel roads including Telfer Mine Access Road and Punmu Community Road.
- Access to site is via well maintained local tracks.
- Telfer Mine Gas Pipeline (owned by Energy Infrastructure Investments and operated by APA Group).

- Asian Renewable Energy Hub planned development (AREH up to 26GW of combined solar and wind power generating capacity).
- Port Hedland port, a bulk import and export facility.
- Port Hedland International Airport and Newcrest's Telfer Airport.

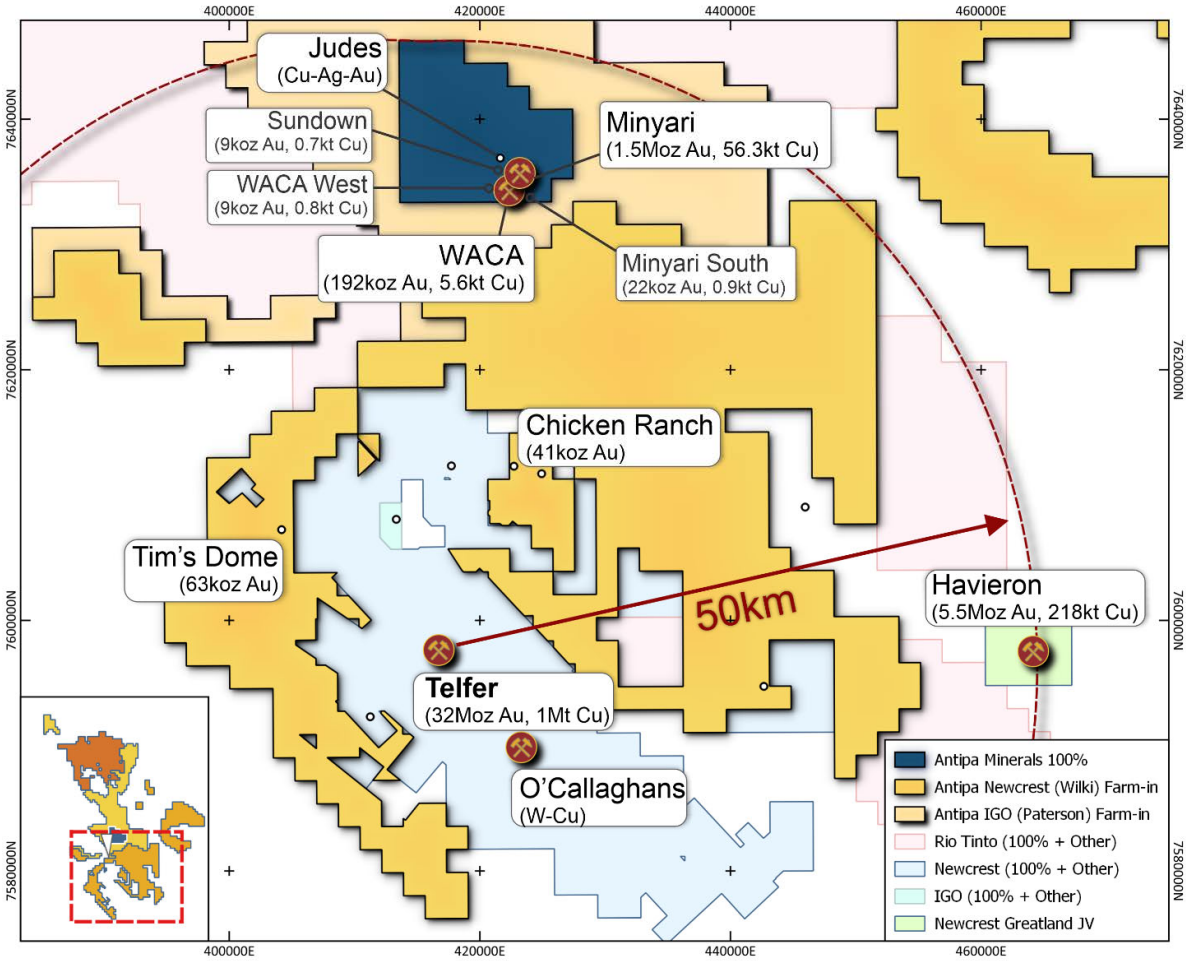

Figure 1: Project Location map showing Antipa's Minyari Dome (100%) Project and 30km proximity to Newcrest Mining Ltd's Telfer Gold-Copper-Silver mine and 22Mtpa processing facility. NB: Regional GDA2020 / MGA Zone 51 co-ordinates, 20km grid.

The Company engaged Snowden Optiro and Strategic Metallurgy to complete the Scoping Study for the Minyari Dome Project. The Study provides a preliminary technical and economic study of the potential viability of this Project based on low level technical and economic assessments (± 35% accuracy). The recommendations of the Scoping Study provide guidance for the ongoing appraisal of the development potential, including a Pre-Feasibility Study.

The Project's principal source of production is the Minyari deposit (96% of the ounces), which underpins the Project with minor production contributions from the WACA and Minyari South deposits (combined 4% of the ounces). The Study assessed two processing facility options each at throughput rates of 1Mtpa, 2Mtpa and 3Mtpa for gold-silver (**gold**) and gold-silver-copper-cobalt (**polymetallic**) cases. Based on various constraints applied to the Study, including the May MRE, mining rates (open pit and underground) and metallurgical factors, a gold Project with a plant throughput rate of 3Mtpa was considered optimal at this point in time. Whilst the PFS will focus on the gold case it may also undertake a more detailed evaluation of the polymetallic development opportunity.

Key Study Outcomes and Assumptions

The Study confirmed that the Minyari Dome Project presents a potential commercially viable development opportunity. A summary of the initial physical and financial evaluation of the gold Project case at a 3Mtpa throughput rate is shown in Table 1, with additional details provided in the Scoping Study appended as Appendix A.

Table 1: Scoping Study Evaluation Period Results and Key Assumptions (in A$)

Physicals and Costs			
Mining Physicals – Project		Total	
Ore Tonnage	**Mt**	21.4	
Grade Gold	**g/t**	1.6	
Contained Ounces Gold	**koz**	1,090	
Mining Physicals – Sub-Totals		Open Pit	Underground
Ore Tonnage	**Mt**	13.5	7.9
Grade Gold	**g/t**	1.1	2.4
Contained Ounces Gold	**koz**	486	604
Plant Throughput	**Mtpa**	3	
Evaluation Period (excluding pre-production)	**Years**	7+	
Strip Ratio	**waste:ore**	5:1	
Process Recovery Gold (Life of Mine average)	**%**	90	
Gold (Process) Production			
Total Evaluation Period (9 years)	**koz**	975	
Average Annual	**koz pa**	122	
Average Annual – First 5 years	**koz pa**	168	
Upfront Capital and Mining Cost			
Development Capital	**$M**	167.4	
Open Pit	**$M**	15.5	
Underground Decline	**$M**	24.4	
Total Development Capital Cost	**$M**	**207.3**	
Pre-Production Open Pit Mining	**$M**	67.7	
Operating Costs			
Mining Open Pit	**$/t**	25.30 Ore mined	4.10 Total material
Underground	**$/t ore mined**	80.00	
Processing	**$/t ore milled**	19.20	
General and Administration	**$/t ore milled**	1.40	
Total	**$/t ore milled**	70.00	
Financials and Key Assumptions			
Gold Price	**US$/oz**	1,750	
Silver Price	**US$/oz**	22	
Exchange Rate	**AUD:USD**	0.72	
Discount Rate	**%**	7.0	
Royalty Rate (WA Government + Sandstorm)	**NSR %**	3.5	
AISC			
First 5 year average	**US$/oz**	1,088	
Life of Mine (LOM) average	**US$/oz**	1,062	
Net cash flow (undiscounted, pre-tax)	**$M**	672	

Financials and Key Assumptions - continued		
Net cash flow (undiscounted, post-tax)	**$M**	491
NPV_7% (pre-tax)	**$M**	392
NPV_7% (post-tax)	**$M**	278
IRR (pre-tax)	**%**	34
IRR (post-tax)	**%**	29
Payback Period (pre-tax)	**Years**	2.46
Payback Period (post-tax)	**Years**	2.54

Production Projection

The production profile of the Project demonstrates annual production of up to 205,000 ounces of gold in Year 3, with average of 168,000 ounces of gold over the first five years of mining, and 122,000 ounces of gold per annum over the 7+ year evaluation period. Forecast LOM silver production is 350 koz, which is an annual average output of 44 koz. Gold production over the evaluation period is sourced from Indicated and Inferred Mineral Resource tonnage (JORC 2012), with 74% Indicated Resource (26% Inferred) for the three years of production spanning the payback period of the project and 72% (28% Inferred) over the current 7+ year evaluation period. The Minyari deposit comprises 96% of the gold production over the 7+ year evaluation period. Refer to Table 2 and Figure 2 below for a summary of the process production.

Table 2: Annual gold and silver process production - Throughput rate 3Mtpa

YEAR	Total	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8
Gold koz	**975**	153	183	205	179	123	59	54	20
Silver koz	**350**	37	56	74	64	40	33	32	12

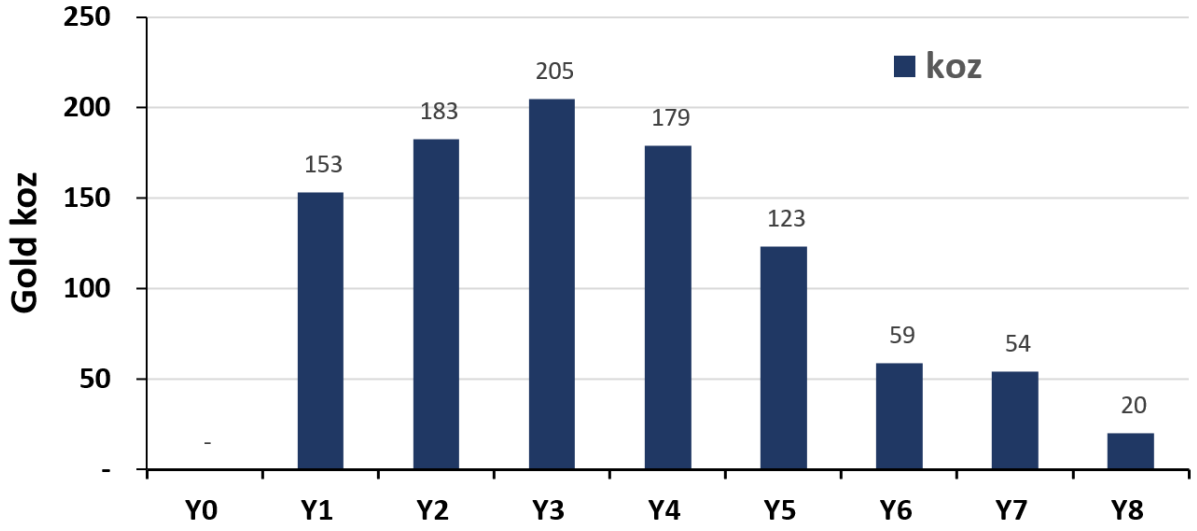

Figure 2: Minyari Dome Project Gold Output (recovered)

Sensitivity Analysis

Sensitivity analysis shows the Project to be resilient to changes in capital costs, but like most mining projects the economics are most sensitive to changes in operating costs and revenue parameters, such as the commodity price (Figure 3).

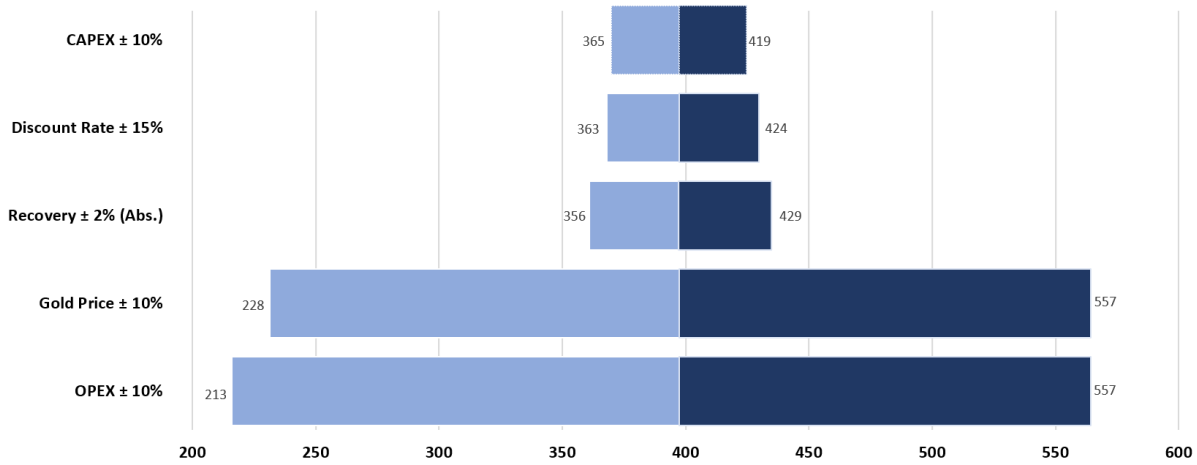

Figure 3: Minyari Dome Project NPV_7 (pre-tax) Sensitivity Analysis (A$M discounted)

Project Configuration

Processing

The Company studied two industry standard processing facility options; a gravity and Carbon-In-Leach facility (**CIL**) for a gold-silver (**gold**) case producing doré gold, and a flotation and gravity facility (**Flotation**) for the gold-silver-copper-cobalt (**polymetallic**) case producing separate copper-gold and cobalt concentrates plus some doré gold. Each processing facility type was evaluated at throughput rates of 1Mtpa, 2Mtpa and 3Mtpa. The 3Mtpa CIL gold Project case was considered optimal at this point in time (Figures 4 and 5).

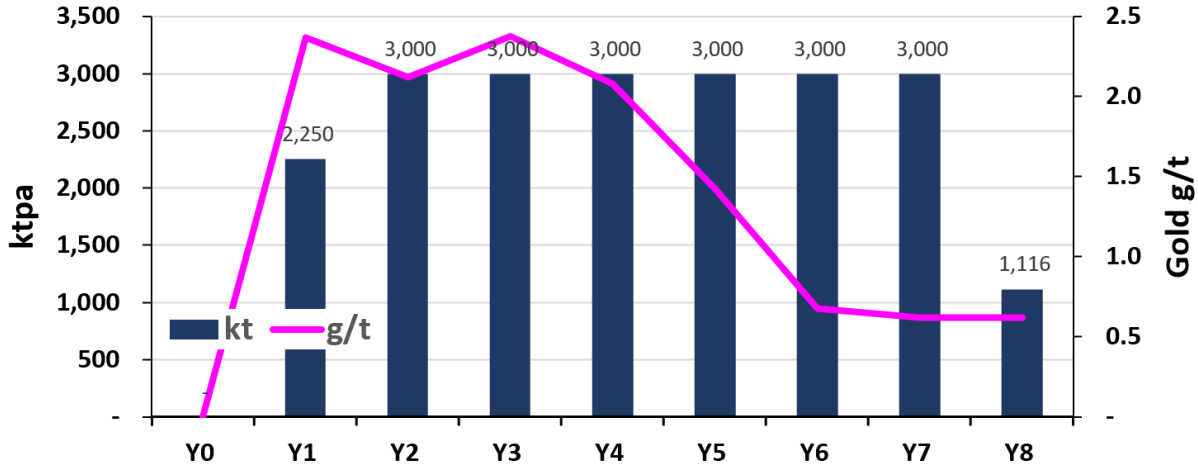

Figure 4: Minyari Dome Project Processing Schedule

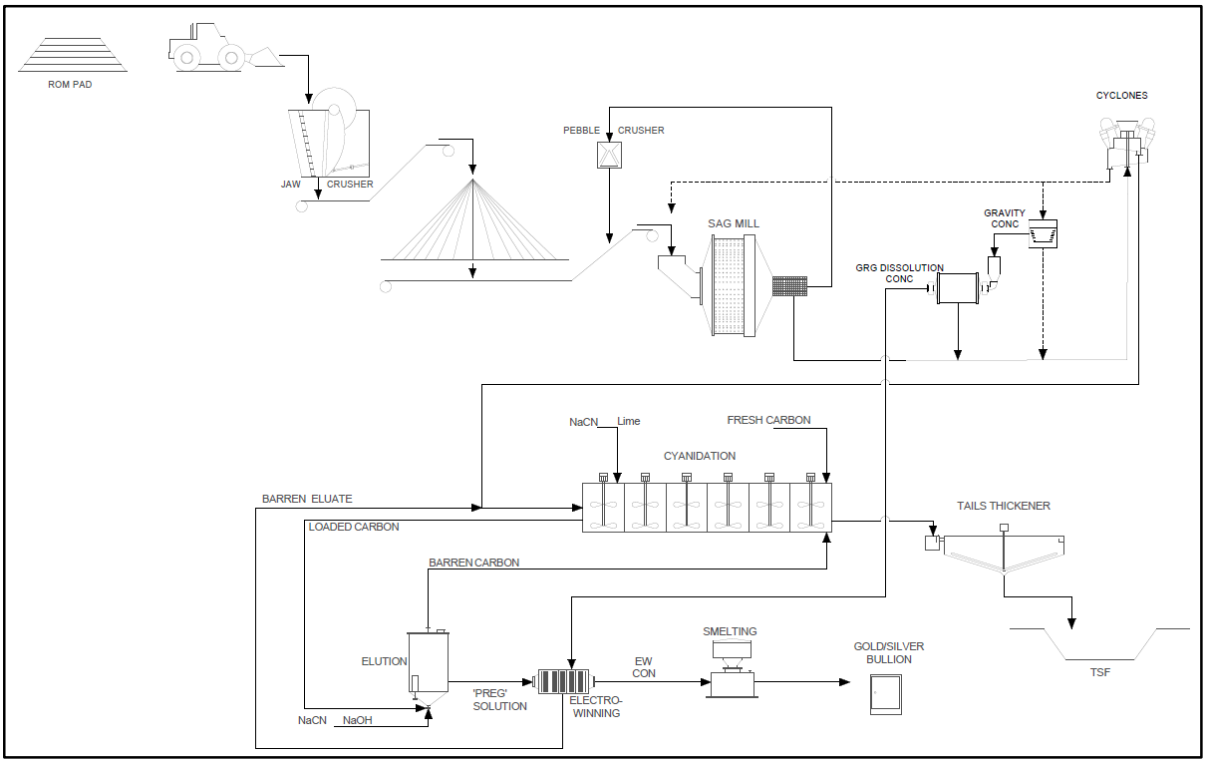

Figure 5: Minyari Dome Project Processing facility block flow diagram of CIL flowsheet

Mining

Contractor mining will be undertaken from three open pits (Figures 6 and 7) using standard truck and shovel mining methods with the Minyari deposit accounting for 90% of the open pit gold mining production. The open pit lower economic cut-off grade was determined to be 0.30 g/t.

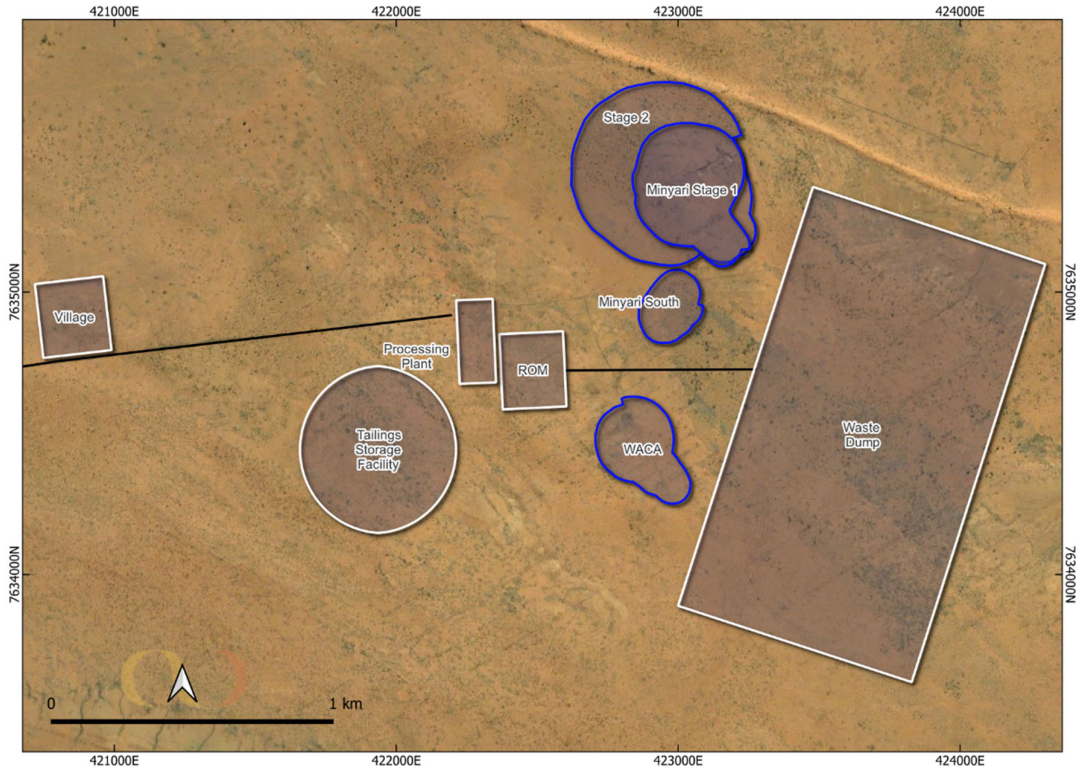

Figure 6: Minyari Dome Project conceptual configuration

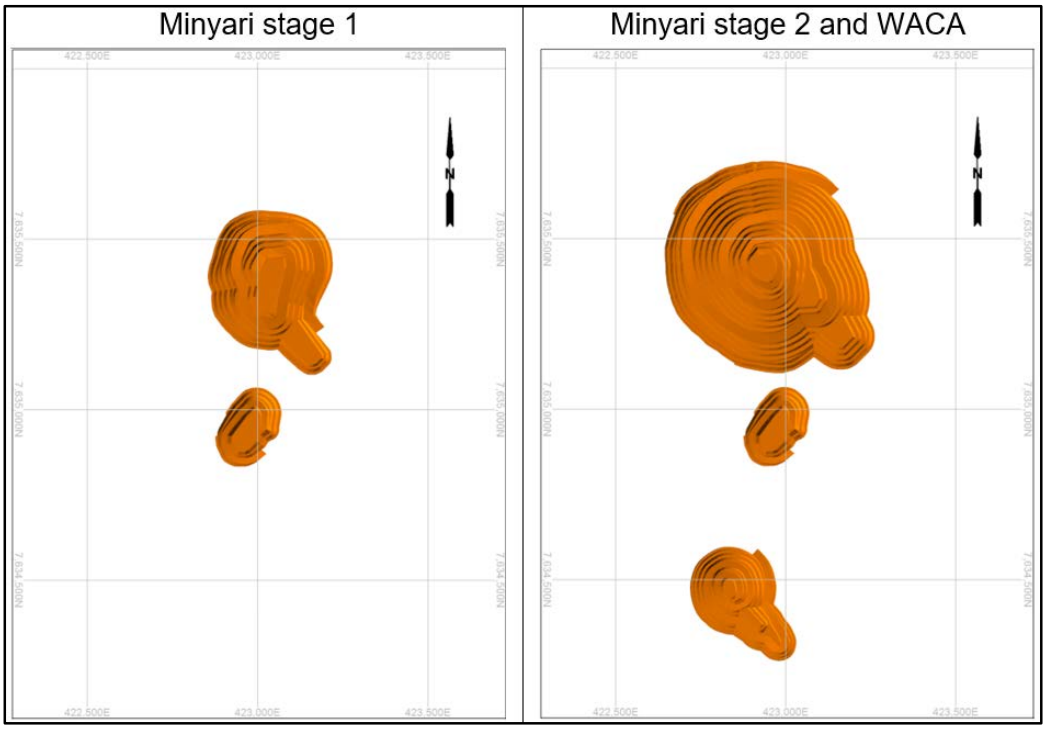

Figure 7: Minyari Dome Project open pit stage sequence

Contractor mining will also be undertaken for the Minyari deposit underground using Modified Sub-Level Caving (**M-SLC**) mining methods. The Minyari South open pit will also act as the box-cut for the Minyari deposit underground portal and decline. The Minyari underground lower economic cut-off grade was determined to be 1.50 g/t. Based on the conceptual underground mine design (Figure 8) the decline is also an optimal drill platform for delineating and accessing underground resource growth and mining opportunities including the Minyari and WACA plunge targets, Minyari South and Sundown.

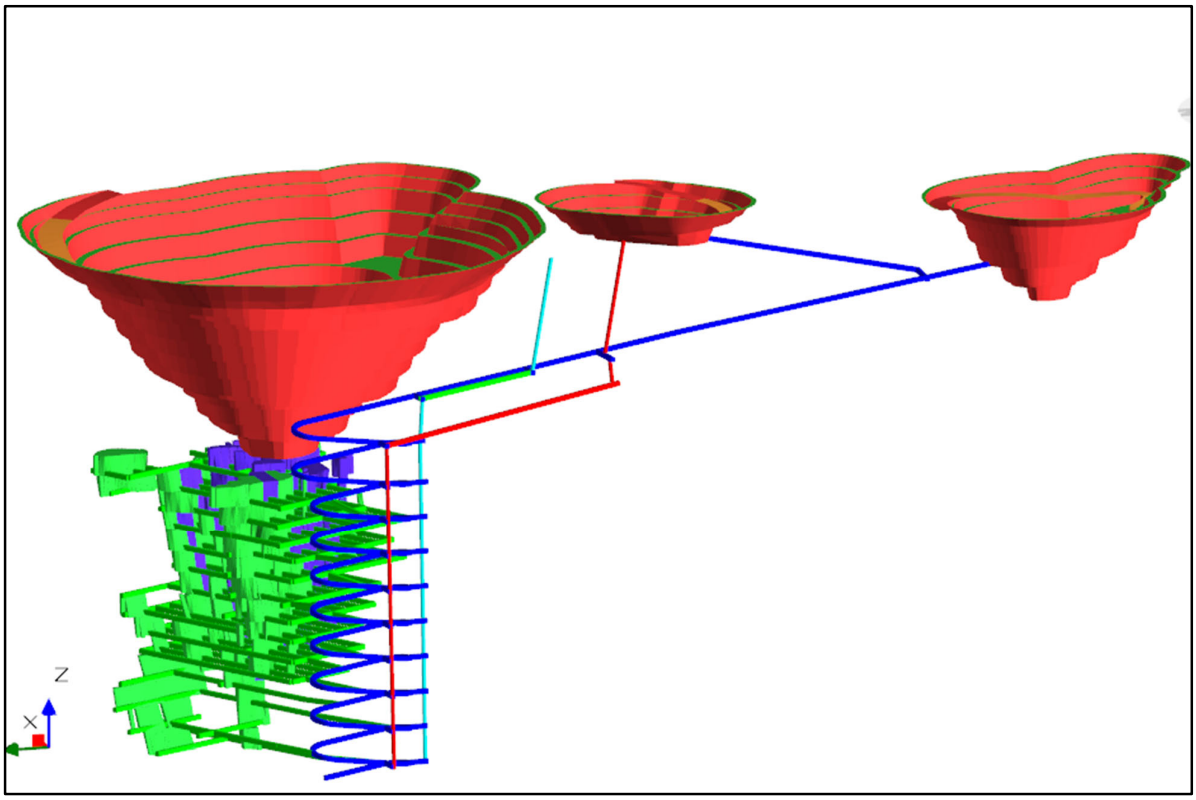

Figure 8: Minyari Dome Project conceptual underground mine design

Figures 9 and 10 summarise the mining schedule, including the breakdown of ore tonnage by Mineral Resource category and open pit and underground mining sources.

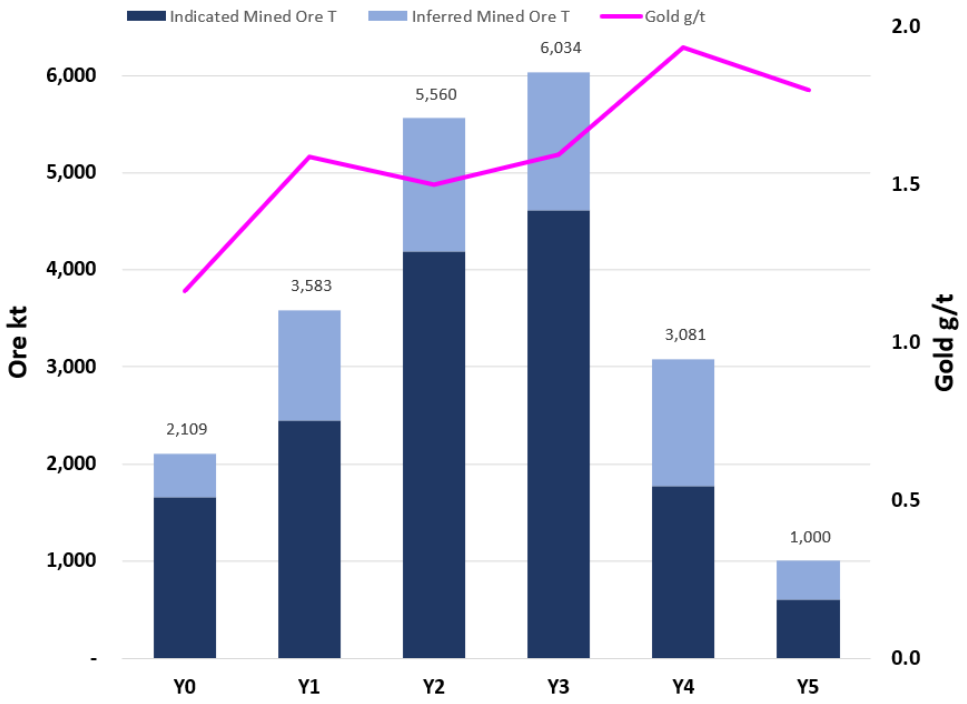

Figure 9: Minyari Dome Project Mining Schedule by resource category ('000 Tonnes Ore)

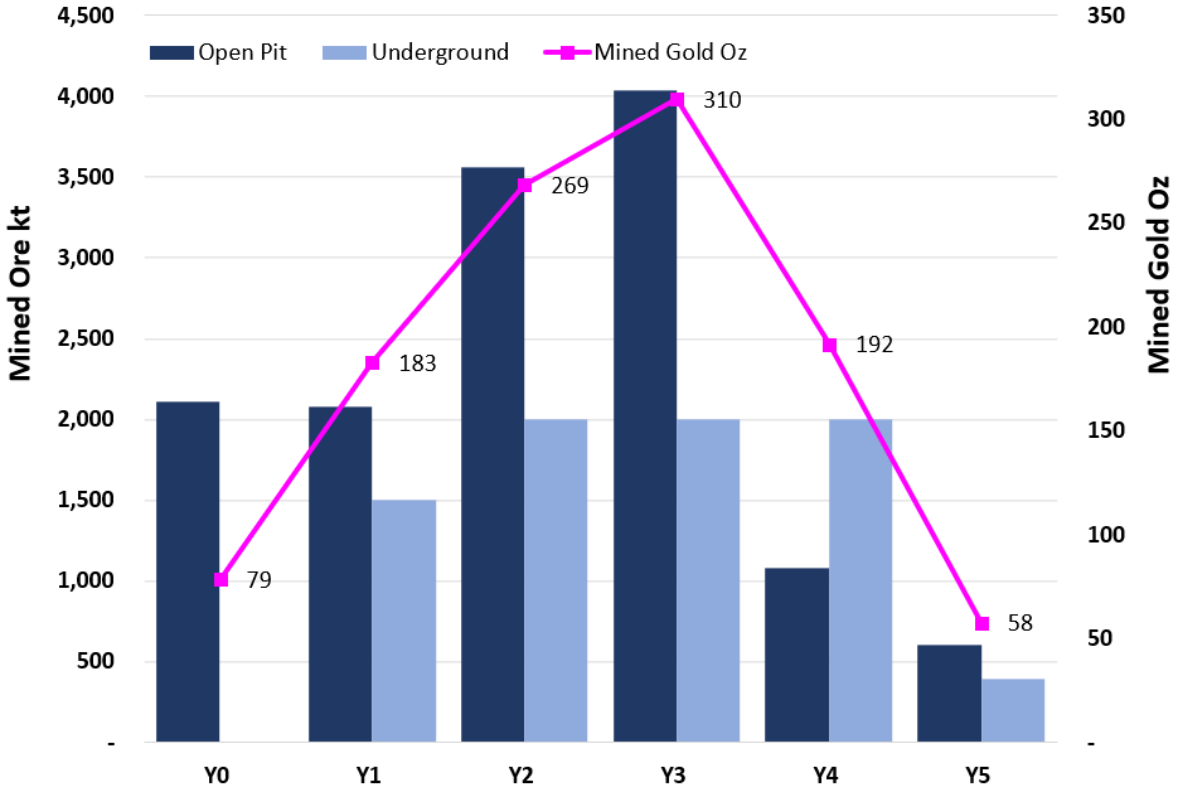

Figure 10: Minyari Dome Project mined ore tonnage breakdown by open pit and underground

Capital Cost Estimate

Capital cost estimates have been estimated for the three key areas of the Project, namely mining, processing and administration by independent consultants Snowden Optiro and Strategic Metallurgy. The capital cost estimate has primarily been derived using a desktop approach to an accuracy of ± 35%, typical of a Scoping Study (Table 3).

Pre-production mining costs of A$68M relate to open pit mining activities during the period preceding commercial production. The operating strategy is to maximise gold ounces produced during the first four years via the preferential processing of high-grade ore stockpiles, which optimises the Project's NPV and IRR. The amount of pre-production open pit mining can be modified to reduce the pre-production funding requirements and will be reviewed during the PFS.

Table 3: Project Capital Cost Estimate - 3Mtpa Plant and Infrastructure

Area	Cost Estimate (A$M)
Processing Plant (3Mtpa CIL)	77.1
Contingency	7.7
Infrastructure - Process	33.0
EPCM	13.5
Reagents	2.3
Tailings Storage Facility (TSF)	8.5
Infrastructure – General/Other	25.3
Open Pit CAPEX	15.5
Underground CAPEX	24.4
TOTAL	**207.3**
Pre-production Open Pit Mining	67.7

Operating Cost Estimate

Operating costs have been estimated for the three key areas of the Project, mining, processing and administration. The operating costs estimates have been derived using a first principles desktop study approach to an accuracy of ± 35% (Table 4).

Consultants Snowden Optiro were engaged to independently estimate the open pit and underground mining costs based on a contractor mining strategy. The mining costs were estimated based on appropriate open pit and underground equipment sizing considered relevant to each deposit and the required mining rates. Haulage costs to the ROM and waste rock dump were included in the overall operating cost.

Consultants Strategic Metallurgy were engaged to undertake an independent assessment of the processing operating cost estimate at a throughput rate of 3Mtpa, including relevant administration costs.

Table 4: Operating Cost Estimate (rounded)

Area	Cost Estimate (A$)
Mining – Open Pit	25.30/t ore processed
Mining – Underground	80.00/t ore processed
Processing	19.20/t ore processed
Administration	1.40/t ore processed

Funding

The Company's 100% owned Minyari Dome Project is relatively low risk and is considered technically simple, with very strong economics that provide a robust platform for Antipa to source traditional financing through debt and equity markets. There is, however, no certainty that Antipa will be able to source funding as and when required.

To achieve the various outcomes indicated in the Scoping Study, pre-production funding in excess of A$275M may be required. Typical project development financing would involve a combination of debt and equity. Antipa has formed the view that there is a reasonable basis to believe that requisite future funding for development of the Minyari Dome Gold Project will be available when required.

There are grounds on which this reasonable basis is provided including:

- The Project is in a tier one jurisdiction, with simple non-refractory metallurgy allowing for an industry standard CIL process plant and has a rapid payback of only 2.5 years from commercial process production;
- The very strong post-tax cashflows of A$491M and rapid payback would support a significant level of conventional debt financing for the Project development;
- There is significant potential to grow the Project's Mineral Resource base that is the basis of this Scoping Study. The Minyari Dome Project CY2022 exploration programme is set to include a significant diamond core and reverse circulation drill programme which commenced in June. The drill programme is designed to test a range of gold-copper-cobalt resource growth extensional targets and prospects (summarised in the section below), with particular emphasis on the Minyari deposit and new significant deposit and satellite discoveries across the Minyari Dome Project. Many of these targets are within approximately one kilometre of the Minyari deposit. The key objective of this programme

is to increase both the overall size and Indicated component of the existing MRE. It is expected that growth in Mineral Resources would further strengthen Project economics;
- The Company has a strong track record of raising equity funds as and when required to further the exploration and evaluation of its assets; and
- The Antipa Board and management has extensive experience in mine development, financing and production in the resources industry in Western Australia.

Conclusions and Recommendations

The Study provides justification that the Minyari Dome Project is a commercially viable stand-alone gold mining and processing operation and accordingly the Board of Antipa has approved progression of the Project to a PFS.

The PFS will immediately commence in parallel with ongoing exploration, resource growth and delineation drilling and further metallurgical test-work with results expected to be provided in the second half of calendar year 2023.

The Project is located just 35km from Newcrest's Telfer 22Mtpa processing facility. While a stand-alone development of the Project is Antipa's preferred base case, the Company will assess all potential third-party pathways that might offer greater risk-weighted value for Antipa shareholders.

Next Steps

The Project economics are significantly leveraged to future resource growth, therefore exploration activities within the Project aim to deliver both greenfield discoveries and increase brownfield gold-silver-copper-cobalt resources, whilst continuing to advance various studies to de-risk the project. The first phase of the 2022 Exploration Programme comprises:

- A 10,000m RC drill programme to test high-priority resource and greenfield targets;
- 3,000m diamond core drill programme to test high-priority resource targets; and
- A project-scale high-resolution Airborne Gravity Gradiometry (**AGG**) survey to assist drill targeting and regional 3D geological modelling.

The Phase 2 programme and PFS plan are currently being finalised with the aim of delivering an updated Mineral Resource estimate in Q3 CY2023 and PFS in Q4 CY2023.

Consistent with previous years, the Minyari Dome Project Exploration Programme and budget will be subject to ongoing review based on results, field conditions, contractor availability and pricing, and other relevant matters.

<u>Mineral Resource Growth Opportunities</u>

In addition to completing project development studies, this year Antipa aims to significantly increase the Minyari Dome Project Mineral Resources via drill testing of a range of gold-silver-copper-cobalt resource extension targets and prospects, summarised below and in Figure 11.

- *Mineral Resource Extension Opportunities:*
  - ***Minyari Keel Zone –*** Potential for high-grade mineralisation in the Minyari fold nose region remains untested along a significant plunge extent.
  - ***Minyari Down Plunge –*** Mineralisation open down plunge into same vertical depth zone as the 5.5Moz Havieron gold-copper deposit.
  - ***WACA Down Plunge -*** Mineralisation open down plunge.

- ***Minyari South –*** High-grade mineralisation open in several directions along a favourable litho-structural contact within 150m of the Minyari deposit.
- ***Sundown -*** Mineralisation open in several directions demonstrating intense Minyari-style hydrothermal alteration increasing with depth toward an Induced Polarisation chargeability target just 250m west of Minyari deposit.
- ***WACA West –*** Narrow high-grade mineralisation within thick (100m downhole) low-grade zone open in all directions located 100m west of WACA in an encouraging structural address within an interpreted dismembered fold hinge displaying increased magnetic anomalism.

- *Maiden Mineral Resource Opportunities:*
  - ***Minyari North –*** 2021 discovery drill results included 28m at 0.5 g/t gold and 0.16% copper from a coincident magnetic-high and IP chargeability anomaly approximately 400m north of Minyari with 2021 drilling intersecting encouraging hydrothermal alteration including sulphides.
  - ***GP01 –*** 2021 discovery drill results included 27m at 1.3 g/t gold and 0.11% copper 350m east of WACA with mineralisation and broad intense Minyari-style hydrothermal alteration remaining open along strike and down dip.
  - ***WACA East –*** 2021 discovery drill results included 9m at 1.0 g/t gold and 0.12% copper 150m east of WACA with mineralisation remaining open along strike and down dip.
  - ***Judes –*** Copper-silver±gold prospect 1.8km northwest of Minyari with drill intersections including 10m at 2.05% copper, 9.11 g/t silver and 0.19 g/t gold.
  - ***Other Targets -*** Geophysical, geochemical anomalies and conceptual targets, including the recently identified four high-priority gold ± copper and pathfinder soil anomalies.

Release authorised by
Roger Mason
Managing Director

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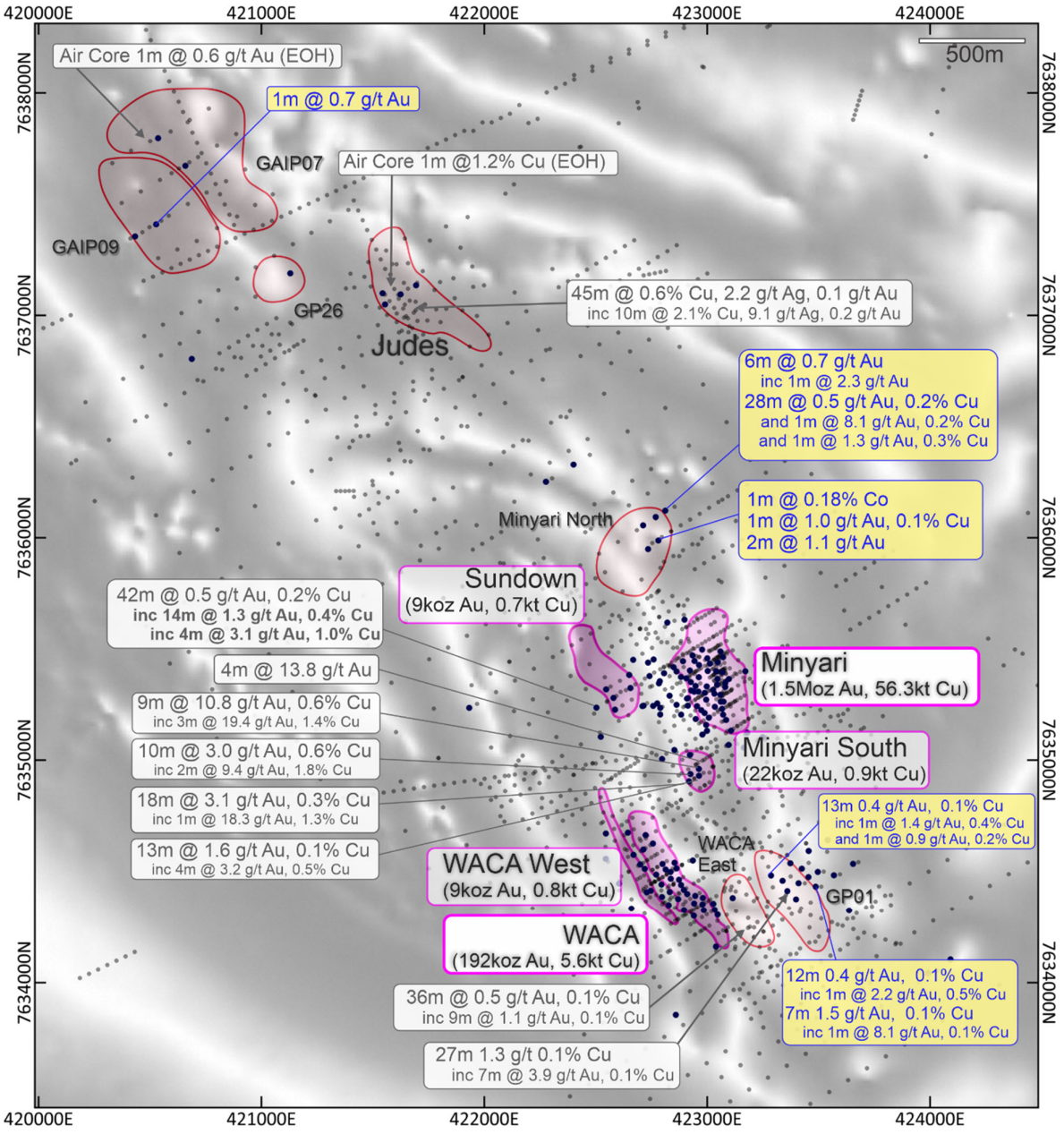


Figure 11: Map of the southern region of the Minyari Dome Project showing Minyari and WACA resource locations, Judes and other prospect locations, and drill hole collars. NB: Over Airborne magnetic image (50m flight-line spacing at an altitude of 30m; grey-scale TMI-RP) and Regional GDA2020 / MGA Zone 51 co-ordinates, 1km grid.

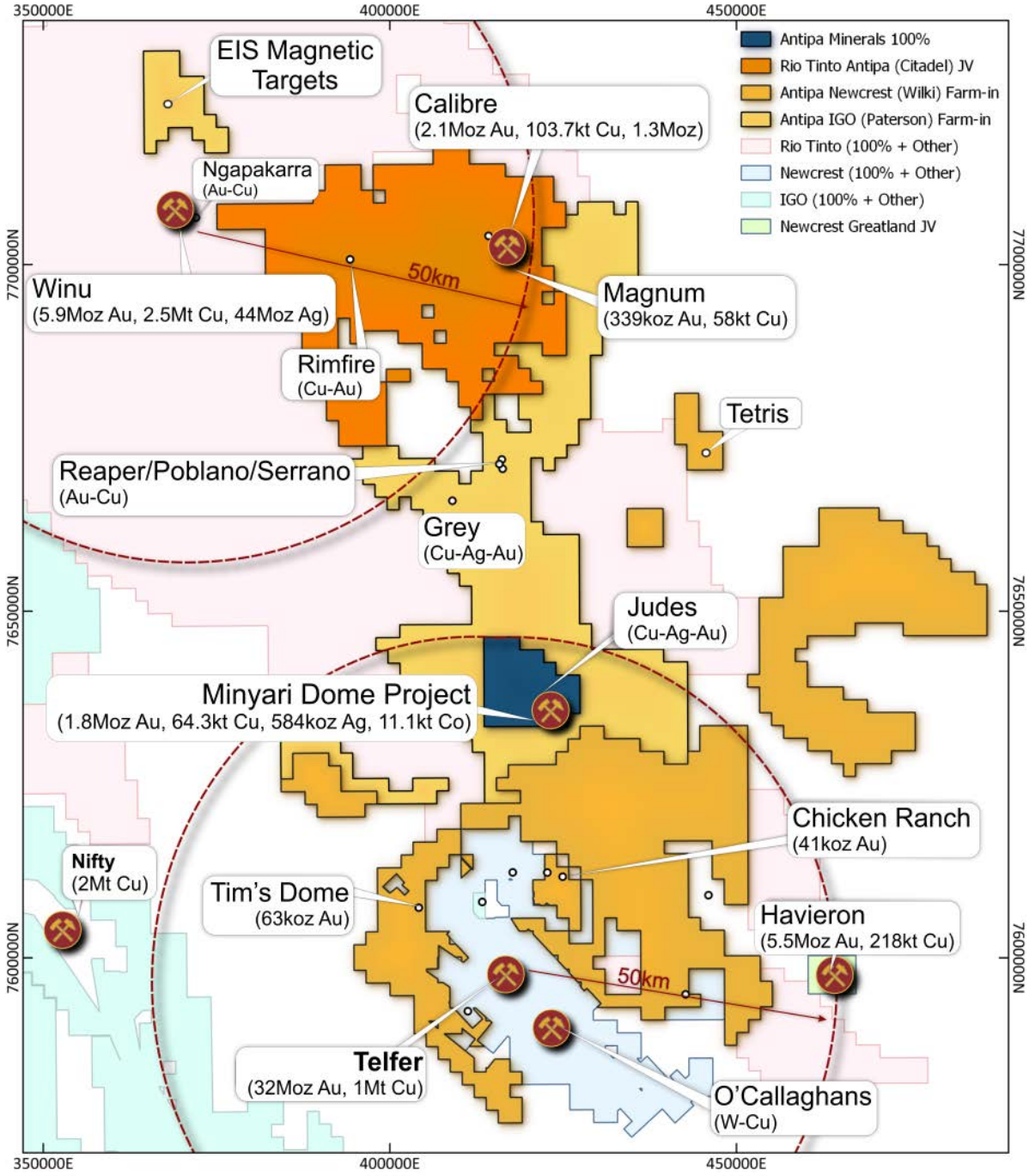
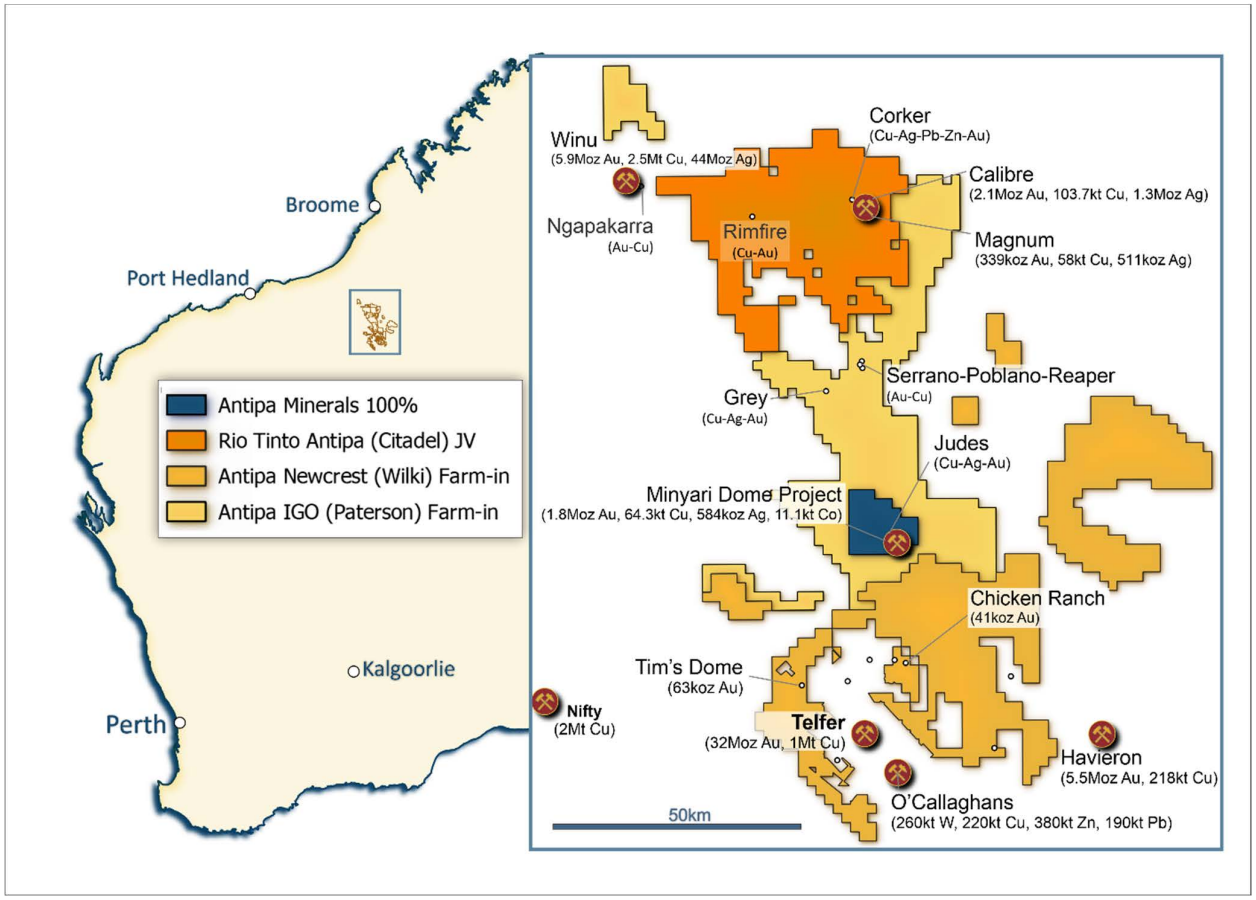


Figure 12: Plan showing location of Antipa 100% owned tenements, Rio Tinto-Antipa Citadel Joint Venture Project, including the Calibre and Magnum resources. Also shows Antipa-Newcrest Wilki Farm-in, Antipa-IGO Paterson Farm-in, Newcrest Mining Ltd's Telfer Mine and O'Callaghans deposit, Rio Tinto's Winu deposit, Newcrest-Greatland Gold's Havieron deposit and Cyprium's Nifty Mine.

NB: Rio and IGO tenement areas include related third-party Farm-in's/Joint Ventures.

NB: Regional GDA2020 / MGA Zone 51 co-ordinates, 50km grid.

About Antipa Minerals: Antipa is a mineral exploration company focused on the Paterson Province in north-west Western Australia, home to Newcrest Mining's world-class Telfer gold-copper mine, Rio Tinto's Winu copper-gold deposit, Newcrest-Greatland Gold's Havieron gold-copper deposit and other significant mineral deposits. Having first entered the Paterson in 2011 when it was a less sought-after exploration address, the Company has used its early mover advantage to build an enviable tenement holding of ~5,100km^2, including the ~1,200km^2 Citadel Joint Venture Project with Rio Tinto (who currently holds a 65% joint venture interest), the ~2,200km^2 Wilki Project that is subject to a $60 million Farm-in and Joint Venture Agreement with Newcrest (who is yet to earn a joint venture interest) and the ~1,500km^2 Paterson Project that is subject to a $30 million Farm-in and Joint Venture Agreement with IGO (who is yet to earn a joint venture interest). Antipa retains 144km^2 of 100%-owned Minyari Dome Project tenements which contains an established Mineral Resource, with the Minyari and WACA deposits containing 1.8 million ounces of gold and 64,300 tonnes of copper plus other deposits and high quality exploration targets. The Citadel Project lies within 5km of the Winu deposit and contains a Mineral Resource of 2.4 million ounces of gold and 162,000 tonnes of copper from two deposits, Calibre and Magnum. Unlike certain parts of the Paterson where the post mineralisation (younger) cover can be kilometres thick, making for difficult exploration, the Company's combined 5,100km^2 tenement portfolio features relatively shallow cover; approximately 80% being under less than 80 metres of cover. Extensive drilling programmes, geophysical and surface geochemical surveys are planned for 2022 across Antipa's combined Paterson tenement portfolio as the company pursues a multi-layered strategy of targeting tier-one greenfields discoveries, growing its existing resources through brownfields exploration and advancing potential development opportunities.



Forward-Looking Statements: This document may include forward-looking statements. Forward-looking statements include, but are not limited to, statements concerning Antipa Mineral Ltd's planned exploration programme and other statements that are not historical facts. When used in this document, the words such as "could," "plan," "estimate," "expect," "intend," "may," "potential," "should," and similar expressions are forward-looking statements. Although Antipa Minerals Ltd believes that its expectations reflected in these forward-looking statements are reasonable, such statements involve risks and uncertainties and no assurance can be given that actual results will be consistent with these forward-looking statements.

Competent Persons Statement – Exploration Results: The information in this document that relates to Exploration Results is based on and fairly represents information and supporting documentation compiled by Mr Roger Mason, a Competent Person who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Mason is a full-time employee of the Company. Mr Mason is the Managing Director of Antipa Minerals Limited, is a substantial shareholder of the Company and is an option holder of the Company. Mr Mason has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcements, all of which are available to view on www.antipaminerals.com.au and www.asx.com.au. Mr Mason, whose details are set out above, was the Competent Person in respect of the Exploration Results in these original market announcements.

Various information in this report which relates to Exploration Results have been extracted from the following announcements lodged on the ASX, where further details, including JORC Code reporting tables where applicable, can also be found:

- *North Telfer Project Update on Former NCM Mining Leases* 3 December 2015
- *High Grade Gold Mineralisation at Minyari Dome* 8 February 2016
- *Minyari Deposit Drilling to Commence May 2016* 2 May 2016
- *Minyari Phase 1 Drilling Commences* 2 June 2016
- *Further Historical High-grade Gold Intersections at Minyari* 14 June 2016
- *Minyari Reprocessed IP Survey Results* 5 July 2016
- *Minyari Phase 1 Drilling Update No. 1* 20 July 2016
- *Completion of Phase 1 Minyari Deposit RC Drilling Programme* 9 August 2016
- *Minyari Drilling Update No. 3* 17 August 2016
- *Minyari Drilling Update No. 4* 29 September 2016
- *Minyari Dome - Phase 2 Exploration Programme Commences* 31 October 2016
- *North Telfer and Citadel Exploration Programme Update* 16 November 2016
- *Minyari Dome Drilling Update No. 1* 16 December 2016
- *Minyari Dome and Citadel – Phase 2 Update* 9 February 2017
- *Minyari Dome 2017 Exploration Programme* 27 March 2017
- *Minyari Dome 2017 Phase 1 Exploration Programme Commences* 13 April 2017
- *Minyari Dome Positive Metallurgical Test Work Results* 13 June 2017
- *High-Grade Gold Intersected at North Telfer Project Revised* 21 June 2017
- *Drilling Extends High-Grade Gold Mineralisation at WACA* 25 July 2017
- *High-Grade Gold Mineralisation Strike Extension at Minyari Deposit* 4 August 2017
- *Minyari Dome Phase 1 Final Assay Results* 31 August 2017
- *Minyari/WACA Deposits Maiden Mineral Resource* 16 November 2017
- *Air Core Programme Highlights Minyari and WACA Deposit* 5 December 2017
- *Minyari Dome 2017 Air Core Drilling Results* 29 January 2018
- *Antipa to Commence Major Exploration Programme* 1 June 2018
- *Major Exploration Programme Commences* 25 June 2018
- 2018 *Exploration Programme Update* 16 July 2018
- *Minyari Dome – Initial Drill Results* 1 August 2018
- *Thick High-grade Copper Mineralisation Intersected* 2 October 2018
- *Chicken Ranch and Minyari Dome Drilling Update* 15 November 2018
- *Multiple New Gold-Copper Targets on 100% Owned Ground* 23 December 2019
- *Commencement of Drilling Programmes at Minyari Dome Project* 2 October 2020
- *Drilling of New Targets Deliver Significant Au Intersections* 16 February 2021
- *Corporate Presentation - 121 APAC Conference - March 2021* 17 March 2021
- *High-Grade Gold Intersected at Minyari & WACA Deposits* 7 April 2021
- *Corporate Presentation - Update April 2021* 12 April 2021
- *Commencement of Drilling at 100% Owned Minyari Project* 13 May 2021
- *Corporate Presentation - 121 EMEA Conference - May 2021* 25 May 2021
- *Corporate Presentation - Noosa Mining Conference - July 2021* 15 July 2021
- *Discovery of Significant Zones of High-Grade Gold at Minyari* 15 July 2021
- *Further High-Grade Gold Mineralisation at Minyari Deposit* 20 July 2021
- *Corporate Presentation - Diggers and Dealers - August 2021* 2 August 2021

- *Further High-Grade Gold Results at 100% Minyari Deposit* 12 August 2021
- *Outstanding Gold Intersections at 100% Owned Minyari Deposit* 6 September 2021
- *Corporate Presentation - Beaver Creek PMS - September 21* 8 September 2021
- *Further High-Grade Gold Results at 100% Minyari Deposit* 5 October 2021
- *Significant Gold-Copper Discovery at 100% Minyari Project* 19 October 2021
- *Corporate Presentation - 121 APAC Conference* 2 November 2021
- *Further Significant Gold-Copper Discoveries at Minyari* 29 November 2021
- *Further High-Grade Gold Results at 100% Minyari Deposit* 6 December 2021
- *Further Outstanding High-Grade Gold Results at Minyari* 3 February 2022
- *Results Confirm High-Grade Gold-Copper at Depth at Minyari* 3 March 2022
- *Corporate Presentation - Euroz Hartleys Conference Presentation* 9 March 2022
- *Corporate Presentation - 121 APAC Conference Presentation* 22 March 2022
- *Minyari Dome Project Gold Resource Increases 250% to 1.8 Moz* 2 May 2022
- *Corporate Presentation - Stockhead WA Gold Explorers Conference* 12 May 2022
- *Corporate Presentation - Australian Gold Conference* 14 June 2022
- *Corporate Presentation - Noosa Mining Conference* 20 July 2022
- *Drill Results Confirm High-Grade Gold at Minyari North* 21 July 2022
- *Corporate Presentation - Diggers and Dealers Conference* 1 August 2022

These announcements are available for viewing on the Company's website www.antipaminerals.com.au under the Investors tab and on the ASX website www.asx.com.au.

The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcements. Mr Roger Mason, whose details are set out above, was the Competent Person in respect of the Exploration Results in these original reports.

Competent Persons Statement – Mineral Resource Estimations for the Minyari Dome Project Deposits, Calibre Deposit, Magnum Deposit and Chicken Ranch Area Deposits and Tim's Dome Deposit: The information in this document that relates to the estimation and reporting of the Minyari Dome Project deposits Mineral Resources is extracted from the report entitled "Minyari Dome Project Gold Resource Increases 250% to 1.8 Moz" created on 2 May 2022 with Competent Persons Ian Glacken, Jane Levett, Susan Havlin and Victoria Lawns, the Tim's Dome and Chicken Ranch deposits Mineral Resources is extracted from the report entitled "Chicken Ranch and Tims Dome Maiden Mineral Resources" created on 13 May 2019 with Competent Person Shaun Searle, the Calibre deposit Mineral Resource information is extracted from the report entitled "Calibre Gold Resource Increases 62% to 2.1 Million Ounces" created on 17 May 2021 with Competent Person Ian Glacken, and the Magnum deposit Mineral Resource information is extracted from the report entitled "Calibre and Magnum Deposit Mineral Resource JORC 2012 Updates" created on 23 February 2015 with Competent Person Patrick Adams, all of which are available to view on www.antipaminerals.com.au and www.asx.com.au. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the estimates in the relevant original market announcements continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcements.

The information in this report that relates directly to the **Scoping Study** report was compiled by Mr. Roger Mason, a Competent person who is a Member of The Australasian Institute of Mining and Metallurgy. Mr. Mason is employed as Managing Director of Antipa Minerals Ltd and has sufficient experience in the development of gold projects from the studies phase to the operational phase and consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Gold Metal Equivalent Information – Magnum, Calibre and Minyari Dome Mineral Resources Gold Equivalent cut-off grades: Gold Equivalent (Aueq) details of material factors and metal equivalent formulae for the Magnum, Calibre and Minyari Dome Mineral Resources are reported in the following reports which are available to view on www.antipaminerals.com.au and www.asx.com.au:

- *Calibre and Magnum Mineral Resources JORC 2012 Updates* 23 February 2015
- *Calibre Gold Resource Increases 62% to 2.1 Million Ounces* 17 May 2021
- *Minyari Dome Project Gold Resource Increases 250% to 1.8 Moz* 2 May 2022

Antipa Minerals Ltd Paterson Province Project Portfolio Mineral Resource Estimates

Minyari Dome Project (100% Antipa)

Deposit and Gold Equiv Cut-off Grade*	Resource Category	Tonnes Mt (or kt)	Aueq (g/t)	Gold Grade (g/t)	Copper Grade (%)	Silver Grade (g/t)	Cobalt (%)	Aueq (oz)	Gold (oz)	Copper (t)	Silver (oz)	Cobalt (t)
Minyari 0.5 Aueq	Indicated	15	1.78	1.17	0.19	0.54	0.04	858,000	567,000	27,800	259,600	5,930
Minyari 0.5 Aueq	Inferred	2.7	1.49	1.12	0.12	0.31	0.02	129,000	96,000	3,300	26,300	640
Minyari 0.5 Aueq	**Sub-Total**	**17.7**	**1.74**	**1.17**	**0.18**	**0.50**	**0.04**	**987,000**	**663,000**	**31,100**	**285,900**	**6,570**
Minyari 1.5 Aueq	Indicated	4.4	2.95	2.30	0.26	0.83	0.03	417,000	328,000	11,400	118,400	1,450
Minyari 1.5 Aueq	Inferred	6.2	3.14	2.51	0.22	0.66	0.03	626,000	523,000	13,800	132,700	1,590
Minyari 1.5 Aueq	**Sub-Total**	**10.6**	**3.06**	**2.48**	**0.24**	**0.73**	**0.03**	**1,043,000**	**851,000**	**25,200**	**251,100**	**3,040**
Minyari	**Total**	**28.3**	**2.23**	**1.66**	**0.20**	**0.59**	**0.03**	**2,030,000**	**1,514,000**	**56,300**	**537,000**	**9,610**
WACA 0.5 Aueq	Indicated	1.7	1.29	0.97	0.11	0.17	0.02	70,000	52,000	1,900	9,400	310
WACA 0.5 Aueq	Inferred	1.5	1.35	1.02	0.12	0.18	0.02	67,000	51,000	1,800	9,100	300
WACA 0.5 Aueq	**Sub-Total**	**3.2**	**1.32**	**0.99**	**0.11**	**0.18**	**0.02**	**137,000**	**103,000**	**3,700**	**18,500**	**610**
WACA 1.5 Aueq	Inferred	1.6	2.14	1.69	0.11	0.17	0.03	112,000	89,000	1,900	9,000	560
WACA	**Total**	**4.9**	**1.59**	**1.23**	**0.11**	**0.18**	**0.02**	**249,000**	**192,000**	**5,600**	**27,500**	**1,170**
Minyari South 0.5 Aueq	**Inferred**	**153 t**	**5.74**	**4.51**	**0.56**	**1.04**	**0.05**	**28,000**	**22,000**	**900**	**5,100**	**80**
Minyari South	**Total**	**153 kt**	**5.74**	**4.51**	**0.56**	**1.04**	**0.05**	**28,000**	**22,000**	**900**	**5,100**	**80**
Sundown 0.5 Aueq	**Inferred**	**202 kt**	**2.13**	**1.38**	**0.36**	**0.72**	**0.03**	**14,000**	**9,000**	**700**	**4,700**	**60**
Sundown	**Total**	**202 kt**	**2.13**	**1.38**	**0.36**	**0.72**	**0.03**	**14,000**	**9,000**	**700**	**4,700**	**60**
WACA West 0.5 Aueq	Inferred	393 kt	1.21	0.73	0.17	0.81	0.03	15,000	9,000	700	10,200	120
WACA West 1.5 Aueq	Inferred	11 kt	1.62	0.86	0.50	0.05	0.01	1,000	304	55	17	1
WACA West	**Total**	**404 kt**	**1.23**	**0.73**	**0.18**	**0.79**	**0.03**	**16,000**	**9,304**	**755**	**10,217**	**121**
Minyari + WACA + Satelite Deposits	**Grand Total**	**33.9**	**2.14**	**1.60**	**0.19**	**0.54**	**0.03**	**2,340,000**	**1,750,000**	**64,300**	**584,000**	**11,100**

Wilki Project (Newcrest Farm-in)

Deposit and Gold Cut-off Grade**	Resource Category	Tonnes (Mt)	Gold Grade (g/t)	Copper Grade (%)	Silver Grade (g/t)	Cobalt (ppm)	Gold (oz)	Copper (t)	Silver (oz)	Cobalt (t)
Chicken Ranch Area 0.5 Au	Inferred	0.8	1.6	-	-	-	40,300	-	-	-
Tim's Dome 0.5 Au	Inferred	1.8	1.1	-	-	-	63,200	-	-	-
Chicken Ranch Area + Tim's Dome	**Total**	**2.4**	**1.3**	-	-	-	**103,500**	-	-	-

***0.5 Au = Using a 0.5 g/t gold cut-off grade above the 50mRL (NB: potential "Open Cut" cut-off grade)*

Note: Wilki Project Mineral Resources are tabled on a 100% basis, with Antipa's current joint venture interest being 100%

Citadel Project (Rio Tinto JV)

Deposit and Gold Cut-off Grade***	Resource Category	Tonnes (Mt)	Gold Equiv (g/t)	Gold Grade (g/t)	Copper Grade (%)	Silver Grade (g/t)	Gold Equiv (Moz)	Gold (Moz)	Copper (t)	Silver (Moz)
Calibre 0.5 Au Equiv	Inferred	92	0.92	0.72	0.11	0.46	2.7	2.1	104,000	1.3
Magnum 0.5 Au Equiv	Inferred	16	-	0.70	0.37	1.00	-	0.34	58,000	0.5
Calibre + Magnum Deposits	**Total**	**108**	-	**0.72**	**0.15**	**0.54**	**2.7**	**2.4**	**162,000**	**1.8**

****0.5 AuEquiv = Refer to details provided by the Notes section*

Note: Citadel Project Mineral Resources are tabled on a 100% basis, with Antipa's current joint venture interest being 35%

ANTIPA MINERALS LTD - MINYARI DOME PROJECT SCOPING STUDY

JORC Table 1 - Section 4 – Consideration of Modifying Factors (in the form of section 4 of the JORC Code (2012) Table 1)

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	• *Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.* • *Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.*	• The Mineral Resource Estimate on which the Scoping Study is based was separately announced on the 2nd May 2022 (*https://antipaminerals.com.au/upload/documents/investors/asx-announcements/220501221201_Minyari-WACAResourceUpdate-20220502.pdf*). • No Ore Reserve has been declared as part of the Scoping Study.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• Site visit information and commentary pertaining to the Mineral Resource Estimate are provided in the Mineral Resource Estimate announcement on the 2nd of May 2022.
Study status	• *The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.* • *The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.*	• The type and level of study is a Scoping Study as defined in Section 38 of the JORC Code, 2012 edition. • No Ore Reserve has been declared as part of the Scoping Study. • The Scoping Study has not been used to convert Mineral Resources to Ore Reserves. • Material modifying factors have been considered in the Scoping Study.

Cut-off parameters	• *The basis of the cut-off grade(s) or quality parameters applied.*	• Cut-off grade parameters for the Mineral Resource estimate are provided in the announcement on the 2nd of May 2022.
		• For the Scoping Study the following inputs were used to estimate revenue per ounce of gold produced:
		  ○ Gold: US$1,750 per troy ounce
		  ○ Silver: US$22 per troy ounce
		  ○ USD:AUD currency exchange rate of 0.72
		  ○ Standard Western Australia State Royalties for gold and silver
		  ○ A 1% Net Smelter Royalty for gold and silver payable to Sandstorm Gold Ltd
		  ○ Relevant metallurgical recoveries for gold and silver
		• For the Scoping Study the following inputs were used to estimate operating cost per tonne of ore treated for Open Pit and Underground Mining methods:
		  ○ Mining operating costs
		  ○ Processing operating costs to final saleable products (including refining costs)

Mining factors or assumptions	• *The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the*	• The Scoping Study has not undertaken a conversion of the Mineral Resource to an Ore Reserve. • Open Pit and Underground mining methods are utilised in the Scoping Study.

Criteria	JORC Code explanation	Commentary
	Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design). • *The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.* • *The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.* • *The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).* • *The mining dilution factors used.* • *The mining recovery factors used.* • *Any minimum mining widths used.* • *The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.* • *The infrastructure requirements of the selected mining methods.*	<u>Open Pit</u> • Open pit optimisation was completed by Snowden-Optiro using Datamine Studio NPVS software, which uses the Lerch-Grossman algorithm to determine a range of optimal pit-shells. • The optimal pit-shells derived were then used as a guide to develop open pit mine plans for the ore deposits. • Intermediate open pit stages were designed to defer waste pre-strip. • Open Pit studies used geotechnical parameters recommended and provided from the geotechnical study completed by Snowden-Optiro. <u>Underground</u> • Stope optimisations were run using Datamine Software's Mineable Shape Optimiser® (MSO®). • The proposed mining method is a modified sub-level caving (M-SLC) technique. • Underground optimisation studies used geotechnical parameters recommended and provided from the geotechnical study completed by Snowden-Optiro. <u>Mining Factors</u> • The Minyari (including Minyari South) and WACA Mineral Resource (block) models were re-blocked to simulate mining factors for dilution and recovery and provide the selective mining unit ("SMU"). • Minyari was reblocked to 5mX by 5mY by 5mZ resulting in 9.4% dilution and 96.0% recovery. • WACA was reblocked to 2.5mX by 2.5mY by 2.5mZ resulting in 0.0% dilution but only 45.9% recovery. • Underground MSOs include 1.0m of internal dilution, in addition to the 5% external dilution, with ore loss set at 10%. • A minimum mining width (true width) of 4m at Minyari was used for Underground MSO parameters. <u>Inferred Mineral Resource Utilisation</u> • 96% of the Scoping Study gold ounces come from the Minyari Deposit open pit and underground, with just 3% from the WACA open pit and 1% from the Minyari South open pit. • A component of Inferred Mineral Resource has been included in the Scoping Study. • Mineral Resource tonnage scheduled for extraction during the Scoping Study's 7+ year production plan constitute approximately 72% Indicated and 28% Inferred. • In the first four years of operation Indicated Resource and Inferred Resource tonnage comprises 75% and 25% of the production schedule, respectively. • The post-tax payback of approx. 2.5 years from first production is dominated by Indicated Resource. <u>Infrastructure requirements</u> • Infrastructure requirements for each mining method have been considered in the Scoping Study, which include but are not limited to, a suitable waste-rock landform (WRL), ROM pad, underground decline and ventilation, de-watering pumping requirements, FIFO camp and airstrip, access road, etc.

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td>Metallurgical factors or assumptions</td><td>

The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.
Whether the metallurgical process is well-tested technology or novel in nature.
The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.
Any assumptions or allowances made for deleterious elements.
The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.
For minerals that are defined by a specification, has the Ore Reserve estimation been based on the appropriate mineralogy to meet the specifications?

</td><td>

The metallurgical process proposed is a conventional Carbon in Leach (CIL) process used to produce gold doré.
The process includes crushing, milling, leaching, gravity circuit and tailings dewatering.
The metallurgical data pertaining to the Minyari and WACA deposits has been determined by metallurgical test-work completed in 2017 and 2018 by independent consultants Strategic Metallurgy, which has been previously reported (https://antipaminerals.com.au/upload/documents/investors/asx-announcements/201129223150_2017-06-13-31.pdf and https://antipaminerals.com.au/upload/documents/investors/asx-announcements/201129232007_2018-08-271.pdf).
Individual recoveries are applied to metallurgical domains for oxide, transitional and primary ore types; noting that Primary ore accounts for 85% of the Scoping Study mined tonnes.

<table>
<tr><th>Metallurgical Domain</th><th>Recovery (%)</th></tr>
<tr><td>Oxide</td><td>95%</td></tr>
<tr><td>Transitional</td><td>92%</td></tr>
<tr><td>Primary</td><td>89%</td></tr>
</table>

The deleterious element arsenic is present as the sulphide mineral arsenopyrite.
Metallurgical test-work has shown that for the Scoping Study's CIL processing Base Case the arsenic reports to the tails and therefore does not attract a refining penalty.
Scanning Electron Microscopy / Energy Dispersive X-Ray Spectroscopy (SEM/EDS) and optical microscope petrological and mineralogical studies completed between 2016 and 2021 analysing sulphides (including arsenopyrite) confirmed that the gold mineralisation was non-refractory.
Bulk sample ± pilot test-work will be undertaken as part of a Pre-Feasibility Study.
No Ore Reserve has been declared.

</td></tr>
<tr><td>Environmental</td><td>

The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.

</td><td>

Scoping Study level of analysis and these aspects of the Project will be fully addressed during the Pre-Feasibility Study.
The environmental approvals process will commence during the Pre-Feasibility Study.

</td></tr>
<tr><td>Infrastructure</td><td>

The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.

</td><td>

Limited infrastructure exists, however there is sufficient land area available for all mining and processing related infrastructure.
No known impediments to the potential Project's infrastructure exist.
Scoping Study level of analysis and these aspects of the Project will be fully addressed during the Pre-Feasibility Study.

</td></tr>
<tr><td>Costs</td><td>

The derivation of, or assumptions made, regarding projected capital costs in the study.

</td><td>

Estimates are at Scoping Study level i.e. ± 35%.
Mining Capital cost estimates were determined by Snowden-Optiro (refer to Section 8.2 of the Scoping

</td></tr>
</table>

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td></td><td>• The methodology used to estimate operating costs.
• Allowances made for the content of deleterious elements.
• The source of exchange rates used in the study.
• Derivation of transportation charges.
• The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.
• The allowances made for royalties payable, both Government and private.</td><td>Study report).
• Processing Capital cost estimates were determined by Strategic Metallurgy (refer to Sections 5 and 8.2 of the Scoping Study report).
• Capital cost estimates include (but are not limited to) the following:
○ Open pit capital (mine establishment costs, mobilisation, site, facilities, etc).
○ Underground capital (development, ventilation, de-watering, power, etc).
○ Site capital (CIL Processing plant, TSF, etc).
• Mining Operating cost estimates were determined by Snowden-Optiro (refer to Section 7 of the Scoping Study report).
• Processing Operating cost estimates were determined by Strategic Metallurgy (refer to Sections 5 of the Scoping Study report).
• Presence of deleterious element Arsenic discussed in Metallurgical factors or assumptions criteria section above.
• The gold and silver price and currency exchange rate assumptions used in the Scoping Study are based off the long-term analyst consensus data (refer to Section 8 of the Scoping Study report).
All standard Western Australian state royalties applicable to the Project have been allowed for, with the addition of a 1% Net Smelter Royalty payable to Sandstorm Gold Ltd upon the sale of all metals on exploration licence E45/3919 (refer to Section 8 of the Scoping Study report).</td></tr>
<tr><td>Revenue factors</td><td>• The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.
• The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.</td><td>• The derivation of feed grades comes from the re-blocked (SMU including mining dilution and recovery) Mineral Resource estimate.
• Mill feed streams were allocated to Low, Medium and High grade ore stockpiles based on gold grade bins to optimise expected mill head grade.
• Metal prices and the currency exchange rate are based on long-term consensus.
• The product to be sold is gold doré produced on site and to be sold on the spot market.
<table>
<tr><th>Item</th><th>Unit</th><th>Au</th><th>Ag</th></tr>
<tr><td>Price</td><td>US$/Oz</td><td>1,750</td><td>22.00</td></tr>
<tr><td>Payability</td><td>%</td><td>99.9</td><td>99.9</td></tr>
<tr><td>Royalty</td><td>%</td><td>3.5</td><td>3.5</td></tr>
<tr><td>Exchange Rate</td><td>US$/AU$</td><td colspan="2">0.72</td></tr>
</table></td></tr>
<tr><td>Market assessment</td><td>• The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.
• A customer and competitor analysis along with the identification of likely market windows for the product.
• Price and volume forecasts and the basis for these forecasts.</td><td>• Not applicable - The product to be sold is gold doré produced on site and to be sold on the spot market.
• Not applicable.
• Not applicable.</td></tr>
</table>

Criteria	JORC Code explanation	Commentary
	• *For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.*	• Not applicable.
Economic	• *The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.* • *NPV ranges and sensitivity to variations in the significant assumptions and inputs.*	• Refer to Section 8 of the Scoping Study report. • The Scoping Study accuracy is ± 35%. • Based on long-term consensus a discount rate of 7% has been used in the cash flow model. • Sensitivity analysis has been completed as part of the Scoping Study ± 10% and ± 20% to demonstrate effect on NPV. • The Project returned a positive NPV for ±20% variances in the significant assumptions and inputs.
Social	• *The status of agreements with key stakeholders and matters leading to social licence to operate.*	• The traditional landowners, the Martu people and the Jamukurnu-Yapalikunu Aboriginal Corporation (JYAC), are key Project stakeholders. The Martu hold exclusive possession Native Title rights and interests over more than 130,000km^2 of land, including to all points around the Minyari Dome Project area. A Land Access and Mineral Exploration Agreement between Antipa Resources Pty Ltd and JYAC, entitled the "North Telfer Project", was signed on 26 July 2015 which grants access and the ability to conduct exploration activities on the Minyari Dome Project, including Exploration Licence E45/3919 which contains the Minyari, WACA and Satellite Deposit Mineral Resources.
Other	• *To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:* • *Any identified material naturally occurring risks.* • *The status of material legal agreements and marketing arrangements.* • *The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.*	• No Ore Reserve has been declared. • No material naturally occurring risks have been identified. • The Project is owned 100% by Antipa Minerals and there are no marketing arrangements in place. • There are currently no government agreements in place. • The Minyari, Minyari South and WACA Mineral Resources are located wholly within Antipas 100% owned 15 graticular blocks covering the northernmost region of exploration licence E45/3919. • The Company continues to undertake relevant studies to support necessary stakeholder approvals processes, including the WA Government, Native Title/Traditional Owners, etc. • There are reasonable grounds to expect that all necessary Government approvals will be obtained within the timeframe anticipated. • The Company is yet to commence Pre-Feasibility or Feasibility studies.

Criteria	JORC Code explanation	Commentary
Classification	• *The basis for the classification of the Ore Reserves into varying confidence categories.* • *Whether the result appropriately reflects the Competent Person's view of the deposit.* • *The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).*	• No Ore Reserve has been declared.
Audits or reviews	• *The results of any audits or reviews of Ore Reserve estimates.*	• No Ore Reserve has been declared.
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.* • *It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available*	• No Ore Reserve has been declared.

ANTIPAMINERALS

MINYARI DOME PROJECT

Scoping Study - August 2022

Table of Contents

1 EXECUTIVE SUMMARY

1.0 Project background

Antipa Minerals Ltd holds a land position in the Paterson Province in north-west Western Australia (as shown in Figure 1-1).

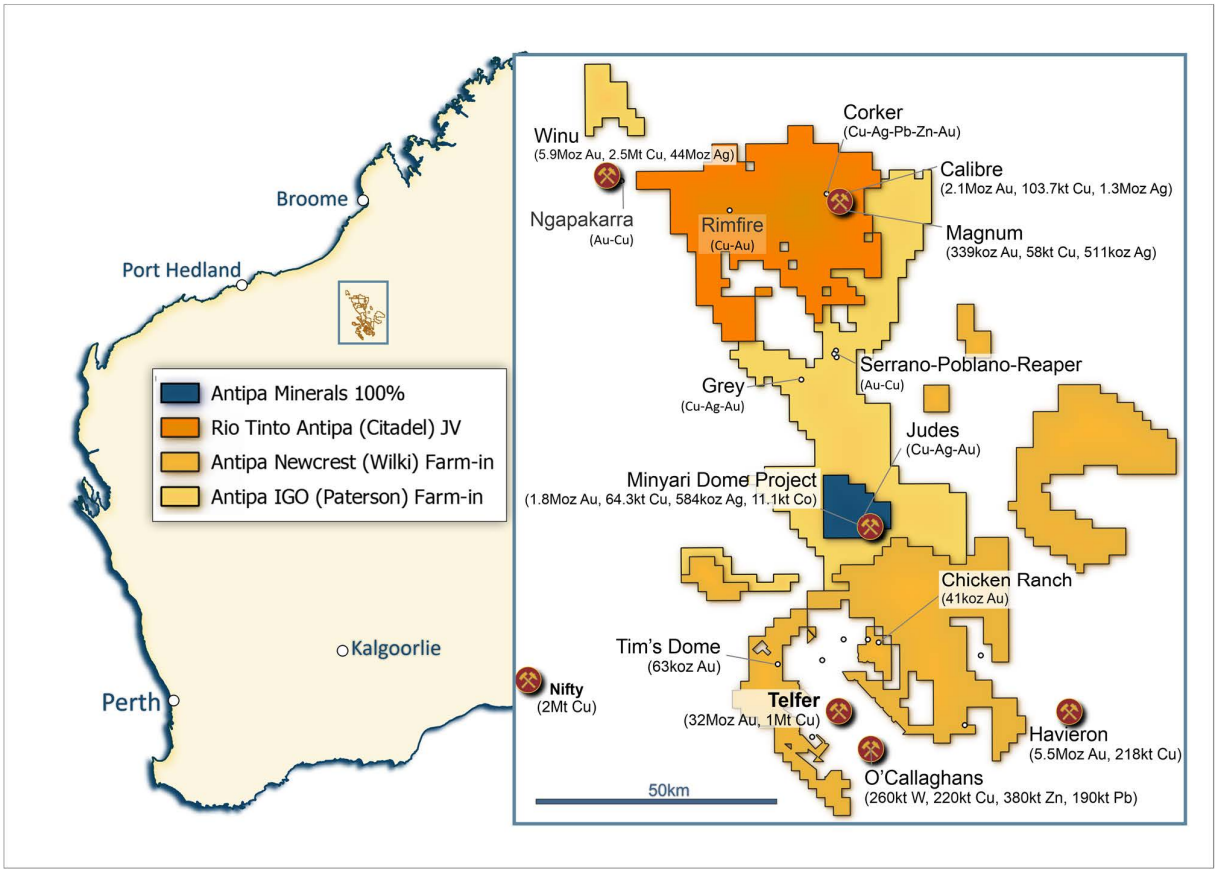
Antipa is focused on exploration activities on its 100%-owned Minyari Dome Project (**Project**), which covers 144km^2 of ground in the Paterson Province. In May 2022, an updated Minyari, WACA and Satellite Deposit Mineral Resource was announced with a combined Mineral Resource of 1.8 million ounces of gold, 64,300 tonnes of copper, 584,000 ounces of silver and 11,100 tonnes of cobalt.

In October 2015, Antipa and Rio Tinto entered a farm-in and Joint Venture Agreement over the Citadel Project. Rio Tinto, who operate the Citadel Project, has since earned a 65% interest in the Joint Venture by sole funding $25 million in exploration on the tenements. The Calibre and Magnum deposits contain a combined Mineral Resource of 2.4 million ounces of gold, 162,000 tonnes of copper and 1.8 million ounces of silver.

In February 2020, Antipa entered into a $60 million farm-in agreement with Newcrest Mining Limited (**Newcrest**) in respect of a ~2,200km^2 portion of the Company's ground in the Paterson, now known as the 'Wilki Project'. Newcrest currently act as Operators of the Wilki Project and Antipa currently owns 100% of the Wilki Farm-in Project.

In July 2020, Antipa entered into a farm-in agreement with ASX-listed mining company IGO Limited (**IGO**) over 1,550km^2 of highly prospective ground in the Paterson, now known as the 'Paterson Project'. IGO can earn a 70% interest in the tenements by spending $30 million over 6.5 years. IGO currently act as Operators of the Paterson Project and Antipa currently owns 100% of the Paterson Farm-in Project.

Figure 1-1 Project location



1.1 Methodology

To progress understanding of the Project development pathway of the Minyari, WACA and satellite deposits, Antipa engaged Snowden Optiro (**Snowden**) to undertake a scoping level study over a range of production product assumptions and throughputs. For this Scoping Study (**Study**), cost inputs were taken from similar scaled projects including publicly released information and from Snowden's own cost database. The Study was broken down into different options to consider different paths forward.

Two processing options are assessed: Carbon-In-Leach (**CIL**) and Flotation treatment.

The Study considered the following Mineral Resource (JORC 2012) classifications in evaluation and costing:

- Indicated Mineral Resource; and
- Inferred Mineral Resource.

Unclassified material was excluded from consideration and treated as waste, and no Measured Mineral Resource currently exists.

Open pit optimisations were used to evaluate the potential for open pit extraction and an underground (**UG**) extension using stope optimisations (truncated to the limits of the open pit) was appended to the result to create a combined open pit-underground mining result. Open pit mining operations are planned around a fleet of 300 tonne class excavators paired with 200 tonne dump trucks. The mining rate of 2 Mtpa is at a stripping ratio of approximately 5:1 on a tonne basis and will result in mining of approximately 35.8 Mm^3 of material. Ore will be transported to the Run-of-Mine (**ROM**) pad via a haul road, and waste rock will be hauled to a local waste dump adjacent to the largest pit being Minyari.

An underground mining operation is planned to be excavated either post or synchronous with mining of the open pit/s. This sequence was tested during the scenario phase of the Study. Underground mining has been assumed to be completed by a contractor through Modified Sub-Level Caving (**M-SLC**) techniques. The proposed mining method requires a pattern of generally evenly spaced and sized rib pillars separating the primary (Core) stopes, which are connected via an overlying sill pillar. The sill pillar separating the active mining area from the overlying mined out area which contains waste rock fill introduced from a pass breaking through to a designated area from surface or in the pit.

The elements of the Scoping Study and their respective contributors are as follows:

- Environment and social (sourced from Antipa Minerals);
- Mineral Resource (Snowden);
- Geology (Snowden);
- Processing (Strategic Metallurgy);
- Geotechnical (Snowden);
- Mine planning (Snowden); and
- Cashflow modelling estimate (Snowden).

1.2 Key findings

The purpose of the Project Scoping Study was to provide a broad range of options, to provide direction for future economic assessments at greater levels of accuracy. The Study covered a range of both processing and mining capacities and options, with the aim to compare on a maximum discounted cashflow (**DCF**) basis.

Open pit and underground optimisations were prepared to test a range of processing plant sizes and mining productivities. On review of the optimisation results, the following options were progressed to mining schedules and processing scenarios:

- Process plant size options for 1 Mtpa, 2 Mtpa, 3 Mtpa capacities;
- CIL to recover gold and silver or Flotation treatment option to additionally recover copper and cobalt;
- Pit design options 12 Mt and 23 Mt mill feed size pits;
- Pit stage designs to level material movements;
- Mining schedules to match processing rates; and
- Processing stockpiling schedule using ore (gold) grade bins.

Based on the results, the 3 Mtpa CIL gold-silver production option was selected as the Project **Base Case** having the following properties:

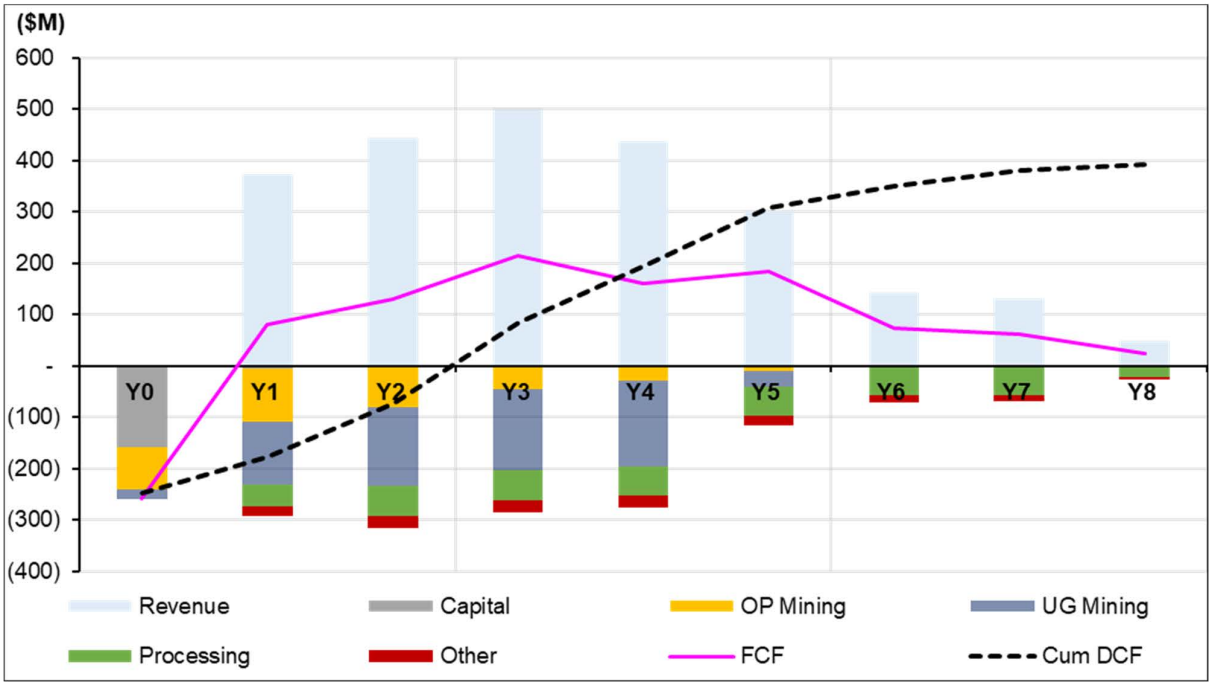
- Processing CIL plant with a capacity of 3 Mtpa;
- 21 Mt mining inventory grading 1.6 g/t gold and 0.7 g/t silver for 1.1 Moz gold and 175 koz silver;
- Gold and silver (commercial) production of 975 koz of gold and 349 koz of silver (recovered);
- An open pit of 13.5 Mt ore tonnes and 67.1 Mt waste tonnes (strip ratio ≈ 5:1) grading 1.1 g/t gold and 0.5 g/t silver, mining 486 koz of gold and 215 koz of silver;
- Open pit sequencing using two pit stages for the Minyari pit, a single stage pit for Minyari South and a single stage for the WACA pit;
- Underground mine using a bulk mining method at a 2 Mtpa production rate with an average grade of 2.4 g/t gold and 0.7 g/t silver, mining 604 koz of gold and 175 koz of silver;
- Underground commences capital development immediately after the completion of the Minyari South open pit; and
- Stockpiling strategy to allow a higher grade for the first 3-years of processing production.

The Study has provided a positive economic solution for the Project with the following results:

- Life of Mine (**LoM**) of 8 years;
- All in Sustaining Cost (**AISC**) of A$1,475/oz or US$1,062/oz (excluding Y0 pre-production open pit mining);
- All in Cost (**AIC**) of A$1,749/oz or US$1,260/oz (including all LoM CAPEX and pre-production open pit mining);
- DCF_7 of $392 million pre-tax and $278 million post-tax;
- Internal Rate of Return (**IRR**) of 34% pre-tax and 29% post-tax; and
- Payback (2.5 years) and a maximum drawdown of $275 million (including 12-months of pre-production open pit mining).

Figure 1-2 demonstrates the pre-tax discounted cashflow profile for the Base Case identified during the Study.

Figure 1-2 Base Case Pre-tax Cashflow summary (3 Mtpa CIL gold-silver production case)



1.3 Recommendations and future work

The Study has provided the following key learnings to assist in future study work:

- Recommended mine design parameters for open pit and underground operations based on a preliminary assessment of geotechnical conditions are summarised in Table 6-11.

Table 1-1 Summary of mine design recommendations

Item	Properties	Depth	Parameter
Open pit slope angles	Weathered/Oxide	70 m	40°
	Fresh	250 m	50°
		500 m	45°
UG Open stope dimensions	Back		25 m x 25 m
	Height		30 m

- The ore body is considered to be of sufficient scale to support a possible mining production rate of greater than 2 Mtpa, supporting a processing minimum plant size of 2 Mtpa;
- With multiple mining areas (open pit or underground), the mine can support a 3 Mtpa capacity processing plant;
- Open pit optimisation results indicated the ore body exhibits significant strip ratio steps, indicating suitable locations for pit stages and suitable transition depth for open pit to underground;
- Cashflow modelling shows significant early value in stockpile management providing process feed grades of greater than 40% in the first 3-years compared to the LoM average grade; and
- Maximum cashflows achieved by establishing both open pit and underground mines as soon as practicable to the Project start. Whilst this will increase the complexity to the site establishment, this option maximises early revenue, and reduces the initial payback period.

To progress the Project to a Prefeasibility Study (**PFS**) level of detail, Snowden have highlighted the following items (but not limited to) would form a typical study programme:

- Conversion of Inferred Mineral Resource to Indicated Mineral Resource;
- Geotechnical drilling of the preferred pit outline to confirm rock types and any structures impacting the open pit wall positions, and inform batter and berm dimensions;
- Hydrology assessment to inform any flood diversion structures;
- Hydrogeology assessment to inform dewatering strategy, water balances, and support geotechnical analysis;
- Waste rock storage considerations including geochemical and material properties test-work;
- Further metallurgical and other processing and metal recovery test-work assessments to increase level of detail;
- Mining method assessment;
- Equipment selection – Open pit;
- Equipment selection – Underground;
- Underground ventilation assessment;
- Power supply options analysis;
- Detailed infrastructure cost estimation;
- Detailed operating cost estimation;
- Environmental clearances and impact assessments; and
- Project risk assessment.

2 INTRODUCTION

2.0 Project location

The Project is located in the Paterson Province of Western Australia, 35 km north of Newcrest Mining's Telfer gold-copper-silver mine and 22 Mtpa mineral processing facility, 450 km east of the regional hub of Port Hedland (6-hour drive) and 1,700 km north-east of Perth (20-hour drive) (Figures 1-1, 2-1 and 2-2). The closest town is Marble Bar, approximately 280 km west of the Project Area. Existing infrastructure capable of servicing the Project includes:

- Bitumen roads from Port Hedland (population circa 14,000) to Telfer Mine Access Road turnoff, via Marble Bar (population circa 410).
- Gravel roads including Telfer Mine Access Road and Punmu Community Road;
- Access to site is via well maintained local tracks.
- Telfer Mine gas pipeline (owned by Energy Infrastructure Investments and operated by APA Group), which includes the Nifty Mine Gas Lateral.
- Planned development of the Asian Renewable Energy Hub (**AREH**) up to 26 GW of combined solar and wind power generating capacity.
- Port Hedland port, a bulk import and export facility.
- Port Hedland Domestic and International Airport, with mine-site (bitumen) airstrips at both Telfer (≈35 km) and Nifty (≈100 km).
- The Martu People hold Native Title Rights over the Minyari Dome Project Area with the Aboriginal communities of Punmu and Kunawarritji located approximately 120 km and 300 km to the east, respectively.

2.1 Tenement status

The Project is 100%-owned by Antipa and covers an area of 144km^2 over three West Australian (**WA**) Department of Mines, Industry Regulation and Safety (**DMIRS**) mineral Exploration Licences:

- **E45/3919** (partial area – refer to below), which the Minyari, WACA and Satellite Deposit Mineral Resources are contained wholly within;
- **E45/3918** (partial area – refer to below); and
- **E45/4618** (100%).

Two of the Exploration Licences above are divided between the 100% Antipa owned Minyari Dome Project and the Wilki Project Farm-In Agreement (E45/3919) with Newcrest and Paterson Project Farm-In Agreement (E45/3918) with IGO:

E45/3919:

- 66 total graticular blocks in total.
- 15 graticular blocks within the 100% Antipa owned Minyari Dome Project.
- 51 non-contiguous graticular blocks as part of the Wilki Project Farm-In Agreement with Newcrest.

E45/3918:

- 91 total graticular blocks in total.
- 29 graticular blocks within the 100% Antipa owned Minyari Dome Project.
- 72 contiguous graticular blocks as part of the Paterson Project Farm-In Agreement with IGO.

Figure-2-1 Paterson Province region's major deposits and Antipa's four Project locations

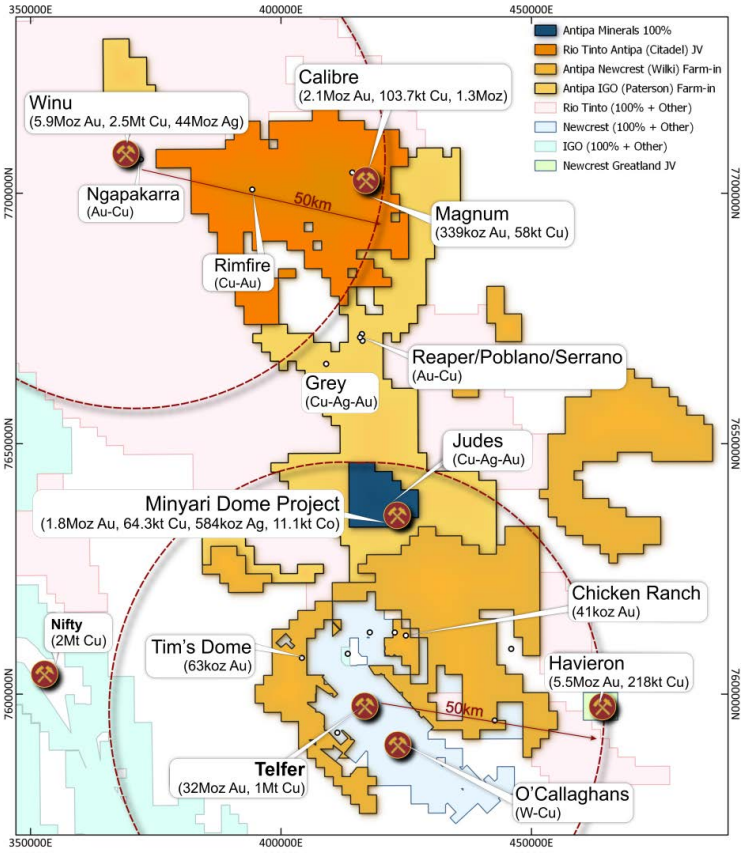
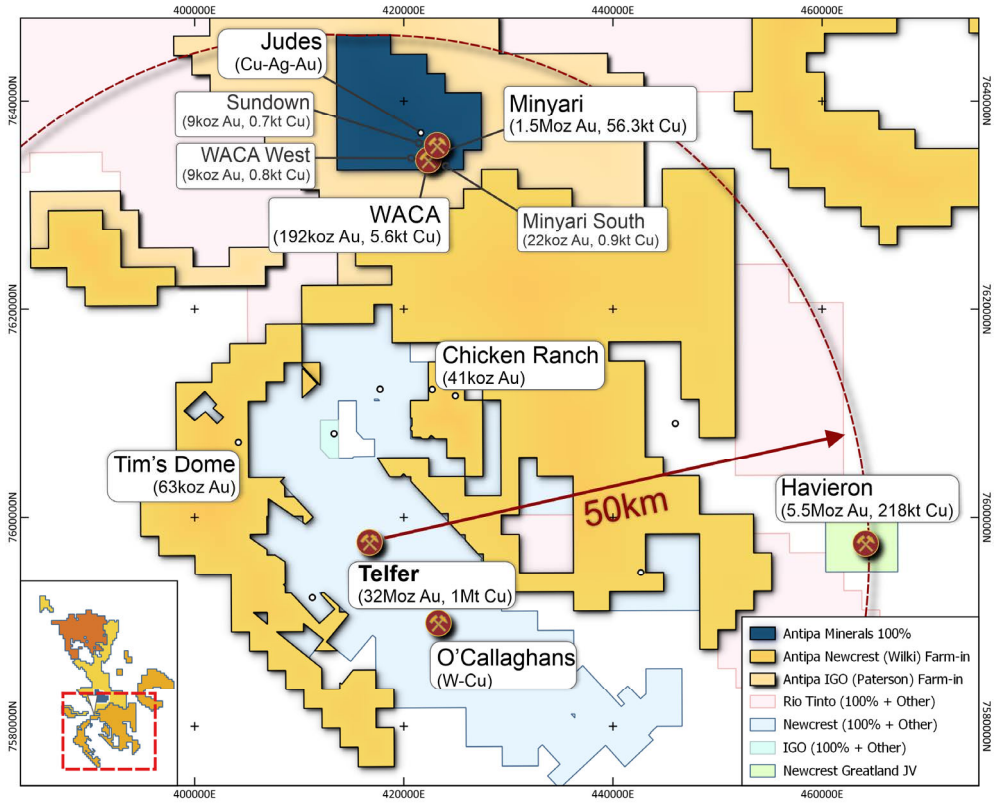


Figure 2-2 50km distance from Newcrest's Telfer processing facility and Antipa's Project locations



3 GEOLOGY

Snowden Optiro was engaged by Antipa to complete a Mineral Resource Estimate (**MRE**) update for the Project, which comprises the Minyari and WACA group of gold-copper-silver-cobalt deposits, with the resultant MRE update reported in May 2022.

The Minyari and WACA deposits are located within the Proterozoic-aged Paterson Province and precious (gold and silver) and/or base metal (copper and cobalt) mineralisation in the region is interpreted to be reduced intrusion-related, with local controls on mineralisation being the key factors influencing mineralisation grade and continuity.

3.0 Local geology

Mineralisation at both Minyari and WACA is hosted predominantly within hydrothermally altered meta-sediments. There are several mafic bodies identified in the project area, predominantly dolerite, which are variably mineralised, along with late felsic intrusive dykes that cross-cut the deposit area and are generally unmineralised. The resource has been depleted in these lithologies. The Proterozoic rocks are overlain by transported overburden, typically desert/dune aeolian sand which varies in thickness up to 10 metres.

The Minyari and WACA deposits precious (gold and silver) and/or base metal (copper and cobalt) mineralisation is interpreted to be reduced intrusion-related, with local controls on mineralisation related to variations in both the competency/hardness and chemical composition of rock units, in combination with other discrete structural controls such folding, faulting, fracturing, veining, brecciation and associated hydrothermal alteration and mineralisation (including sulphides) being the key factors influencing mineralisation grade and continuity.

The Minyari deposit constitutes approximately 85% of the gold resource and 96% of the Scoping Study mining inventory gold ounces. Minyari mineralisation is generally moderate to steeply dipping and is hosted by a plunging pipe-like breccia body located in the hinge and both limbs of an interpreted synform. The true-thickness of mineralisation ranges from 5 to 120m and extends from surface to a depth of 670m and remains open down plunge to the northwest. In the Minyari deposit area there is also near-surface, sub-horizontal soil/calcrete hosted re-worked/remobilised “channel” style low-grade gold mineralisation, located above the Proterozoic basement.

3.1 Data quality

Data quality in the Project areas is considered by Snowden to be of a good standard. The significant number of drillholes completed by Antipa since the 2017 MRE follows industry best practice standards.

3.2 Resource estimation

Antipa prepared the mineralisation, weathering and lithology interpretations which were inputs to the estimate. The interpretations were used to flag the samples, from which 1.0 m composites were created and were used for estimation. Top-cuts were applied to data, where required, to restrict the influence of outlier data.

All boundaries were treated as hard for the purposes of estimation, with the exception of a semi-soft boundary surrounding Minyari Main. Ordinary Kriging was selected as the preferred estimation technique based on the low variance/coefficient of variation (**CV**), low nugget continuity, and minimal skew exhibited in the respective grade distributions. Variography was prepared for all variables using the data from single or combined domains, depending on the number of samples. A three-pass search strategy was utilised in each estimate. Parent cell estimates were applied.

The subsequent estimate was depleted for previous mining.

The Mineral Resource estimates have been classified in accordance with the JORC Code (2012) reporting guidelines. There is sufficient confidence in the data quality to support all classifications. The final Mineral Resource estimate classification employed the available drilling and confidence in the estimate to assign a classification as Indicated or Inferred Mineral Resources.

Significant drilling by Antipa since the 2017 MRE has resulted in improved understanding of the deposits and the advancement of mineralisation interpretations. The 2022 Mineral Resource update has been quoted at gold equivalent cut-offs of 0.5 g/t gold equivalent (**AuEq**) above 0mRL at Minyari, and above 100mRL at WACA to reflect potential open pit extraction, and above 1.5 g/t AuEq below this RL as a proxy for underground extraction (the surface RL is approximately 275mRL); refer to Table 3-1 to Table 3-5.

Table 3-1 Minyari MRE update, 2022 – summary

Minyari										
Resource Category	Weathering	Tonnes (kt)	Gold (g/t)	Cu (%)	Ag (g/t)	Co (%)	Au (oz)	Cu (t)	Ag (oz)	Co (t)
Minyari Deposit using a 0.5 g/t Au Equiv cut-off grade above the 0mRL										
Indicated	Overburden	35	0.77	0.17	0.07	-	868	61	82	-
Indicated	Oxide	530	1.00	0.20	0.23	0.03	16,933	1,035	3,961	160
Inferred	Oxide	70	0.93	0.06	0.08	0.02	2,164	50	178	10
Sub-Total	**Oxide**	**600**	**0.99**	**0.18**	**0.21**	**0.03**	**19,097**	**1,085**	**4,140**	**170**
Indicated	Transitional	1,600	1.19	0.18	0.34	0.04	59,837	2,762	16,853	630
Inferred	Transitional	200	1.05	0.09	0.13	0.02	6,530	200	820	30
Sub-Total	**Transitional**	**1,800**	**1.18**	**0.17**	**0.31**	**0.04**	**66,367**	**2,962**	**17,673**	**660**
Indicated	Fresh	13,000	1.18	0.19	0.58	0.04	489,000	24,031	239,000	5,000
Inferred	Fresh	2,400	1.12	0.13	0.33	0.02	87,000	3,000	25,000	600
Sub-Total	**Fresh**	**15,200**	**1.18**	**0.18**	**0.54**	**0.04**	**576,000**	**27,031**	**264,000**	**5,600**
Indicated	0.5 g/t Au Equiv cut off grade above the 0mRL	15,000	1.17	0.19	0.54	0.04	567,000	27,800	259,900	5,930
Inferred		2,700	1.12	0.12	0.30	0.02	96,000	3,300	26,000	640
Sub-Total		**17,700**	**1.17**	**0.18**	**0.50**	**0.04**	**663,000**	**31,100**	**285,900**	**6,570**
Minyari Deposit using a 1.5 g/t Au Equiv cut-off grade below the 0mRL										
Indicated	Fresh	4,400	2.30	0.26	0.83	0.03	328,000	11,421	118,400	1,450
Inferred	Fresh	6,200	2.61	0.22	0.66	0.03	523,000	13,794	132,700	1,590
Sub-Total	1.5 g/t Au Equiv cut of grade below 0mRL	**10,600**	**2.48**	**0.24**	**0.73**	**0.03**	**851,000**	**25,200**	**251,100**	**3,040**
TOTAL	**Minyari**	**28,300**	**1.66**	**0.20**	**0.59**	**0.03**	**1,514,000**	**56,300**	**537,000**	**9,610**

Table 3-2 Minyari South MRE update, 2022 – summary

Minyari South										
Resource Category	Weathering	Tonnes (kt)	Au (g/t)	Cu (%)	Ag (g/t)	Co (%)	Au (oz)	Cu (t)	Ag (oz)	Co (t)
Minyari South Deposit using a 0.5 g/t AuEquiv cut-off grade above the 150mRL										
-	Overburden	-	-	-	-	-	-	-	-	-
Inferred	Oxide	22	4.45	0.33	0.59	0.04	3,160	73	419	10
Inferred	Transitional	54	4.88	0.47	0.85	0.04	8,410	251	1,470	20
Inferred	Fresh	77	4.27	0.70	1.29	0.06	10,560	537	3,200	50
TOTAL	**Minyari South Total**	**153**	**4.47**	**0.56**	**1.04**	**0.05**	**22,000**	**861**	**5,100**	**80**

Table 3-3 Sundown MRE update, 2022 – summary

Sundown										
Resource Category	Weathering	Tonnes (kt)	Au (g/t)	Cu (%)	Ag (g/t)	Co (%)	Au (oz)	Cu (t)	Ag (oz)	Co (t)
Sundown Deposit using a 0.5 g/t AuEquiv cut off grade above the 100mRL										
Inferred	Overburden	-	-	-	-	-	-	-	-	-
Inferred	Oxide	10	0.97	0.18	0.37	0.02	310	18	100	2
Inferred	Transitional	22	1.09	0.20	0.37	0.03	760	43	260	10
Sub-Total		**170**	**1.44**	**0.39**	**0.79**	**0.03**	**7,900**	**660**	**4,300**	**50**
TOTAL	**Sundown Total**	**202**	**1.38**	**0.36**	**0.72**	**0.03**	**9,000**	**721**	**4,700**	**60**

Table 3-4 WACA MRE update, 2022 – summary

WACA										
Resource Category	Weathering	Tonnes (kt)	Au (g/t)	Cu (%)	Ag (g/t)	Co (%)	Au (oz)	Cu (t)	Ag (oz)	Co (t)
WACA Deposit using a 0.5 g/t Au Equiv cut-off grade above the100mRL										
-	Overburden	-	-	-	-	-	-	-	-	-
Indicated	Oxide	217	0.79	0.08	0.13	0.02	5,530	184	886	36
Inferred	Oxide	99	0.77	0.10	0.15	0.02	2,453	95	461	15
Sub-Total	**Oxide**	**316**	**0.79**	**0.09**	**0.13**	**0.02**	**7,984**	**279**	**1,346**	**51**
Indicated	Transitional	435	0.92	0.10	0.15	0.02	12,863	438	2,052	80
Inferred	Transitional	155	0.87	0.10	0.14	0.02	4,339	161	689	31
Sub-Total	**Transitional**	**590**	**0.90**	**0.10**	**0.14**	**0.02**	**17,202**	**599**	**2,741**	**111**
Indicated	Fresh	1,035	1.03	0.12	0.19	0.02	34,081	1,288	6,417	198
Inferred	Fresh	1,290	1.06	0.12	0.19	0.02	43,865	1,541	7,919	253
Sub-Total	**Fresh**	**2,325**	**1.04**	**0.12**	**0.19**	**0.02**	**77,945**	**2,829**	**14,336**	**450**
Indicated	0.5 g/t Au Equiv cut-off grade above the 100mRL	1,688	0.97	0.11	0.17	0.02	52,500	1,900	9,400	310
Inferred		1,544	1.02	0.12	0.18	0.02	50,700	1,800	9,100	300
Sub-Total		**3,232**	**0.99**	**0.11**	**0.18**	**0.02**	**103,000**	**3,700**	**18,500**	**610**
WACA Deposit using a 1.5 g/t Au Equiv cut-off grade below the 0mRL										
Indicated	Fresh	-	-	-	-	-	-	-	-	-
Inferred	Fresh	1,627	1.69	0.11	0.17	0.03	89,000	1,900	9,000	560
Sub-Total	1.5 g/t gold cut-off grade below the 0mRL	**1,627**	**1.69**	**0.11**	**0.17**	**0.03**	**89,000**	**1,900**	**9,000**	**560**
TOTAL	**WACA**	**4,859**	**1.23**	**0.11**	**0.18**	**0.02**	**192,000**	**5,600**	**27,500**	**1,170**

Table 3-5 WACA West MRE update, 2022 – summary

WACA West										
Resource Category	Weathering	Tonnes (kt)	Au (g/t)	Cu (%)	Ag (g/t)	Co (%)	Au (oz)	Cu (t)	Ag (oz)	Co (t)
WACA West Deposit using a 0.5 g/t AuEquiv cut off grade above the 100mRL										
Inferred	Overburden	-	-	-	-	-	-	-	-	-
Inferred	Oxide	40	0.85	0.18	0.84	0.03	1,000	100	1,100	14
Inferred	Transitional	82	0.77	0.14	0.71	0.03	2,000	100	1,900	30
Inferred	Fresh	270	0.70	0.18	0.83	0.03	6,000	500	7,200	78
Sub-Total		**393**	**0.73**	**0.17**	**0.81**	**0.03**	**9,000**	**700**	**10,200**	**120**
WACA West Deposit using a 0.5 g/t AuEquiv cut off grade below the 100mRL										
Inferred	Fresh	11	0.86	0.50	0.05	0.01	304	55	17	1
TOTAL	**WACA West Total**	**404**	**0.73**	**0.18**	**0.79**	**0.03**	**9,304**	**755**	**10,217**	**121**

4 ENVIRONMENTAL AND SOCIAL

4.0 Landscape

Located in the Great Sandy Desert of Western Australia, the landscape of the Project consists of mainly intra-dunal sandplains with small areas of gravel, clay-rich areas and sub-crop with several large rocky outcrops nearby. Large, linear sand dunes and swale areas are prevalent across the region, although the Mineral Resource area and beyond to the south void of dunes other than one dune along the northern margin of the area. Vegetation is dominated by spinifex with various species of scattered trees and shrubs found throughout the region.

4.1 Environmental studies

Desktop studies of the Project were conducted by Antipa and based on this very preliminary evaluation no significant environmental impediments were identified.

Numerous field studies have been conducted across the region by Newcrest Mining, in particular for Telfer Mine Site and associated infrastructure and infrastructural corridors, which are available online via the DMIRS Open File system. Antipa currently uses these Open File studies to provide baseline environmental data, given the proximity and similarity between the Project and Telfer region.

Dedicated environmental studies, including flora and fauna surveys and hydrological studies, would be conducted during a PFS for the Project.

4.2 Climate and climate change

The nearest Bureau of Meteorology weather station is Telfer Aero, approximately 35 km south of the Project Area. The climate is defined as semi-arid to tropical with warm, dry winters and hot summers with seasonal tropical lows ± tropical cyclones occurring from December to March.

Average annual rainfall is 350-400mm with the majority of rainfall occurring from December to March. Average maximum temperatures range from 40.4ºC in January to 25.3ºC in July, with average minimum temperatures ranging from 26ºC in January to 10.6ºC in July.

Climate Change projections for the Pilbara region by the Western Australia State Government suggest:

- Average, minimum and maximum temperatures will rise with the duration and intensity of hot spells to increase in the north of Western Australia, with an increased bushfire risk.
- Decrease in annual rainfall in the western Pilbara and an increase in annual rainfall in the eastern Pilbara.
- Decrease in frequency of tropical cyclones but increase in intensity due to a warmer atmosphere holding more water vapour.

4.3 Native Title

The Project Area is contained completely within land where the Martu people have been determined to hold Native Title Rights under the Native Title Act (1993). These Native Title Rights grant the Martu people with exclusive use, occupation and possession of their determination area, including administration of access within their determination area. Antipa has a good working relationship with the Martu people and Jamukurnu-Yapalikunu Aboriginal Corporation (**JYAC**) (previously entitled Western Desert Lands Aboriginal Corporation, **WDLAC**), the Prescribed Body Corporate that holds and manages Native Title for the Martu common law holders of the Martu Native Title determinations.

The Land Access and Mineral Exploration Agreement (**LAA**) between Antipa Resources Pty Ltd and JYAC, entitled the 'North Telfer Project', was signed on 26 July 2015 and grants access and the ability to conduct exploration activities on the Project, including Exploration Licence E45/3919 which contains the Minyari, WACA and satellite deposit Mineral Resources.

4.4 Heritage

Numerous heritage surveys have been undertaken across the Minyari Dome Project in accordance with the LAA to approve Work Areas prior to conducting any ground disturbing exploration activities. Heritage Surveys are conducted with an Archaeologist, Anthropologist and typically eight Traditional Owners (**TOs**) as appointed by JYAC with several Antipa representatives providing survey assistance. The various heritage survey reports document all archaeological and anthropological findings for each survey.

4.5 Community relations

Key stakeholders for the Minyari Dome Project include:

- The Martu People / JYAC.
- Department of Mines, Industry Regulation and Safety.
- Relevant Mining and/or exploration companies active in the immediate Project region include:
    - Newcrest Mining Ltd;
    - Rio Tinto Plc;
    - IGO Ltd; and
    - Greatland Gold Plc.

No Pastoral Leases are located in the vicinity of the Project.

4.6 Permitting

All tenements within the Minyari Dome Project are in “good standing” with DMIRS.

Applications for a Mining Licence and Miscellaneous Licence(s) are required to develop the Minyari Dome Project from an exploration project into an operational mine site. Any application for a Mining Licence is subject to negotiation with JYAC, as per clause 13.2 of the North Telfer Project Land Access and Mineral Exploration Agreement.

Any additional approvals required, as identified by the Scoping Study, internally or externally, will be sought in a timely manner to ensure all appropriate approvals are in place for the Project.

5 PROCESSING

Antipa engaged Strategic Metallurgy as metallurgical consultant to develop a process package for a processing facility to treat ore from the Minyari and WACA resources. The processing cost estimates were developed to a Scoping Study level (±35%). The report provided includes:

- Process description;
- High level process flow diagram;
- Major mechanical equipment list;
- High level mass balance;
- Tailings Storage Facility information; and
- Capital and operating costs.

Antipa requested two options to be assessed during the course of the Study at 1 Mtpa, 2 Mtpa and 3 Mtpa treatment rates, namely:

- Case 1: Free milling gold and silver recovery CIL flowsheet; and
- Case 2: Base metal recovery flotation flowsheet for separate copper-gold-silver and cobalt concentrates.

5.0 Testwork

The Project's metallurgical inputs are sourced from metallurgical test-work completed in 2017 and 2018 by consultants Strategic Metallurgy, which have been publicly reported (*https://antipaminerals.com.au/upload/documents/investors/asx-announcements/201129223150_2017-06-13-31.pdf* and *https://antipaminerals.com.au/upload/documents/investors/asx-announcements/201129232007_2018-08-271.pdf*).

Samples were selected from each ore type across and along strike at the deposits. There does not appear to be a substantial difference in performance between the Minyari and WACA samples. No test-work has been completed at Minyari South as yet, however it is expected that the performance would be similar to that of Minyari due to no significant differences in the chemistry and mineralogy.

A total of seven gravity concentration and diagnostic leach tests were conducted. Testing focused on determining the proportion of the gold that is gravity recoverable, cyanide amenable, sulphide locked, and silicate locked. The flowsheet utilises conventional gravity concentration and cyanidation techniques followed by an aqua regia digest and a fire assay on the final tails sample. The sample is passed through a Knelson gravity concentrator. The intensive cyanidation tailings residue is then washed and combined with the Knelson tailings where it is leached under direct cyanidation conditions to determine the proportion of cyanide amenable gold. The direct cyanidation tails is then washed, and acid leached with aqua regia to determine the proportion of sulphide locked gold; the tails of the aqua regia leach is then fire assayed to determine the proportion of gold locked in silicates.

The gravity recovery of the oxide samples is considered low. However, the overall recovery (gravity + cyanide) is high, ranging between 92-97%. The fresh (primary) ore samples demonstrate a moderate to high degree of gravity recoverable gold, however the overall recoveries are slightly lower (85-90%) than that seen in oxide samples but are still considered good. A summary of results is provided in Table 5-1.

Table 5-1 Diagnostic leach test-work results summary

	Unit	OX 1.0	OX 2.0	OX 3.0	PR 1.2	PR 4.7	PR 2.7 (West)	PR 2.5 (WACA)
Assayed head	g/t	1.20	2.16	2.85	1.21	3.39	1.83	2.40
Calculated head	g/t	0.99	1.05	2.35	1.09	3.14	2.24	2.08
Cyanide consumption	kg/t	1.19	1.90	1.96	0.52	0.89	0.63	0.63
Diagnostic leach results								
Gravity gold	%	10%	9%	24%	27%	35%	54%	34%
CN amenable	%	87%	83%	73%	59%	53%	36%	51%
Sulphide locked	%	2%	6%	2%	13%	11%	9%	12%
Silicate locked	%	1%	2%	1%	1%	0%	1%	3%

Overall, the diagnostic test results indicate that the gold bearing ore (oxide and fresh) will respond well to typical free milling conditions. Cyanide consumption for oxide composites is on the higher end (>1kg/t) for a conventional free milling operation due to cyanide soluble copper.

Based on the 2017 results, a sighter test-work programme was conducted in 2018 to identify the viability of producing a saleable copper/cobalt concentrate via flotation or through gravity concentration. Overall, the test-work programme achieved both primary objectives.

A total of six flotation tests were conducted. A high-level summary of the flotation results is provided in Table 5-2. All tests were conducted in Perth tap water at a primary grind size of P80 75µm. Testing focused on achieving maximum grade and recovery of copper and cobalt to their respective concentrates, no particular emphasis was made on achieving gold recovery. Gold recovery is defined in this report by gold recovered to the copper concentrate. It should be noted that both gold and copper reporting to the cobalt concentrate may receive credits. The flotation reagents utilised in this test-work programme are potassium amyl xanthate (**PAX**) and copper sulphate to activate and float cobalt sulphides. A precious metal specific di-alkyl-di-thiophosphinate promoter (3418A) was used to improve selectivity and recovery of copper over other iron sulphide minerals. Aero 3477 (A3477) was used in the selective flotation of cobalt, over other iron sulphide minerals. Methyl Isobutyl Carbinol (**MIBC**) was used as a frother for all the flotation tests. Sodium silicate was used to disperse fine particles. Triethylenetetramine (**TETA**) is an organic reagent used in combination with sulphite to depress iron sulphide minerals during sulphide flotation. Lime and hydrogen sulphide was used to modify the pH, aiding in the activation a depression of cobaltite.

Table 5-2 Flotation test-work results summary

Test	Copper/Gold concentrate				Cobalt concentrate	
Conc.	Cleaner Recovery (Rougher)		Grade		Cleaner Recovery (Rougher)	Grade
	Copper	Gold	Copper	Gold	Cobalt	Cobalt
FT 8	(87.3%)	(86%)	3.9%	11.7 g/t	(68.2%)	1.5%
FT 9	(93.4%)	N/A	7.0%	N/A	(11.6%)	0.2%
FT 10	92.6% (97.7%)	(88.4%)	6.3%	17.5 g/t	3.9% (90.1%)	0.3%
FT 11	88.4% (92.3%)	82.0 (84.2%)	11.7%	21.7 g/t	(47.2%)	1.2%
FT 12	85% (93.9%)	68.0 (77.0%)	14.4%	39.5 g/t	35.9% (40.9%)	2.7%
FT 13	83.4% (91.6%)	63.5 (81.7%)	12.7%	22 g/t	50.8% (61.8%)	3.4%

A total of two gravity tests were conducted on the fresh and oxide ore. The gravity test-work programme objective was to determine if a saleable cobalt concentrate could be generated by gravity separation. To maximise recovery to a gravity concentrate 5 kg of each sample was passed through a falcon concentrator three times to simulate the potential recovery from a continuous falcon concentrator. The concentrates from the falcon concentrator were then combined and tabled to upgrade the concentrate further. The results from the gravity tests are summarised in Table 5-3.

Table 5-3 Gravity test-work results summary

	Mass (%)	Gold		Copper		Cobalt	
		g/t	% dist.	%	% dist.	%	% dist.
PR3_1710 Table Conc	0.23	238	32.4	4.97	3.22	10.8	40.5
OX1_1710 Table Conc	0.08	432	18.5	4.21	0.84	6.54	4.1

5.1 Process flowsheet

The process flows provided below describes the processes necessary to treat Minyari ore to produce either doré gold or separate saleable copper/gold and cobalt concentrates. The average cumulative gravity and cyanide recoverable gold from test-work has been used to provide the CIL flowsheet gold recovery for each ore type. No test-work has been completed from ore representing transitional material and has assumed the numerical average of both Oxide and Fresh.

The concentrator makes use of differential flotation to produce separate copper and cobalt concentrate products, first floating copper minerals followed by cobalt minerals. Both design cases will incorporate similar comminution processes. Where relevant, process variations between design cases have been described. Summarised flowsheets illustrating the major processes are provided by Figure 5-1 and Figure 5-2.

5.2 Tailings storage concept

A tailings storage facility (**TSF**) is required to provide LoM storage for tailings from the Project's process plant. The TSF will be constructed in staged compartments during the LoM using earth fill embankments. Tailings will be deposited along the perimeter using a beach drainage system to a central decant water collection facility.

It is assumed the TSF will be constructed on flat ground in a paddock style arrangement. The plant provides for three nominal design feed rates; however the tailings facility will be designed to accommodate approximately 20 million tonnes.

It is proposed that constructions or lifts will occur every 1 to 2 years and the final TSF area will occupy approximately 92 hectares.

Figure 5-1 Base Case block flow diagram for 3 Mtpa CIL gold-silver processing facility flowsheet

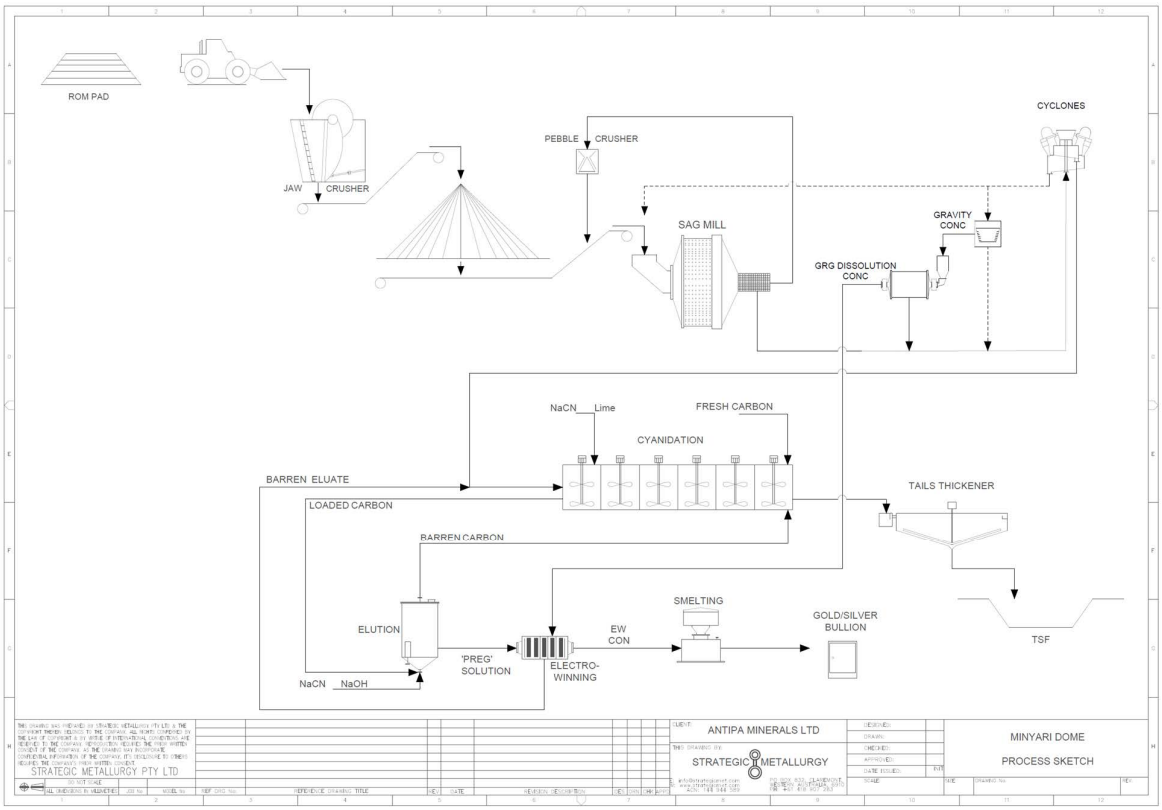
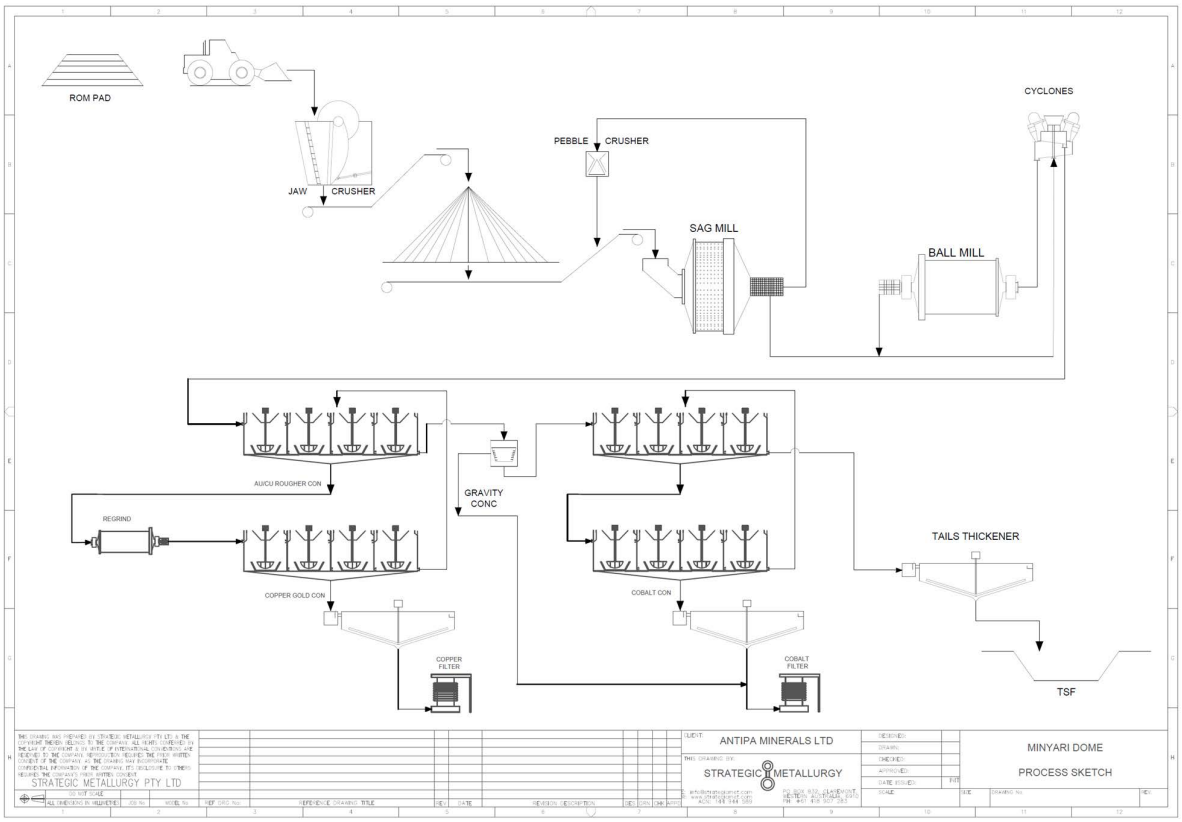


Figure 5-2 Optional Case block flow diagram for 3 Mtpa flotation copper-cobalt-gold-silver concentrator processing facility flowsheet (NB: this case was discounted)



6 GEOTECHNICAL

6.0 General setting

The Project's gold-silver-copper-cobalt deposits are hosted in Proterozoic basement rocks, mainly meta-sediments and meta-mafic intrusives. At the Minyari deposit the gold-bearing sulphide mineralisation form a series of near-vertical lenses and shoots within a pipe-like breccia body that plunges moderately northwest. Weathering of the basement rocks extends to approximately 70 m depth. The weathered basement rocks comprise saprolite and saprock horizons and are overlain by up to 5 m of residual sand/soil/calcrete material.

6.1 Geotechnical investigations

Geotechnical investigations have comprised:

- Geotechnical logging of diamond drill core by interval;
- Rock quality designation (**RQD**);
- Fracture frequency; and
- Estimated rock strength.

Structural logging of orientated drill core:

- Alpha and beta angles;
- Surface roughness/condition; and
- Infill mineralisation.

No geomechanical test-work has been undertaken.

6.2 Geotechnical model

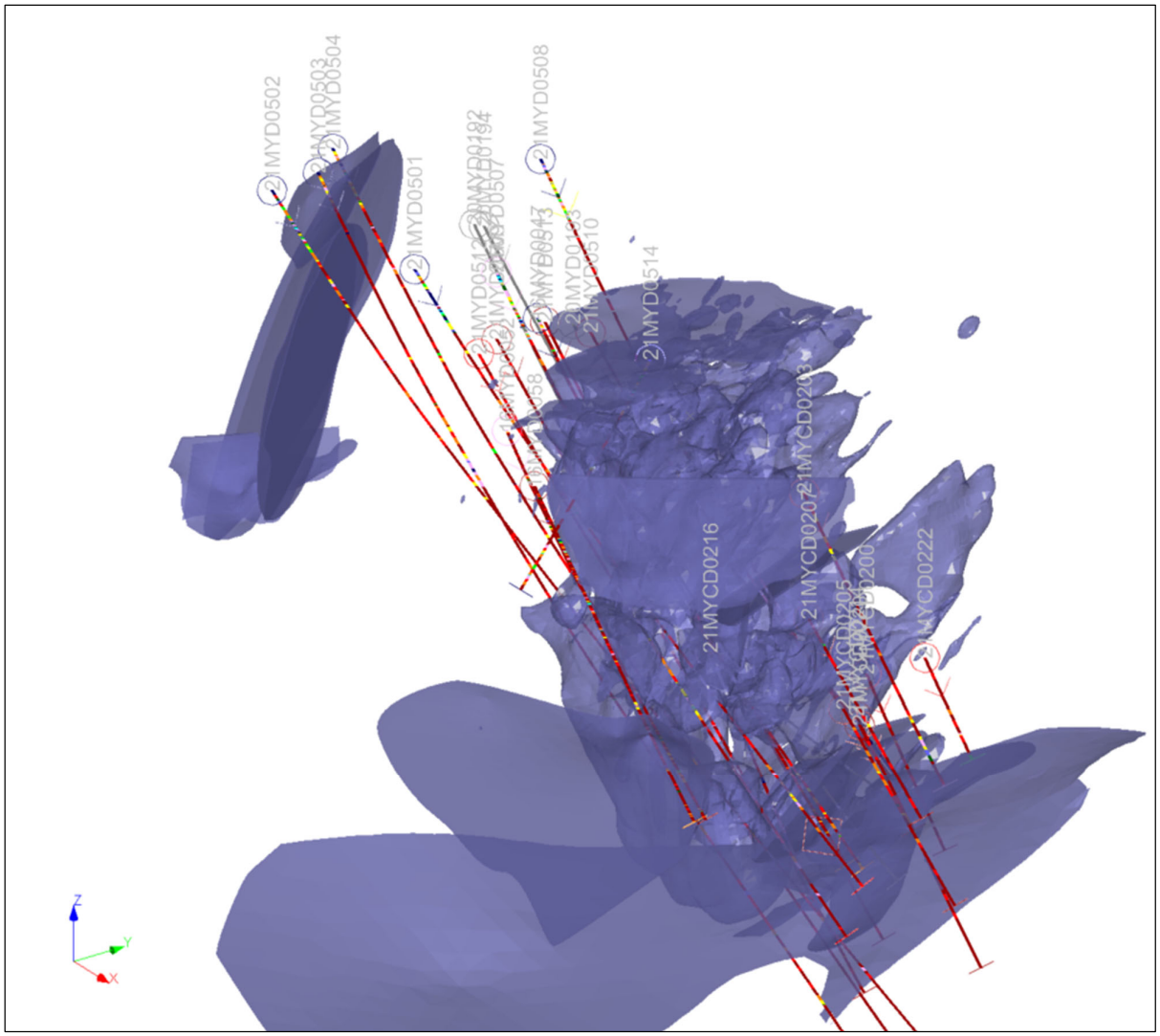
The Minyari geotechnical model was developed with data from a set of 20 drill holes that intersected the deposit, totalling 7,322 m logged; refer to Table 6-1 and Figure 6-1.

Table 6-1 Minyari deposit – geotechnically logged drillholes

Drillhole	From (m)	To (m)	Logged length (m)
16MYD0047	63.0	609.7	546.7
16MYD0052	123.1	504.7	381.6
16MYD0058	123.3	446.0	322.7
21MYCD0200	401.8	579.7	177.9
21MYCD0203	179.3	463.2	283.9
21MYCD0205	414.5	612.5	198.0
21MYCD0207	293.2	494.9	201.6
21MYCD0214	456.4	705.4	249.0
21MYCD0216	401.9	618.4	216.5
21MYCD0220	443.6	548.4	104.8
21MYCD0222	348.3	448.1	99.8
21MYD0501	0	658.8	658.8
21MYD0507	3.1	616.1	613.0
21MYD0508	0	655.1	655.1
21MYD0509	149.4	800.0	650.6
21MYD0510	125.8	553.0	427.2
21MYD0512	95.5	694.9	599.4

Drillhole	From (m)	To (m)	Logged length (m)
21MYD0513	149.2	763.0	613.8
21MYD0514	0	228.1	228.1
21MYDG0002	0	93.4	93.4

Figure 6-1 Minyari – geotechnically logged holes

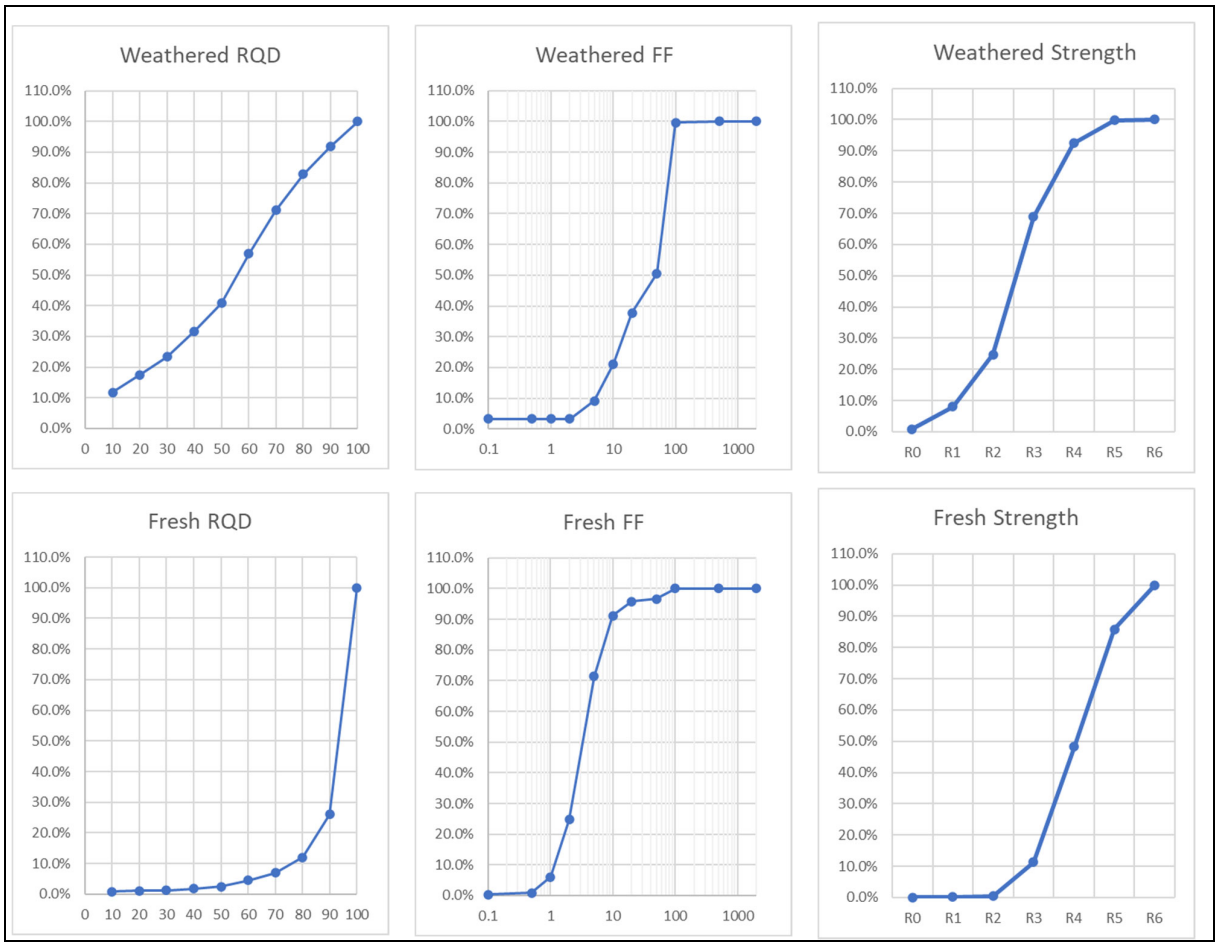


6.2.1 Geotechnical model

Geotechnical and structural logging was predominantly undertaken at an exploration standard which is not as comprehensive as the standard required for direct calculation of geotechnical classification parameters. This has necessitated some interpretation of the data to determine typical conditions.

The preliminary Minyari geotechnical model comprises two domains (Weathered Rock and Fresh Rock) delineated by a 3D wireframe model. Length weighted distributions of the characterisation data are presented in Figure 6-2.

Figure 6-2 Length weighted distributions of geotechnical characterisation data



Length-weighted median values of the characteristics derived from the charts are summarised in Table 6-2.

Table 6-2 Summary of geotechnical characteristics (length weighted median values)

Domain	RQD (%)	Fracture frequency (/m)	Estimated strength (ISRM)
Weathered Rock	55	50	R2/R3
Fresh Rock	92	3	R4

6.2.2 Rock mass structure model

The preliminary Minyari rock mass structure model was developed with orientated logging data from a subset of the geotechnically logged holes with high confidence orientation reliability. The following stereoplots (Figure 6-3 to Figure 6-8) show the full selected dataset and sets sorted by structure type.

Figure 6-3 Minyari structure model – all structures

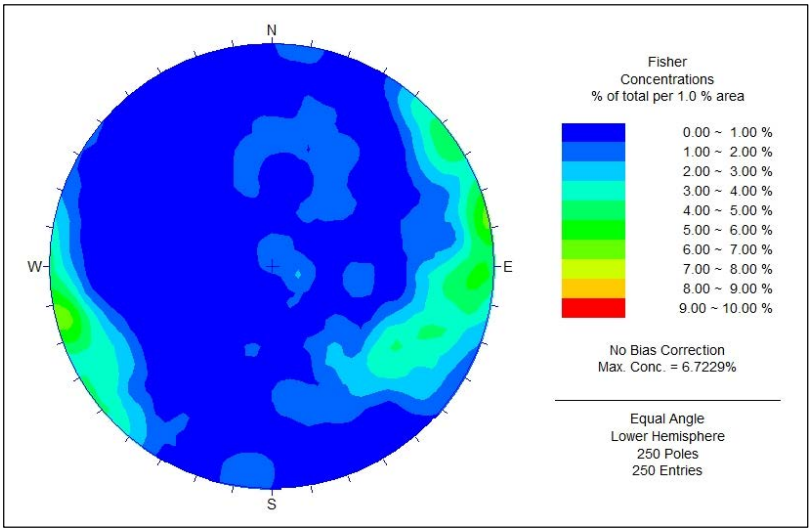


Figure 6-4 Minyari structure model – bedding

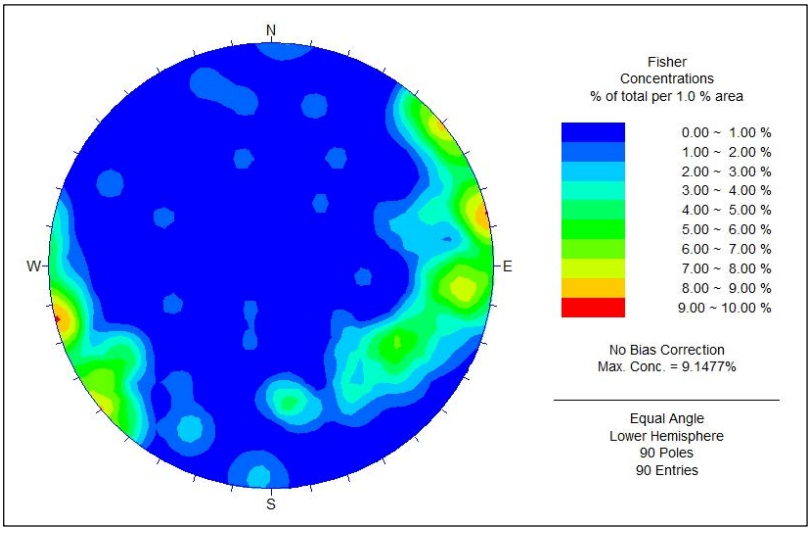


Figure 6-5 Minyari structure model – foliation

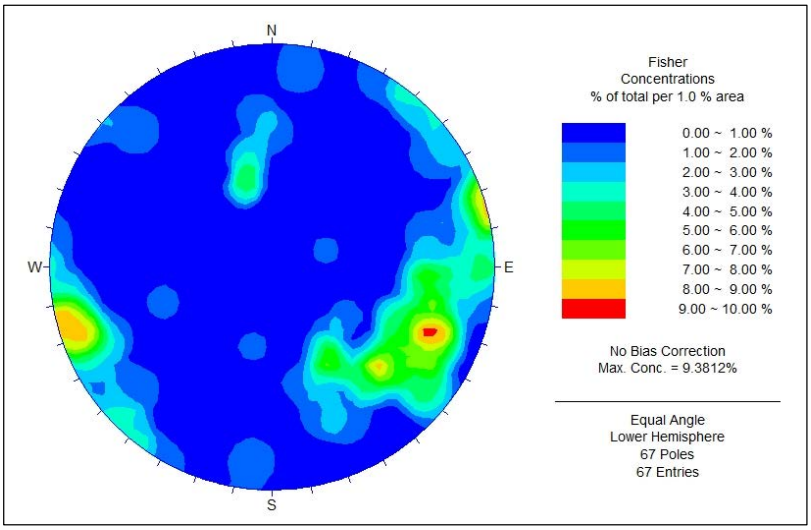


Figure 6-6 Minyari structure model – fractures

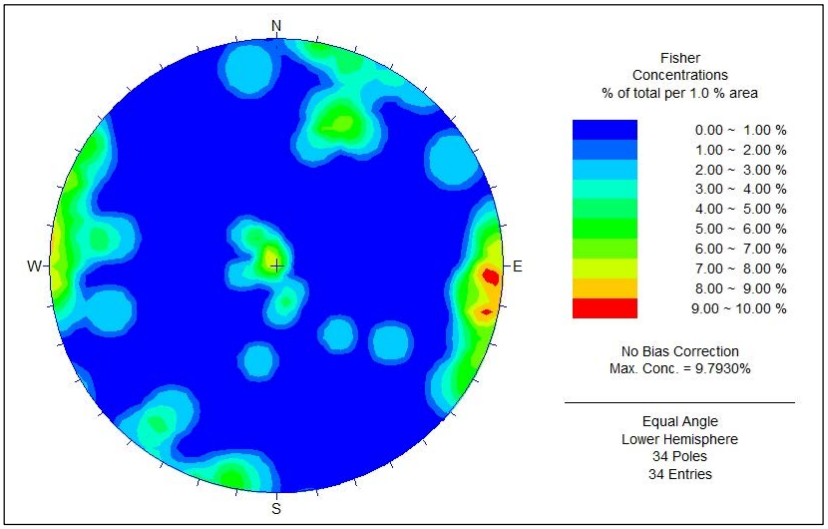


Figure 6-7 Minyari structure model – joints

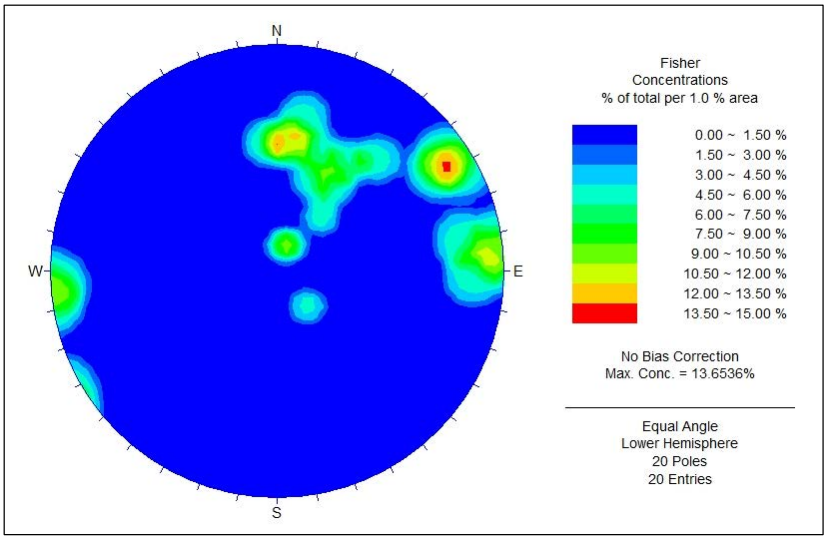
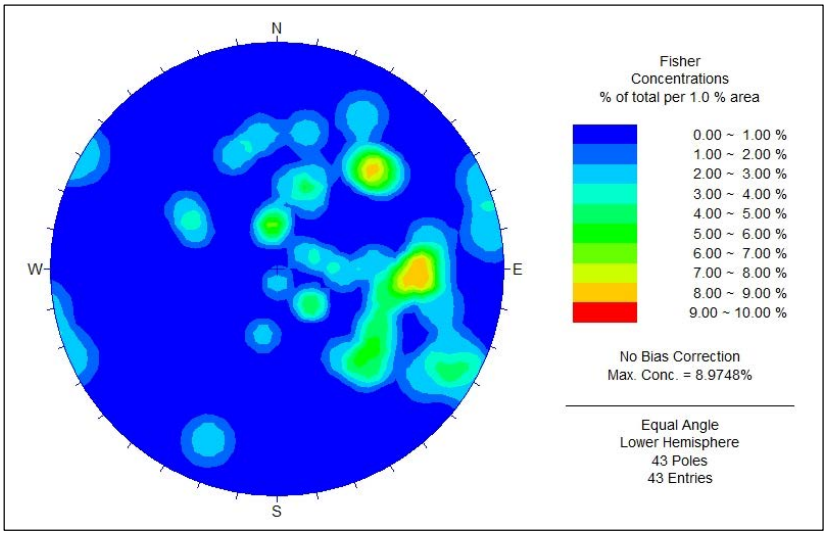


Figure 6-8 Minyari structure model – veins



The dominant structural fabric comprises bedding, foliation, joints, and veins. The dominant structural orientation is sub-vertical, trending north-northwest to south-southeast. In addition, there is a minor set of joints dipping at moderate angle to the south, plus a substantial proportion of "randomly orientated" structures.

Surface and infill characteristics recorded for the set of orientated structures are summarised in Table 6-3.

Table 6-3 Discontinuity surface and infill characteristics

Characteristics	Weathered	Fresh
Surface		
Smooth	70	439
Slightly Smooth		9
Slightly Rough	63	348
Very Rough	20	70
Slickensided		33
Infill		
Slightly Weathered	13	285
Highly Weathered	50	51
Soft gouge <5mm		33
Soft gouge >5mm		8

From Table 6-3, the typical characteristics of the rock mass discontinuities are summarised in Table 6-4.

Table 6-4 Characteristics of the rock mass discontinuities

Domain	Planarity	Roughness	Infill
Weathered	Undulating/Stepped	Smooth/Rough	Mod mins coating
Fresh	Undulating	Smooth/Rough	Hard mins coating

6.2.3 Geotechnical classification

Preliminary Geotechnical Classifications have been developed for the domains using the industry-standard methodologies:

- Rock Mass Rating (RMR89) – CSIR/Bieniawski (1989);
- GSI – Hoek (1994);
- Rock Mass Rating/Mining Rock Mass Rating – Laubscher (1990); and
- NGI Tunnelling Support Index Q/Q' – Barton et al (1974, 1993).

The geotechnical parameters summarised in Table 6-2, Table 6-3 and Table 6-4 above have been subject to a validation by comparison of the logs with core photographs of two holes. As a result, limited adjustments were made to the parameters before calculating the classification values (Tables 6-5 to 6-7).

Stress conditions assumed for calculation of the underground parameters are based on the Telfer geotechnical model for a mining depth of 500 m:

$$\sigma 1 = 2 \times \sigma \times V = 2 \times\ 500 \times 0.027 = 27MPa$$

Table 6-5 Geotechnical classifications – RMR89 and GSI

Domain	UCS	RQD	FF	Discontinuities	Groundwater	RMR89	GSI
Weathered	R2	55	50		Assumed Dry		
Points	*2*	*11*	*1*	*14*	*15*	*43*	*38*
Fresh	R4/R5	92	3		Assumed Dry		
Points	*10*	*18*	*10*	*16*	*15*	*69*	*64*

Table 6-6 Geotechnical classifications – Laubscher RMR

Domain	UCS	FF	Discontinuities	LRMR	MRMR
Weathered	R2	50	Assumed Dry		
Points	*2*	*1*	*11.5*	*15.5*	*14*
Fresh	R4/R5	3	Assumed Dry		
Points (Open Pit)	*10*	*10*	*21.7*	*52.7*	*50*
Points (Underground)	*10*	*10*	*21.7*	*52.7*	*45*

Table 6-7 Geotechnical classifications – NGI Q'/Q

Domain	RQD (median)	Jn	Jr	Ja	Q'	Jw	SRF	Q
Fresh	92	6	2	1	30.7	0.66	6	3.4
Dominant characteristics		*2+ sets*	*Undulating Smooth*	*No infill/ Hard mins*		*Damp*	*sc/s1 = 3.7*	

6.2.4 Mine design parameters

Initial assessment of the potential for open pit mining at Minyari is considering a pit design up to approximately 500 m depth. The current resource model extends below this depth for several hundred metres, providing opportunity for extraction by underground mining.

Preliminary design parameters have been developed using empirical methods for optimisation studies of open pit and underground mining of the deposit.

Open pits

Overall slope angles for open pit designs were estimated using both Sjoberg's (2000) charts based on Rock Strength Class and the Haines and Terbrugge (1991) chart based on MRMR, interpreted for a Factor of Safety of 1.2. Results are summarised in Table 6-8.

Table 6-8 Overall slope angles

Domain	Maximum slope height	Overall slope angle	
		Sjoberg	Haines & Terbrugge
Weathered	70 m		40°
Fresh	250 m	50°	40°
	500 m	45°	

The overall slope angle assessed from the empirical design charts (highlighted) are recommended for scoping-level optimisation studies.

Underground

The rock mass quality defined by the geotechnical classifications summarised in Section 6.2 indicates typical underground ground conditions are in the "Good" category. For these conditions appropriate underground mining methods below an open pit include sublevel open stoping (**SLOS**) and sublevel caving (**SLC**).

Preliminary open stope design parameters have been developed using the empirical Stability Chart methodology (Mathews et al., 1980; Potvin et al., 1989; Mawdesley and Trueman, 2006). The input properties and calculation of the Stability Number N' and Hydraulic Radius (**HR**) for nominal 500 m depth are summarised in Table 6-9.

Table 6-9 Stability chart assessment of stope design parameters

Parameter	Condition	Backs	Walls
Q'	Median	30.7	30.7
A	sc/s1 = 3.7	0.2	0.2
B	Bedding; sub-vertical	1.0	0.3
C	Surface orientation	2.0	8.0
N'		12.3	14.7
HR (Mathews)	Unsupported Supported	7 12	7.5 12.5
HR (Mawdesley)	Unsupported	10	11
Maximum stope design dimensions (Mathews)	Unsupported Supported	28 x 28 48 x 48	30 x 30 50 x 50

The stope dimensions estimated using Mathews effectively limit overbreak (**ELOS**) to approximately 0.5 m. Larger stope dimensions may be achievable if the allowable ELOS is increased to 1.0 m (see Table 6-10), derived from Clark and Pakalnis (1997).

Table 6-10 Hydraulic radius for ELOS of 1.0 m

Stope surface	N'	Hydraulic radius (ELOS = 1.0 m)
Back	12.3	10
Walls	14.7	11

The HR values determined with the Mawdesley method agree with those in Table 6-10 and confirm stopes with spans and heights of 30 m will have a high degree of stability. The assessments summarised in Table 6-9 and Table 6-10 indicate large-scale open stoping is feasible with primary/secondary extraction sequencing and a sublevel interval up to 30 m. Double-lift stopes may also be feasible in areas where geotechnical conditions are better than the median (e.g. stope walls with 25 m span x 50 m height have a HR of 8.3).

The median Q value of 3.4 indicates underground mine development will largely be within the Poor rock support class, mainly due to the depth/stress conditions. The development will require support comprising systematic rock-bolting (2.4 m bolts at 1.3 m spacing) with 50 mm FRC or steel mesh.

6.2.5 Findings and recommendations

Geotechnical conditions at Minyari comprise:

- A Weathered Rock domain up to 70 m deep including saprolite and saprock horizons;
- A Fresh Rock domain;
- The Weathered Rock domain comprises very low to low strength, highly fractured material, classified as Very Poor;
- The Fresh Rock domain comprises high to very high strength, low to moderately fractured material, classified as Good; and
- Current geotechnical and structural logging databases are substantial and sufficient for Scoping Study level.

Recommended mine design parameters for open pit and underground operations based on a preliminary assessment of geotechnical conditions are summarised in Table 6-11.

Table 6-11 Summary of mine design recommendations

Item	Properties	Depth	Parameter
Open pit slope angles	Weathered	70 m	40°
	Fresh	250 m	50°
		500 m	45°
Open stope dimensions	Back		25 m x 25 m
	Height		30 m

Underground mine development will require support comprising systematic rock-bolting (2.4 m bolts at 1.3 m spacing) with 50 mm FRC or steel mesh.

Geotechnical and structural logging was undertaken with an in-house methodology that is not fully in line with industry-standard methods for direct calculation of geotechnical classification parameters. Future geotechnical logging programmes should utilise a modified logging methodology such as the one used by Snowden Optiro (Snowden, 2008), and log by geotechnical domain rather than drill run or fixed length intervals.

6.3 Prefeasibility Study geotechnical investigation programme

The PFS geotechnical investigation programme should include drilling of diamond core holes in the vicinity of the northern, southern and eastern pit walls, and with orientations roughly orthogonal to the dominant west to east orientation of the current drillholes.

Information on rock material parameters determined by geomechanical laboratory testing programme will be required for PFS level assessments. At a minimum, the PFS programme should include the tests listed in Table 6-12.

Table 6-12 PFS geomechanical test programme

Horizons/Tests	Minimum tests per domain*
Soil/saprolite horizons	
Soil characterisation tests (particle size, liquid and plastic limits)	12
Direct shear strength tests	4 sets of 3
Rock horizons	
Unconfined Compressive Strength (UCS) tests with Modulus and Poissons Ratio measurements	25
Brazilian Tensile Strength tests	25
Triaxial Strength Tests	6 sets of 3

**Domains: Weathered, Fresh.*

The geotechnical logging programme should include routine field strength tests with a Point Load Test apparatus.

7 MINE PLANNING

7.0 Mining method

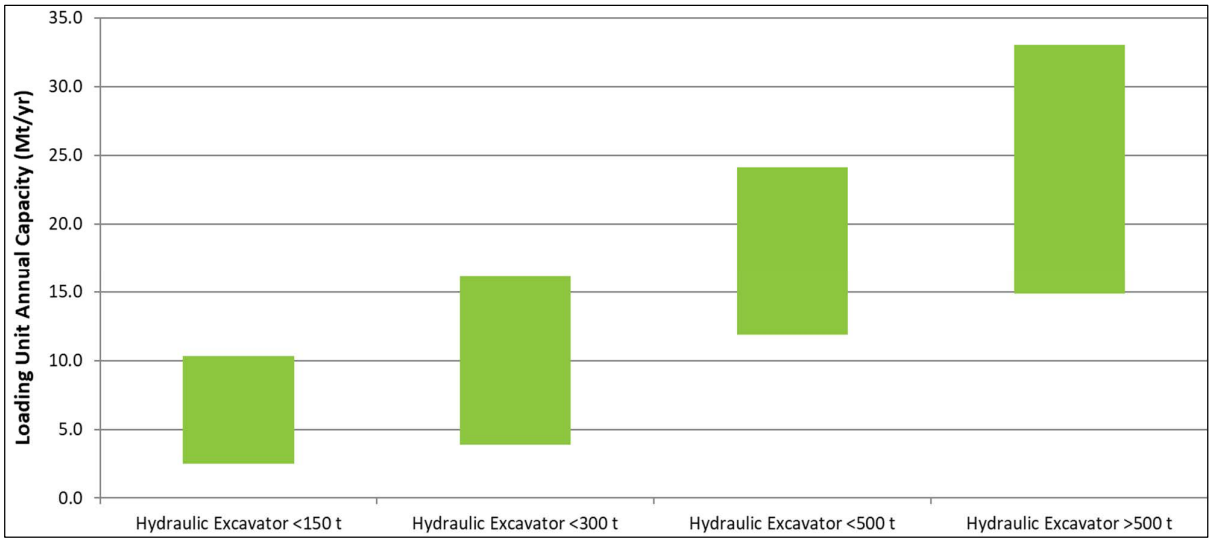
Mining of the Project has been assumed to be by a combination of open pit and underground methods. The open pit mine life is currently projected to be approximately mined in conjunction with underground operations. The selected mining method, design and extraction sequence are tailored to suit orebody characteristics, minimise dilution and ore loss, utilise planned process plant capacity and expedite free cash generation in a safe manner. Mining schedules have been based on realistic mining productivities with readily achievable mining rates along with consistent material movements.

Open pit mining operations are planned around a fleet of 300 tonne class excavators (Figure 7-1) and 200 tonne dump trucks. Based on a mining production rate of 2 Mtpa at a stripping ratio of approximately 5:1 a peak movement rate of approximately 18 Mtpa (i.e. 2 units) will be required. Ore will be transported to the ROM pad via a haul road, and waste rock hauled to a local waste dump adjacent to the pit. The surface topography at the Minyari orebody is very flat with minimal local elevation difference.

An underground mining operation is planned to be excavated either post or synchronous with mining the open pit/s. Mining sequencing was evaluated during the scenario phase of the Study. Detail of the underground mine is provided in Section 6 of this Study.

Open pit mining operations assume traditional drill blast load and haul mining techniques.

Figure 7-1 Loading capacity by excavator class



The first 12 months of mining (prior to commencement of processing), will deliver suitable waste rock from proposed open pit footprints for the purposes of:

- TSF construction;
- TSF evaporation ponds construction;
- Dewatering evaporation pond construction;
- Site haul road construction;
- ROM pad; in addition to
- Ore stockpiles (Low, Medium and High grade stockpiles); and
- Processing plant commissioning and steady-state operation.

7.1 Open pit

7.1.0 Mining model preparation

The block model contains blocks that vary in size in the X, Y and Z direction. To simulate mining factors (dilution and recovery), the block model was reblocked / regularised to a single cell dimension, the result of which is dilution around the edges of the mineralisation and a smearing of grade between cells.

For example, at the edge of a deposit, if the new block size combined two equal mass blocks, one with a gold grade of 2.0 g/t and one with a grade of 0.0 g/t, then the resulting block will have a grade of 1.0 g/t. As this has been diluted, the block may fall below the economic cut-off for mining.

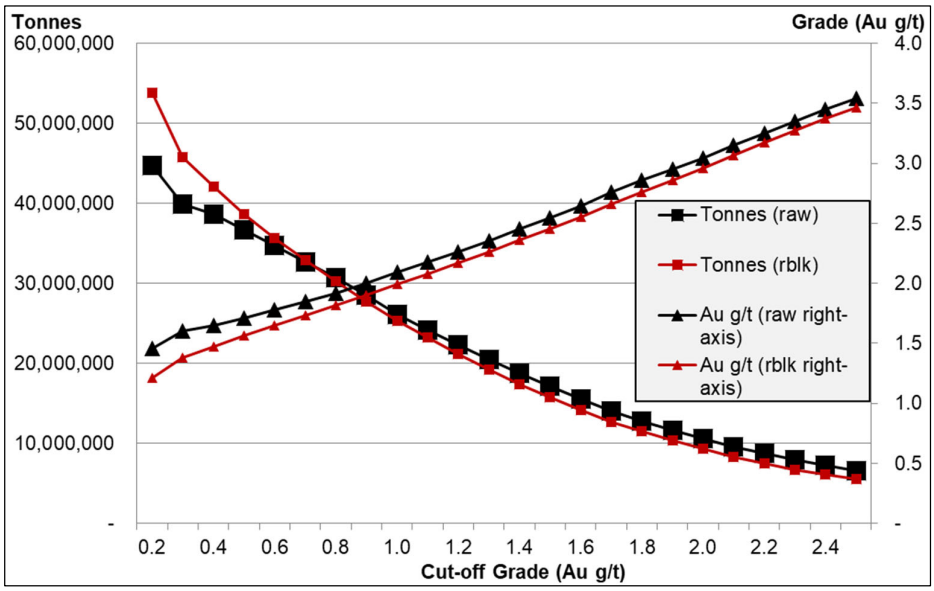
Three reblocking dimensions were investigated for Minyari resulting in the following mining factors at 0.5 g/t gold grade (Table 7-1).

Table 7-1 Minyari Resource reblocking parameters and results

Reblock dimensions	Dilution	Recovery
10mX by 10mY by 5mZ	16.2%	93.8%
5mX by 5mY by 5mZ	**9.4%**	**96.0%**
5mX by 5mY by 2.5mZ	8.5%	96.4%

A block size of 5mX by 5mY by 5mZ was selected as the selective mining unit (**SMU**). Figure 7-2 shows the grade tonnage chart for the original model combined with the grade tonnage chart for the deposit at the reblocked size.

Figure 7-2 Minyari 5mX by 5mY by 5mZ reblocked grade tonnage results



Given the mineralisation characteristics at WACA; i.e. narrow stacked ± undulating veins, reblocking resulted in an unfavourable result with very low recovery (less than 33%). This is an artifact of the reblock process where a fixed framework has been used to simulate the SMU rather than tailoring boundaries to suit the orebody geometry.

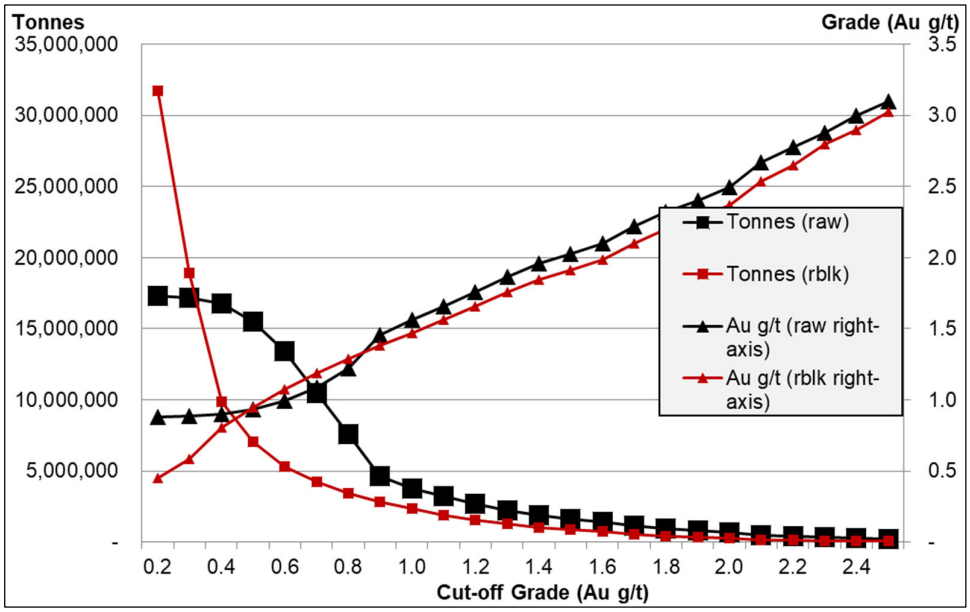
Investigations of the narrow nature of the WACA ore body, necessitated the consideration of a smaller SMU compared to Minyari, and it was concluded that to facilitate an economic extraction of WACA a smaller mining fleet would be required capable of extracting a smaller SMU of 2.5mX by 2.5mY by 2.5mZ.

A summary of reblocking results for WACA are presented in Table 7-2 below and Figure 7-3.

Table 7-2 WACA resource reblocking parameters and results

Reblock Dimensions	Dilution	Recovery
10mX by 10mY by 5mZ	22.9%	24.4%
5mX by 5mY by 5mZ	6.5%	33.9%
5mX by 5mY by 2.5mZ	6.4%	33.9%
2.5mX by 2.5mY by 2.5mZ	**0.0%**	**45.9%**

Figure 7-3 WACA 2.5mX by 2.5mY by 2.5mZ reblocked grade tonnage results



7.1.1 Parameters

Surfaces and boundaries

No additional surfaces or boundary constraints were required to be applied to the May 2022 Mineral Resource model.

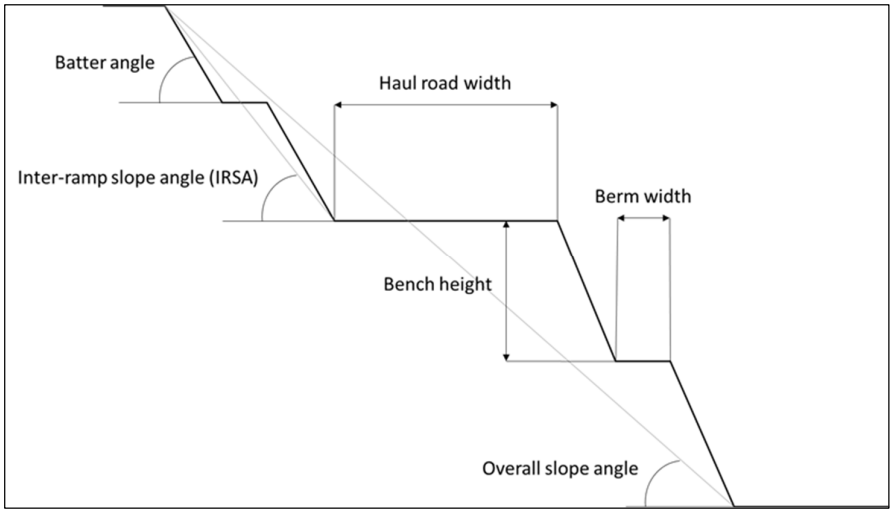
Geotechnical constraints

Pit slope angles follow the geotechnical recommendations as presented in Section 6 . Weathering specific overall slope angles were established using the recommended batter angles, berm width and bench heights. The overall slope angles were then used within the optimisation to determine an economical open pit that would be representative of the final design using the given geotechnical design parameters.

During the optimisation process, an overall slope angle is applied between the lowest toe point and the highest crest point and is inclusive of any ramps or additional step backs.

An Overall Slope Angles (**OSA**) were used to constrain the pit optimisation. Figure 7-4 provides an overview of slope angle terminology.

Figure 7-4 Slope angle definition



The overall slope angles were assigned by weathering type are provided by Table 7-3.

Table 7-3 Overall slope angles for optimisation

Weathering	OSA (degrees)	MROCK
Weathered	40	1-3
Transitional	45	4
Fresh	50	5

Mining Costs

Mining costs used by the optimisation software were prepared by Snowden. These were an all-inclusive rate to extract and deliver ore/waste to the ROM / Waste Rock Landform (**WRL**). Costs were sourced from Snowden's database of recent submissions and are material and bench specific.

Rates for drill and blast were (NB: bcm = bank cubic metre):

- **Cover** = $0.00/bcm (free dig) [MROCK=1];
- **Completely Oxidised** = $1.50/bcm [MROCK=2];
- **Strongly Oxidised** = $1.50/bcm [MROCK=3];
- **Partly Oxidised** = $2.50/bcm [MROCK=4]; and
- **Fresh Rock** = $3.00/bcm [MROCK=5].

Rates for load and haul at surface were:

- **Ore/Waste** = $5.00/bcm.

These were subsequently incremented by $0.10/bcm per five metre increase in depth from surface.

To capture owners' costs, a mining overhead expense of $2.00/bcm was assumed. This was based on an estimated owners' cost of $1,000,000/mth and mining at 500 kbcm/mth.

Post optimisation validation of the cost per tonne of rock mined results in an average rate of $4.26/t – $4.52/t (case dependent). This aligns with expectation and is representative of mining at the pace and scale required.

7.1.2 Processing throughput, recovery and costs

In determining the Project Base Case a total of six scenarios were investigated consisting of two process plant configurations (i.e. CIL and flotation) and three throughput scenarios (i.e. 1 Mtpa, 2 Mtpa and 3 Mtpa). Based on the Project's overall results, the 3 Mtpa CIL gold-silver production option was selected.

Recoveries and processing and general and administrative (**G&A**) costs were provided by Strategic Metallurgy as summarised by Table 7-4 and Table 7-5.

Table 7-4 Processing recoveries

Item	Weathered	Transitional	Fresh
CIL Recovery			
Gold	95.2%	92.0%	89.0%
Silver	95.2%	92.0%	89.0%

Table 7-5 Processing and G&A costs

Item	CIL costs
	3 Mtpa
Processing	$19.21/t
G&A	$1.40/t
Grade Control	$1.00/t
Total	**$21.61/t**

7.1.3 Revenue assumptions

Revenue assumptions were obtained from Antipa and were based on independent long-term commodity pricing and currency exchange rate forecasts (June 2022) and benchmarked against similar operations.

For the purposes of the optimisation an AUD to USD currency conversion rate of 0.72 was used.

Adopted metal pricings as list in Table 7-6.

Table 7-6 Metal prices and payabilities (0.72 USD/AUD exchange rate)

Item	Unit	Prices		Payabilities	
		USD	AUD	CIL	Flotation
Gold	$/oz	1,750	2,431	99.9%	92.5%
Silver	$/oz	22	31	99.9%	40.0%
Copper	$/t	8,267	11,482	-	93.8%
Cobalt	$/t	74,957	104,107	-	75.0%

Royalties were advised by Antipa as summarised in Table 7-7, and consist of WA State government royalties plus Sandstorm Gold Royalties Ltd's (**Sandstorm**) 1.0% NSR royalty.

Table 7-7 Royalty assumptions

Product	Royalty
Bullion (CIL)	3.5%
Concentrate (Flotation)	6.0%

These royalties are based on the realised value of the sold product.

Dilution and mining recovery

Mining dilution and mining metal recovery factors resulting from reblocking are calculated based on the additional waste material extracted through the reblock parcels (Dilution) as well as the amount of metal extracted by the parcels (Recovery), compared to that of the in-situ block model for the same cut-off grade. When utilising reblocking, portions of the orebody that are very narrow or on the ore body boundary will contain additional waste dilution. If the resulting (diluted) grade is then below the calculated cut-off grade this is recorded as metal loss or a recovery factor.

Minyari was reblocked to an SMU of 5mX by 5mY by 5mZ resulting in 9.4% dilution and 96.0% recovery (reporting above a 0.5 g/t gold cut-off grade). WACA was reblocked to an SMU of 2.5mX by 2.5mY by 2.5mZ resulting in 0.0% dilution and 45.9% recovery.

Reblocking uses a fixed framework to define the SMU and is agnostic of local geometric variations. In practice this boundary would be delineated through grade control drilling and greater mineralisation boundary control would be achieved.

Discussion of the reblock process is detailed in 7.2.1 Mining model preparation.

Resource classification

The Study considered the following Mineral Resource (JORC 2012) classifications:

- Indicated Mineral Resource; and
- Inferred Mineral Resource.

Unclassified material was excluded from consideration and treated as waste, and no Measured Mineral Resource currently exists.

Percentage distribution varies for each scenario considered and is included in the results of each outcome.

Discounting

For this Study, a discount factor (**DF**) of 7.0% pa was applied as provided by Antipa, which was benchmarked against recent comparable studies platformed on the ASX and DF forecasts (June 2022).

Pit optimisation

Shells are created by the Lerch-Grossmann (**LGN**) method. LGN is a mathematical algorithm belonging to the family of Network Flows methods that finds open pit shells yielding maximum profit. The initial step in the optimisation process is to prepare the ‘Ultimate Pit’; a pit shell defining the limits to mining for the given deposit. The software then undertakes further optimisations to define ‘LGN Phases’ or ‘Shells’. These are sub-sets of the Ultimate Pit and are successive iterations of the process varying block values (net profit from blocks) by multiplying value by a reducing factor.

Following this process, a series of nested pit shells are created. Each pit shell has a corresponding NPV, as well as total tonnes and grade within the pit shell. Shell number designates the factor by which revenue has been scaled. Each step is a 0.5% increment (Shell 200 has a revenue factor of 1, i.e., adopts the input revenue factor).

The resulting Net Present Value (**NPV**) assumes time flow to be proportional to the tonnage of ore mined. For this Study, the DF was adopted by the optimisation on a per annum basis.

7.1.4 Optimisation results

The following charts illustrate the ore/waste mined versus NPV and associated C1 cost(s) for the Minyari, Minyari South and WACA deposits assuming the Base Case 3 Mtpa CIL gold-silver process plant setup. Results indicate an NPV curve containing several step changes in the size and extents of the open pit (Figure 7-5 and Figure 7-6).

Figure 7-5 Optimisation results Minyari CIL 3 Mtpa

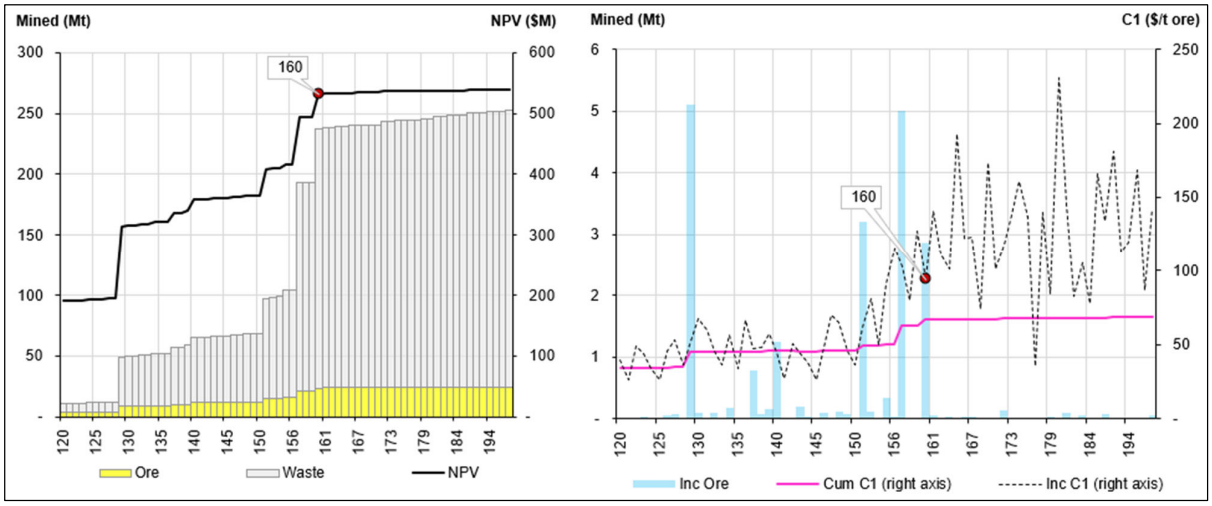
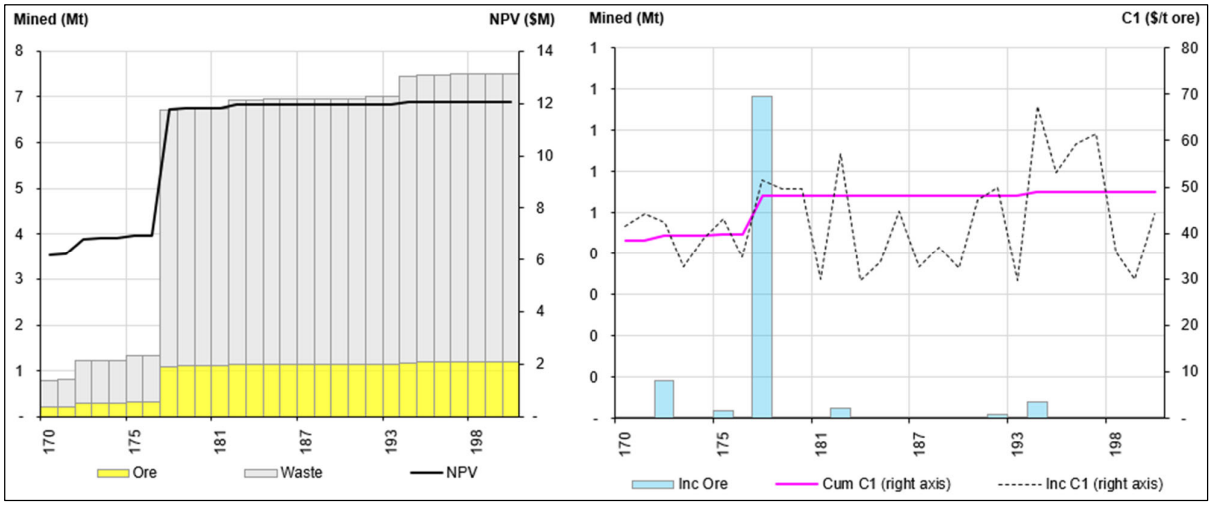


Figure 7-6 Optimisation results WACA CIL 3 Mtpa



7.1.5 Optimisation summary

Following a review of all Minyari-WACA shells, a detailed cashflow analysis was progressed using stage designs and a spreadsheet-based scheduling tool. Given the consistent (common) step changes a spreadsheet tool based on designed stages enabled modelling of:

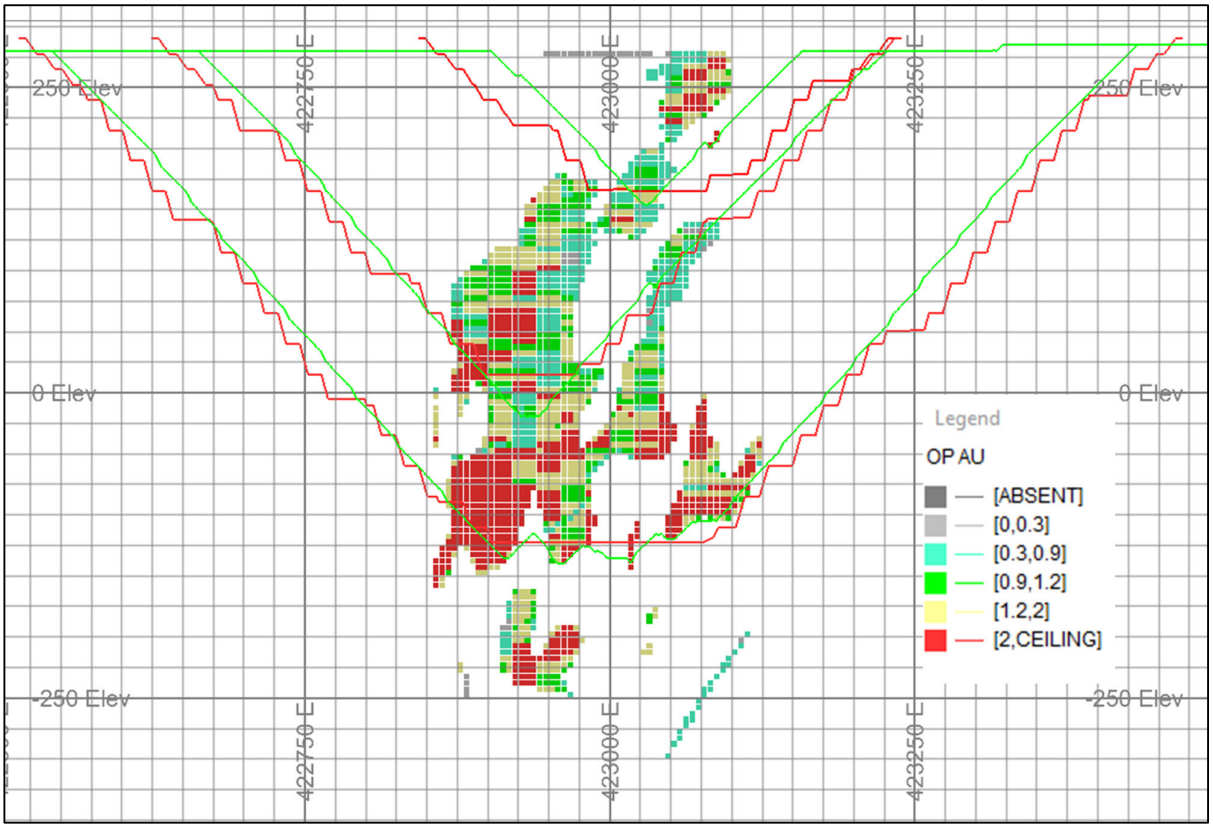
- Capital costs;
- Processing scenario;
- Processing throughput; and
- Addition of underground potential.

Selected stage designs were as shown in Table 7-8 below, and visually, these appear as shown in Figure 7-7.

Table 7-8 Optimisation shells selected for open pit stages design

Description	Unit	2 Mtpa #136	2 Mtpa #159	3 Mtpa #160
Mined				
Waste	Mt	8.5	56.0	213.3
Ore	Mt	3.9	12.1	23.7
Total	Mt	12.3	68.1	237.1
Strip ratio	X	2.2	4.6	9.0
Grade				
Gold	g/t	1.3	1.2	1.4
Silver	g/t	0.4	0.5	0.5
Copper	%	0.18	0.19	0.19
Cobalt	%	0.05	0.04	0.03

Figure 7-7 Cross section of optimisation selected shells (Minyari)



7.1.6 Pit design

Ultimate design

The ultimate pit design for Minyari, Minyari South and WACA were based on the following parameters:

- Pit ramps of 30m for dual lane and 18m for single lane to accommodate approximately 200 tonne truck sizing (as shown in Figure 7-8 and Figure 7-9);
- Pit slopes based on the OSA recommended in Section 6;
- Internal ramp angles (**IRA**) estimated assuming approximately two to three ramp segments included in all walls based on the geometry of the pit optimisation shells; and
- Bench heights at a multiple of the assumed ore flitch height of 5m.

Based on these parameters, the pit design bench and batter dimensions provided by Table 7-9 were selected.

Table 7-9 Pit wall parameters

Material	Depth below surface (m)	Bench height (m)	Batter angle (°)	Berm width (m)	IRA (°)	OSA (°)
Weathered	25-80	12.5	55	6	40	37
Fresh (Shallow)	250	25	75	7	61	50
Fresh	500	25	75	11	55	45

Figure 7-8 Dual lane ramp width

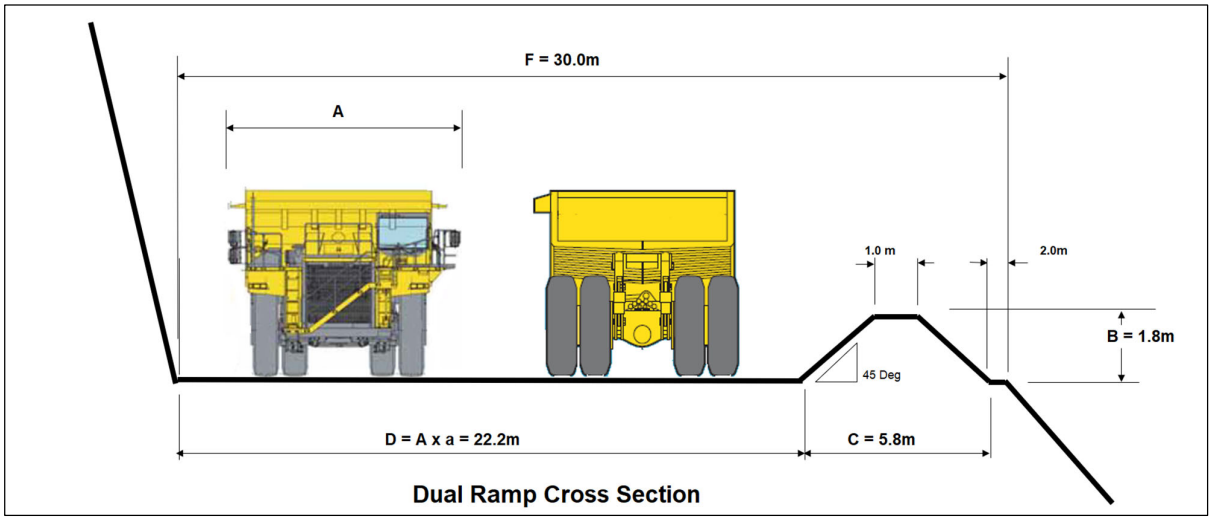
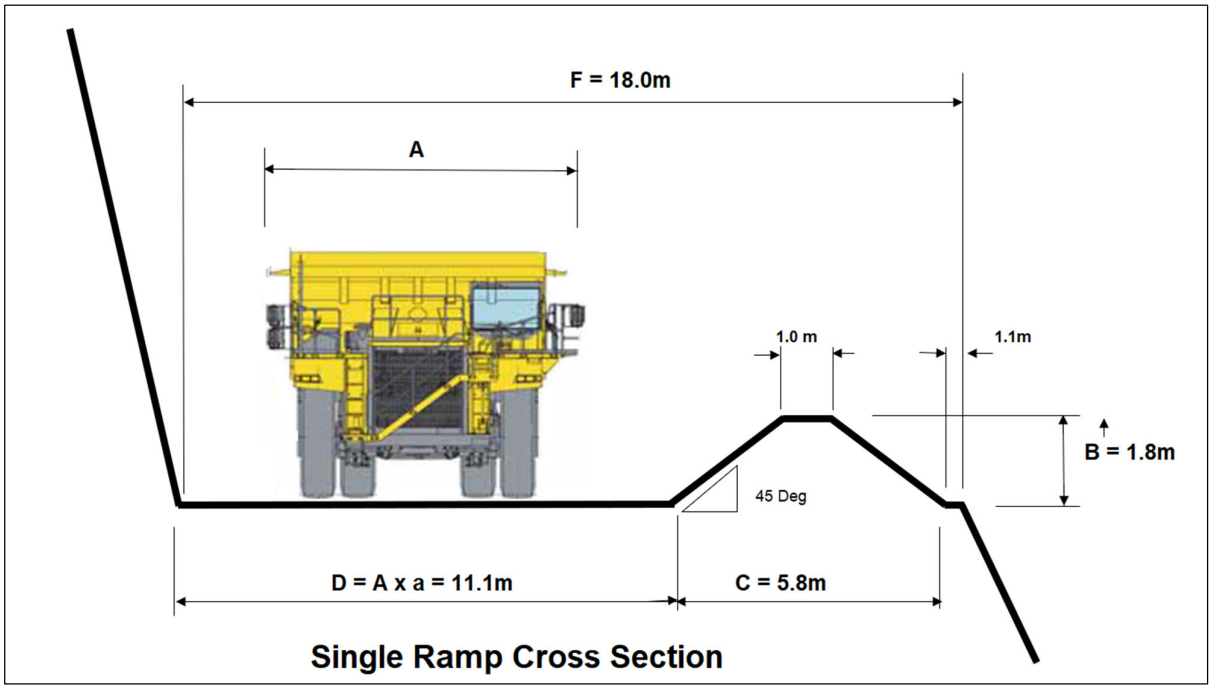


Figure 7-9 Single lane truck width



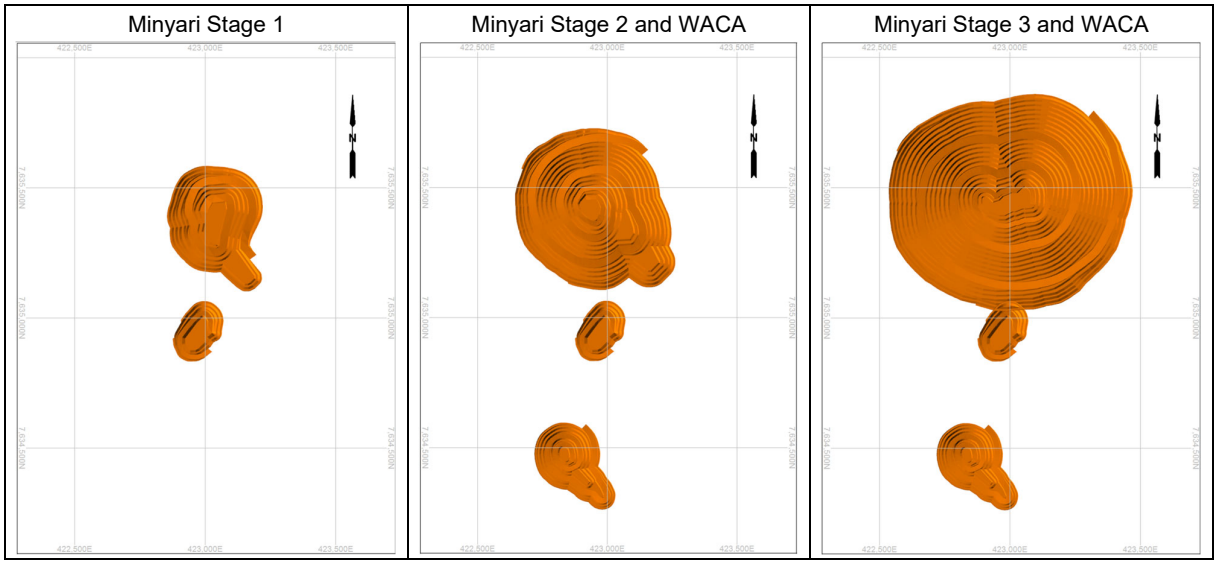
Stage designs

Intermediate stages designed to defer waste pre-strip and provide early mill feed. Pit stages positions were obtained using pit optimisations shells that provided:

- High initial cashflow margins;
- Practical mining width considerations and ramp access options; and
- Minimal impact on the ultimate pit design position.

Pit stage positions compared to the selected pit optimisation are shown in Figure 7-7. Pit stage sequence is shown in Figure 7-10 including the Minyari stage 3 option. Open pit and underground scenarios were run to test the value of progressing from stage 2 to 3.

Figure 7-10 Pit stage sequence including the Minyari stage 3 option



7.1.7 Site layout

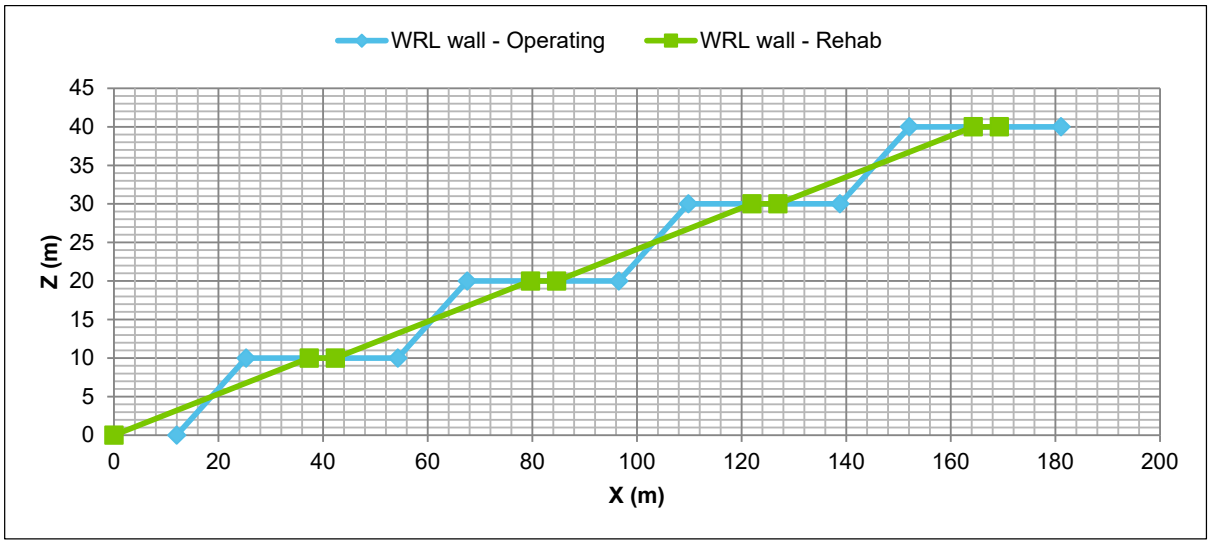
Mining infrastructure

WRL design was prepared for the Minyari and WACA open pits. Criteria for design as follows:

- Provide storage for 31 MBCM waste from the open pits with a 25% swell factor a capacity of 40 Mm^3.
- Generic rehab parameters for fresh WRL:
  - 15 degree slopes;
  - 10m lifts;
  - 5m berms (run-off catchment); and
  - Height 40m (potentially could be higher depending on environmental permitting and optimal haulage).
- General location to the southeast of the Minyari open pit.
- Placement outside the zone of instability (only approximate for this exercise).

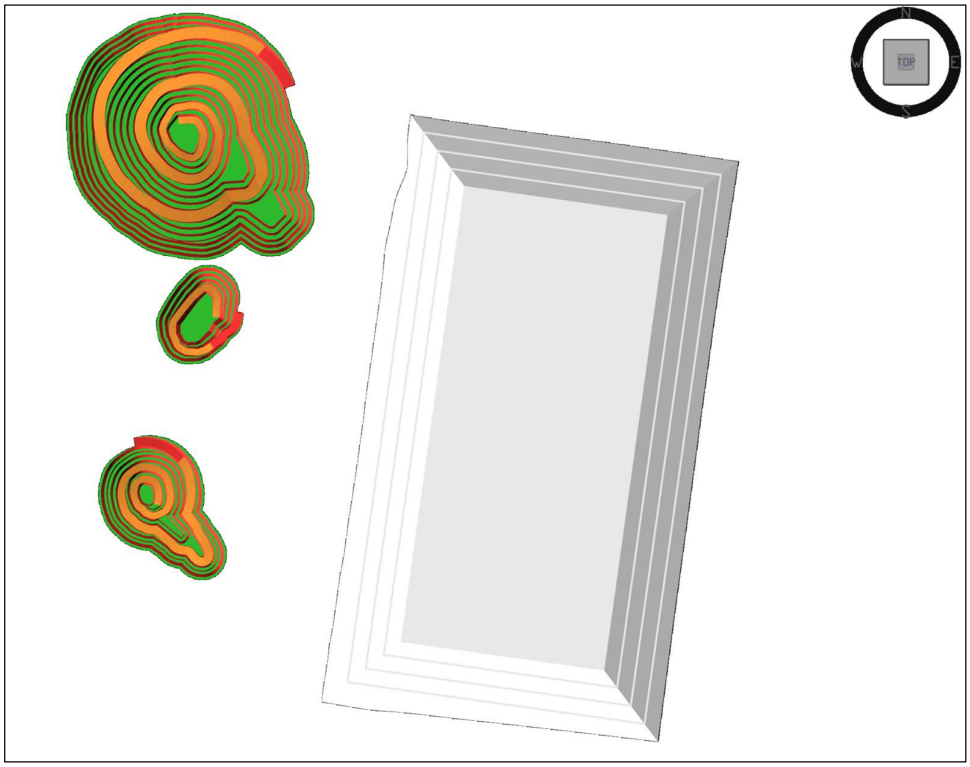
It is assumed the WRL will be stacked using 10m lifts with an angle of repose at approximately 37°. Once a side has been completed, progressive rehabilitation of the WRL can proceed. Operational berm widths of 29 metres would allow for the WRL to be pushed down by track dozers as shown in Figure 7-11.

Figure 7-11 WRL walls – operating and rehabilitated profile



Conceptual layout and design for the rehabilitated WRL is shown in Figure 7-12 below.

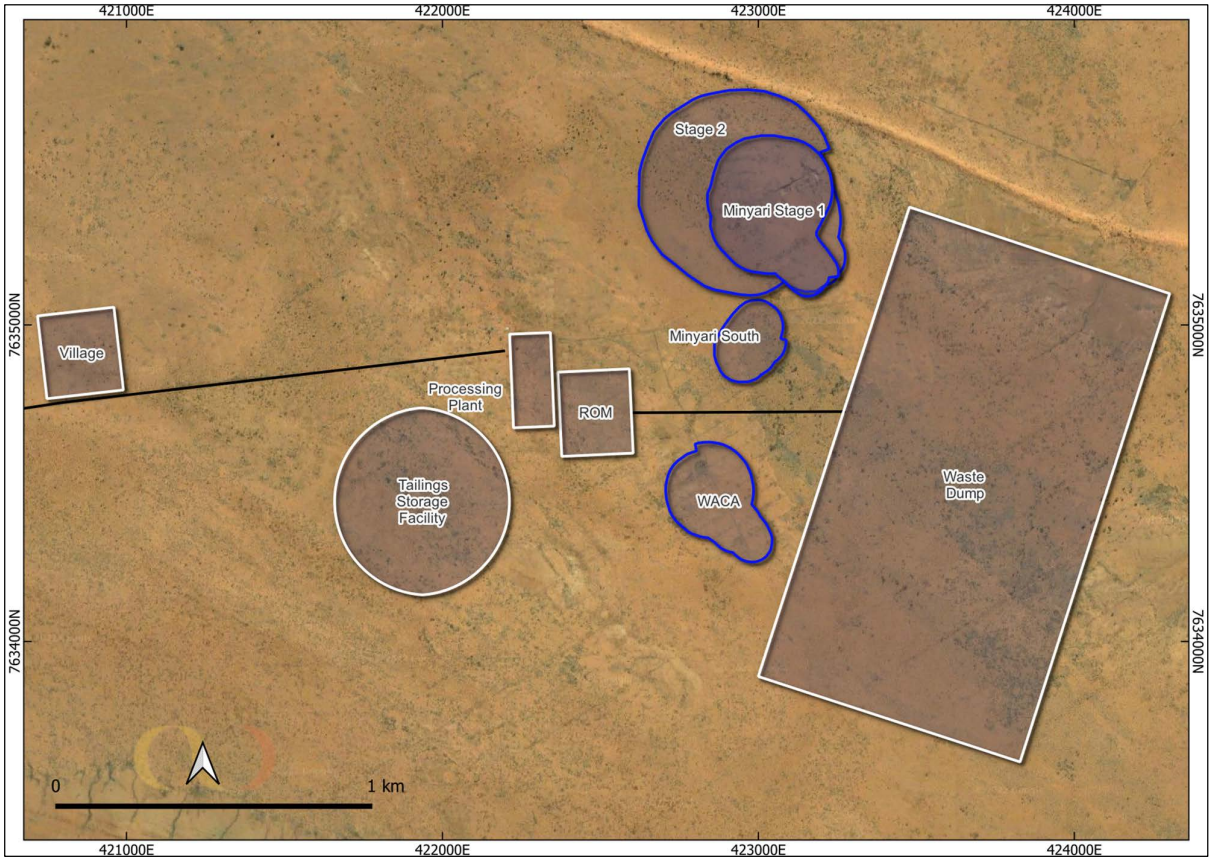
Figure 7-12 Waste Rock Landform rehabilitated design



Site layout

Site layout is shown in Figure 7-13 including road access ways, camp, processing plant and administration, tailings dam, open pits and waste rock landform.

Figure 7-13 Site layout



7.2 Underground mining

7.2.0 Methodology

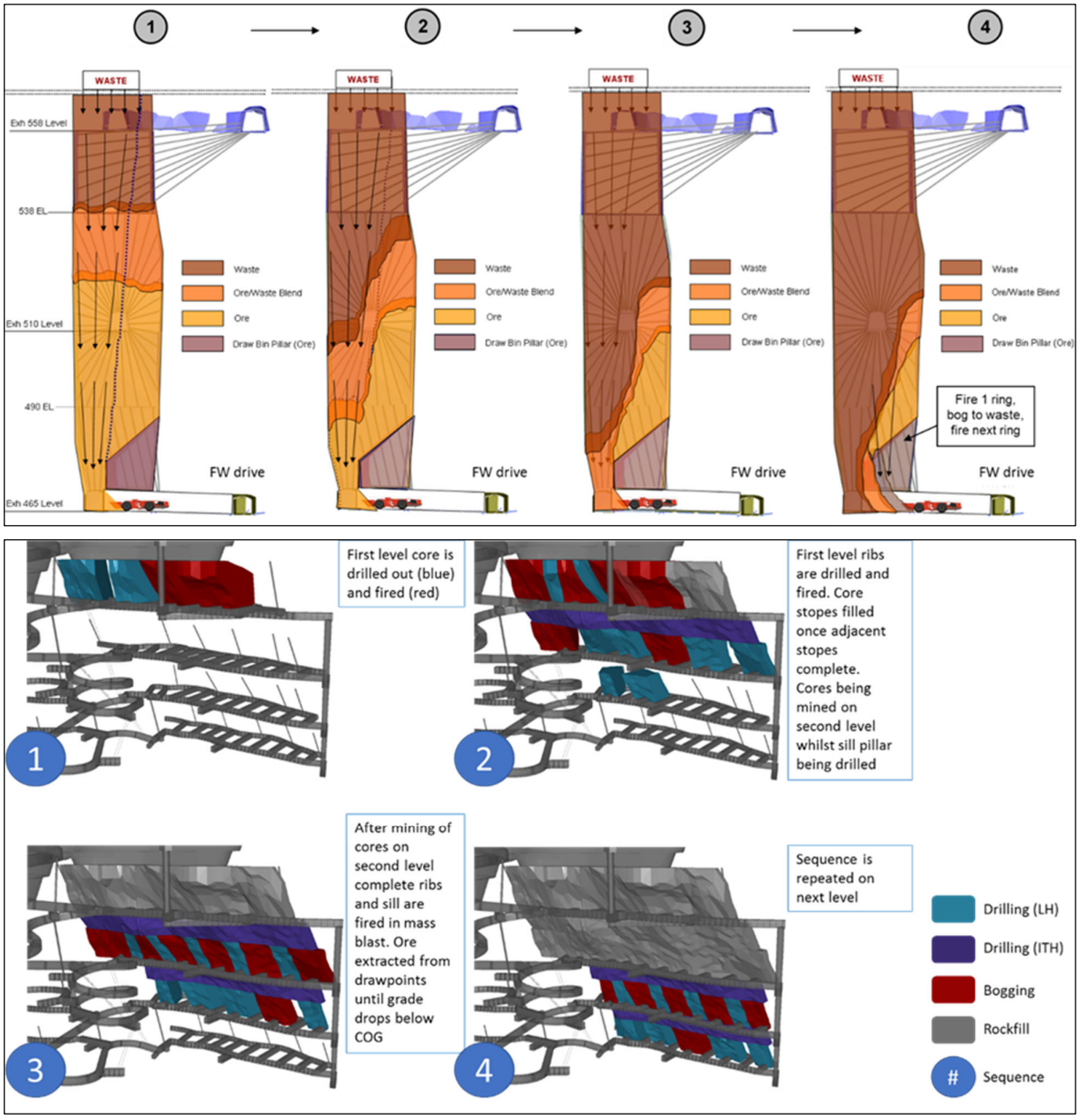
Underground mining has been assumed to be completed by a contractor through Modified Sub-Level Caving techniques.

The proposed mining method requires a pattern of generally evenly spaced and sized rib pillars separating the primary (Core) stopes, which are connected via an overlying sill pillar. The sill pillar is separating the active mining area from the overlying mined out area which contains waste rock fill introduced from a pass breaking through to a designated area from the surface or in the pit (Figure 7-14).

M-SLC involves the extraction of long hole open stopes in a primary-secondary sequence where:

- All primary stopes are extracted on a given level and left open;
- Primary stopes are separated by vertical rib pillars (essentially a secondary-stope sized pillar) on-level, and are separated from overlying extraction levels with a sill pillar;
- Waste rock is introduced into the mining front from above, sitting on the sill pillar, via the open pit floor;
- Ribs and sill pillars are fired en-masse, ore is bogged until a cut-off grade is reached; and
- Waste blanket sits on top of blasted ore, providing passive support to the stoping void above.

Figure 7-14 Underground generalised M-SLC mining method illustration



Waste rock fill will be placed in the core and shell stoping voids via a breakthrough hole to the open pit floor near the decline portal. The waste rock fill will provide support for the walls of the stoping panel, enabling an entire level to be stoped without the need for the rib pillars to remain in place.

7.2.1 Mining model preparation

To reflect the gold and silver CIL product (revenue) the relevant economic and metallurgical factors for the Study were applied, noting that although metallurgical factors change for weathering type, the underground stoping occurs exclusively in fresh rock.

7.2.2 Underground optimisation

Stope optimisations were run on the Mineral Resource model using Datamine Software's Mineable Shape Optimiser® (**MSO®**) software. Mineral Resource categories Indicated and Inferred were included during the optimisation process.

Stope sections were prepared on 5 m lengths along strike to provide adequate granularity. These were then reviewed, and anomalous shapes removed (isolated or irregular shapes).

Parameters

MSO® input parameters used for the evaluation are listed in Table 7-4.

Table 7-4 Underground MSO® input parameters

Optimisation Parameter	Unit	Minyari	WACA
Stope Cut-off Grade	g/t Gold	1.49	1.49
Min. Mining Width (True Width)	m	4	1.5
Level Interval	m	25	25
Section Length	m	5	5
HW Dilution (True Width) *	m	0.5	0.5
FW Dilution (true Width) *	m	0.5	0.5
Min. Parallel Waste Pillar Width	m	10	5
Min./Max. FW Dip Angle	°	Min. 45°	Min. 45°

For the proposed mining method, an all-in underground mining cost of A$80 per tonne was used. With an approximate processing cost of $20/t this results in a cut-off value of $100 per tonne. Under a gold basis this results in a cut-off grade of 1.49 g/t. Further cut-off grade analysis would form part of future studies with increased accuracy of input costs.

Base case results

Results from the underground optimisation for Minyari and WACA are shown in Figure 7-15 to 7-18.

Figure 7-15 MSO® results – Minyari Deposit

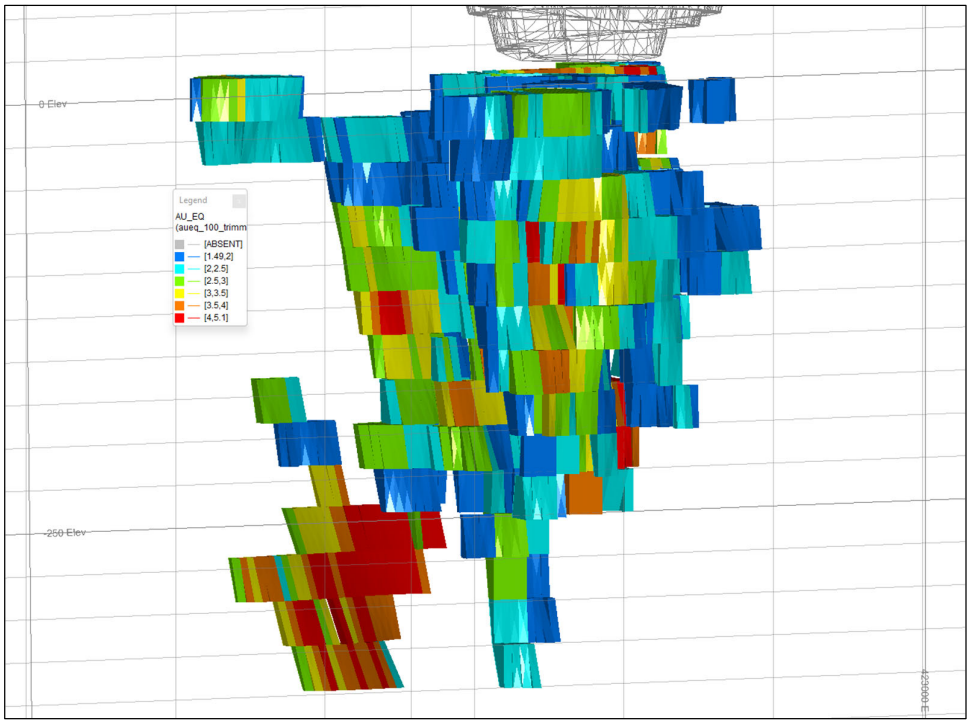


Figure 7-16 Tonnes per 25m level - Minyari Deposit

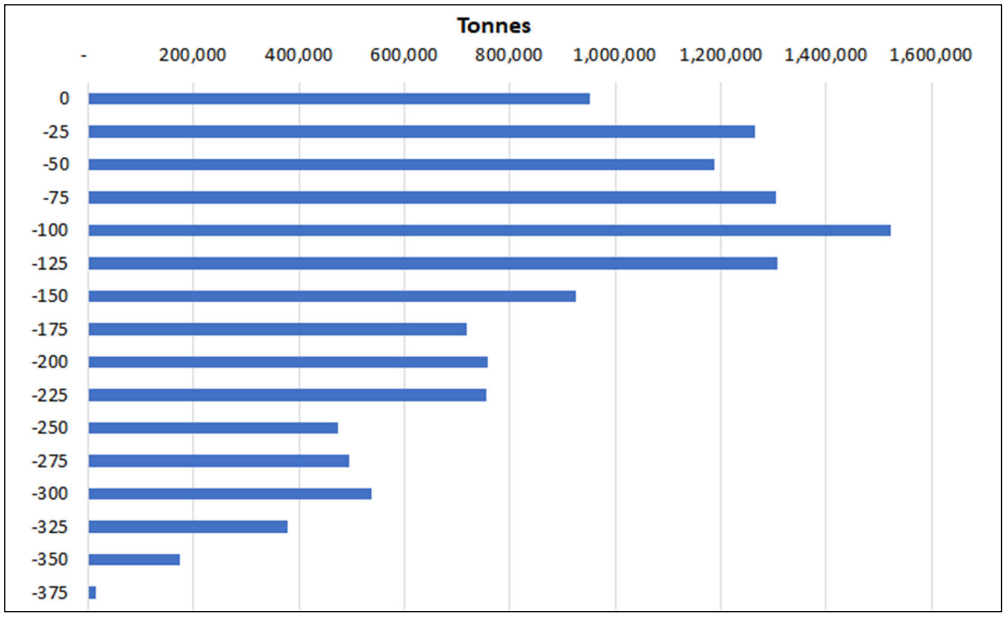


Figure 7-17 MSO® results – WACA Deposit

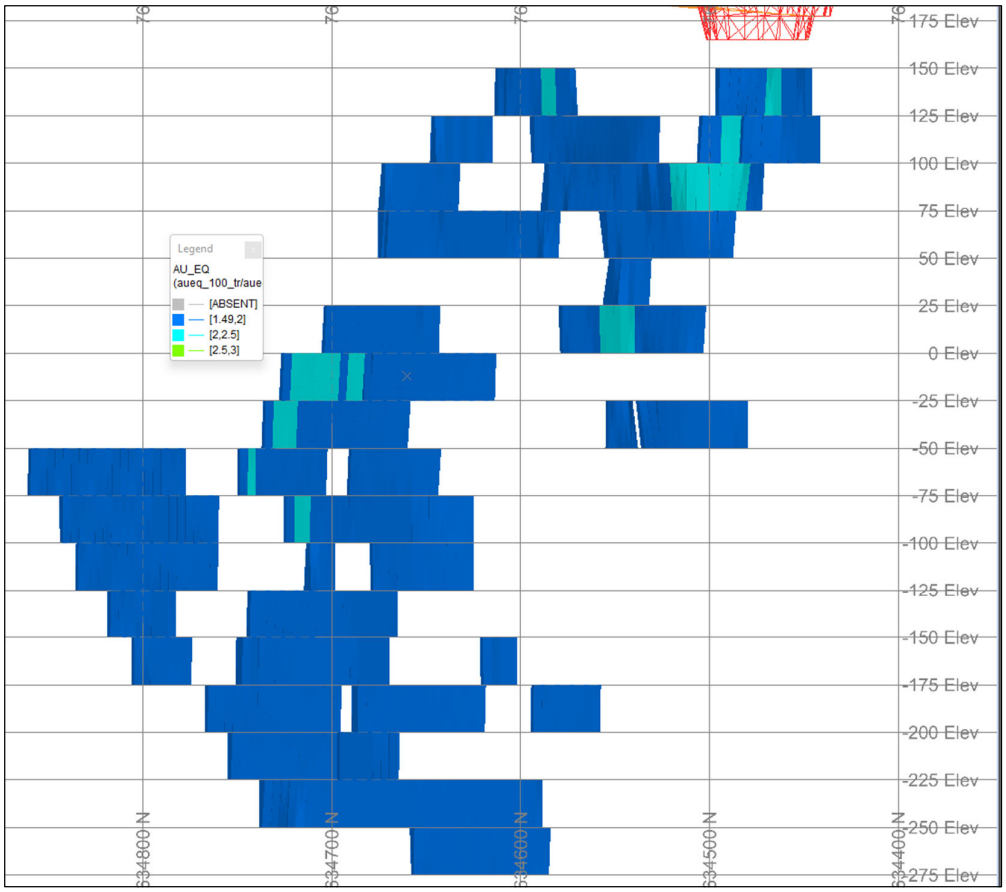
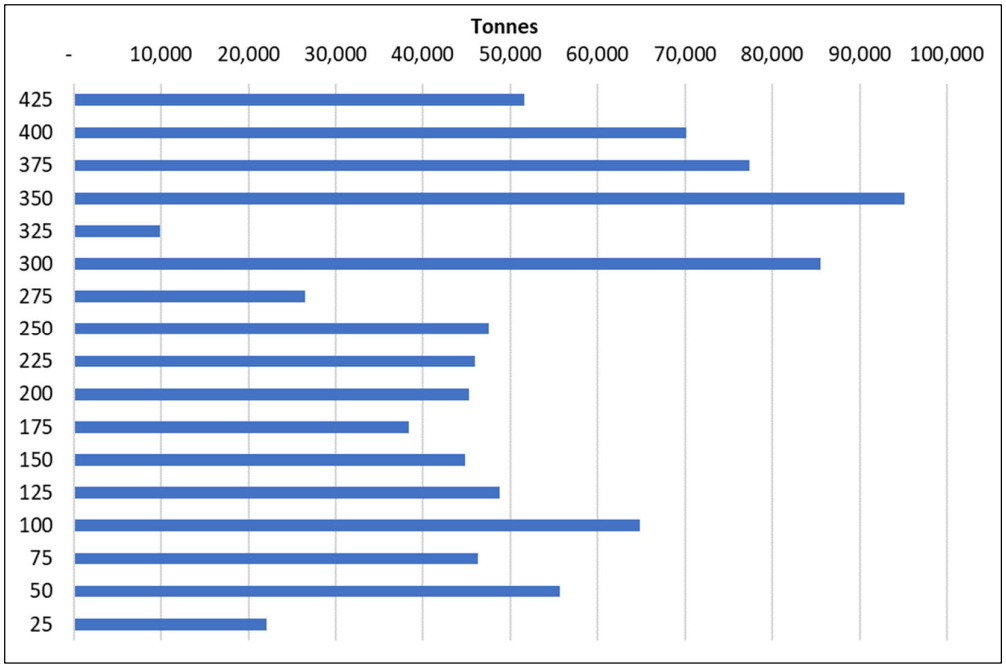


Figure 7-18 Tonnes per 25m level – WACA Deposit



Dilution and mining recovery

Planned dilution is captured by MSO® and an additional 5% mining dilution and 90% recovery have been applied to reflect the expected losses incurred for the proposed M-SLC mining method.

Scenario results

Based on the MSO® results the following observations were made for the Minyari underground opportunity:

- Stope widths average from 30m to 80m and stope panels with continuity between levels, supporting a bulk style mining method;
- Upper levels (-150 mRL to 0 mRL) providing greater than 1 Mt per level, supporting a potential production rate of 2 Mtpa assuming a 50m/yr vertical rate of advance; and
- Underground likely to interact with the open pit options with the larger 23 Mt open pit advancing to the -125mRL depth (note that the 23 Mt open pit scenario was discontinued).

WACA results provided the following observations:

- Tonnes per level averaged approximately 50kt, would be unlikely to support a stand-alone operation above 100kt/yr;
- With the inclusion of planned dilution from the MSO® stopes, grades were predominately below 2.0 g/t and would be unlikely to support a higher cost per tonne project without an increase in scale; and
- Combination of these factors, WACA underground was discounted for the scenarios.

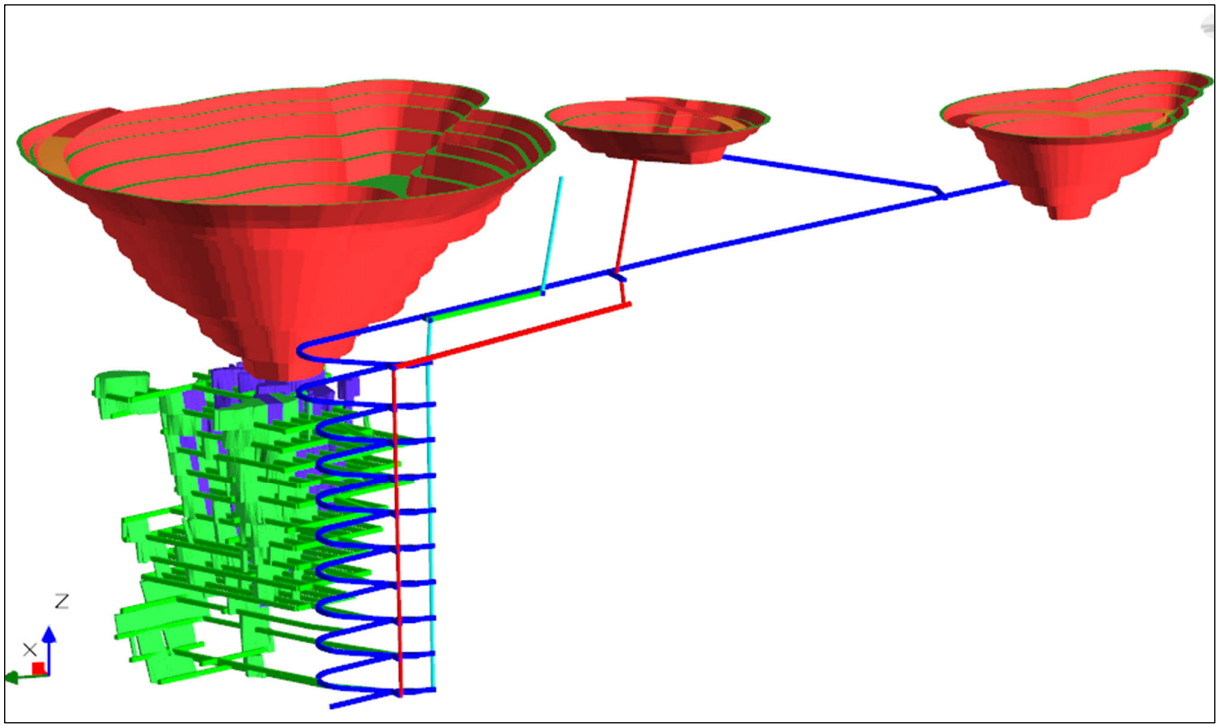
7.2.3 Underground design

A conceptual underground mine design was prepared based on the typical drive dimensions for a 2 Mtpa underground operation (as shown in Figure 7-19 below). This assumes the use of 60 tonne underground trucks and 6m wide by 6m high development drives with development gradients up to 1 in 7.

A ventilation and escapeway concept is demonstrated with the layout, however ventilation modelling would be required to place the number and sizing of the vent rises based on detailed equipment requirements. Additional fresh air intake rises may also be required.

The Minyari South open pit will also act as the box-cut for the Minyari deposit underground portal and decline. Based on the conceptual underground mine design (Figure 7-19) the decline is also an optimal drill platform for delineating and accessing underground resource growth and mining opportunities including the Minyari and WACA plunge targets, Minyari South and Sundown.

Figure 7-19 Conceptual underground mine design



7.3 Schedule

Life of mine schedules were prepared to support the cashflow models. These schedules were built up for each scenario providing the following detail:

- Open pit scheduled movements by 5m bench;
- Underground ore movements by level;
- Processing blend transfers using stockpiled grade bins; and
- Processing material types and recoveries.

Summary results for the selected case as defined in Section 8.5. Figures below show the schedule results as selected by the scenario assessment.

7.3.0 Mining schedule

Open pit

Open pit schedules were provided based on total movement rates per fleet and vertical rates of advance. Excavator fleets were limited to 10 Mtpa (waste + ore) and vertical rate of advance averaged at 65m/yr per stage.

These assumptions were considered reasonable for the size of working areas for each period.

Open pit total movement and material by grade bin is shown in Figure 7-3 and Figure 7-4.

Figure 7-3 Open pit total movements for the selected mining scenario

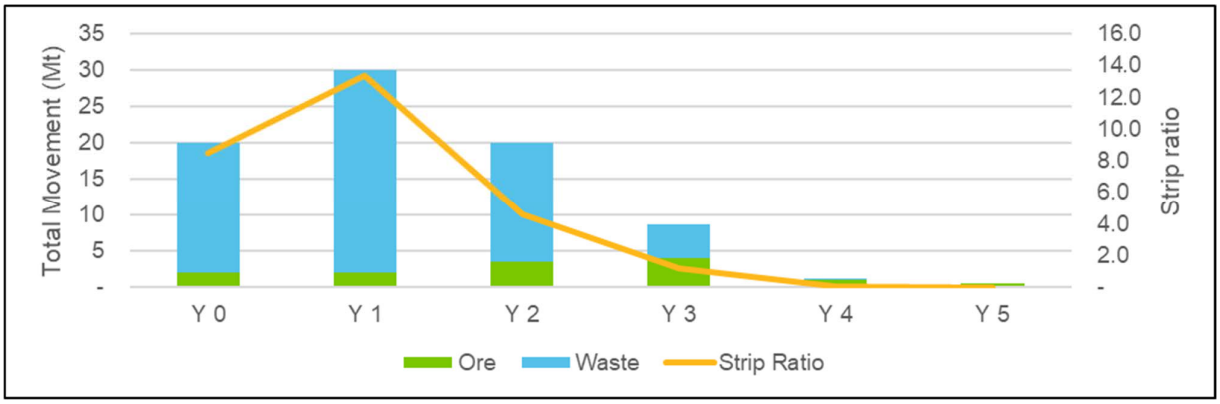
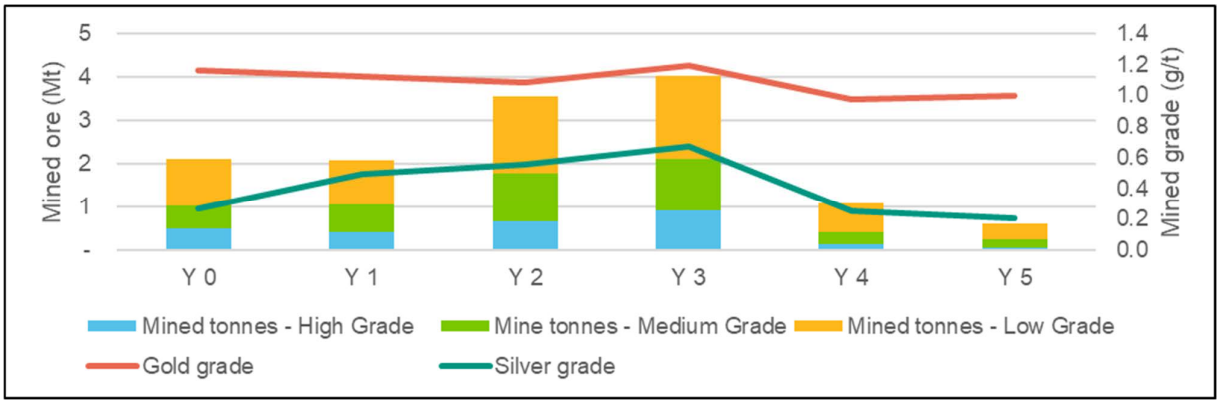


Figure 7-4 Open pit material by grade bin and average mine grade

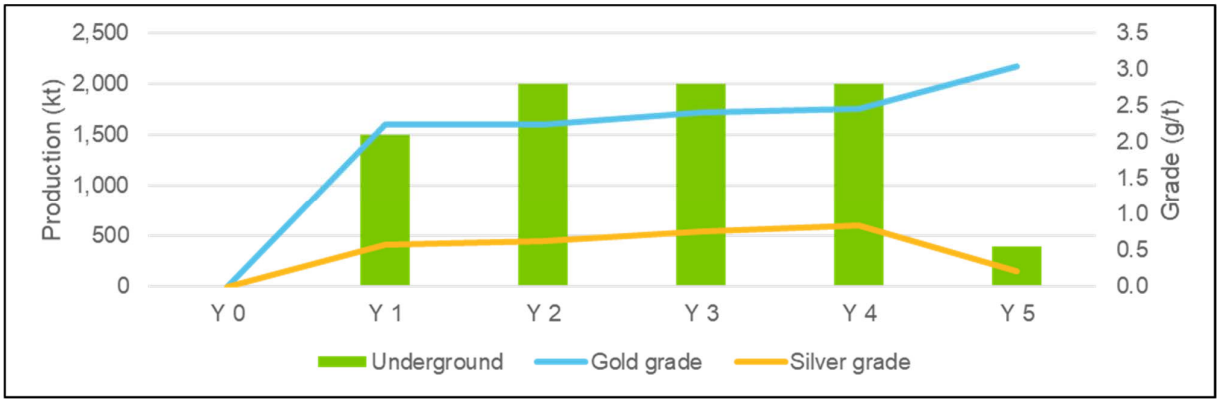


Underground

Underground schedule was estimated on an ore tonnage and vertical rate of advance basis. Ore movement was limited to 2 Mtpa and resultant vertical rate of advance of 65 m/yr (or 2.5 levels per year).

These assumptions were considered reasonable based on the scale of stoping blocks and mining method. Underground schedule is shown in Figure 7-5.

Figure 7-5 Underground production schedule and average grades



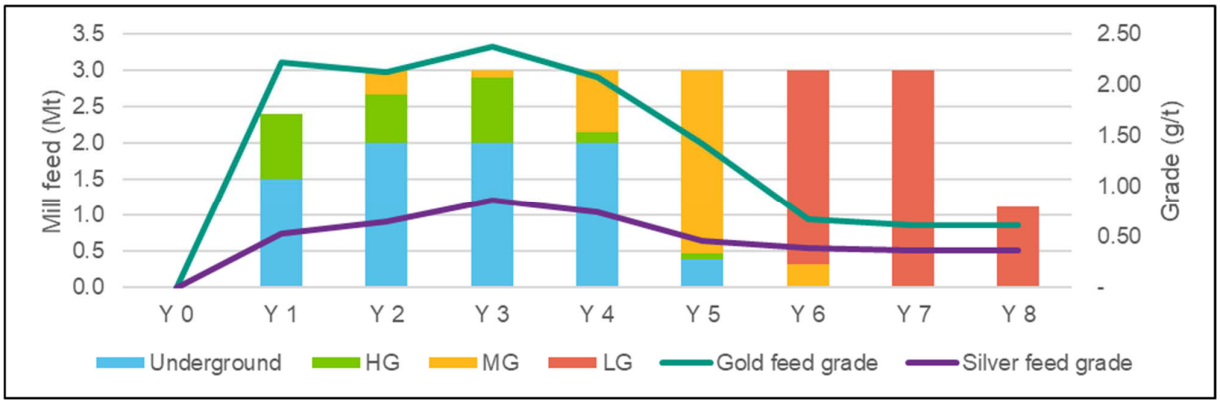
7.3.1 Processing schedule

Processing blend schedule was completed using the three open pit grade bins in addition to the underground mill feed. Higher grade supply or stockpiles were set as preferential feed. Mining areas were started to allow for full utilisation of the processing plant. Periods of oversupply to allow for lower grade bins to be stockpiled (Figure 7-6).

Material type percentages were caried through with the mill feed schedule to inform appropriate metallurgical recoveries.

No allowance was made for sub-economic stockpiling for these scenarios.

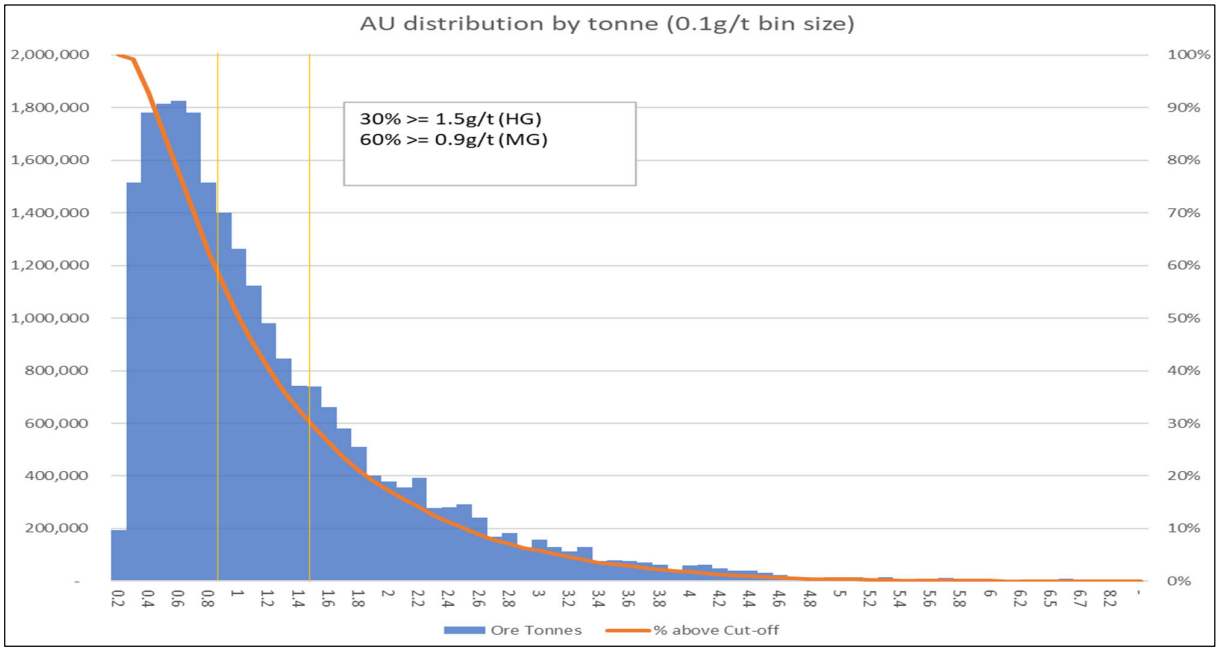
Figure 7-6 Mill feed by grade bins for 3 Mtpa CIL processing facility and selected mining case



Grade bins

On inspection of the grade distribution within the pit inventories, grade bins were selected to split the mill feed material into three similar sized tonnages (as shown in Figure 7-24).

Figure 7-24 Gold grade distribution within the open pit design stages



The following grade bins were selected based on gold grade:

- Waste below economical cut-off (0.3 g/t);

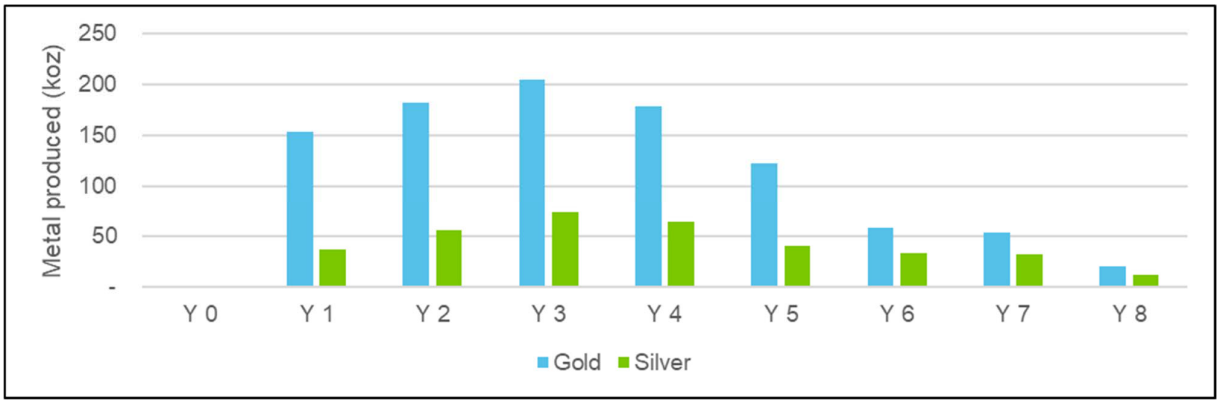
- "Low Grade" (**LG**) less than 0.9 g/t;
- "Medium Grade" (**MG**) between 0.9 to 1.2 g/t; and
- "High Grade" (**HG**) greater than 1.2 g/t.

As the Scoping Study provided a simplistic stockpiling selection model, there is an opportunity in future studies to further optimise the grade bins and selection timing to maximise project value.

7.3.2 Product schedule

For the Base Case, gold and silver were caried through to the final products. The relevant processing recoveries and metal pricing were applied to obtain the cashflow estimates. Product schedules for the selected case are shown in Figure 7-25.

Figure 7-25 Base Case product schedule and selected open pit and underground mining case



7.4 Mining inventory

Mine inventories including Indicated and Inferred classified material were generated using:

Open pit:

- Interrogated using pit designs;
- Mining dilution and ore loss generated using the dilution model (no additional factors added); and
- Lower economic cut-off grade applied based on material type for the preferred processing plant size (3 Mtpa) and ranging from 0.30 to 0.32 g/t gold.

Mill feed streams split into:

- LG between 0.3 to 0.9 g/t;
- MG between 0.9 to 1.2 g/t; and
- HG greater than 1.2 g/t.

Underground:

- Interrogated from stope wireframes generated using MSO®;
- Modifying factors applied:
  - Dilution of 5% in addition to 1.0m diluted width included in MSO® inventory; and
  - Ore loss of 10%.

Open pit inventory is tabled by material destination in Table 7-5.

Table 7-5 Open pit total movement quantities (NB: Copper and cobalt not included in Base Case)

Pit/Destination	Volume (MBCM)	Tonnes (Mt)	Mill feed (kt)	Au (g/t)	Ag (g/t)	Au (koz)	Ag (koz)	Cu (%)	Co (%)	Cu (t)	Co (t)
Minyari Stage 1											
WASTE	5.8	13.0	-	-	-	-	-	-	-	-	-
HG	0.3	0.9	890	2.4	0.5	68	15	0.25	0.07	2,194	604
MG	0.4	1.1	1,063	1.2	0.4	40	15	0.19	0.05	2,022	485
LG	0.8	2.0	1,960	0.6	0.3	38	20	0.13	0.03	2,631	602
Total	**7.3**	**16.9**	**1.2**	**0.4**	**0.18**	**146**	**49**	**0.04**	**146**	**6,848**	**1,692**
Minyari Stage 2											
WASTE	21.0	54.0	-	-	-	-	-	-	-	-	-
HG	0.6	1.7	1,685	2.3	1.0	127	52	0.30	0.05	5,070	907
MG	0.9	2.6	2,586	1.1	0.6	95	49	0.20	0.04	5,050	984
LG	1.4	3.9	3,947	0.6	0.5	81	57	0.14	0.03	5,538	1,185
Total	**23.9**	**62.3**	**8,218**	**1.1**	**0.6**	**303**	**159**	**0.19**	**0.04**	**15,658**	**3,076**
WACA Stage 1											
WASTE	4.1	9.1	-	-	-	-	-	-	-	-	-
HG	0.0	0.1	116	2.3	0.2	9	1	0.15	0.02	176	25
MG	0.1	0.3	333	1.1	0.2	12	2	0.13	0.02	426	70
LG	0.4	0.9	895	0.6	0.1	17	4	0.09	0.02	802	147
Total	**4.6**	**10.5**	**1,344**	**0.9**	**0.2**	**38**	**7**	**0.10**	**0.02**	**1,405**	**242**
GRAND TOTAL	**35.8**	**89.7**	**13,474**	**1.1**	**0.5**	**486**	**215**	**0.18**	**0.04**	**23,911**	**5,010**

Open pit and underground inventory by resource classification in Table 7-6.

Table 7-6 Resource classification by mining area (Open Pit and Underground) (NB: Copper and cobalt not included in Base Case)

Pit	Resource classification	Mill feed (kt)	Au (g/t)	Ag (g/t)	Au (koz)	Ag (koz)	Cu (%)	Co (%)	Cu (t)	Co (t)
Minyari Stage 1	Indicated	3,294	1.2	0.4	127	44	0.19	0.05	6,161	1,550
	Inferred	619	0.9	0.2	19	5	0.11	0.02	687	142
	Total	**3,912**	**1.2**	**0.4**	**146**	**49**	**0.18**	**0.04**	**6,848**	**1,692**
Minyari Stage 2	Indicated	7,670	1.2	0.6	290	153	0.20	0.04	15,033	2,968
	Inferred	548	0.7	0.4	13	6	0.11	0.02	625	108
	Total	**8,218**	**1.1**	**0.6**	**303**	**159**	**0.19**	**0.04**	**15,658**	**3,076**
WACA Stage 1	Indicated	1,284	0.9	0.2	37	7	0.11	0.02	1,354	235
	Inferred	60	0.8	0.2	1	0	0.08	0.01	51	7
	Total	**1,344**	**0.9**	**0.2**	**38**	**7**	**0.10**	**0.02**	**1,405**	**242**
Subtotal – open pit		**13,474**	**1.1**	**0.5**	**486**	**215**	**0.18**	**0.04**	**23,911**	**5,010**
Minyari Underground	Indicated	3,036	2.3	0.8	224	78	0.25	0.03	7,615	822
	Inferred	4,857	2.4	0.6	380	96	0.21	0.02	10,050	1,149
Subtotal – underground		**7,892**	**2.4**	**0.7**	**603**	**175**	**0.22**	**0.02**	**17,664**	**1,971**
ALL AREAS	Indicated	15,283	1.4	0.6	677	282	0.20	0.04	30,163	5,575
	Inferred	6,083	2.1	0.6	413	108	0.19	0.02	11,412	1,405
TOTAL		**21,366**	**1.6**	**0.6**	**1,090**	**390**	**0.19**	**0.03**	**41,576**	**6,980**

8 CASH FLOW ESTIMATE

8.0 Scope

8.0.0 Accuracy/Battery limits

The cost basis for the estimate has been developed to represent the mining methods outlined within this Study. The mining cost estimate is presented in Australian dollars and has an accuracy of ±35%.

The mining cost estimate considers all costs incurred to mine material, deliver it to the processing plant ROM pad. Battery limits are as follows:

- Mining site preparation, establishment, and mobilisation;
- Mining disestablishment and demobilisation;
- Mining-specific capital costs only;
- Mining rates are an all-in rate considering equipment/labour/maintenance/consumables; and
- All associated administrative costs, such as Fly-in Fly-out (**FIFO**) and camp costs, are captured.

All cost estimates are expressed in Australian Dollars (**AU$** or **AUD**), unless noted otherwise. The exchange rate of AU$1.00 to US$0.72 was provided by Antipa. No allowance for variation in the exchange rate has been included in the estimate.

No allowances have been included within the estimates for the following items:

- Goods and Services Tax (**GST**) (this is a refundable expense);
- Withholding taxes (if applicable);
- Escalation or inflation;
- Financial charges of any description;
- Interest;
- Depreciation or amortisation; or
- Contingencies.

8.1 Methodology

The proposed operating model is to use a contractor operated fleet to drill, blast, excavate and haul material to designated locations.

Open pit mining assumes the use of conventional diesel-powered mobile fleet of backhoe excavators and off-highway dump trucks. Drilling and blasting is assumed to only be undertaken on all material apart from surface cover using conventional diesel-powered surface drills and a mobile explosives manufacturing unit (**MMU**) providing emulsion-based explosives directly to blastholes. The surface mining fleet will deliver ore directly to the processing plant ROM pad. Waste is planned to be either deposited in locations for use in construction or dumped on surface waste dumps proximal to pit ramp crests.

Underground mining assumes a M-SLC method.

The following Section presents the results of the mining cost estimate that has been developed by Snowden as a part of the Study.

8.2 Capital cost

The pre-production Project capital costs are estimated at $207.3 M for the 3 Mtpa CIL gold-silver Base Case, excluding pre-production open pit mining (Table 8-1).

Table 8-1 Base Case capital cost summary

Department	Unit	Pre-Production
Site	M$	167.4
Open pit	M$	15.5
Underground	M$	24.4
Total	**M$**	**207.3**

The makeup of these totals are detailed as follows.

8.2.0 Site capital

Capital costs were prepared by Strategic Metallurgy (process plant) and Snowden (Table 8-2).

Table 8-2 Base Case processing and G&A capital works pre-production (Lump Sum = LS)

Site Capital	Unit	3 Mtpa
CIL Process Plant	M$ LS	136.7
TSF	M$ LS	8.5
Camp	M$ LS	16.6
Admin	M$ LS	3.3
Services	M$ LS	2.2
Total	**M$ LS**	**167.4**

8.2.1 Open pit capital

Typical open pit establishment capital costs are detailed in Table 8-3, and Table 8-4.

Table 8-3 Base Case open pit mobilisation assumptions

Item	Unit	Mobilisation per Unit	Demobilisation per Unit
Excavator	$ LS	90,000	90,000
Truck	$ LS	100,000	100,000
Dozer	$ LS	60,000	60,000
Grader	$ LS	25,000	25,000
Water Cart	$ LS	30,000	30,000
Blast Hole Drill Rig	$ LS	63,756	63,756
Stemming Loader	$ LS	104,412	104,412
Service Truck	$ LS	25,000	25,000
IT Loader	$ LS	22,000	22,000
Rockbreaker	$ LS	25,000	25,000
LV	$ LS	40,000	40,000
Ancillary Plant	$ LS	22,500	22,500
Total Pre-Production Mobilisation	**$ M LS**	**11.5**	**For all Units**

Table 8-4 Base Case open pit capital works pre-production

Open Pit Capital	Unit	3 Mtpa
Establishment	M$ LS	2.0
Site Works	M$ LS	2.0
Total	**M$ LS**	**4.0**

8.2.2 Underground capital

Capital costs associated with the establishment of the underground mine generally relate to infrastructure items that are required to support the underground operation (for example primary ventilation fans, portal establishment, mine services), and capitalised mine development (decline and some level access development).

Estimates were prepared by Snowden summarised in Table 8-5.

Table 8-5 Base Case underground capital works pre-production

Underground capital	Unit	Capital
Mobilisation and establishment	M$ LS	2.0
Portal	M$ LS	0.6
Pumping	M$ LS	1.0
Power	M$ LS	1.0
Development (portal to ore)	M$ LS	19.8
Total	**M$ LS**	**24.4**

8.3 Operating cost

The Project's life-of-mine operating costs are estimated at $1,496 M for the 3 Mtpa CIL gold-silver Base Case (Table 8-6).

Table 8-6 Base Case Life-of-mine operating cost summary

Department	Unit	3 Mtpa CIL
Open pit	M$	328
Underground	M$	623
Processing / Other	M$	545
Total	**M$**	**1,496**

The makeup of these totals is detailed as follows.

8.3.0 Open pit operating

Open pit operating cost inputs for the Scoping Study were sourced from the Snowden database for similar scale fleet assumptions. These are summarised in Table 8-8,

Table 8-9, Table 8-10, Table 8-10 and Table 8-11.

Table 8-7 Drill and Blast (D&B)

Description	Unit	D&B
Cover	$/bcm	-
Completely oxidised	$/bcm	1.50
Strongly oxidised	$/bcm	1.50
Partly oxidised	$/bcm	2.50
Fresh	$/bcm	3.00

Table 8-8 Load and Haul

L&H Costs	Unit	Load and haul
L&H at surface	$/bcm	5.00
L&H incremental increase	$/bench	0.10

Table 8-9 Other

Item	Unit	Rate
Dayworks	%	1.5%
Dewatering	$/mth	50,000

Table 8-10 Overheads

Owners Technical Staff	Unit	Camp/FIFO	Payroll
Mining Manager	$/qtr	4,888	75,413
Snr Mining Engineer	$/qtr	4,888	60,330
Mining Engineer	$/qtr	4,888	49,018
Snr Geologist	$/qtr	4,888	60,330
Grade Control Geologists	$/qtr	4,888	37,707
Samplers	$/qtr	4,888	30,165
Surveyor	$/qtr	4,888	49,018
Surveyor Offsider	$/qtr	4,888	30,165

Table 8-11 Miscellaneous

General Expenses	Unit	Rate	Frequency
Paint, Tape etc (Survey)	$/qtr	6,900	1
Prism plates, cables (Survey)	$/qtr	15,000	4
GPS Poles, Tripods (Survey)	$/qtr	15,000	4
Miscellaneous (Survey)	$/qtr	4,500	4
General Consumables (Engineering)	$/qtr	600	1
Capital - Minor (<$1,000)	$/qtr	4,500	4
Equipment Hire	$/qtr	6,000	2
Licenses & Fees	$/qtr	24,000	4

8.3.1 Underground operating

Based on a M-SLC mining method, an all-in cost of $80 per ore tonne was estimated. This figure was validated against Snowden database and undergrounds with a similar mining method and production rate.

8.3.2 Other operating

These are ‘ore’ costs occurring for the Base Case, including:

- Grade Control;
- Processing;
- G&A; and
- Royalties.

A summary of the scenario based mine costs are presented by Table 8-12.

Table 8-12 Base Case other operating costs

Item	3 Mtpa CIL
Processing	$19.21/t
G&A	$1.40/t
Grade Control	$1.00/t
Royalty	3.5% (2.5% + 1.0%)

8.4 Revenue

The life-of-mine revenues are estimated at $2,377.2 M for the gold-silver Base Case (Table 8-13).

Table 8-13 Base Case Life-of-mine revenue summary

Commodity	Unit	3 Mtpa CIL
Gold	M$	2,366.6
Silver	M$	10.7
Copper	M$	N/A
Cobalt	M$	N/A
Total	**M$**	**2,377.2**

Revenue assumptions were established in conjunction with Antipa and benchmarked against similar operations.

For the purposes of the optimisation an AUD to USD currency exchange rate of 0.72 was used.

Adopted metal pricings are listed in Table 7-6.

Table 8-14 Metal prices and payabilities

Item	Unit	Prices		Payabilities
		USD	AUD	CIL
Gold	$/oz	1,750	2,431	99.9%
Silver	$/oz	22	31	99.9%

8.5 Scenarios

Scenarios were undertaken with the objective to test the value of each of the process plant options and effectively utilise the process capacity once established. Key variables considered were the scale of the open pit and the sequence of the underground ore extraction.

The key scenarios evaluated are summarised in Table 8-15 below. Other smaller iterations were considered and discounted due to either increasing cost or deferring revenue. Processing method options for CIL to extract gold and silver, or Flotation to extract the additional copper and cobalt were tested for all scenarios.

No constraints were applied to stockpiling of mill feed material.

Table 8-15 Cash flow scenarios

Scenario	Process capacity (Mtpa)	Open pit size (Mt mill feed)	Underground production rate (Mtpa)	Open pit/ Underground sequence	Comment
1	1.0	12	1.0	OP then UG	Discounted due to high processing cost rate and combined open pit and underground mine supports a higher processing rate
2	2.0	12	2.0	OP then UG	UG portal at the base of Minyari open pit
3a	3.0	12	2.0	WACA OP then UG	UG brought forward, via portal at base of WACA open pit, to support larger mill capacity
Base Case (3b)	**3.0**	**12**	**2.0**	**Minyari South OP then UG**	**UG brought forward, via portal at base of Minyari South open pit, to support larger mill capacity**
3c	3.0	23	-	-	No UG with the 23 Mt open pit

8.6 Results

Cashflow modelling of the selected scenarios provided the following observations:

- Multiple mining areas are required to sufficiently match the larger processing rate (3 Mtpa). This would be achieved by either mining the larger pit (23 Mt mill feed) with multiple stages, or the concurrent operation of the smaller open pit (12 Mt mill feed) with underground mining;
- Lowest operating cost is achieved by establishing the larger processing plant; and
- Stockpiling strategy allows for revenue to be brought forward and deferring lower margin material. This takes advantage of the high ore supply rates achievable by the open pit.

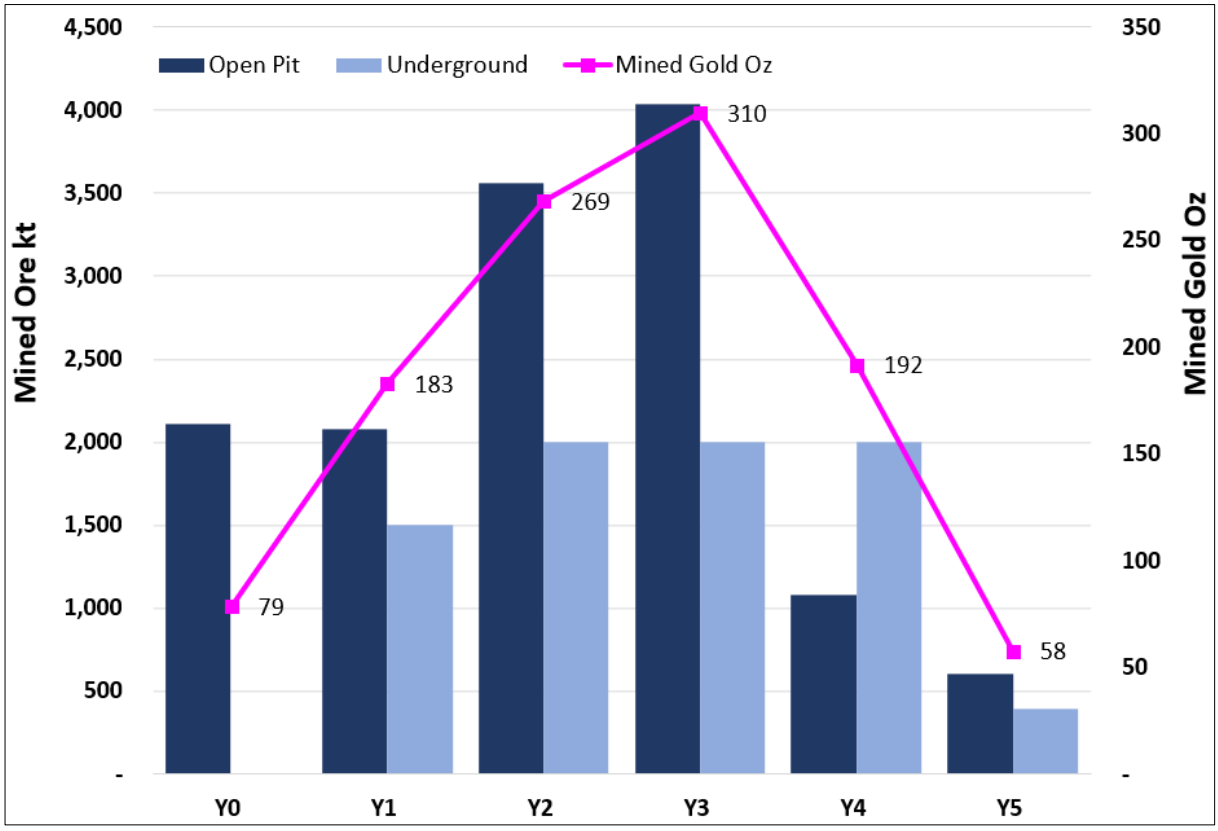
Project Base Case open pit and underground physicals, including mining profiles and Mineral Resource breakdown, are summarised in Table 8-16 and Figure 8-1, and the Base Case cashflow results are provided in

Table 8-17 Base Case cashflow results

	Unit	Base Case
Revenue	$M	2,377.2
Capital pre-production	$M	-207.3
Capital Sustaining	$M	-9
Open pit mining	$M	-328
Underground mining	$M	-623
Processing	$M	-410
Other	$M	-134
AISC1	$M	-1,437
AISC/gold oz1	$/oz	1,475
AIC1	$M	-1,705
AIC/gold oz1	$/oz	1,749
Pre-tax		
FCF	$M	672
DCF	$M	392
IRR	%	34%
Post-tax		
FCF	$M	491
DCF	$M	278
IRR	%	29%

Note: 1. Excludes pre-production open pit mining costs

Figure 8-1 Base Case open pit and underground mining profiles and Mineral Resource breakdown



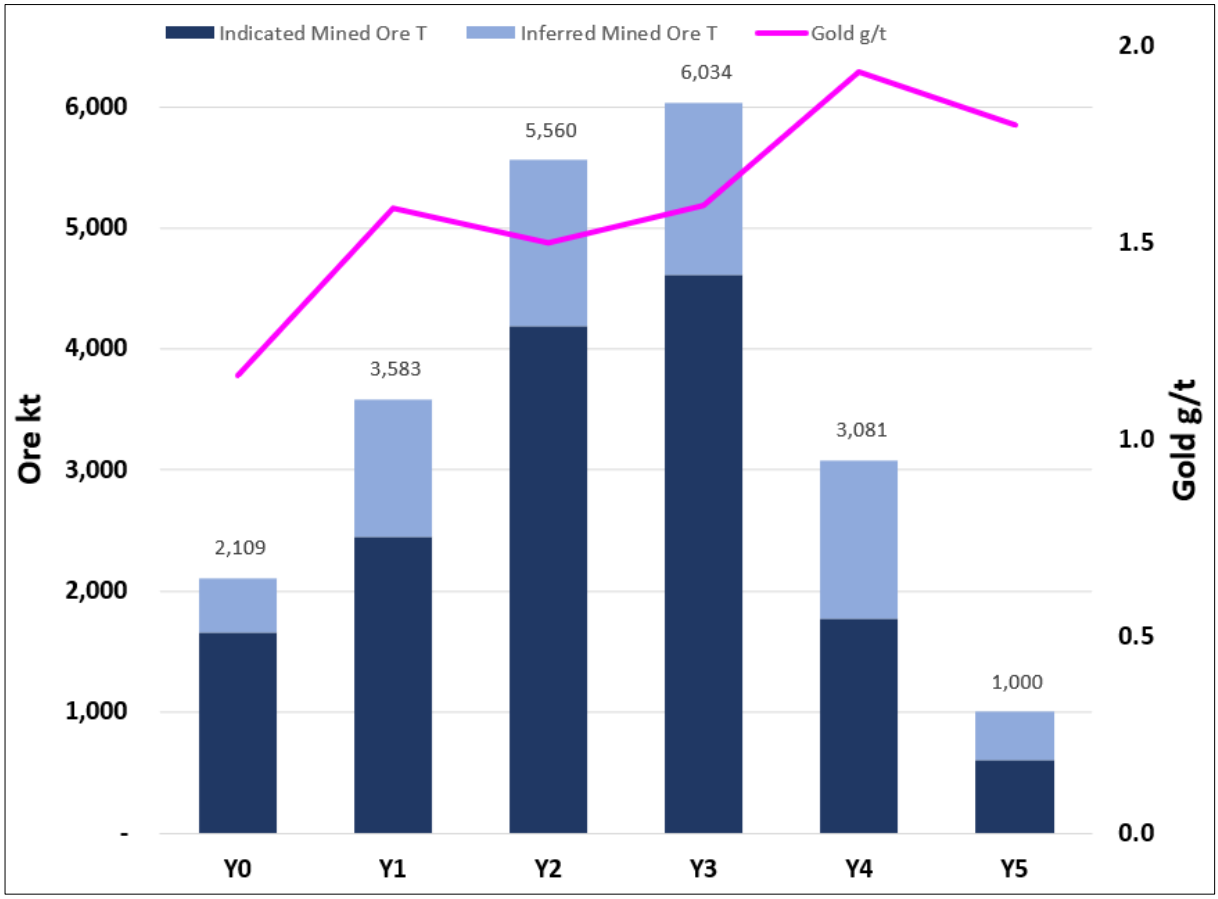


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Table 8-16 Base Case physicals

	Unit	Base Case
Description		3 Mtpa 12 Mt pit + early underground 2 Mt
Open Pit		
Waste	kt	67,054
Ore	kt	13,474
Total	kt	80,528
Strip ratio	x	5
Underground	kt	7,892
Processing Ore Feed		
Ore Feed	kt	21,366
Gold	g/t	1.6
Silver	g/t	0.6
Indicated classification	%	72
Gold	koz	1,090
Silver	koz	390
CIL Recovered Metal		
Gold	koz	975
Silver	koz	349

Table 8-17 Base Case cashflow results

	Unit	Base Case
Revenue	$M	2,377.2
Capital pre-production	$M	-207.3
Capital Sustaining	$M	-9
Open pit mining	$M	-328
Underground mining	$M	-623
Processing	$M	-410
Other	$M	-134
AISC[1]	$M	-1,437
AISC/gold oz[1]	$/oz	1,475
AIC[1]	$M	-1,705
AIC/gold oz[1]	$/oz	1,749
Pre-tax		
FCF	$M	672
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FCF	$M	491
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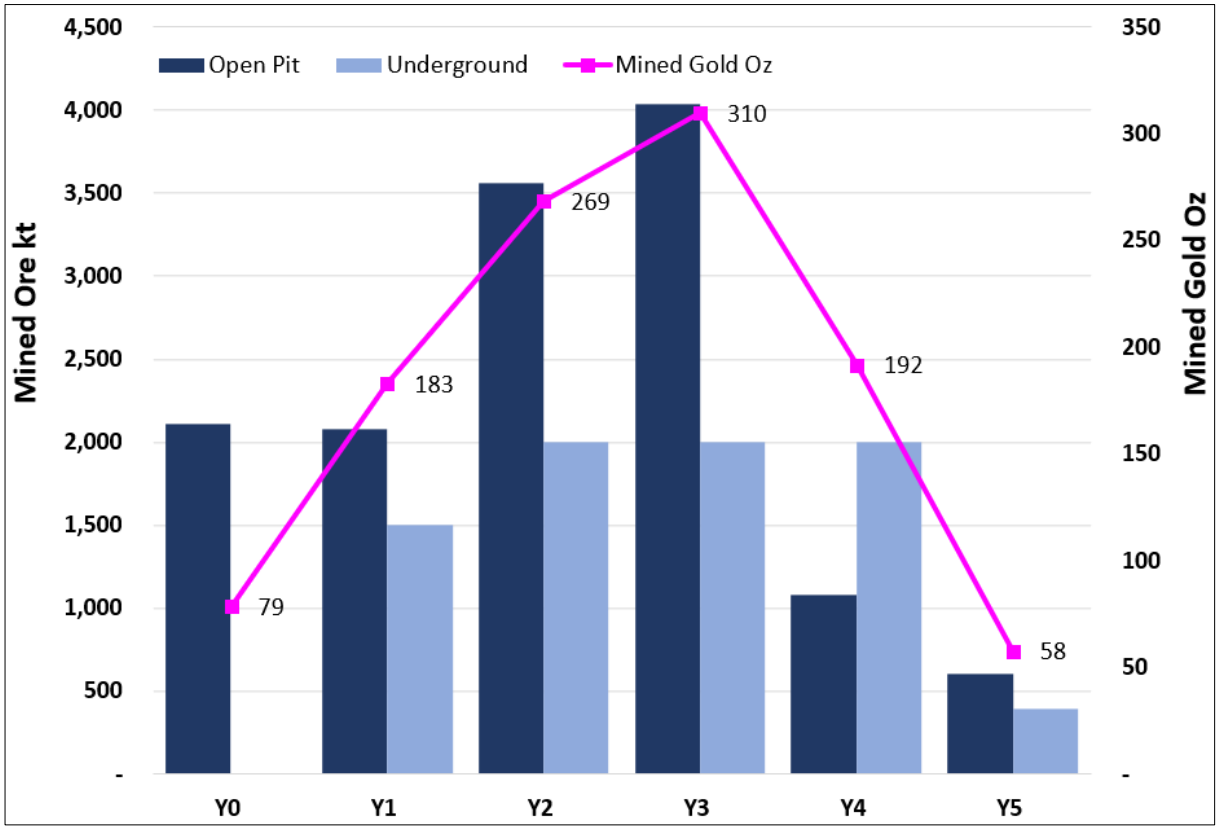
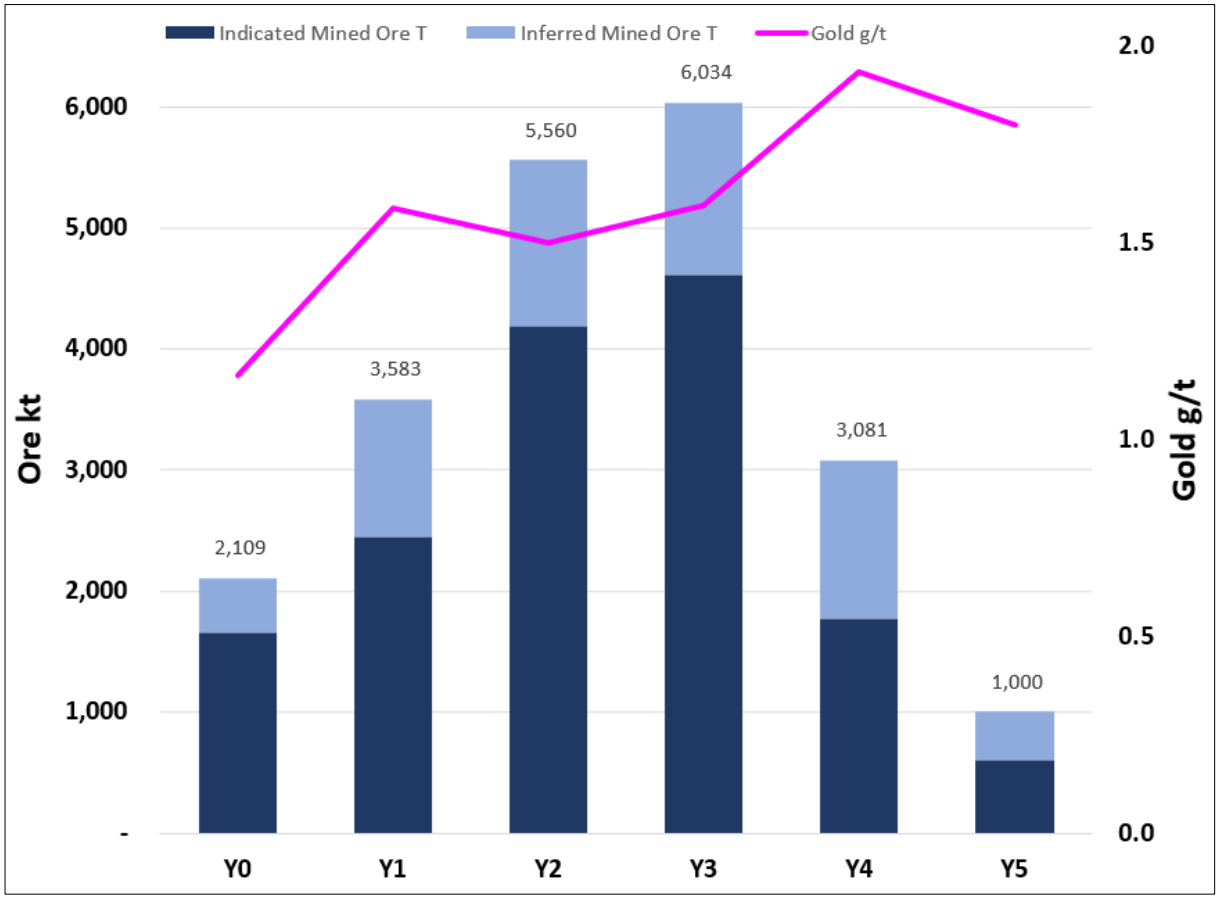
Note: 1. Excludes pre-production open pit mining costs

Figure 8-1 Base Case open pit and underground mining profiles and Mineral Resource breakdown





8.7 Selected case

The 3 Mtpa CIL gold and silver production Project Base Case was selected for the following reasons:

- Highest DCF of all scenarios of $392 pre-tax and $278M post-tax;
- Highest IRR;
- Shortest payback; and
- Highest value option regardless of processing method (CIL or Flotation).

Summary of the results for this scenario:

- LoM life of 8 years;
- 21 Mt grading 1.6 g/t gold and 0.7 g/t silver for 1,090 koz gold and 175 koz silver;
- All in Sustaining Cost (**AISC**) of A$1,475/oz or US$1,062/oz (excluding Y0 pre-production open pit mining);
- All in Cost (**AIC**) of A$1,749/oz or US$1,260/oz (including all LoM CAPEX and pre-production open pit mining);
- DCF of $392 pre-tax and $278M post-tax;
- IRR of 34% pre-tax and 29% post-tax; and
- Payback (2.5 years) and a maximum drawdown of $258 M on an annualised cash-flow basis.

Results for this specific case are shown in

Table 8-18 and Table 8-19.

Table 8-18 Base Case summary physicals

Year	Total	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8
Gold koz	**975**	153	183	205	179	123	59	54	20
Silver koz	**350**	37	56	74	64	40	33	32	12

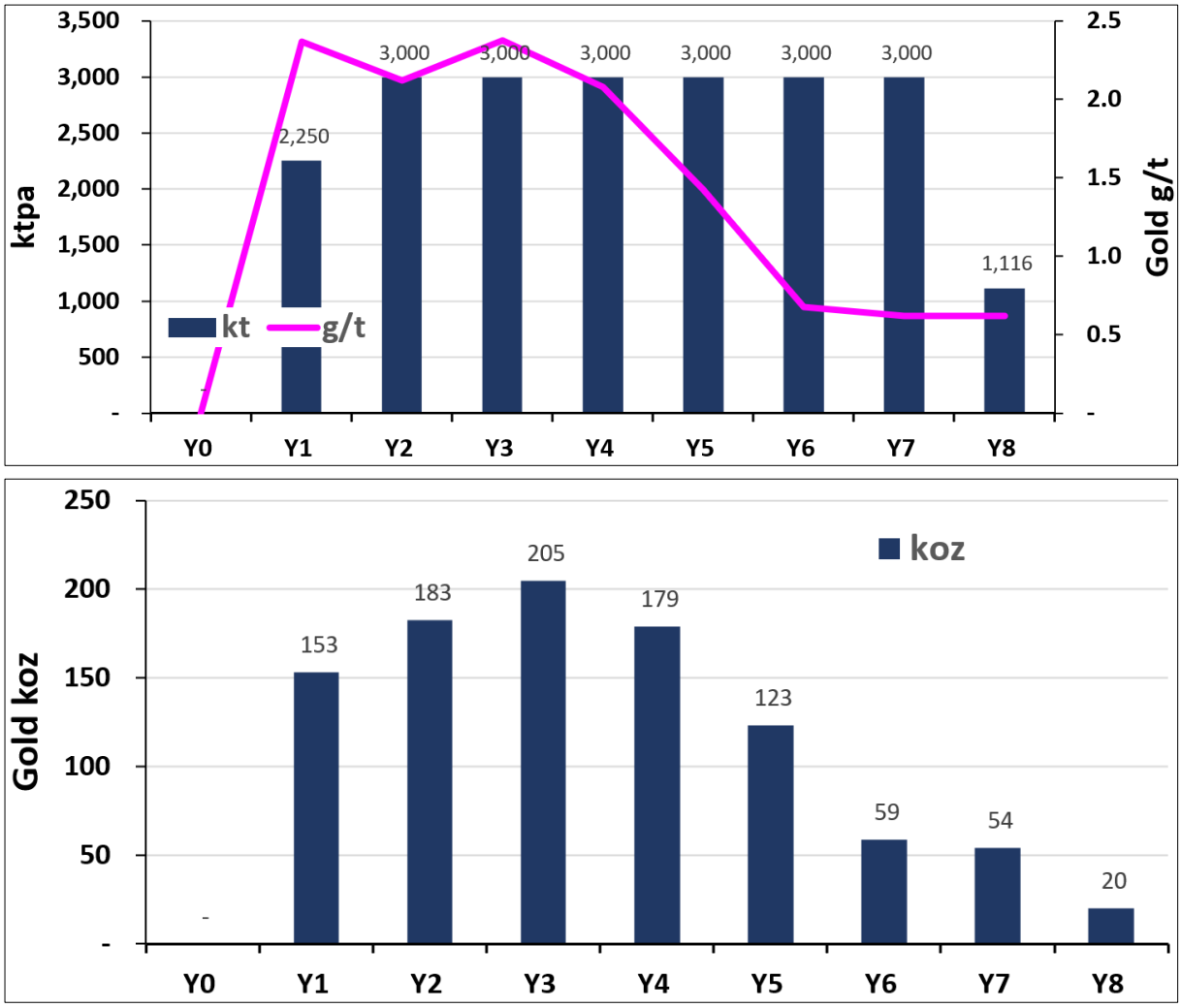
Year	Unit	Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8
Waste	kt	17,891	27,917	16,440	4,746	59	0	0	0	0
Ore	kt	2,109	2,083	3,560	4,034	1,081	607	0	0	0
Total	kt	20,000	30,000	20,000	8,780	1,140	607	0	0	0
Strip Ratio	x	8	13	5	1	0	0	0	0	0
Underground	kt	79	84	93	96	96	96	0	0	0
Processing										
Ore	kt	0	2,250	3,000	3,000	3,000	3,000	3,000	3,000	1,116
Gold	g/t	0.0	2.4	2.1	2.4	2.1	1.4	0.7	0.6	0.6
Silver	g/t	0.0	0.6	0.6	0.9	0.7	0.5	0.4	0.4	0.4
Indicated % by tonnes	%	79	68	75	76	57	61	0	0	0
Gold	koz	0	171	205	229	200	137	65	60	22
Silver	koz	0	41	62	83	72	45	37	36	13
Produced (recovered)										
Gold	koz	0	153	183	205	179	123	59	54	20
Silver	koz	0	37	56	74	64	40	33	32	12

Table 8-19 Base Case summary cashflow details

Year	Unit	Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8
Revenue	$M	0	373	445	499	436	300	143	132	49
Capital - Growth	$M	-191	-9	0	0	0	0	0	0	0
Capital - Sustaining	$M	0	-2	-3	-3	-1	-1	0	0	0
OP Mining	$M	-68	-102	-77	-44	-28	-10	0	0	0
UG Mining	$M	0	-117	-155	-157	-166	-29	0	0	0
Processing	$M	0	-43	-58	-58	-58	-58	-58	-58	-21
Other	$M	0	-18	-23	-25	-22	-18	-12	-12	-4
AISC *(excl. Y0-OP)*	$M	0	-282	-315	-285	-275	-115	-70	-69	-26
AISC/oz *(excl. Y0-OP)*	$/ oz	0	1,844	1,722	1,394	1,537	938	1,192	1,290	1,290
AIC *(incl. all CAPEX & Y0-OP)*	$M	-258	-292	-315	-285	-275	-115	-70	-69	-26
AIC/oz *(incl. all CAPEX & Y0-OP)*	$/ oz	0	1,904	1,722	1,394	1,537	938	1,192	1,290	1,290
Pre-Tax										
FCF	$M	-258	81	131	214	161	185	73	62	23
DCF	$M	-248	70	105	157	109	114	42	32	11
Post-Tax										
FCF	$M	-258	81	131	184	113	129	51	44	16
DCF	$M	-248	70	105	135	76	80	29	22	8

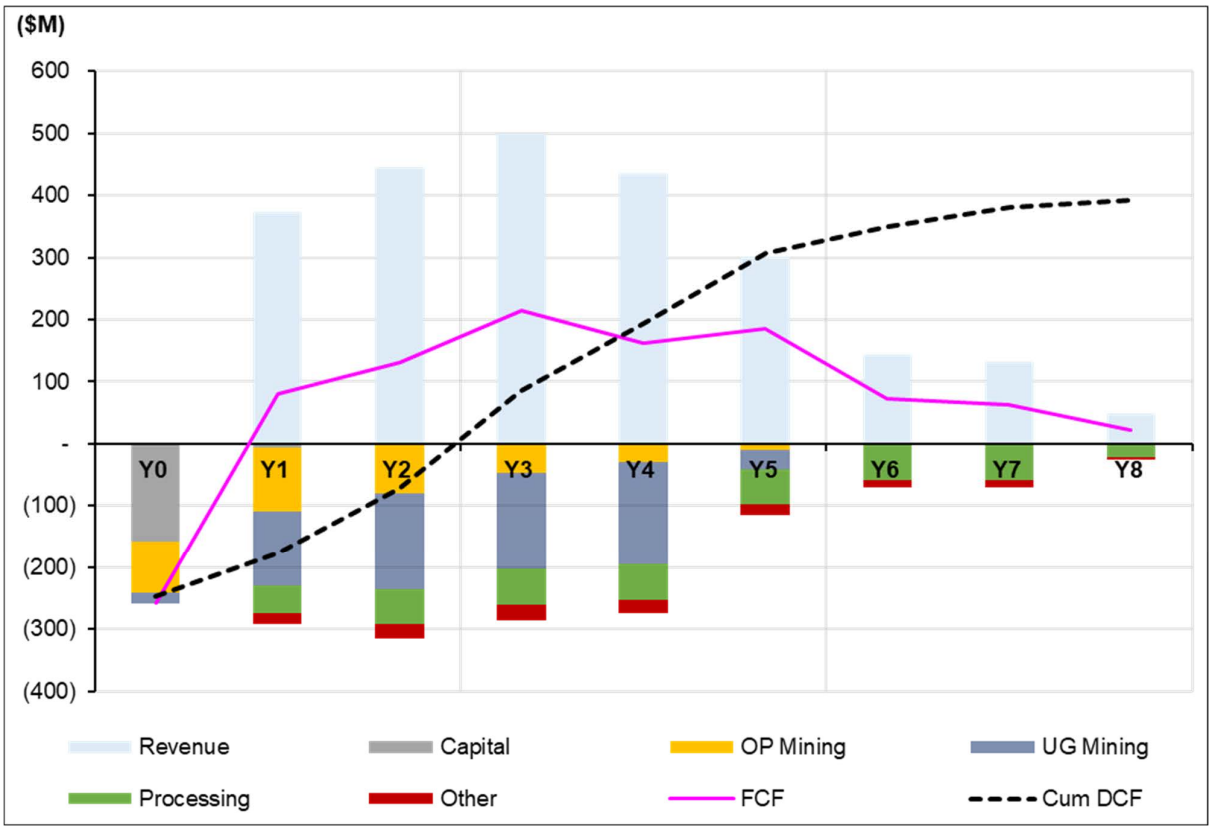
Production charts for the open pit and underground (including breakdown by Mineral Resource classification), and processing physicals are displayed in Figure 8-2.

Figure 8-2 Base Case gold production profiles



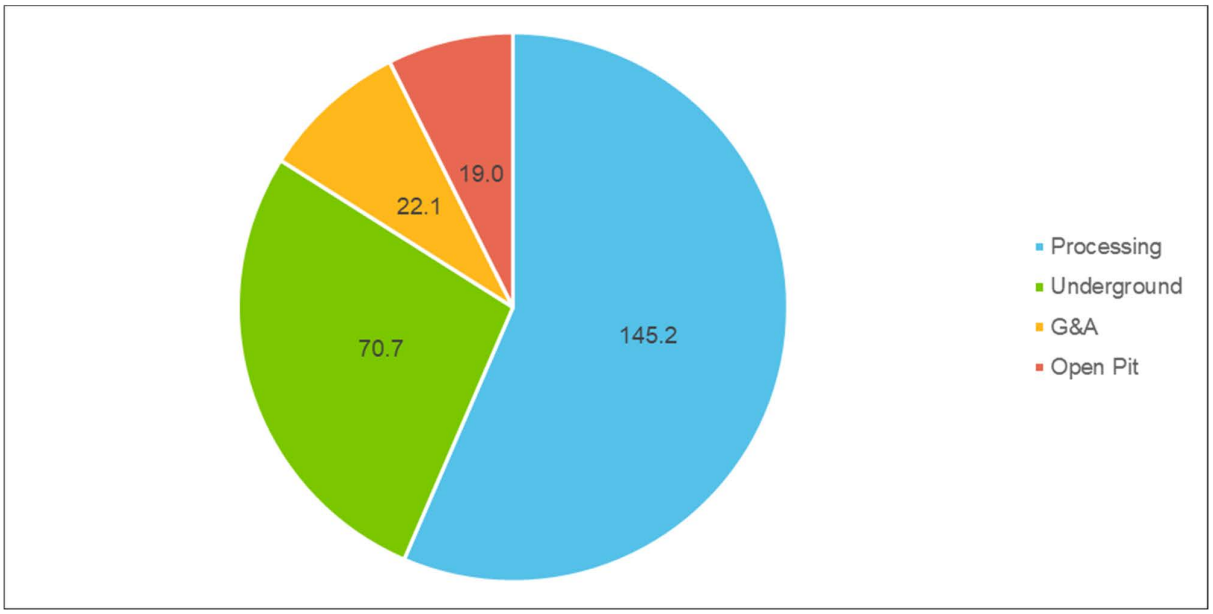
Cost, revenue and cashflow results are shown in Figure 8-3.

Figure 8-3 Base Case annual pre-tax free cashflow (FCF) and cumulative discounted cashflow (DCF)



Capital expenditure breakdown is shown in Figure 8-4.

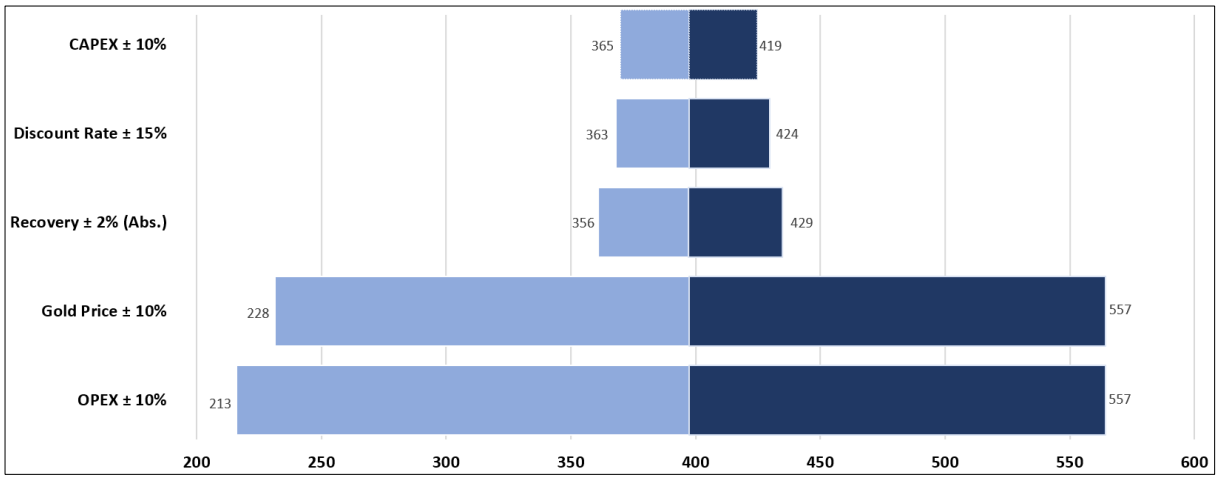
Figure 8-4 Base Case LoM Capital (Growth and Sustaining) breakdown ($M)



8.7.0 Sensitivities

Sensitivity analysis was generated for the life of mine discounted cash flow for the preferred scenario. Variances of metal pricing and operating cost have a similar impact on the Project value. Less sensitivity was shown for the variation of the capital costs. The Project returned a positive DCF for the ±20% variances. Results shown in Figure 8-5.

Figure 8-5 Base Case Sensitivity Analysis discounted cashflow (pre-tax)



9 CONCLUSIONS AND RECOMMENDATIONS

9.0 Risks and opportunities

A summary of key risks and opportunities are described below.

9.0.1 Risks

Study accuracy

Initial scoping studies inherently carry the risk of limitations due to the ±35% accuracy of the assessment. Progressing the Project through each study phase step, will be important to both fully understand the cost of investment and maximum possible potential of the Project.

A large component of the Mineral Resources underpinning the Study are of an Indicated classification with 75% in the first 4 years and 72% over the LoM. Majority of the Inferred material is contained within the underground mine and as such, the underground production currently has the higher risk of deviating (both positive and negative) from these estimates.

Project timeline and ramp up

Similar to the majority of unestablished projects, project NPV is closely linked to duration of the initial project development and commencement date. Whilst the preferred scenario provides the least exposure to initial capital cost having the least payback period and highest IRR, it does involve a more complex operation, requiring the establishment of the site, processing plant and infrastructure, as well as an open pit and underground operation within the first 18 to 24 months of the operation. Detailed implementation and execution planning will be critical to reducing any start-up delays.

Funding

The Company's 100% owned Minyari Dome Project is relatively low risk and is considered technically simple, with very strong economics that provide a robust platform for Antipa to source traditional financing through debt and equity markets. There is, however, no certainty that Antipa will be able to source funding as and when required.

To achieve the various outcomes indicated in the Scoping Study, pre-production funding in excess of A$275M may be required. Typical project development financing would involve a combination of debt and equity. Antipa has formed the view that there is a reasonable basis to believe that requisite future funding for development of the Minyari Dome Gold Project will be available when required.

There are grounds on which this reasonable basis is provided including:

- The Project is in a tier one jurisdiction, with simple non-refractory metallurgy allowing for an industry standard CIL process plant and has a rapid payback of only 2.5 years from commercial production;
- The very strong post-tax cashflows of A$491M and rapid payback would support a significant level of conventional debt financing for the Project development;
- There is significant potential to grow the Project's Mineral Resource base that is the basis of this Scoping Study. The Project's calendar year 2022 exploration programme is set to include a significant diamond core and reverse circulation drill programme and commenced in June. The drill programme is designed to test a range of gold-copper-cobalt resource growth extensional targets and prospects, with particular emphasis on the Minyari deposit and new significant deposit and satellite discoveries across the Project. Many of these targets are within approximately one kilometre of the Minyari deposit. The key objective of this programme is to increase both the overall size and Indicated component of the existing MRE. It is expected that growth in Mineral Resources would further strengthen Project economics;
- The Company has a strong track record of raising equity funds as and when required to further the exploration and evaluation of its assets; and

- The Antipa Board and management has extensive experience in mine development, financing and production in the resources industry in Western Australia.

9.0.2 Opportunities

Early ore exposure

Minyari pit initial stage 1 provides a low strip ratio allowing early access to ore feed and ability to defer capital pre-strip.

Stockpile management

Stockpile management shows significant improvement to the project NPV using a simplistic scoping level assessment. Opportunity to use more advanced methods, to further optimise the mined grade intervals and target mill feed grade, particularly during the start-up period.

Mineral Resource growth

Extending the potential Project LoM by two or more years via further Mineral Resource growth, including satellite open pit and Minyari, WACA and satellite underground opportunities would materially enhance the Project's NPV and IRR. Further exploration success across the Minyari Dome Project delivers the potential to push-back the final two years of low grade stockpile processing.

Base metal production – Copper and Cobalt

The Project's future facing base metals copper and cobalt represent significant in-situ value and although the Study's optimum development case was the precious metal gold-silver only scenario, further base metal focused metallurgical test-work may determine improved processing operational performance, such as base metal recoveries and concentrate product specifications, potentially highlighting alternative viable Project development options. It is noteworthy that the Australian Government's critical minerals list (March 2022) includes cobalt, and that the Australian Government is committed to building a pipeline of critical minerals projects via various mechanisms including incentive programmes such as the Critical Minerals Facility, Critical Minerals Accelerator Initiative (**CMAI**), and Modern Manufacturing Initiative (**MMI**).

9.1 Recommendations

The purpose of the Minyari Dome Project Scoping Study was to provide a broad range of options, to provide direction for future economic assessments at greater levels of accuracy.

The Study has provided a positive economic solution for the Project with the following results:

- LoM of 8 years;
- 21 Mt grading 1.6 g/t gold and 0.7 g/t silver for 1,090 koz gold and 175 koz silver;
- All in Sustaining Cost (**AISC**) of A$1,475/oz or US$1,062/oz (excluding Y0 pre-production open pit mining);
- All in Cost (**AIC**) of A$1,749/oz or US$1,260/oz (including all LoM CAPEX and pre-production open pit mining);
- DCF of $392 pre-tax and $278M post-tax;
- IRR of 34% pre-tax and 29% post-tax; and
- Payback (2.5-years) and a maximum drawdown of $258M on an annualised cashflow basis.

The Study has provided the following key learnings to assist in future study work:

- The ore body in terms of possible mining production rates supports at least a 2 Mtpa capacity processing plant;

- With multiple mining areas (open pit or underground), the mine can support a 3 Mtpa capacity processing plant;
- Pit optimisation results indicated the ore body exhibits significant strip ratio steps, indicating suitable locations for pit stages and suitable transition depth for open pit to underground;
- Cashflow modelling shows significant early value in stockpile management providing feed grades of greater than 40% in the first 3 years compared to the LoM average grade; and
- Maximum cashflows achieved by establishing both open pit and underground mines as soon as practicable to the Project start. Whilst this will increase the complexity to the site establishment, this option maximises early revenue, and reduces overall start-up capital spend.

9.2 Future work

To progress the Project to a Prefeasibility Study level, Snowden have highlighted the following items (but not limited to) which would form a typical study programme:

- Conversion of Inferred Mineral Resource to Indicated Mineral Resource;
- Geotechnical drilling of the preferred pit outline to confirm rock types and any structures impacting the open pit wall positions, and inform batter and berm dimensions;
- Hydrology assessment to inform any flood diversion structures;
- Hydrogeology assessment to inform dewatering strategy, water balances, and support geotechnical analysis;
- Waste rock storage considerations including geochemical and material properties test-work;
- Further metallurgical and other processing and metal recovery test-work assessments to increase level of detail and optionality (e.g. recovery and sale of base metals);
- Underground mining method assessment;
- Equipment selection – Open pit;
- Equipment selection – Underground;
- Underground ventilation assessment;
- Power supply options analysis;
- Detailed infrastructure cost estimation;
- Detailed operating cost estimation;
- Environmental clearances and impact assessments; and
- Project risk assessment.