ASX RELEASE 17 April 2023

ASX: MGV

Potential value of the Cue Gold Project demonstrated by Stage 1 Prefeasibility Study

Musgrave Minerals Ltd (Musgrave or the Company) is pleased to announce the results of a Stage 1 Prefeasibility Study (PFS) on its 100% owned Cue Gold Project, situated in the heart of Western Australia's Murchison gold region. The outcomes of the study show a technically and financially robust project.

Key Highlights

- **Confirms a financially attractive standalone project with an initial 5-year LOM demonstrating low cost, high margin gold production.**
- **LOM undiscounted, pre-tax, free cash flow of $314M over 'Stage 1' 5-year term (A$2,600/oz sale price), increases to $427M at current spot of ~A$2,950/oz.**
- **Payback period of 9 months from commencement of production, accounting for a standalone 500,000 tpa processing plant and three months pre-production activities totalling $121M in startup capital.**
- **Stage 1 PFS gold production of 337,000 oz (345,000 oz mined) with the initial 3 years averaging 80,000 oz/year. The total LOM production includes approximately 77% Indicated and 23% of Inferred Mineral Resource.**
- **The Project displays robust financial metrics:**
  - **EBITDA of $528M, with a C1 cost of A$934/oz.**
  - **Average LOM AISC of A$1,315/oz, including sustaining capital of $93M over the LOM.**
  - **Pre-tax NPV$_8$ of $235M, with an IRR of 95% ($215M and 91% post-tax).**
- **Stage 1 PFS cost profiles are based on the current inflationary environment, with 86% of the total costs having a direct Q1CY23 quoted price from service provider or contractor.**
- **Musgrave will rapidly advance to Stage 2 PFS with the aim of extending mine life through ongoing infill drilling to convert Inferred material as well as continued exploration and drilling of mineralised prospects to underpin an updated Mineral Resource Estimate in late 2023.**

Cautionary statement:

The production inventory and forecast financial information referred to in the Stage 1 PFS comprise Indicated Mineral Resources (approximately 77%) and Inferred Mineral Resources (approximately 23%). The Inferred material has been scheduled such that less than 7% tonnage and less than 1.7% ounces of the Inferred material is mined in the first year, with the remainder mined through to the end of the mine life. The Inferred material does not have a material effect on the technical and economic viability of the Cue Gold Project. There is a lower 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.

The Stage 1 PFS Life of Mine (LOM) plan focuses predominantly on the current 417,000 ounce Indicated component of the 868,000 oz Southern Area Mineral Resource to generate gold production of 345,000 oz with compelling physical and economic metrics.

Musgrave to rapidly advance to Stage 2 PFS which is expected to extend the LOM as ongoing drilling tests new prospects and extends and upgrades existing Inferred Mineral Resources into the mine plan, within Musgrave's 100% owned tenure.

Musgrave is continuing to fast-track drilling, to make new discoveries and grow and de-risk the resource base with a focus on adding mine life through the Stage 2 PFS. Any future resource additions in the S2 PFS will add mine life and continue to drive value for the project. The Company is also advancing technical studies and permitting to accelerate the project towards development.

Commenting on the Stage 1 PFS outcomes, Musgrave's Managing Director, Rob Waugh, said:

"The excellent Stage 1 PFS outcomes demonstrate that Musgrave's Cue Gold Project is one of the highest margin, undeveloped gold projects in Australia. This potential new standalone development has a rapid payback period of 9 months from first processing due to the extraordinary near-surface, high-grade nature of the Break of Day and White Heat deposits."

"The project has an IRR of 95% (pre-tax) and the potential to deliver over 65,000 ounces of gold annually over an initial 5 year period, including 80,000oz/year for the first 3 years, at an AISC of A$1,315/oz and AIC of A$1,675/oz (based on full amortisation of start-up capital). The project generates cashflow of $314M (before tax) and an EBITDA of $528M (at A$2,600/oz) with a C1 cost of A$934/oz. With this cost profile (based on Q1 2023 capital and operating cost assumptions), the Project is expected to be in the lowest cost quartile of gold producers in Australia[1]."

"The Stage 1 PFS predominantly focuses on the current Indicated Mineral Resources at Cue which constitute only 47% of the total Resource base. The Stage 1 PFS includes the mining of 6 open pit deposits (Break of Day, White Heat, Lena, Big Sky, Numbers and Leviticus) and an initial 2 years of gold production from the upper levels of the Break of Day underground mine."

"A thorough and relatively conservative view was taken with the Stage 1 PFS utilising current costs from Q1CY23 RFQ's acknowledging the current inflationary environment while also applying top-cuts, ore loss and dilution to the resources. The initial pre-production CAPEX for the proposed standalone development of a 500kt/pa processing facility (with supporting camp, infrastructure and pre-production mining activities) is $121M. Reduced capital processing scenarios will be further evaluated during the Stage 2 PFS."

"The Stage 2 PFS, is set to add mine life through the extension and conversion of existing Inferred Resources to the higher confidence Indicated category, together with the potential inclusion of newly discovered resources. The Musgrave team has been very successful in defining new targets, making new discoveries and growing the resource base. The project has significant upside growth potential with recent discoveries like Amarillo and Waratah expected to add to the resource base in 2023 to align with delivery of the Stage 2 PFS in early 2024."

[1] *Note: Industry costs taken from 2022, Q4 Aurum Analytics Quarterly Gold Report.*

Presentation and Conference Call

Managing Director, Rob Waugh, and General Manager-Development, Anthony Buckingham will host a presentation conference call to discuss the Stage 1 Prefeasibility Study at **9:30am Australian Western Standard Time ("AWST"), 11:30am Australian Eastern Standard Time ("AEST") today, Monday 17 April 2023.**

To join the conference call, participants will need to access the link below at the allocated time:

https://us02web.zoom.us/j/82887135015?pwd=NmlYUmNxeXlreThMV0VLN2xIVlpTdz09

Cue Gold Project Stage 1 PFS Base Case		
Key Project Metrics (Real unless stated)	**Unit**	**Stage 1 PFS @ $2,600 Au**
Initial Project Life (Total)	months	70 Mth(s)
Initial Operating Life (Total)	months	62 Mth(s)
Nominal Processing Plant throughput (annum)	ktpa	500
Gold Price	AUD / oz	2,600 / oz
Process Plant Feed Tonnes	t	2,448,767
Process Plant Feed Grade	g/t	4.4
Gold Recovery Overall Percentage	%	97.8%
Gold Recovered	oz	337,381
Gold Recovered- Annual Average over initial 5 yrs	oz	Approx. 65,000 oz
Operating Cost	AUD M	(350.8)
Sustaining Capital	AUD M	(92.9)
Pre Production Capital	AUD M	(121.3)
Undiscounted Cashflow (before Tax)	AUD M	314.0
Undiscounted Cashflow (After Tax)	AUD M	287.7
EBITDA	AUD M	528.2
EBIT	AUD M	288.8
NPAT	AUD M	262.6
C1 Cost	AUD / oz	934 / oz
All-in-Sustaining Cost (AISC)	AUD / oz	1,315 / oz
Pre-production CAPEX	AUD M	121.3
Project NPV (Pre-Tax 8%)	AUD M	235.1
Project NPV (Post Tax 8%)	AUD M	215.0
Project IRR (Pre-Tax)	%	95%
Project IRR (Post Tax)	%	91%
Project Payback Period from Production Start	Period	9 Mth(s)
Maximum Project Drawdown	AUD M	(121.3) and W/C of (5.3)
(W/C - Working Capital)		
Project Physicals (LOM)	**Unit**	**Stage 1 PFS @ $2,600 Au**
Total Movement: Open Pits	bcm	14,025,717
Ore Mined: Open Pits	t	1,964,355
Ore Grade: Open Pit	g/t	4.3 g/t
Gold Contained: Open Pit	oz	269,853
Strip Ratio: Open Pits	x	15.7 x
Ore Mined: Break of Day Underground	t	484,412
Ore Grade Break of Day Underground	g/t	4.8 g/t
Gold Contained: Break of Day Underground	oz	75,197
Process Plant Feed Tonnes	t	2,448,767
Process Plant Feed Grade	g/t	4.4
Process Plant Feed Ounces	oz	345,051
Total Gold Recovered from Processing Plant	oz	337,381
Ore Fed- Indicated Category		1,722,898 @ 4.8g/t for 258,371 oz rec
Ore Fed- Inferred Category		725,869 @ 3.5g/t for 79,010 oz rec

Authorised for release by the Musgrave Minerals Board of Directors.

For further information please contact:

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CUE GOLD PROJECT

STAGE 1 PREFEASIBILITY STUDY

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1 INTRODUCTION

1.1 Introduction

Musgrave Minerals Ltd is an Australian resources company focused on gold exploration and development in the Murchison Province of Western Australia.

In August 2017, Musgrave acquired 100% of the Cue Gold Project (CGP) after a 2015 joint venture (JV) and farm-in agreement with Silver Lake Resources Limited (Silver Lake). The CGP is located within the well-endowed, gold producing Murchison region of Western Australia, which has over 10 Moz mined or classified in Mineral Resource Estimates.

The CGP hosts significant gold mineralisation including the high-grade Break of Day (discovered in 2018) and Lena (discovered in 2012) deposits. Musgrave has had significant exploration success at CGP with expanded gold discoveries at Break of Day which underpin the existing Mineral Resource and new discoveries at White Heat (including Mosaic lode,2020 discovery) and Big Sky (2021 discovery). Additional gold prospects at Amarillo and Waratah (discovered in 2022) further underpin the CGP's potential.

During 2022, Musgrave acquired new tenure south of Mt Magnet, only 40 km south of the Cue Gold Project. This under-explored area is expected to create a series of early-stage targets to compliment the exploration program at the CGP.

The Company's objective is to expand and upgrade its gold resources through discovery and extensional drilling to underpin mining studies and demonstrate a viable path to development. Musgrave's intent is to expand the resource base, accelerate exploration and continue studies at Cue to define a high margin operation that returns value to shareholders.

As of 1 January 2022, Evolution Mining Limited (Evolution) has elected to manage the Earn-In and Joint Venture Exploration Agreement which covers a select area of the Cue Gold Project, comprising Lake Austin and surrounds (Evolution JV). The Evolution JV excludes all the known resources including Lena and Break of Day, the new Big Sky and White Heat discoveries, and the Mainland option area and is not a subject of this study.

The current Mineral Resource Estimate for CGP totals 12.3 Mt @ 2.3 g/t Au for 927 koz contained gold including the Break of Day High-Grade Trend (982 kt @ 10.4 g/t Au for 327 koz Au) and the Western Trend (9.8 Mt @ 1.7 g/t Au for 541 koz Au), both in the southern area of the project (MGV, 2022). The new gold discoveries at Amarillo and along the Waratah trend are outside the existing resource and are not included in the Mineral Resource Estimate.

Successful exploration drilling continues to support the expansion of the resource base through discoveries at Big Sky and White Heat. Exploration on the Company's wholly owned tenure at Cue included large regional and extensional drilling programs to improve the classification of the mineral resource base and highlight the potential of the Cue Gold Project.

1.2 Stage 1 Prefeasibility Study

This Prefeasibility Study (PFS or Study) is based on numerous environmental, mining and processing studies that were completed in 2022 and early 2023. The Study is based on a standalone project, with Musgrave's belief in the commercial viability.

The PFS is one of two stages (Stage 1) and is based on the May 2022 Minerals Resource Estimate, specifically the 'southern area' total of 10.8 Mt @ 2.5 g/t Au for 868 koz Au. Within the 868 koz contained gold, the Stage 1 PFS is focused on the near surface and higher confidence 417 koz Au of Indicated material.

Development studies and associated field work are continuing on the CGP, with specialist consultants assisting the various mining disciplines. During 2023, works will continue on hydrology, metallurgy and geotechnics, together with further refinement of the infrastructure layout and essential site services. Heritage and baseline studies will be continuing to accommodate the expanded exploration potential as well as provide for continuous stakeholder feedback and consultation.

The Stage 2 PFS will be based on an updated Mineral Resource Estimate planned for late 2023, a revision of cost profiles and further exploration success at the CGP.

1.3 Location

The Cue Gold Project is located approximately 30 km south of the township of Cue in the Murchison district of Western Australia (approximately 600 km north of Perth). CGP is located on Wanarie Pastoral Station and the Badimia people are the Traditional Owners of the land (Figure 1-1).

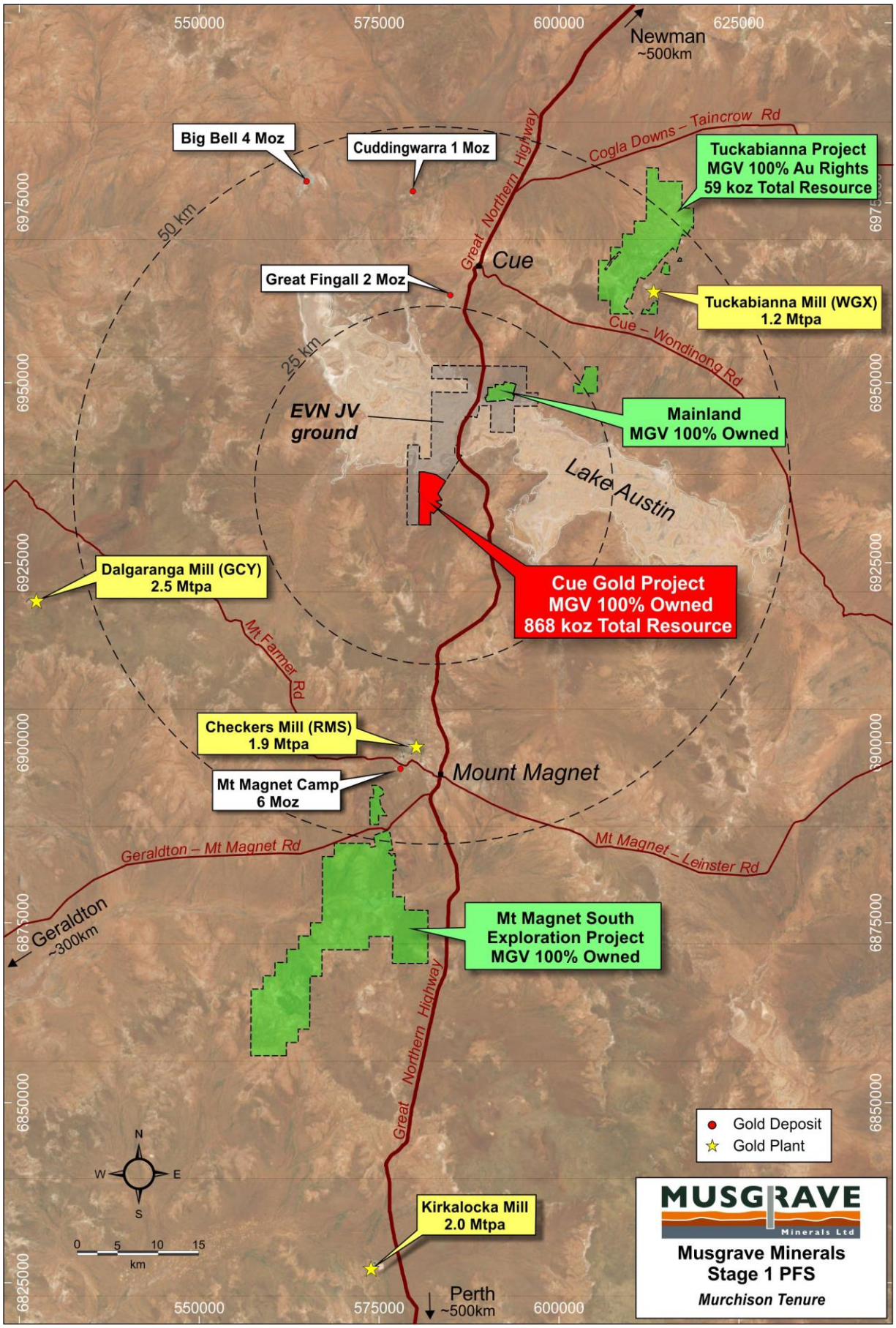
The majority of known gold deposits on CGP are south of Lake Austin and are approximately 5 km west of the Great Northern Highway. All resources included in the Stage 1 PFS are within 100% owned Musgrave tenure and are all located on granted Mining Leases.

Access to the project is from the Great Northern Highway via an un-gazetted track from the northern end of M21/107. There is currently no all-weather access route to the site; however, the Company proposes to develop site access roads as part of the project development.

The location of the Cue Gold Project with respect to the township of Mt Magnet and other regional locations is shown in Figure 1-1 and Figure 1-2.

Figure 1-1: Cue Gold Project regional location

Figure 1-2: Cue Gold Project location plan



1.4 Ownership and Tenure

All surface activities and resources considered in the Stage 1 PFS are located on 100% owned Musgrave tenure. Access to the Great Northern Highway is via an existing Miscellaneous License (L58/42) which overlays the Evolution JV tenements. All tenure is in good standing. The Company's total tenure in the Cue region covers in excess of 310 km^2.

All resources included in Stage 1 PFS are located on granted Mining Leases. Recently granted Mining Lease (M58/336) over the Big Sky, Numbers and Leviticus deposits, was granted late in 2022. The Waratah Prospect (outside of this Stage 1 PFS scope), is located on recently granted Mining Lease M58/367.

M21/106 contains the Lena, Break of Day and a significant portion of White Heat deposits. M21/106 also contains the Amarillo prospect (which is outside of the scope of the Stage 1 PFS). M58/367 contains a small section of the White Heat deposit. M58/366 contains all of the Big Sky, Numbers and Leviticus mineralisation.

The Cue Gold Project (CGP) is in Western Australia and as such, subject to the standard state government royalty which equates to 2.5% of the value of gold metal produced. The gold deposits within the CGP included in this Stage 1 PFS are all subject to third-party royalties that date back to the 1990s: 1.575% gold royalty to Franco Nevada and a $2.50/oz gold royalty to Molopo. See section 14.2 of this report for further details.

The Company has a joint venture with Evolution Mining Ltd (Evolution) directly north of the Cue Gold Project. The Evolution Joint Venture is not included in the Stage 1 PFS. Musgrave also has a joint venture over tenements east-northeast of Cue with Cyprium Metals Pty Ltd where Musgrave holds 100% of the gold-only rights (also not included in the Stage 1 PFS).

1.5 History and Previous Production

Mining in the district dates back to 1892 with the historic town of Austin which was located south of Cue, gazetted in 1895. Historically, the local area had three mining divisions:

- Mainland, which is located to the north of Lake Austin and included mines such as the Mainland Consols Mine;
- The Island, an area that lies within Lake Austin and was host to the Golconda and Island Eureka mines (not within Musgrave's tenure); and
- Moyagee area (referred to in this document as the Cue Gold Project), is the southern section of Musgrave Cue tenure that is the subject of the PFS.

Historical records indicate that from 1898 to the 1930s, the Moyagee mines produced 9,400 t @ 39 g/t Au for 11.8 koz Au (mindat.org) from limited underground workings and surface excavations.

During the 1980s, the land was explored by several exploration companies (Esso, Molopo Australia and Brunswick NL), completing numerous drilling programs (vacuum, rotary air blast (RAB) and reverse circulation (RC)). In the 1990s, the project was owned by Perilya Ltd who drilled the Lena deposit and undertook metallurgical testwork. In 2007, Perilya sold the project to Silver Lake as part of a package of gold projects. Silver Lake subsequently announced a Moyagee (CGP) Inferred Resource of 127 koz in 2015 (SLR, 2015).

In November 2015, Musgrave entered into a farm-in and joint venture agreement with Silver Lake and following successful exploration and resource definition results, acquired 100% of the project in August 2017. In 2017, CGP had 382 koz in total Resource (MGV 2017), with 181 koz Indicated and 202 koz Inferred.

1.6 Study Partners

The Stage 1 PFS was managed by Musgrave, with primary input from qualified and recognised independent specialist consultants. The study team is listed below.

Resource Estimation	**Process Engineering & Infrastructure**	**Metallurgical**
PayneGeo	GR Engineering Services Engineering Consultants and Contractors	MineLogiX
Metallurgical Testwork	**Mining Engineering & Mine Costing**	**Geotechnical**
ALS right solutions. right partner.	entech. Mining Engineering and Management	Peter O'Bryan & Associates consultants in mining geomechanics
Geochemical	**Hydrology**	**Tailings**
Graeme Campbell & Associates Pty Ltd Specialists in Materials Characterisation	GROUNDWATER RESOURCE MANAGEMENT	REC GEOTECHNICAL AND TAILINGS
Energy & Decarbonisation	**Project Permitting & Environmental**	**Surface Water Management**
Super Smart Energy	Significant Environmental Services	Carrick Consulting (WA) Pty Ltd
Road Intersection Design & Costing	**Communications and IT**	
Greenfield Technical Services	air communications	

2 GEOLOGY AND MINERAL RESOURCES ESTIMATE

The Cue Gold Project (CGP) consists of six individual gold deposits including Break of Day, White Heat, Lena, Big Sky, Leviticus and Numbers. The CGP is located approximately 30 km south of the regional town of Cue in the Murchison region of Western Australia. The area is locally referred to as Moyagee (referred to in this document as the Cue Gold Project).

The deposits are located within Mining Leases M21/106, M21/366 and M21/367, which are 100% owned by Musgrave Minerals Ltd (Musgrave). The Break of Day deposit has a series of old underground workings (historically referred to as the Moyagee Gold Mine). No modern development has occurred on any of the deposits at CGP.

The CGP deposits are located in the poorly exposed and deformed Archaean Mt Magnet-Meekatharra greenstone belt in the Murchison Province of the Yilgarn Block in Western Australia.

A major structural feature at the project is the second-order Lena shear. This curvilinear structure splays off the crustal-scale, north-south trending Cuddingwarra Shear, which runs from Mt Magnet in the south to Meekatharra in the north. The Lena shear is present as a 100 m-wide shear zone in mafic-ultramafic rocks and hosts the Lena deposit. A number of northwest-trending and east-northeast-trending faults crosscut the stratigraphy and also play an important role in the location of mineralisation (Figure 2-1).

The scale, grade and orientation of the CGP deposits is both lithologically and structurally controlled. The Lena deposit is hosted in ultramafic rocks intruded by felsic porphyries. The strongly sheared ductile ultramafics have promoted the formation of shear-parallel, sub-vertical lodes, striking north-northeast. Mineralisation is typically associated with quartz veining. Further south, the Leviticus deposit is hosted in similar shear-parallel lodes within a high-magnesian basalt unit.

The Break of Day and White Heat deposits lie in a relatively low strain unit, adjacent to the Lena Shear. This brittle tholeiitic basalt unit has resulted in the formation of high grade, quartz vein-hosted mineralisation where cross-cutting northwest and east-northeast-trending lodes intersect the basalt unit.

The Big Sky Deposit displays a number of similarities to Lena, albeit in different host rocks. Big Sky is hosted by a volcanogenic and clastic sediment package and is similarly intruded by felsic porphyries. Mineralisation is typically sub-vertical and north-south trending, within a zone of significant shearing.

The Numbers deposit is hosted by banded iron sedimentary formations (BIFs). Stratigraphy-parallel, sulphide-rich mineralisation occurs within the BIFs in zones crosscut by northwest-trending faults.

Alteration around the deposits is typically discrete, with sericite-carbonate-pyrite-biotite assemblages observed within a 5 m to 10 m halo around the mineralized lodes. Visible gold is a frequent occurrence at the deposits, particularly those within the high-grade Break of Day trend.

In May 2022, Musgrave reported a Mineral Resource Estimate of 12.3 Mt @ 2.3 g/t Au for 927 koz contained gold by Payne Geological Services Pty Ltd (PayneGeo) (MGV, 2022).

The Stage 1 PFS will largely focus on the Indicated component of this resource (417 koz) with ongoing exploration and resource drilling focusing on resource growth and further conversion of Inferred to Indicated resources. This resource conversion and potential resource growth will be the focus of a future Stage 2 PFS. The Stage 1 PFS focuses on a subset of the 2022 Mineral Resource located south of Cue and contains 10.8 Mt @ 2.5 g/t Au for 868 koz Au (Table 2-1).

Figure 2-1: CGP geology overview and resource locations

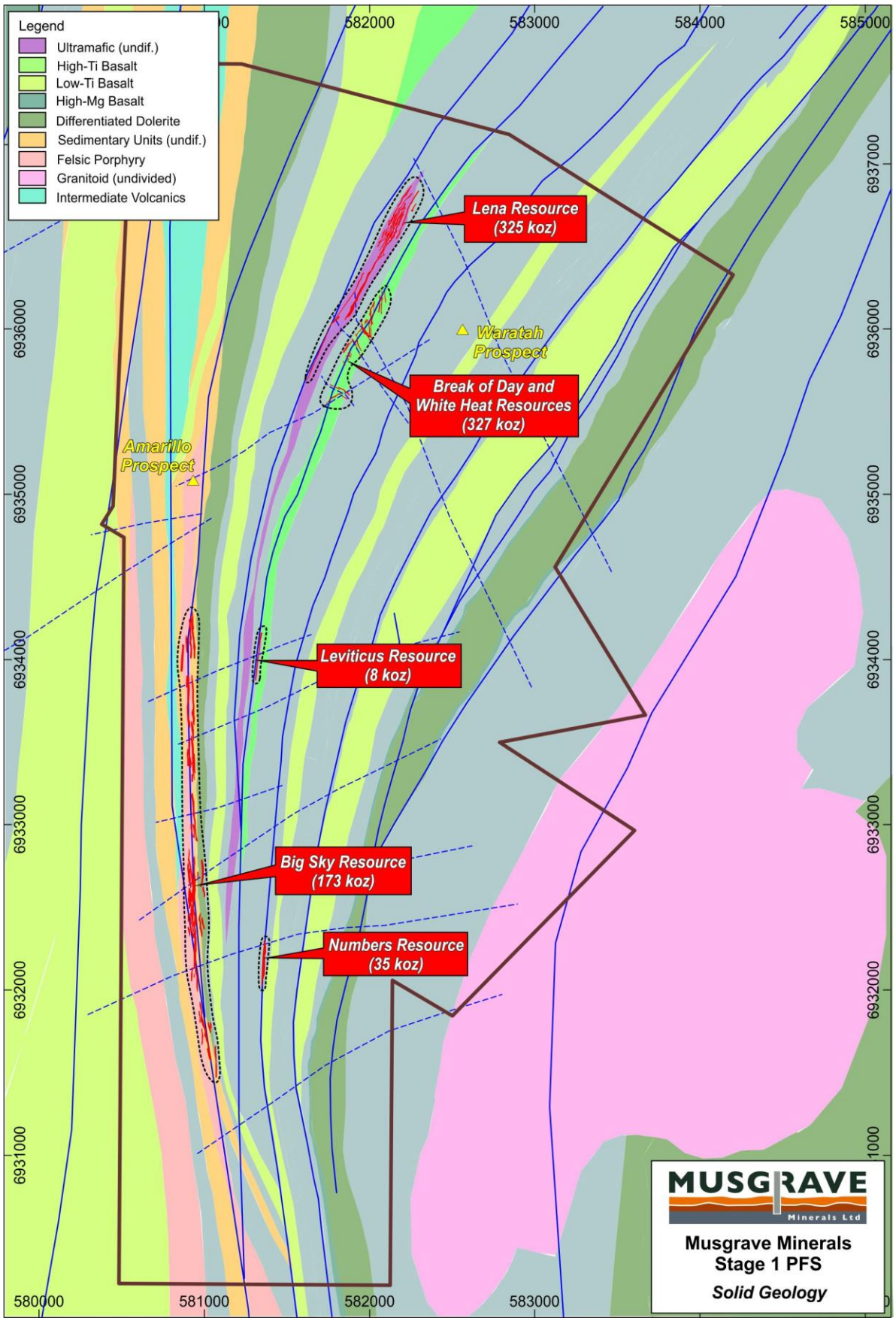


Table 2-1:Mineral Resource Estimate

Deposit	Indicated Resources			Inferred Resources			Total Resources		
	Tonnes Mt	Au g/t	Au koz	Tonnes Mt	Au g/t	Au koz	Tonnes Mt	Au g/t	Au koz
CGP Mineral Resource Estimate									
Break of Day High-Grade Trend									
Break of Day	451	12.1	176	346	7.7	86	797	10.2	262
White Heat	116	14.1	52	70	5.8	13	185	11.0	65
Total High-Grade Trend	**567**	**12.5**	**228**	**416**	**7.4**	**99**	**982**	**10.4**	**327**
Mid-Grade Trend									
Lena	2,253	1.7	121	2,053	3.1	204	4,305	2.3	325
Big Sky	1,170	1.3	48	3,480	1.1	125	4,650	1.2	173
Leviticus				42	6.0	8	42	6.0	8
Numbers	438	1.4	19	378	1.3	16	817	1.3	35
Total Mid-Grade Trend	**3,861**	**1.5**	**188**	**5,953**	**1.8**	**353**	**9,815**	**1.7**	**541**
Total	4,427	2.9	417	6,369	2.2	452	10,797	2.5	868
Mineral Resource Estimate for other deposits at Cue not included in the Stage 1 PFS									
***Hollandaire (MGV Attributable)**	**436**	**0.3**	**4**	**121**	**0.4**	**2**	**557**	**0.3**	**6**
Hollandaire Gold Cap	**197**	**1.3**	**9**	**62**	**1.2**	**2**	**260**	**1.3**	**11**
Rapier South				**258**	**1.7**	**14**	**258**	**1.7**	**14**
Total Eelya	***633***	***0.6***	***13***	***441***	***1.3***	***18***	***1,075***	***0.9***	***31***
Jasper Queen				332	1.7	19	332	1.7	19
Gilt Edge	69	2.6	6	34	3.6	4	102	2.9	10
Total Tuckabiannna	**69**	**2.6**	**6**	**365**	**1.9**	**23**	**434**	**2.0**	**28**
Grand Total Cue	***5,129***	***2.6***	***435***	***7,175***	***2.1***	***492***	***12,306***	***2.3***	***927***

Note: Due to the effects of rounding, the totals may not represent the sum of all components.

The Hollandaire Resource Estimate is on a 20% attributable interest to Musgrave in the Hollandaire deposit (Musgrave free carried to completion of DFS). Totals are on an attributable interest basis. Gold mineralisation not associated with the copper resource at Hollandaire, that is 100% attributable to MGV (Hollandaire Gold Cap) is also reported in compliance with JORC 2012.

The Mineral Resource has been classified in accordance with guidelines contained in the JORC Code (JORC, 2012). The classification applied reflects the uncertainty that should be assigned to the Mineral Resources reported herein. The reported Indicated Mineral Resources represent areas where there is sufficient geological evidence to assume geological and grade continuity between points of observation where data and samples are gathered. The reported Inferred Mineral Resources represent areas where there is sufficient geological evidence to imply, but not verify, geological and grade continuity between points of observation where data and samples are gathered.

The full technical descriptions and requisite disclosures for the Mineral Resource Estimate can be found in the Musgrave's ASX announcement (MGV, 2022).

The Company is well funded and has a strong track record of discovery and resource growth. It has a pipeline of targets and opportunities for further drill testing and potential future resource growth, with recent encouraging drill results from the Amarillo and Waratah targets. Drilling is continuing at the Cue Gold Project.

2.1 Competent Person's Statement

2.1.1 Mineral Resources

The information in this report that relates to Mineral Resources for the Break of Day, Lena, White Heat-Mosaic, Big Sky, Numbers, Leviticus, Jasper Queen, Gilt Edge, Rapier South and the Hollandaire Gold Cap deposits is based on information compiled by Mr Paul Payne, a Competent Person who is a Fellow of the Australasian Institute of Mining and Metallurgy. Mr Payne is a full-time employee of Payne Geological Services. Mr Payne has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken 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'. Mr Payne consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this report that relates to Mineral Resources for the Hollandaire Copper-Gold deposit is an accurate representation of the available data and is based on information compiled by external consultants and Mr Peter van Luyt a competent person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' who is a member of the Australian Institute of Geoscientists (2582). Mr van Luyt is the Chief Geologist of Cyprium Metals Limited. Mr van Luyt has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and the activity which he is undertaking to qualify as a Competent Person (CP). Mr van Luyt consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The Company confirms that it is not aware of any further new information or data that materially affects the information included in the original market announcements by Musgrave Minerals Ltd (MGV) entitled 'Lena Mineral Resource more than doubles and gold grade increases' released on 17 February 2020 and 'Break of Day High-Grade Mineral Resource Estimate' released on 11 November 2020 and 'Cue Mineral Resource Increases to 927,000 ounces' released on 31 May 2022 and in the case of estimates of Minerals Resources, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. To the extent disclosed above, 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 announcement.

The information in this report that relates to Mineral Resources for the Hollandaire deposit is an accurate representation of the available data and is based on information compiled by external consultants and Mr Peter van Luyt a competent person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' who is a member of the Australian Institute of Geoscientists (2582). Mr van Luyt is the Chief Geologist of Cyprium Metals Limited. Mr van Luyt has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and the activity which he is undertaking to qualify as a Competent Person (CP). Mr van Luyt consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

2.1.2 Exploration Results

The information in this report that relates to Exploration Results is based on information compiled and/or thoroughly reviewed by Mr Robert Waugh, a Competent Person who is a Fellow of the Australasian Institute of Mining and Metallurgy (AusIMM) and a Member of the Australian Institute of Geoscientists (AIG). Mr Waugh is Managing Director and a full-time employee of Musgrave Minerals Ltd. Mr Waugh has

sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken 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'. Mr Waugh consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

2.1.3 Forward-Looking Statements

This document may contain certain forward-looking statements. Forward-looking statements include, but are not limited to, statements concerning Musgrave Minerals Limited's (Musgrave's) current expectations, estimates and projections about the industry in which Musgrave operates, and beliefs and assumptions regarding Musgrave's future performance. When used in this document, words such as 'anticipate', 'could', 'plan', 'estimate', 'expects', 'seeks', 'intends', 'may', 'potential', 'should', and similar expressions are forward-looking statements. Although Musgrave believes that its expectations reflected in these forward-looking statements are reasonable, such statements are subject to known and unknown risks, uncertainties and other factors, some of which are beyond the control of Musgrave and no assurance can be given that actual results will be consistent with these forward-looking statements.

3 GEOTECHNICAL

3.1 Summary

A geotechnical assessment has been completed on the Stage 1 PFS resources to inform mining assumptions and parameters. The assessment was based on defect mapping of dedicated geotechnical orientated core, hydrology reports, rock strength testing of core samples, visual reviews of historical geological diamond core photos, as well as input from historical reports. Peter O'Bryan and Associates were engaged for the geotechnical studies, and have been involved with the project since 2011.

Geotechnical parameters were subsequently utilised for pit and stope optimisations, to provide suitably stable designs. Overall, the parameters are based on industry standard Factor of Safety (FOS) criteria of 1.3+ for dry conditions and 1.2–1.25 for potential semi-saturated environments.

3.2 Data Collection

The PFS geotechnical recommendations for the six open pits (Break of Day, Lena, White Heat, Big Sky, Numbers and Leviticus) and one underground mine (Break of Day) are based primarily on logging and testing of 15 orientated geotechnical diamond holes (totalling 2,160 m of HQ3 or PQ3 drilling). The holes are distributed across the major deposits: six holes at Break of Day, four at White Heat, three at Lena and two at Big Sky. All holes are located within, or are designed deliberately perpendicular to, the PFS design pit and underground envelopes. All holes were geotechnically logged by Peter O'Bryan and Associates to enable detailed understanding of weathering profiles, Rock Quality Designation (RQD), fracture frequency and defect characteristics.

A selection of core lengths from these dedicated geotechnical holes were also taken for laboratory testing (E-Precision Laboratory in Perth) with 35 sampled for uniaxial compressive strength (UCS), seven for direct shear (DS) properties and six consolidated undrained triaxial testing (Table 3-2, Table 3-3, Table 3-4, respectively). In addition to the direct logging and subset testing of the 15 selected holes, core photos of 57 diamond holes across all resources were reviewed to understand the distribution of weathering profiles, geological domains and defect characteristics.

Table 3-1 details the 15 geotechnical holes. The locations of these 15 holes relative to the Stage 1 PFS open pits and underground mine are shown as traces within Figure 3-1.

Table 3-1: Orientated core geotechnical holes for open pits

Borehole	Easting	Northing	RL	Depth	Inclination (°)	Azimuth (°)	Deposit
11MODD004	582099	6936675	411.2	195	-55	88	Lena
11MODD005	582042	6936540	411.9	196	-55	88	Lena
21MODD015	582175	6936516	413.6	130	-60	270	Lena
21MODD016	581777	6936024	415.3	213	-60	90	Break Of Day
21MODD017	582048	6935864	419.6	225	-60	270	Break Of Day
22MODD031	581886	6936024	416	155.3	-68	85	Break Of Day
22MODD032	581977	6936119	415	105.4	-65	320	Break Of Day
22MODD033	582021	6935996	418	135.4	-65	105	Break Of Day
22MODD034	581943	6935940	417	140.4	-65	215	Break Of Day
22MODD035	581869	6935588	421	60.4	-62	91	White Heat

Borehole	Easting	Northing	RL	Depth	Inclination (°)	Azimuth (°)	Deposit
22MODD036	581813	6935665	419	140.1	-58	180	White Heat
22MODD037	581741	6935605	420	120.2	-56	131	White Heat
22MODD038	581849	6935531	422	140.4	-66	349	White Heat
22MODD039	580888	6932699	431	84.2	-64	95	Big Sky
22MODD040	580982	6932395	430	120.3	-61	265	Big Sky

Table 3-2: Uniaxial compressive strength (UCS) testing results

Sample No.	Borehole	Interval		Test required	Lithology	Result (MPa)	Deposit
		From (m)	To (m)				
04_01	11MODD004	80.9	81.4	UCS		29*	Lena
04_02	11MODD004	142.0	142.2	UCS		23*	Lena
04_03	11MODD004	170.2	170.5	UCS		57*	Lena
04_04	11MODD004	194.0	194.3	UCS		-	Lena
15_01	21MODD015	81.7	82.0	UCS	Amphibolite	43*	Break Of Day
15_02	21MODD015	89.5	89.8	UCS	Amphibolite	16*	Break Of Day
15_03	21MODD015	126.4	126.7	UCS	Amphibolite	11*	Break Of Day
16_01	21MODD016	94.4	94.7	UCS	Amphibolite	22*	Break Of Day
16_02	21MODD016	147.0	147.4	UCS	Amphibolite	29*	Break Of Day
16_03	21MODD016	192.5	192.9	UCS	Amphibolite	34*	Break Of Day
17_01	21MODD017	119.4	119.7	UCS	Mafic	146	Break Of Day
17_02	21MODD017	148.1	148.4	UCS	Mafic	167	Break Of Day
17_03	21MODD017	214.5	214.7	UCS	Mafic	124	Break Of Day
MGV004	22MODD034	62.81	62.99	UCS	MB (PW-F1)	150.66*	Break Of Day
MGV006	22MODD034	98.35	98.55	UCS	MB (PW-F1)	226.39	Break Of Day
MGV018	22MODD033	124.89	125.28	UCS	MBK (SF-F1)	202.39	Break Of Day
MGV019	22MODD032	71.26	71.63	UCS	MB (PD-FO)	126.58*	Break Of Day
MGV022	22MODD031	60.27	60.6	UCS	MBK (PD-FO)	79.01*	Break Of Day
MGV024	22MODD031	100.7	100.91	UCS	MBK (PD-BR)	70.18*	Break Of Day
MGV025	22MODD031	122.05	122.4	UCS	MBK (PD-F2)	123.78	Break Of Day
MGV027	22MODD031	145.49	145.77	UCS	MBK (PD-F3)	110.70*	Break Of Day
MGV012	22MODD036	46.5	46.74	UCS	MB	250.87	White Heat
MGV013	22MODD036	63.7	63.98	UCSE	MB (AY)	281.22	White Heat
MGV015	22MODD036	108.18	108.57	UCS	MB (PW)	215.22	White Heat
MGV031	22MODD039	23.92	24.28	UCS	LS	4.27	Big Sky
MGV032	22MODD039	48.1	48.46	UCS	SPK	1.84	Big Sky
MGV036	22MODD040	15.73	16.04	UCS	SAP	7.13	Big Sky

Sample No.	Borehole	Interval		Test required	Lithology	Result (MPa)	Deposit
		From (m)	To (m)				
MGV037	22MODD040	33	33.19	UCS	SAP	4.63	Big Sky
MGV039	22MODD040	57.45	57.65	UCS	SAP	2.62	Big Sky
MGV041	22MODD040	62.67	63	UCS	SAP	8.30	Big Sky
MGV042	22MODD040	97.33	97.61	UCS	F	150.29	Big Sky
MGV043	22MODD040	104.05	104.39	UCS	SH (LM)	110.92	Big Sky
MGV044	22MODD040	108.1	108.44	UCS	F (-SC)	155.33	Big Sky
MGV045	22MODD040	118.37	118.59	UCS	S	79.82	Big Sky
MGV046	22MODD040	119.43	119.68	UCS	S	75.14	Big Sky

Note: * Defect controlled failure.

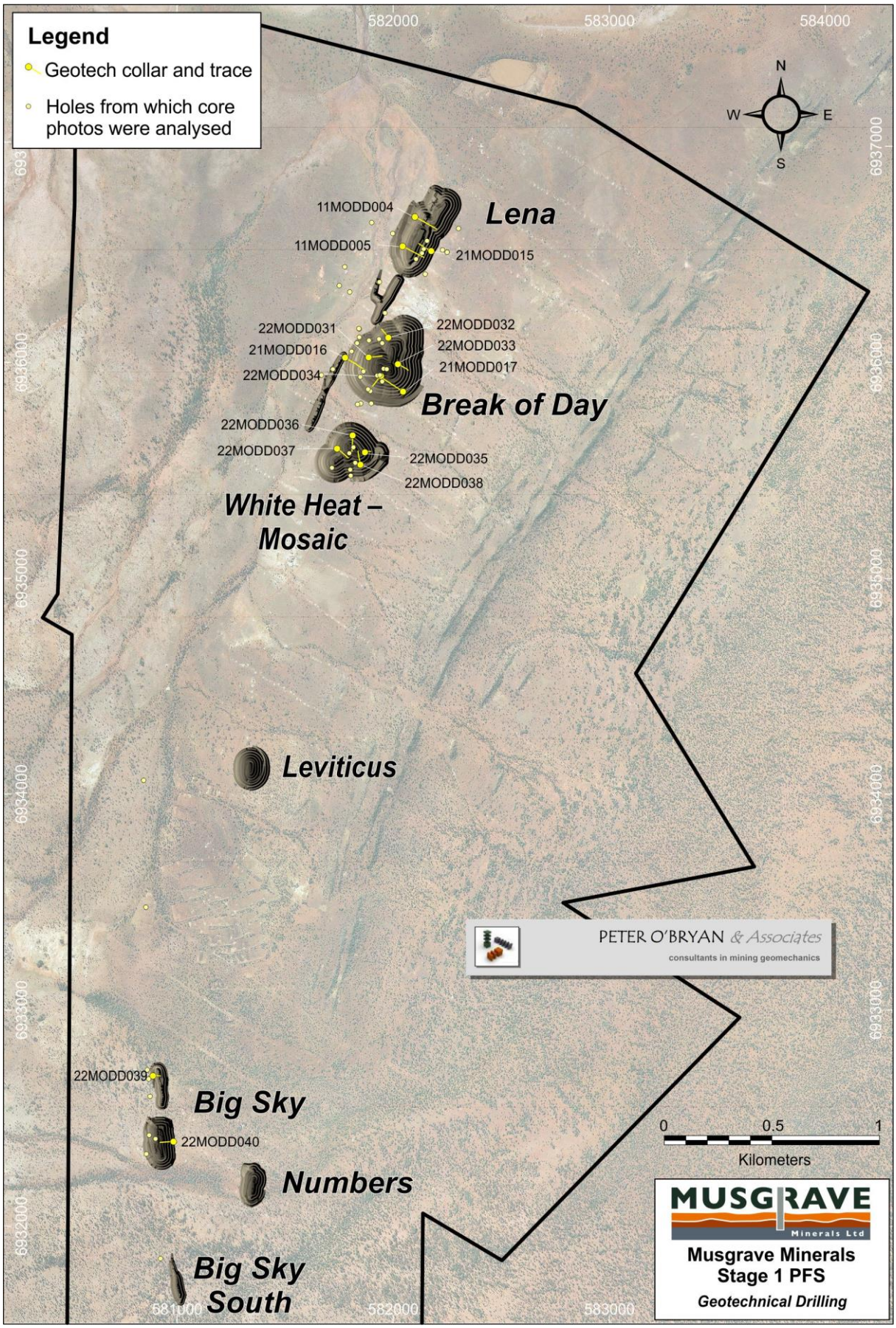
Table 3-3: Direct shear (DS) testing results

Sample No.	Borehole	Interval		Test required	Result Shear Angle (°)		Deposit
		From (m)	To (m)		Peak	Ultimate	
DS1	11MODD004		81	Direct shear	27		Lena
DS2	11MODD004		194	Direct shear	28		Lena
MGV005	22MODD034	157.61	158.06	Direct shear	38.66	35.37	Break Of Day
MGV014	22MODD036	93.72	94.11	Direct shear	33.02	27.92	White Heat
MGV026	22MODD031	130.12	130.47	Direct shear	41.02	36.87	Break Of Day
MGV043	22MODD040	104.05	104.39	Direct shear	28.37	26.10	Big Sky
MGV044	22MODD040	108.10	108.44	Direct shear	35.75	33.42	Big Sky

Table 3-4: Consolidated undrained triaxial testing results

Sample No.	Borehole	Interval		Test required	Results		Deposit
		From (m)	To (m)		C' (kPa)	Φ (°)	
MGV003	22MODD034	6.18	6.40	CU3	207.89	34.35	Break Of Day
MGV011	22MODD036	21.20	21.45	CU3	151.98	30.73	White Heat
MGV030	22MODD039	20.42	20.66	CU3	28.36	25.89	Big Sky
MGV33	22MODD039	53.45	53.65	CU3	22.12	24.42	Big Sky
MGV35	22MODD039	64.95	65.20	CU3	30.86	32.26	Big Sky
MGV040	22MODD039	45.89	46.17	CU3	124.10	30.08	Big Sky

Figure 3-1: Geotechnical hole locations



3.3 Open Pit Geotechnical Outcomes

3.3.1 Setting

The geotechnical studies have recommended parameters for stable open pit wall design for PFS level mine planning. Pit wall recommendations are provided for each of the Stage 1 PFS open pits, with differentiated conditions per oxide state. Recommendations consider the standing groundwater table in the region (10 m to 30 m vertically from the natural surface), with the pit wall angles assuming advanced dewatering/depressurisation.

Rock weathering has occurred to shallow and moderate depths in the project area, with base of complete oxidation (BOCO) typically recorded at 10 m to 40 m below surface, and the top of fresh rock (TOFR) at 50 m to 60 m depth.

3.3.2 Investigations and Findings

The geotechnical assessment of proposed open pit mining at Cue has been based predominantly on observations made during, and data derived by, geotechnical logging of cores from core-oriented diamond boreholes.

Peter O'Bryan and Associates were involved in designing the three phases of geotechnical holes to ensure their locations and depths were optimised for analysis. Several of the 2022 holes were drilled perpendicular, and into the wall host rock, to the proposed pit wall to gauge cross-cutting structures (avoiding toppling and wedge failures) and provide for rock mass properties within the future pit walls.

Rock properties testing for compressive strength, defect shear strength and intact rock density was performed by Curtin University Western Australian School of Mines (WASM) Geomechanics Laboratory Kalgoorlie; and E-Precision Geomechanics Laboratory, Perth under the management of Peter O'Bryan and Associates.

Data from borehole cores and geological interpretations indicate that the dominant structural geological features comprise the following:

- Sub-vertical north-south striking foliation fabric and associated sub-parallel structures.
- Steep east dipping, low persistence structures.
- Flat lying defects.

The structural geological environment is generally favourable for wall stability.

On the basis of assessed rock mass conditions, it is considered that wall stability at Cue above the top of fresh rock will be governed by the combined influences of low strengths of transported cover materials and weathered bedrock and, where present, the orientation and shear strength of relict defects exposed in or located close behind the pit walls.

Wall stability within the fresh rocks will be governed largely by the orientation and shear strength of geological structures (inclusive of relict structures) and to a lesser extent variously by the individual and combined influences of rock strength/rock weathering grade, rock mass quality and groundwater (hydrostatic pressures) in future pit walls.

The presence of groundwater in wall rocks has been noted as potentially exacerbating the numerous failure mechanisms. The low transmissivity of the clays in the upper oxide regions of the open pits will mean that complete dewatering and depressurisation is unlikely, but it is anticipated that a combination of pit dewatering measures and the relaxation of the rock mass following excavation will be effective in depressurising the pit walls. Subsequently, the PFS has allocated cost and timing for outer pit dewatering

bores to pre-emptively lower the hydrostatic level within the open pits zone of influence. A series of sub-horizontal, in pit, depressurisation holes will also be drilled in order to facilitate weeping of the localised wall conditions below the standing water table.

Assessment of the 15 geotechnically logged diamond core holes indicates the rock mass is typically of good quality in the fresh material whilst the initial oxide horizon is generally classified as poor. Table 3-5 summarises the rock mass quality (RMR) across the key open pits.

Table 3-5: Rock mass quality

Q rating	Oxide	Transitional	Fresh
Break of Day	20	36-48	70
White Heat	18	39-46	67
Lena	20	35-50	68
Big Sky	18	39-51	N/A

The recommended base case pit design parameters have been derived on the assumption that the required drained/depressurised wall rock conditions can be achieved.

3.3.3 Pit Wall Design

The recommended PFS pit wall design parameters are shown in Table 3-6.

Table 3-6: Pit wall design parameters

		Oxide	Transitional	Fresh	Deep Fresh
Break of Day	IRA	37°	42°	49°	54°
	OSA	28°–36°	32°–42°	49°–38°	47°–50°
White Heat	IRA	37°	42°	49°	58°
	OSA	28°–36°	35°–42°	41°–44°	50°–50°
Lena	IRA	40°	47°	58°	
	OSA	32°–39°	41°–47°	49°–58°	
Big Sky	IRA	40°	43°		
	OSA	34°–39°	37°–42°	41°–50°	
Leviticus	IRA	40°	43°		
	OSA	33°–36°	38°–41°	42°–49°	
Numbers	IRA	40°	43°		
	OSA	34°–39°	37°–42°	41°–50°	

Note: IRA - Inter Ramp Angle; OSA - Overall Slope Angle

3.4 Underground Geotechnical Outcomes

3.4.1 Setting

Geotechnical studies have provided recommendations on stable void ratios, development ground support requirements and suitable stope standoff distances for the Break of Day underground mine. The recommendations are cognitive of the overlying open pit void and are representative of the underground's current 2–3 year Stage 1 PFS mine life.

The Stage 1 PFS underground design covers a 140 m vertical horizon, with its initial portal established off the adjacent White Heat open pit, 80 m below surface.

3.4.2 Investigations and Findings

Recommendations for indicative underground mine design parameters have been based on information derived from the findings of the open pit investigations (specifically four geotechnical holes) as well as a detailed review of 10 exploratory/resource diamond core holes within the vertical horizon of the underground mine design. A more detailed geotechnical assessment of existing and additional data will be required to review and revise preliminary recommendations for underground access development and production mining during the next study phase.

Details for the 14 holes are given in Table 3-7.

Table 3-7: UG geotechnical drill holes

Borehole	Easting	Northing	RL	Depth	Inclination (°)	Azimuth (°)	Deposit
22MODD031	581886	6936024	415.92	155	-67.88	84	Break Of Day
22MODD032	581977	6936119	415.43	105	-64.27	319.91	Break Of Day
22MODD033	582021	6935996	418.05	135	-65.29	123.42	Break Of Day
22MODD034	581943	6935940	417.7	140	-64.84	216.28	Break Of Day
22MODD015	581851	6935811	418	350	-54.99	39.16	Break Of Day
22MODD017	581862	69335958	416	322	-57.16	59.37	Break Of Day
22MODD018	581808	6936052	415	421	-55.32	71.23	Break Of Day
22MODD019	581833	6936089	414	382	-56.57	72.26	Break Of Day
22MODD020	581843	6936118	414	347	-56.27	736	Break Of Day
22MODD021	581935	6936109	415.03	271	-55.75	2.51.44	Break Of Day
22MODD022	581889	6936103	414.84	280	-57.3	75.55	Break Of Day
22MODD023	581836	6935806	417.99	280	-58.02	32.64	Break Of Day
20MODD006	581849	6935935	416.85	378	-56.84	29.13	Break Of Day
20MODD007	581895	6935871	418.14	275	-60.15	32.72	Break Of Day

Assessment of the 14 diamond core holes indicates the rock mass is typically of good quality, with a consistent host rock mass quality (Q value) averaging 52 across the population. Ore Q values have a corresponding Q1 value of 44. Hydraulic radius values (predicted stable stope dimensions) have used the empirical Modified Stability Graph method with Q1 host rock values.

3.4.3 Underground Design and Development

Using a 1st quartile rating of 44, the hydraulic radius values shown in Table 3-8 were utilised for the underground mine design. Based on the design's sublevel interval of 20 m vertical (floor to floor), unsupported stope strike dimensions of 18 m with 2 m to 3 m in situ pillars have been used. These design dimensions are significantly less than the recommended hydraulic radius, reflecting a conservative approach to this early-stage assessment.

Table 3-8: Hydraulic radius calculations

Area	Equation	Hydraulic radius
Backs	$N_{1st\ q}$ = 44 x 0.7 x 0.3 x 2 = 18.5	≈8 m unsupported (upper range of transition zone) ≈12 m supported
Sidewalls	$N_{1st\ q}$ = 52 x 0.4 x 0.2 x 7 = 29	≈9 m unsupported (upper range of transition zone)

A recommended minimum standoff distance of 40 m from capital development to any production envelope has been incorporated into the design, allowing for stable and long-term mine access.

Assessment of stope slough was undertaken to ensure suitable side wall dilution was incorporated into the mine design and subsequent scheduling. Using empirical methods, the degree of stope instability was assessed in terms of metres of slough or dilution. An allowance for at least 0.3 m dilution on all stope sidewalls was recommended.

The underground portal is designed from the adjacent White Heat open pit. Accessing the underground from this location enables early development of the underground mine, as well as flexibility in drilling the resource at depth. Portal ground support recommendations have been based on generic standards, with further investigation/interpretation required to assess the geology and ground conditions in and around the proposed portal location. However, the location provides for ample flexibility to adjust locations to take advantage of best available ground conditions for portal development.

3.5 Civil Geotechnical Assessment

Baseline soil characterisation work has been completed across the footprint of CGP, with the excavation of 36 subsurface pits to examine and measure subsurface profiles. Various samples were taken for testwork and analysis to understand the physical, chemical and hydraulic properties (including subsidence/erosional) of soils at the site. The work has been critical in understanding the subsurface conditions of CGP as well as rehabilitation conditions for mine closure. Preliminary conclusions include: requirement to stockpile separately where practical 100 mm to 200 mm depth of topsoil, mining should focus on extracting as much as practical of the ferricrete (laterite) hard pan (underlying the topsoil) to preserve for rock armouring and mine closure requirements.

Specific investigations will be required at feasibility study level in key areas of the plant that will be subject to high loads, such as the crusher, ball mill and leach tanks. Consideration will be given to extending those investigations to the site access road route to determine if excavation of weak materials and backfilling with rock, or other geotechnical remediation measures, may be required to ensure that the road can support all construction and operational traffic loads.

4 HYDROGEOLOGY

4.1 Introduction

Both surface water and subsurface groundwater assessments have been completed during the Stage 1 PFS to understand, manage and conserve water resources. Assessments have focused on three significant aspects: water security for the operations, surface water management and water inflows into the mines. Groundwater Resource Management (GRM) has been engaged for the subsurface studies whilst Carrick Consulting has been providing Musgrave with recommendations on surface water management.

Field testwork and detailed surveys have been undertaken at the Cue Gold Project to inform modelling and empirical recommendations.

The CGP lies in the southern region of Lake Austin catchment, in the East Murchison Basin. Therefore, the CGP has a regional groundwater gradient towards the lake feature (Lake Austin), with the majority of the groundwater quality typically saline to hypersaline (up to 150,000 mg/L total dissolved solids (TDS)). Resources further south (such as Big Sky) have deeper groundwater tables, whilst those more proximal to the lake intersect groundwater at approximately 10 m depth. Various historical pastoral and road construction bores are located on or within the CGP tenement area and are indicative of brackish water extraction potential.

There are no major river systems or watercourses within the vicinity of the CGP. However, a localised 6.5 km^2 catchment area is drained by an unnamed creek which runs parallel to the Lena Shear. Peak flow estimates and resultant flood mitigation have been incorporated into the PFS.

4.2 Field Work Completed

Airlift testing programs utilising the results of historical drilling and 19 more recent mineral exploration drill holes recorded water levels during drawdown and recovery. The drill holes reported airlift yields of <0.1 L/s to 8 L/s.

In addition, 11 groundwater monitoring bores were installed during field investigations. The monitoring bores reported airlift yields of <0.1 L/s to 15 L/s with the highest permeability associated with the paleochannel sediments and fractures within the weathered bedrock. The paleochannel sediments are overlain by a calcrete/hardpan sequence near Lake Austin which is saturated and provides some additional permeability. The salinity across all aquifer types is highly variable, ranging from brackish to hypersaline. The depth to the water table ranges from 2.4 m to 15.6 m below surface, and the groundwater flow direction is towards the north.

Figure 4-1 shows the location of the holes. Table 4-1 lists the holes and their associated testwork.

Several rounds of water sampling and water level monitoring have been undertaken, informing a baseline study of pre-mining conditions. Numerous holes distributed throughout the CGP are scheduled for water table monitoring, and annually testing for water quality. The holes are biannually measured and sampled in order to provide a seasonally adjusted understanding of the localised water quality and subsurface recharge.

Figure 4-1: Location of airlift holes

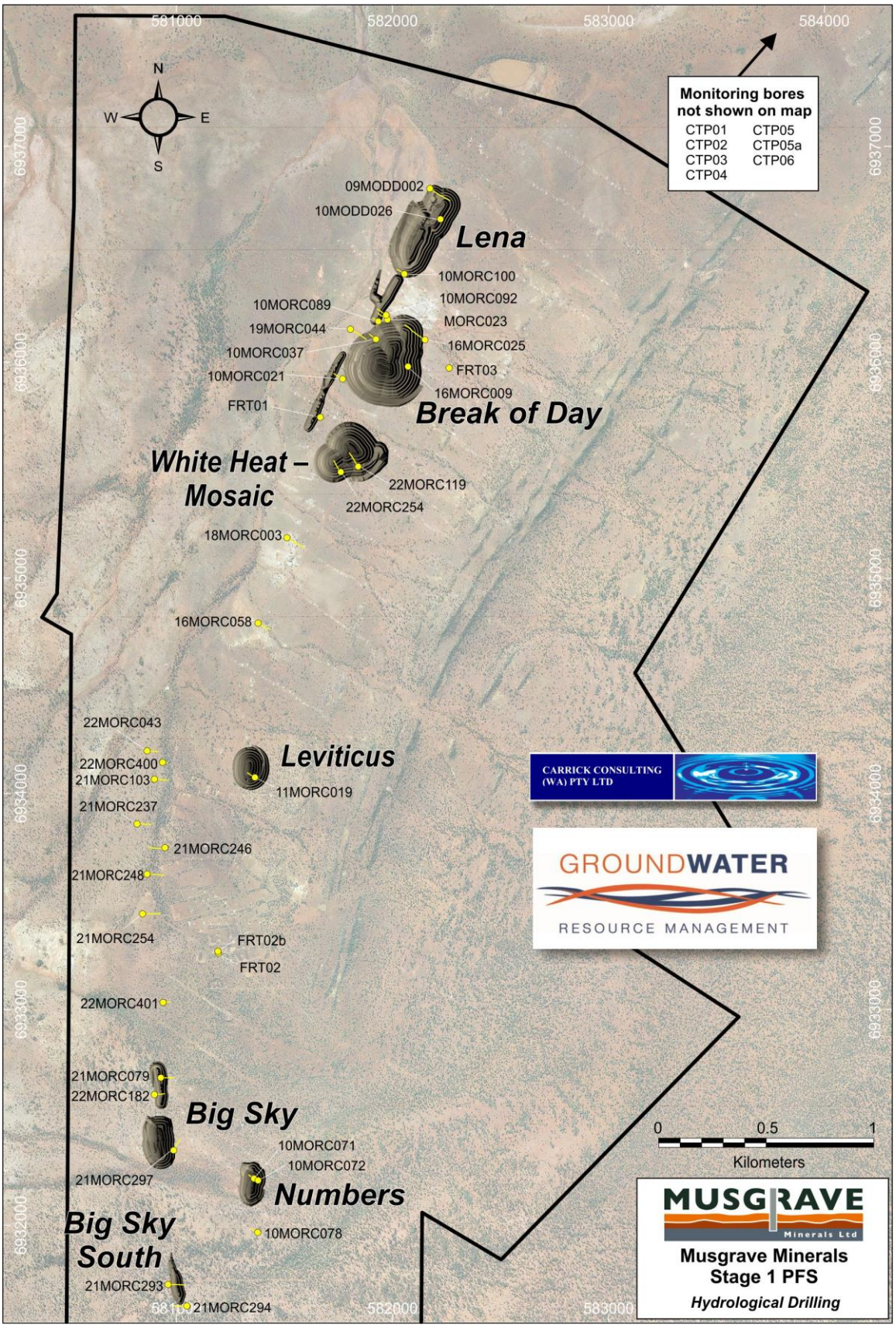


Table 4-1: Airlift holes

Hole ID	Hole Type	Deposit/ Location	Coordinates (MGA94 Z50)		Hole Depth (m)	Azimuth (°)	Hole Dip (°)	Airlift Yield (L/s)	Comment
			Easting (m)	Northing (m)					
MORC023	RC Resource	Lena	581,973	6,936,198	100	305	-60	0.2	Ran out of water after half an hour
19MORC044	RC Resource	Lena	581,802	6,936,154	206	125	-60	0.8	Data shows GHD testing of 10MODD037 needs validation
16MORC025	RC Resource	Break of Day	582,147	6,936,106	246	303	-60	≈ 3	Collar blow-out with very little water making it to surface; most airlifted water connecting through to and filling adjacent sump
16MORC009	RC Resource	Break of Day	582,070	6,935,981	195	297	-60	trace	Ran out of water after half an hour
22MORC119	RC Resource	White Heat	581,839	6,935,517	149	327	-60	1.8	Recovery data OK
22MORC254	RC Resource	White Heat	581,758	6,935,491	124	329	-60	0.6	Recovery data OK
22MORC043	RC Resource	Big Sky 5	580,862	6,934,199	108	97	-62	Blocked	No outside return due to over-pressured clays
21MORC103	RC Resource	Big Sky 5	580,895	6,934,068	125	98	-60	NA	Rods veered off at 24m during re-entry started drilling new hole
21MORC237	RC Resource	Big Sky 5	580,814	6,933,861	134	95	-62	3	Recovery data OK
21MORC246	RC Resource	Big Sky 4	580,944	6,933,750	152	276	-60	4.4	Recovery data OK
21MORC248	RC Resource	Big Sky 4	580,862	6,933,629	152	96	-60	NA	No outside return
21MORC254	RC Resource	Big Sky 4	580,839	6,933,444	170	90	-60	NA	No outside return; ground pressurising
21MORC079	RC Resource	Big Syk 2-3	580,925	6,932,685	119	90	-60	3	Collar could not be sealed properly; some water recirculating back down hole
22MORC182	RC Resource	Big Syk 2-3	580,895	6,932,607	103	90	-65	NA	Rods veered off at 60m during re-entry started drilling new hole
21MORC297	RC Resource	Big Syk 2-3	580,984	6,932,349	119	34	-62	3.9	Tested OK
21MORC293	RC Resource	Big Sky 1	580,959	6,931,727	164	96	-64	NA	Lost outside return at 60m could not re-establish (thick clay sequence)
21MORC294	RC Resource	Big Sky 1	581,046	6,931,626	122	279	-60	NA	Lost outside return at 60m could not re-establish (thick clay sequence)
18MORC003	RC Resource	White Heat	581,509	6,935,188	183	125	-65	0.3	Recovery too slow to capture on logger
16MORC058	RC Resource	White Heat	581,376	6,934,792	113	121	-60	NA	Could not lineup on hole collar in sump
22MORC400	RC Resource	Big Sky 5	580,932	6,934,147	84	93	-80	trace	New RC hole drilled to 84m; Outside return maintained through most of hole on rod changes
22MORC401	RC Resource	Big Sky 4	580,936	6,933,033	96	90	-85	NA	Drilled to 96m good outside return, no water, lifted mud/clay at EoH
CTP01	Monitoring Bore	Lake Austin	584,738	6,938,504	37	—	-90	8	Slotted 50mm PVC casing interval 1 – 37m
CTP02	Monitoring Bore	Lake Austin	584,986	6,938,770	60	—	-90	9.09	Slotted 50mm PVC casing interval 1 – 60m
CTP03	Monitoring Bore	Lake Austin	585,185	6,938,977	102	—	-90	8.6	Slotted 50mm PVC casing interval 1 – 102m

Hole ID	Hole Type	Deposit/ Location	Coordinates (MGA94 Z50)		Hole Depth (m)	Azimuth (°)	Hole Dip (°)	Airlift Yield (L/s)	Comment
			Easting (m)	Northing (m)					
CTP04	Monitoring Bore	Lake Austin	585,400	6,939,192	126	—	-90	10	Slotted 50mm PVC casing interval 1 – 126m
CTP05	Monitoring Bore	Lake Austin	585,661	6,939,391	96	—	-90	11.76	Slotted 50mm PVC casing interval 1 – 96m
CTP05s	Monitoring Bore	Lake Austin	585,661	6,939,391	6	—	-90	1	Slotted 50mm PVC casing interval 1 – 6m
CTP06	Monitoring Bore	Lake Austin	585,952	6,939,477	76	—	-90	7.4	Slotted 50mm PVC casing interval 1 – 76m
FRT01	Monitoring Bore	Break of Day	581,662	6,935,745	75.5	—	-90	10-15	Slotted 50mm PVC casing interval 12–75.5m
FRT02	Monitoring Bore	Big Sky 4	581,191	6,933,262	35	—	-90	<0.1	Slotted 50mm PVC casing interval 14.5–26.5m
FRT02b	Monitoring Bore	Big Sky 4	581,188	6,933,271	66	—	-90	4.33	Slotted 50mm PVC casing interval 12 – 66m
FRT03	Monitoring Bore	Break of Day	582,259	6,935,974	120	—	-90	0.4	Slotted 50mm PVC casing interval 12 – 120m
09MODD002	GHD Tested Hole	Lena	582,170	6,936,806	185.5^	120	-60	2–5	K = 4.7 E-02
10MODD026	GHD Tested Hole	Lena	582,220	6,936,664	173.2^	302	-60	5–10	K = 7.6 E-01
10MORC021	GHD Tested Hole	Break of Day	581,767	6,935,923	86.6^	302	-60	0.5–2	K = 1.3 E-02
10MORC037	GHD Tested Hole	Break of Day	581,921	6,936,108	65.8^	305	-60	5–10	K = 4.8 E-01
10MORC089	GHD Tested Hole	Break of Day	581,931	6,936,220	52^	305	-60	2–5	K = 1.4 E-02
10MORC092	GHD Tested Hole	Break of Day	581,967	6,936,220	79.7^	305	-60	5–10	K = 7.9 E-02 (inconsistent with airlift yield result)
10MORC100	GHD Tested Hole	Break of Day	NA	NA	65.8^	302	-60		K = 2.9 E-03
11MORC019	GHD Tested Hole	Leviticus	581,361	6,934,076	69.3^	302	-60	0.6	K = 5.8 E-03
10MORC071	GHD Tested Hole	Numbers	581,357	6,932,218	52^	302	-60	0.7	K = 1.3 E-01 (inconsistent with airlift yield result)
10MORC072	GHD Tested Hole	Numbers	581,375	6,932,208	65.8^	295	-60	0.2	K = 1.6 E-02 (inconsistent with airlift yield result)
10MORC078	GHD Tested Hole	Numbers	581,374	6,931,967	69.3^	302	-60	0.4	2.0 E-03

Notes:- ^ = Vertical depth of bore; NA = no data

4.3 Water Supply

The project water balance will require a modest low salinity water supply at the start of mining. Investigations for this supply will focus on suitable paleochannel aquifers in the local area and will be factored in as part of future hydrogeological studies.

The analysis conducted to date indicates that the site water demands of 15 L/s to 20 L/s could be met from a combination of pit dewatering activities and bores installed at the preferred locations identified during the PFS.

A conceptual model and groundwater flow model was developed for the project to assess likely drawdown impacts associated with operation of the proposed borefield and mining operations. Combined dewatering efforts from CGP mining will cause a cone of depression in the local groundwater table which will propagate outward over time. A map showing the predicted drawdown extent at the end of the project is provided in Figure 4-2. The map indicates that an elliptical drawdown cone will potentially have developed centering on the BOD mine with the 1 m drawdown contour extending to around 2 km to the east and west, and around 3 km to the north and 4 km to the south. The modelling is considered preliminary and will require revision during Stage 2 PFS.

The existing groundwater licence (GWL 202638) over M21/106 will require an amendment to increase the annual allocation from 475,000 kL/a to 800,000 kL, to include groundwater abstraction from the proposed water supply borefield and additional tenure and allow sufficient contingency.

To enhance future studies, Musgrave has received approval for constructing production bores on the CGP tenements. The license (26D) is issued through the Department of Water and Environmental Regulation (DWER) and is a precursor for drilling and pump testing initial production bores as part of the Stage 2 PFS.

4.4 Subsurface Water Quality

Laboratory sampling of CGP's local groundwater has been completed to understand the baseline conditions of the region. A series of monitoring holes are used to periodically collect samples for analysis. The results indicate that the groundwater is neutral, reporting a pH of 6.8 to 7.4, and highly variable in terms of salinity, with total dissolved solids ranging from 3,500 mg/L TDS (brackish) to 145,000 mg/L TDS (hypersaline). The variability is likely a function of the complexity of the fractured rock environment and the associated recharge mechanisms at shallow depths. However, at depth the regional aquifer will be hypersaline.

The laboratory results are presented in Table 4-2.

Figure 4-2: Predicted drawdown extent at the end of the project

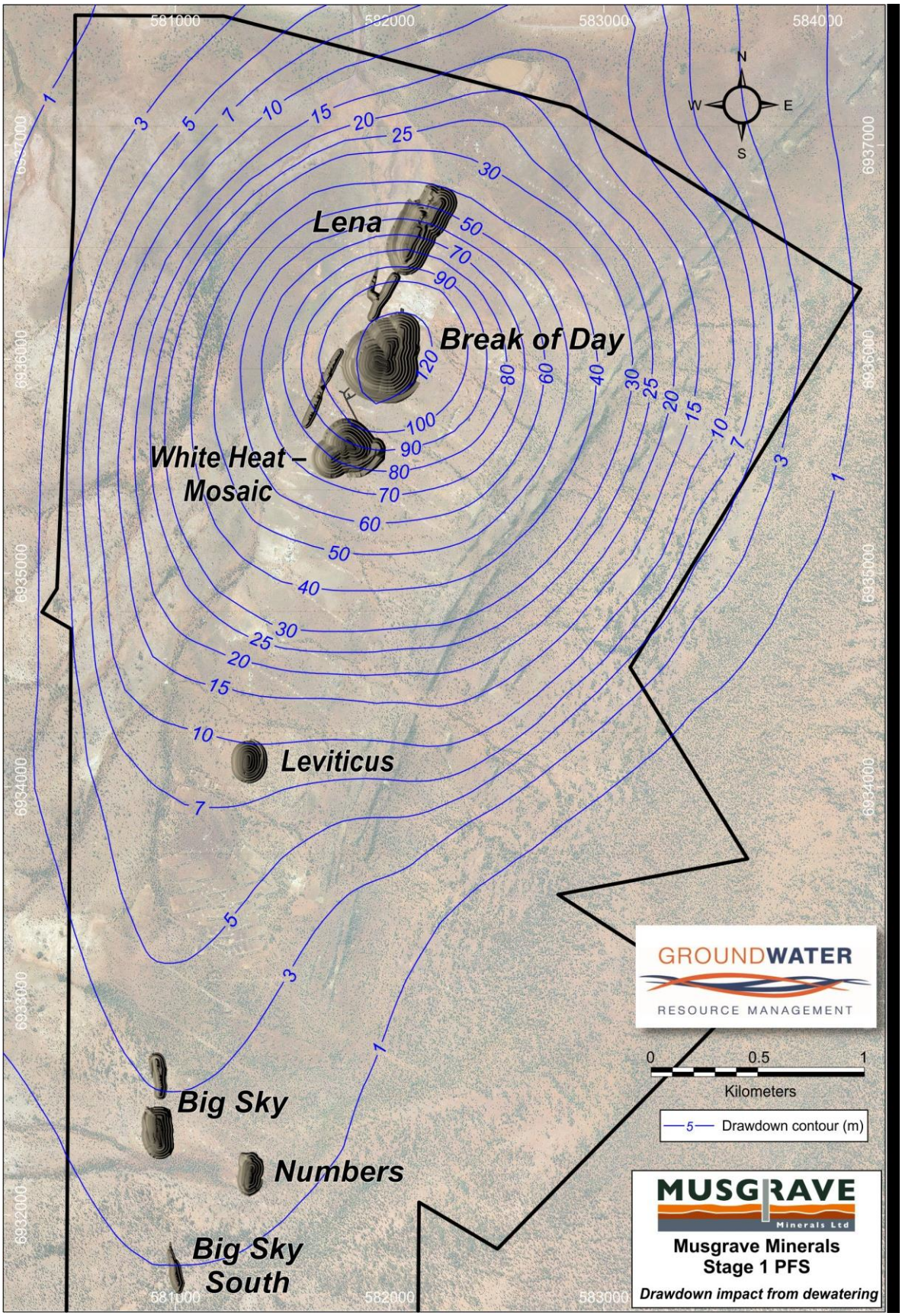


Table 4-2: Subsurface water quality

Analyte	Units	Detection Limit	21 MORC 297 01-Dec-22	21 MORC 079 01-Dec-22	21 MORC 237 01-Dec-22	21 MORC 246 03-Dec-22	18 MORC 003 04-Dec-22	22 MORC 254 05-Dec-22	22 MORC 119 05-Dec-22	21 MOWB 008 06-Dec-22	21 MOWB 010 07-Dec-22	21 MOWB 006 08-Dec-22
pH	pH units	TBC	TBC	TBC	TBC	TBC	TBC	TBC	TBC	TBC	TBC	TBC
Conductivity @ 25°C	µS/cm	2	180,000	120,000	190,000	220,000	180,000	140,000	140,000	27,000	890	83,000
Total Dissolved Solids Dried at 175-185°C	mg/L	10	150,000	85,000	170,000	220,000	150,000	110,000	110,000	16,000	630	61,000
Bicarbonate Alkalinity as HCO_3	mg/L	5	99	160	35	34	150	150	150	180	35	130
Carbonate Alkalinity as CO_3	mg/L	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Total Alkalinity as $CaCO_3$	mg/L	5	81	130	29	28	120	130	120	140	29	110
Sulfate, SO4	mg/L	1	11,000	5,800	12,000	15,000	11,000	8,700	7,900	1,700	96	4,600
Chloride, Cl	mg/L	1	87,000	50,000	92,000	130,000	84,000	62,000	64,000	9,300	170	37,000
Calcium, Ca	mg/L	0	650	520	960	850	960	830	820	290	25	520
Magnesium, Mg	mg/L	0	3,200	2,100	3,300	4,600	3,000	2,500	2,400	290	14	1,000
Sodium, Na	mg/L	1	51,000	27,000	52,000	72,000	52,000	36,000	37,000	5,800	110	20,000
Potassium, K	mg/L	0	1,200	670	1,200	1,700	950	680	680	120	11	530
Silicon, Si	mg/L	0	7	10	6	4	4	9	9	33	44	13
Aluminium	µg/L	5	<500	<250	<500	<500	<500	<250	<250	<50	14	<250
Iron	µg/L	5	1,900	<250	<500	1,700	<500	790	250	<50	7	69,000
Manganese	µg/L	1	2,500	2,000	2,800	2,200	1,400	980	430	62	1	4,900
Antimony	µg/L	1	<100	<50	<100	<100	<100	<50	<50	<10	<1	<50
Arsenic	µg/L	1	<100	<50	<100	<100	<100	<50	<50	<10	1	<50
Cadmium	µg/L	0	<10	<5	<10	<10	<10	<5	<5	<1	<0.1	<5
Cobalt	µg/L	1	<100	<50	<100	<100	<100	<50	<50	<10	<1	<50
Nickel	µg/L	1	100	<50	<100	<100	<100	<50	<50	11	<1	<50
Lead	µg/L	1	<100	<50	<100	<100	<100	<50	<50	<10	<1	<50
Selenium	µg/L	1	<100	<50	<100	<100	<100	<50	<50	13	<1	<50
Zinc	µg/L	5	<500	<250	<500	<500	<500	<250	<250	<50	<5	<250
Nitrite Nitrogen, NO_2 as N	mg/L	0	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0
Ammonia Nitrogen, NH_3 as N	mg/L	0	0	0	0	0	0	0	0	<0.05	0	0
Ammonia, NH_3	mg/L	0	0	0	0	0	0	0	0	0	0	0

4.5 Surface Water

Site infrastructure and mine landform structures have been designed to accommodate surface water requirements and minimise the risk of localised flooding. This has involved understanding the various layout options and assessing the local hydro-meteorological conditions. A site-wide drone survey of the natural topography, along with several years of post-rainfall observation and recording, has enabled Musgrave to undertake a detailed study of local hydro-meteorological conditions resulting in measures that are tailored to the site. Musgrave has engaged Carrick Consulting to undertake the surface water components of the Stage 1 PFS.

Peak flow estimates and Annual Exceedance Probabilities (AEP) have been determined at various annual Recurrence Intervals (ARI) over the current Stage 1 PFS five year term. A majority of CGP's surface water design criteria and in-pit runoff data is based on a 1% or 5% AEP.

There are no major river systems or watercourses within the vicinity of the Cue Gold Project. The regional Lake Austin provides a natural drainage contour away from the project area. The small catchment area that does exist upstream of CGP is limited in extent to approximately 6.5 km^2 and is drained to the north via a minor unnamed ephemeral creek (referred to as Central Creek in this document). Peak flow estimates for Central Creek range from about 7 m^3/s to 26 m^3/s for the 10% and 1% annual exceedance probability (AEP) events, respectively. The surface water management measures required to ameliorate the flood risk posed by Central Creek include the construction of flood protection bunding and channels.

Surface water management measures have also been designed to divert runoff from non-impacted upstream areas around the various project facilities. Minor diversion drains and bunds have been designed to preferentially divert the clean water runoff away from the mining facilities. Sedimentation ponds will be constructed in areas of the project site where water runoff erosion is likely. A series of road culverts have been designed along the main site access road to ensure any upstream water is diverted away from the infrastructure and northwards to Lake Austin.

Preliminary assessments of inundation elevations have been completed to understand the risk of flooding from Lake Austin to the operation and the potential management plans to alleviate risk. The lakebed has a nominal surface elevation of 408 mRL within the general facility. A majority of the CGP infrastructure facilities are located on high ground with the processing plant at 425 mRL and mine yard facilities at 420 mRL. The underground portal in the White Heat open pit, to access the Break of Day underground, is positioned 22.5 m above the pit floor (76,000 m^3 storage capacity) with significant bunding around the pit to alleviate inundation risk in the event of a 100-year flood event.

4.6 Mine Dewatering

Airlift testing results were used to inform the 3D numerical groundwater flow model which is used to estimate water inflows into the various mines as their depth and geometry increase. Based on the PFS mining schedule, the 3D groundwater model predicted the following dewatering rates, shown in Table 4-3.

It should be noted that these dewatering rates assume no ex-pit bores are installed and operated to assist with the mine dewatering.

Table 4-3: Predicted dewatering rates

	Low (initial) Inflows (L/s)	High (end of mine life) Inflows (L/s)
Break of Day Open Pit	5.5	21.8
White Heat Open Pit	4.7	14.7
Lena Open Pit	2.4	19.3
Big Sky Open Pit	1.8	5.8
Leviticus Open Pit	1.9	7.6
Numbers Open Pit	0.8	2.2
Break of Day Underground	20	25

Groundwater inflows to the pits and underground mine are likely to be higher in the weathered material than in the underlying fresh bedrock. However, significant water-bearing structures can be intersected in the fresh rock. It is expected that as mining commences there will be an initial higher inflow of groundwater with a steady tapering of inflows as the pits progress. Therefore, establishment of pre-production water bores will be required to facilitate effective mining. These bores will be planned on the outer edge of the pit crest and target the structures with the highest permeability. It is anticipated that these bores will be commissioned several months prior to the commencement of mining to allow for sufficient drawdown. During the mining phase (and additional to the pre-production bores), control measures will include in-pit sumps and bores, surface diversion bunds and a series of depressurisation holes from pits into walls.

A numerical groundwater model was developed for CGP to estimate the life of mine (LOM) dewatering rates required to maintain dry conditions for all of the pits including the BOD open pit and underground developments. The model is also used to predict the impacts on the local groundwater system from the combined mine dewatering.

The model was built using a combination of Groundwater Vistas and MODFLOW (3D finite-difference groundwater modelling software). The model contains a series of layers that describe the various oxide, aquifer and hydrological subsurface features, with each mine schedule month representing a 'stress period' within the model for predictive outputs. The groundwater model constructed has an active area of 529 km^2. The risk of environmental impact to other groundwater users, the groundwater environment and Groundwater Dependent Ecosystems (GDE) because of pit dewatering is considered low.

Additional hydrogeological investigation will be undertaken along the Lena Shear and local fault systems to confirm permeabilities to a feasibility level of confidence. This would include drilling installation and test pumping of groundwater production bores. Any installed production bores could be used as advanced dewatering/water supply bores ahead of mining.

5 MINING

5.1 Summary

The Stage 1 PFS mine plan is based on extraction of ore via six open pits and a single underground mine. The PFS focuses on mining and processing of the Indicated Resource category, though Inferred Resource material mined as the individual mines progress is also accounted for. Less than 2% of recovered ounces are currently classified as Inferred during the payback period. Stage 1 PFS has a total of 81 koz Inferred mined within the total gold mined of 345 koz (as illustrated in Table 5-1). Stage 1 PFS does not have an accompanying Reserve Statement. This will be provided as the studies advance further.

Table 5-1: CGP mine plan summary

	Indicated Ore			Inferred Ore			Total Ore			Waste (bcm or t)
	Tonnes	Grade	Ounces	Tonnes	Grade	Ounces	Tonnes	Grade	Ounces	
Break of Day OP	526,838	7.9	133,458	140,830	3.5	15,870	667,668	7.0	149,328	6,193,459 bcm
White Heat OP	146,585	10.9	51,298	51,298	4.2	6,926	197,867	9.2	58,224	1,999,258 bcm
Lena OP	682,190	1.7	37,858	41,213	1.4	1,843	723,403	1.7	39,702	3,045,713 bcm
Big Sky OP	119,843	1.8	6,974	92,957	1.6	4,694	212,800	1.7	11,668	996,396 bcm
Leviticus OP	-	-	-	40,878	4.0	5,205	40,878	4.0	5,206	668,422 bcm
Numbers OP	95,806	1.5	4,739	25,933	1.2	988	121,739	1.5	5,727	284,723 bcm
Break of Day UG	151,635	6.2	30,077	332,777	4.2	45,177	484,412	4.8	75,197	354,725 t
TOTAL	**1,722,898**	**4.8**	**264,404**	**725,869**	**3.5**	**80,644**	**2,448,767**	**4.4**	**345,051**	**13,187,970 bcm 354,725 t**

Note: *small errors may result in the direct addition of the parts due to rounding

Entech was engaged by Musgrave to undertake the optimisation, design, contractor costing and scheduling works associated with the Stage 1 PFS mining components.

Conventional mining methods and equipment have been utilised in the study, with adherence to standard Western Australian work conditions and requirements. Open pit mining has been costed and scheduled for a standard 120 t excavator with 90 t trucks. In ore systems with narrow widths, and or where pits are reaching their lower levels, alternative 40 t trucks are utilised for minimising ramp width, waste and wall angle projections. The underground mining method is conventional sub-level open stoping, utilising standard Western Australian fleet.

Open pit mining at Break of Day and White Heat are scheduled initially to maximise gold extraction, with progressive pits at Big Sky and Lena commencing as the schedule requires. Various practical schedule constraints are placed on the life of mine (LOM) including maximum benches per month and maximum bank cubic metres (bcm) per month. Mining at Leviticus open pit is prioritised in the initial 24 months of operations to facilitate in-pit tailings disposal in later years of the LOM. Geotechnical conditions were incorporated into the optimisations and subsequent designs.

Underground mining at Break of Day commences from establishing a portal at White Heat open pit, with the decline projecting to the adjacent ore system of Break of Day. A portal is established at White Heat due to the timing availability of this location compared to Break of Day. Geotechnical conditions were incorporated into the optimisations and subsequent designs.

Mine optimisations, modifying parameters, designs, schedules, and costs have been worked in combination with Entech and Musgrave. A recent (Q1CY23) Request for Quotation (RFQ) has informed the open pit and underground costs.

A surface/underground trade-off exercise was completed to determine the optimum surface underground trade-off point.

5.2 Open Pit Mining

Open pit mining methods are used to extract the near-surface gold resources at CGP. The mining method utilises conventional 120 t excavators with mobile 90 t trucking fleet and associate service vehicles. Drill and blast operations will be required from commencement, with an assumption of blasting requirements in the initial oxide layers and laterite (hardpan) capping. Once a pit has developed into the transitional to fresh horizon, prudent smooth wall blasting practises have been assumed and costed. Where ore widths are narrow and/or where the pit has reached its lower limits, pit design configurations change from a wide ramp configuration (90 t) to that of a more discrete 40 t configuration. The satellite pits of Numbers and Leviticus are all designed on 40 t fleet configurations. In the larger open pits, twin lane ramps (for trucking efficiency) have been designed to capture 40–50% of the total hauled inventory.

5.2.1 Open Pit Optimisations

Open pit optimisations were undertaken on all six deposits to understand the economic envelope. Optimisations were based on a conservative A$2,500/oz gold price, and in areas where the optimum shell chased outlining grades or small discrete inferred resource blocks, these were further investigated and excluded from of the final design.

Optimisation inputs are displayed in Table 5-2.

Table 5-2: Economic inputs - optimisations

Item	Value (A$)	Comment
Gold price	A$ 2,500/oz	Equivalent to $ 80.4/gram
Private royalties	$2.5/oz & 1.575% NSR	Molopo and Franco Nevada
WA State Royalty	2.5% NSR	
Metallurgical recovery	93–98.8%	Varied based on deposit and oxide state
Surface haulage	$1.5–$1.8/t Ore	Varied based on moisture content and haulage distance
Grade control	$2.9-6.3/t Ore	Varied based on existing drilling density vs grade controlled
Processing	$39.6–$42.3/t Ore	Oxide state varied
Rock breaking	$0.5–$1.0/t Ore	Oxide state varied
G&A	$10.2/t Ore	Cost profile supports mining operations
Ore mining delta	$0.6–$1.4/t Ore	Difference between waste and ore mining

Cut-off grade calculations were based on the above economic inputs and varied according to oxide state and deposit specific inputs. A summary of the cut-off grades (COG) is shown in Table 5-3.

Table 5-3: Cut-off calculations

	Operating Cost used for COG calculations			
Open Pit	Oxide	Transitional	Fresh	COG (g/t)
Break of Day OP	$58.8	$60.4	$60.9	0.8–0.9
White Heat OP	$58.6	$60.2	$60.7	0.8–0.9
Lena OP	$55.2	$58.5	$60.0	0.8–0.9
Big Sky OP	$56.7	$58.9	$60.8	0.8–0.9
Leviticus OP	$55.2	$56.8	$58.6	0.8–0.9
Numbers OP	$56.4	$57.9	$59.4	0.8–0.9

5.2.2 Open Pit Dilution and Ore Loss

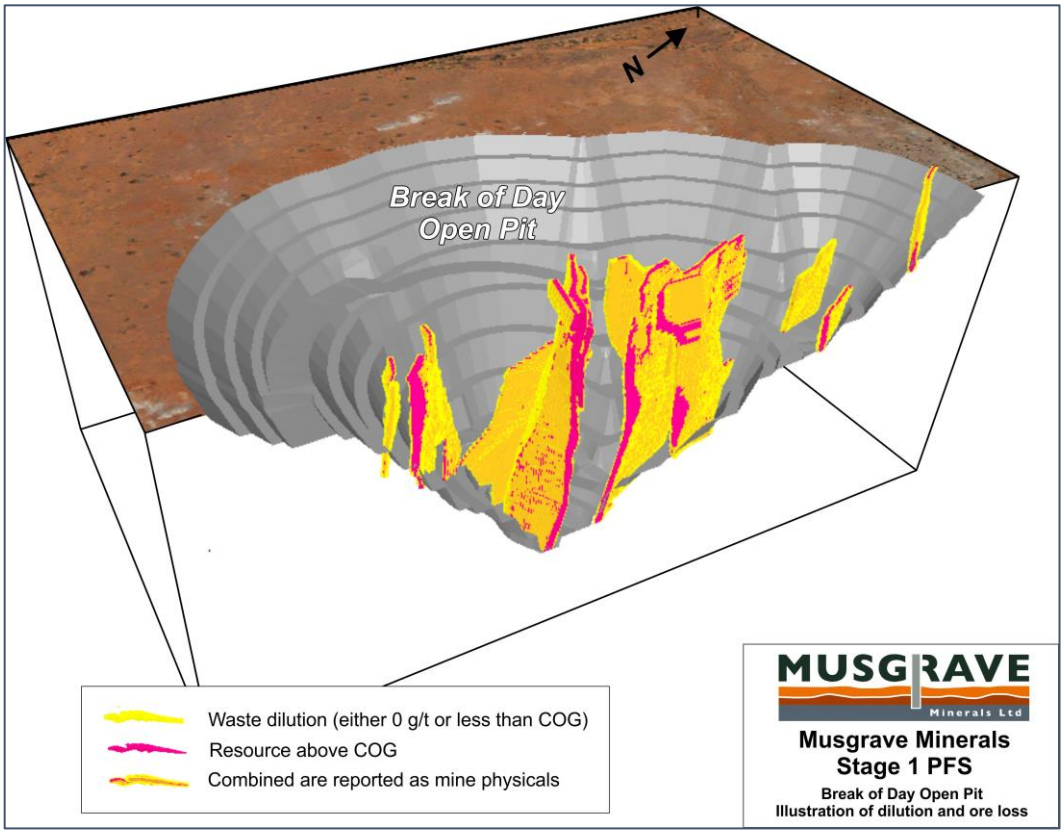
Accounting for an appropriate level of mining dilution and ore loss is critical to the accuracy of the financial analysis of the project. Musgrave created executable dig blocks to adequately account for the critical mining modification factors. Dig blocks are polygons that describe the excavator ore dig zones that account for minimum mining widths as well as projecting a continuous and practical footwall/hangingwall plane. All dig blocks had a minimum width of 2 m (irrespective of the ore dimensions) and were expanded beyond the initial design to account for drill and blast dilution and general mining execution aspects. Dig blocks were expanded to either 0.25 m or 0.5 m on the footwall, hangingwall and strike end sides (equating to either 0.5 m or 1.0 m additional waste skin). In flitches where adjacent dig blocks make it impractical to excavate separately, these two blocks were joined and resulted in additional planned dilution. Continuous dig blocks were designed based on resource model zones above the cut-off grade, and in locations where larger zones of waste or low grade mineralisation existed, blocks excluded these areas. An illustration of the dig block process is shown in Figure 5-1. Musgrave believes this level of rigor is required to adequately account for planned and unplanned dilution activities in order to adequately predict the executable result.

Table 5-4 illustrates the levels of dilution and ore loss incorporated into the mine plan from the initial resource inventory. As an example of the process, Break of Day dig blocking has converted 384 kt's at 12.2g/t for 150.0 koz of the Mineral Resource Estimate into a mine plan of 668 kt's @ 7.02g/t for 149.3koz. This equates to 284 kt's (or 74%) of dilution (at zero grade) added to the Mineral Resource to accommodate mining parameters. Additionally, the amount of ore loss (metal loss) is the variation between 150.0koz and 149.3koz. A comparatively low loss percentage due to the deposits high inherent grade and sharp edges to the mineralised zones (only minor low-grade halo), enhancing extraction economics.

Table 5-4: Mine Design compared to Resource (at Mining COG and Resource cut)

	Mine Design			Resource within Design (above COG)			Resource within Design (above MRE cut)		
	Tonnes	Grade	Ounces	Tonnes	Grade	Ounces	Tonnes	Grade	Ounces
Break of Day OP	667,668	7.0	149,328	383,767	12.2	150,038	395,535	11.8	150,289
White Heat OP	197,867	9.2	58,224	137,274	13.2	58,339	137,278	13.2	58,339
Lena OP	723,403	1.7	39,702	627,643	2.0	40,970	745,948	1.8	43,760
Big Sky OP	212,800	1.7	11,669	165,642	2.3	12,243	179,587	2.2	12,533
Leviticus OP	40,878	4.0	5,205	27,631	5.9	5,215	27,631	5.9	5,215
Numbers OP	121,739	1.5	5,727	98,931	1.9	6,079	166,537	1.4	7,420
TOTAL	**1,964,355**	**4.3**	**269,854**	**1,440,888**	**5.9**	**272,885**	**2,053,981**	**5.9**	**389,267**

Figure 5-1: Dig block process



5.2.2.1 Open Pit Designs

Pit designs were created based on the guiding A$2,500 optimisation shells, honouring the geotechnical batter and berm configurations, as well as adhering to mining fleet specifications.

Ramp configurations are described in Table 5-5. Ramp designs have considered ramp surface exit points for economic waste disposal considerations, as well as general site layout conditions (topography and neighbouring infrastructure). Large open pits have been designed with three stages of ramp widths. The upper 50% of total movement is accessed via 90 t twin lane ramp systems, with the underlying benches having 90 t single lane ramps. The lower 5% to 10% of total pit movement is often serviced by a single lane 40 t ramp configuration.

Waste dump designs have honoured the geotechnical recommendations for stable operational slopes, as well as final rehabilitation angles. All waste dumps have been designed outside the DMIRS recommended zone of instability.

Table 5-5: Pit ramp configurations

	40 t (Equivalent HM400)	90 t (Equivalent Cat 777G)
Single Lane	9.2 m	12.3 m
Dual Lane	13.5 m	21.3 m

Individual pit physicals and their corresponding specifications/parameters are displayed in Table 5-6. Pit views are shown in Figure 5-2 to Figure 5-5.

Table 5-6: Pit physicals and parameters

	Unit	Break of Day OP	White Heat OP	Lena OP	Big Sky OP	Leviticus OP	Numbers OP
PHYSICALS							
Total Ore Tonnes	t	667,668	197,867	723,403	212,800	40,878	121,739
Total Ore Grade	g/t	7.0	9.2	1.7	1.7	4.0	1.5
Total Ore Ounces	oz	149,328	58,224	39,702	11,668	5,206	5,727
Total Waste	bcm	6,193,459	1,999,258	3,045,713	996,396	668,422	284,723
Total Ore	bcm	250,546	77,233	324,819	101,294	20,391	63,465
Total Movement	bcm	6,444,005	2,076,491	3,370,531	1,097,690	688,813	348,188
Strip Ratio	w:o	24.7	25.9	9.4	9.8	32.8	4.5
Max Pit Depth	m	160	100	87 Main Pit	54 Main Pit	62.5	42.5
Pit Crest Strike Length	m	450	300	460 Main Pit	250 Main Pit	200	205
PARAMETER							
Ramp Specifics							
Twin Lane 90 t (21.3m)		to 45mD representing 54% of pit bcm	to 25mD representing 59% of pit bcm	to 30mD representing 67% of pit bcm	to mD representing 0% of pit bcm	to mD representing 0% of pit bcm	to mD representing 0% of pit bcm
Single Lane 90 t (12.3m)		to 100mD representing 41% of pit bcm	to 80mD representing 40% of pit bcm	to 60mD representing 27% of pit bcm	to md representing 0% of pit bcm	to mD representing 0% of pit bcm	to md representing 0% of pit bcm
Single Lane 40 t (9.2m)		to 155mD representing 5% of pit bcm	to 100md representing 1% of pit bcm	to 85mD representing 6% of pit bcm	to 55mD representing 100% of pit bcm	to 62.5mD representing 100% of pit bcm	to 42.5mD representing 100% of pit bcm
Geotechnical OSA							
North		37.2	45.1	44.2	37.9	37.8	27.9
West		44.3	41.6	38.6	37.5	38.3	43.1
South		44.6	42.3	41.2	38.4	34.8	31.5
East		47.4	35.2	44.6	34.4	36.3	34.8

Figure 5-2: Break of Day oblique pit view

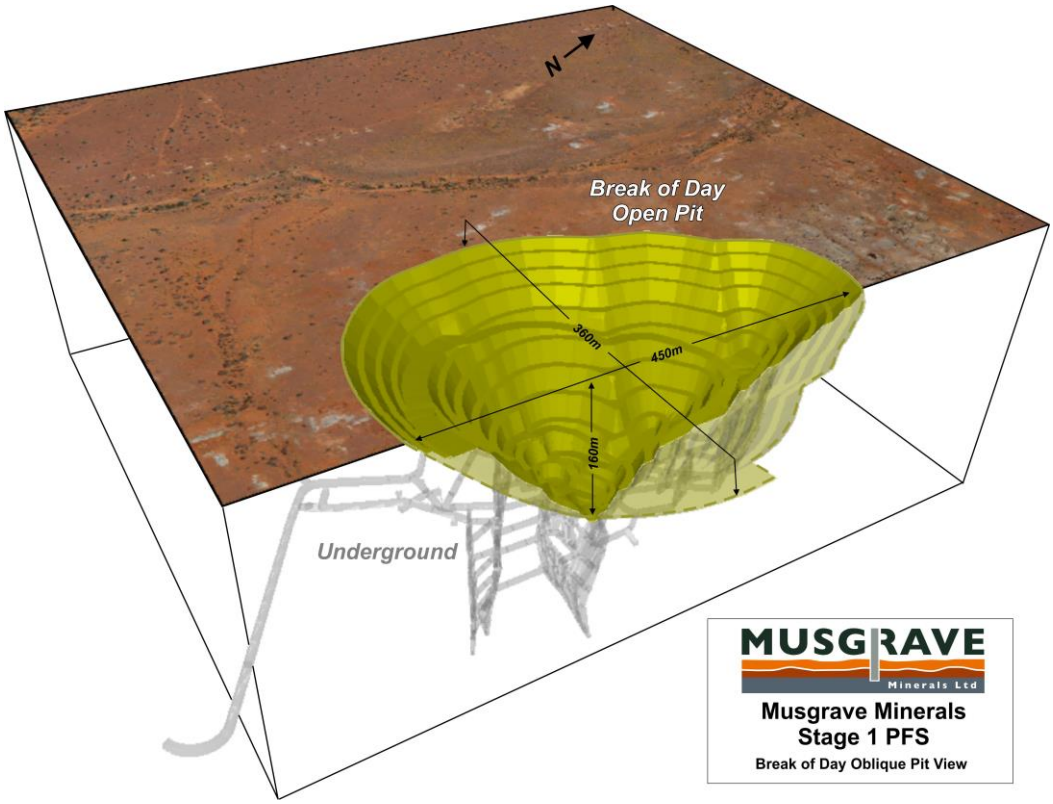


Figure 5-3: White Heat oblique pit view

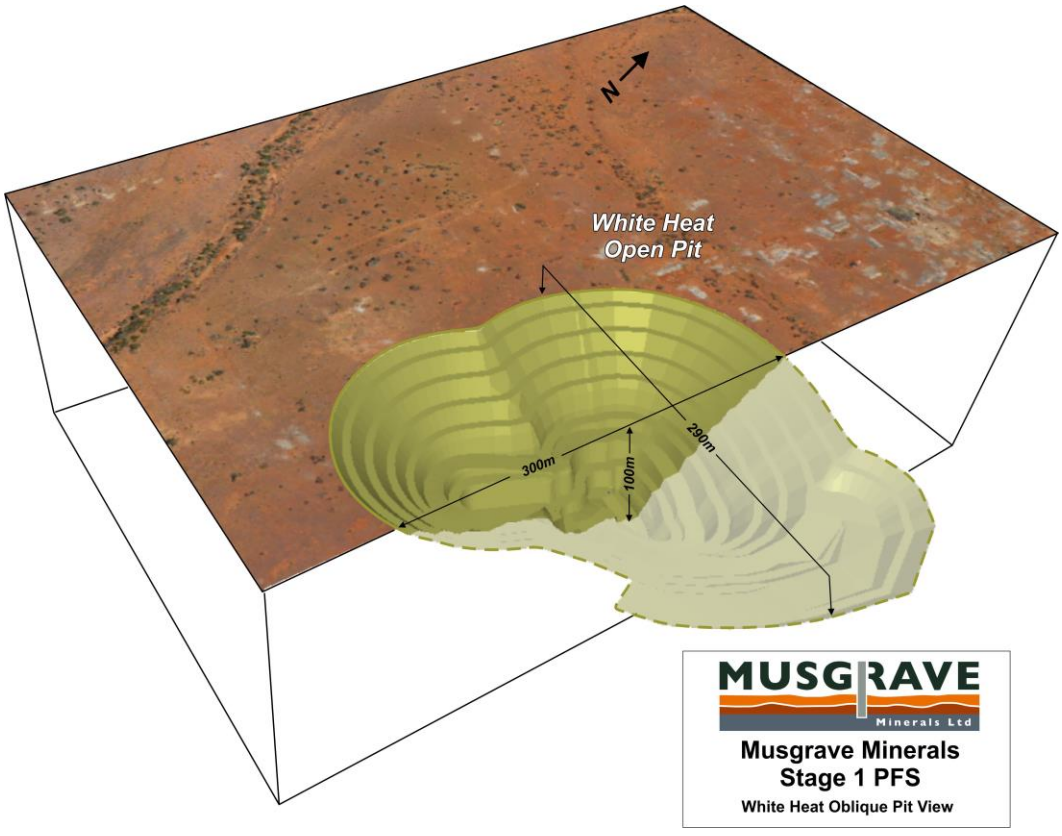


Figure 5-4: Lena oblique pit view

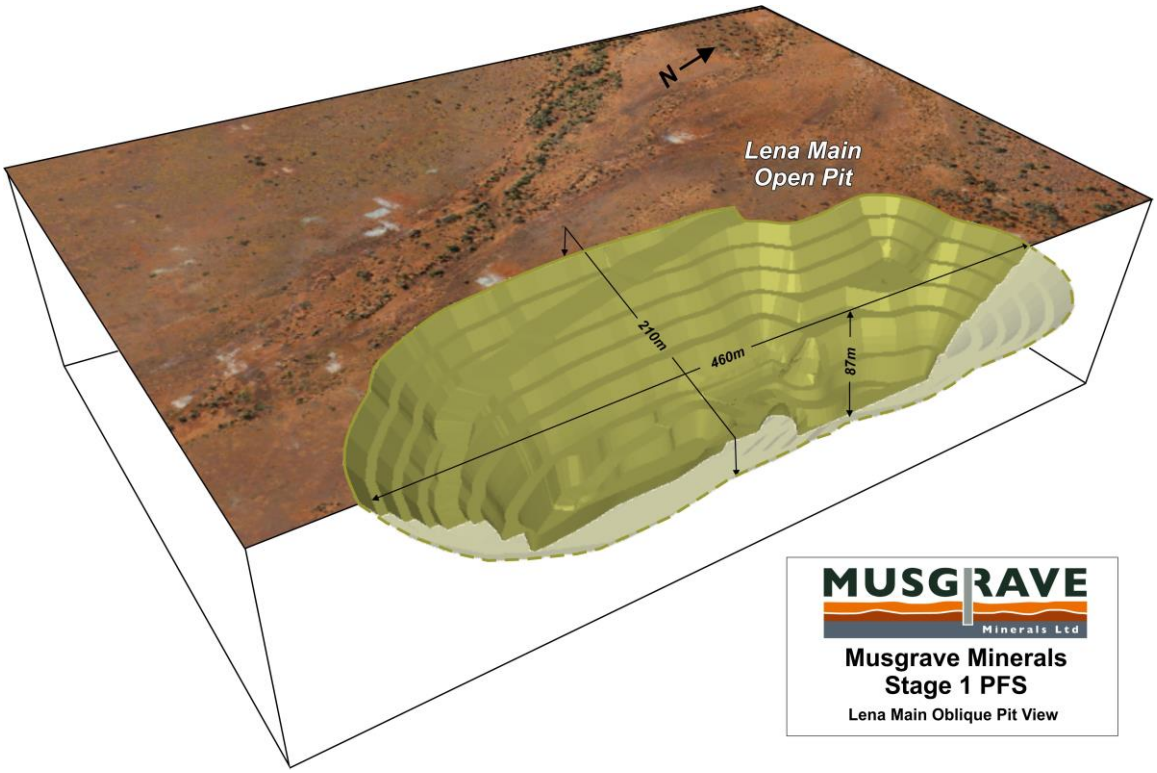
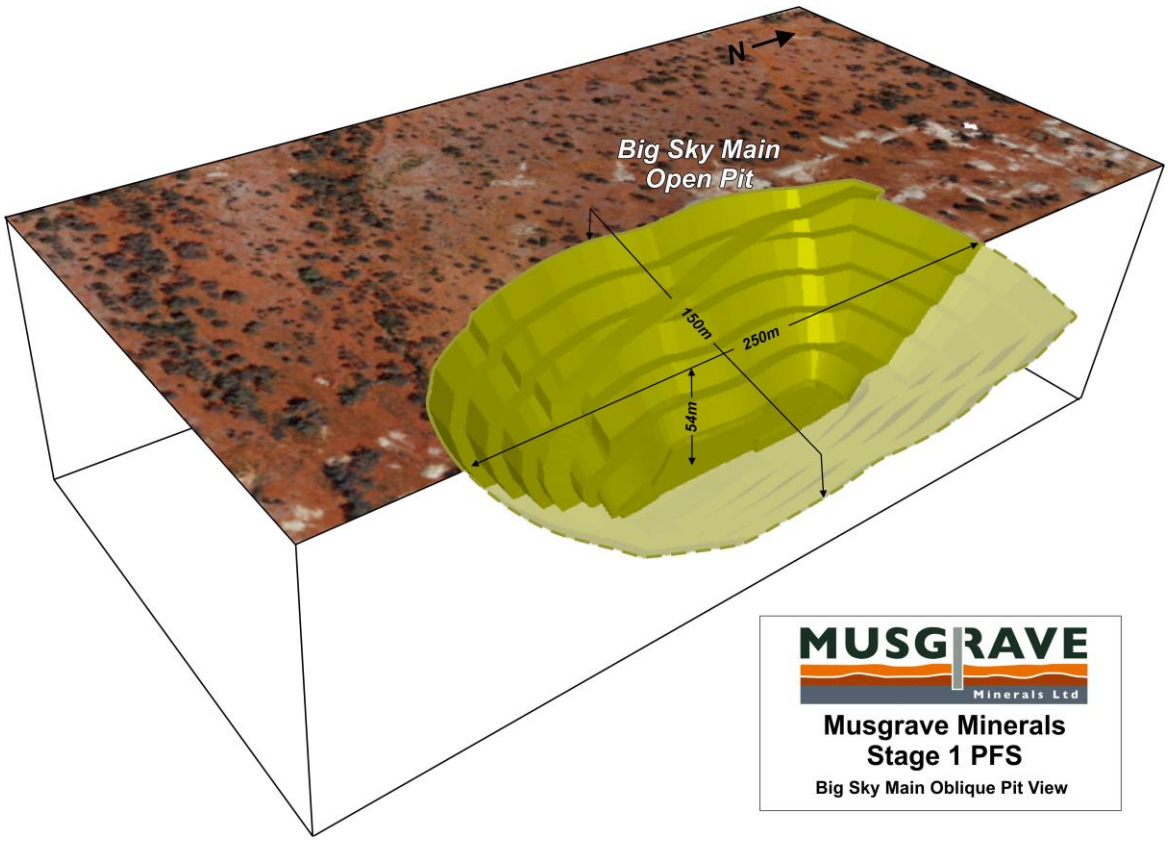


Figure 5-5: Big Sky oblique pit view



5.3 Underground Mining

Stage 1 PFS includes a single underground mine at Break of Day. The mine extracts a portion of the resource underlying the Break of Day open pit. Conventional longhole open stoping with rib pillars and drive development methods have been scheduled. Mining extraction is based on a top-down approach, with significant in situ waste pillars between the various high grade ore zones. Ventilation and dewatering plans have been accounted for within the design, schedule and costing.

Portal access to the mine is designed from the adjacent White Heat open pit. The placement of the portal in White Heat allows for early access to the underground resource (for development and exposure of the ore system) whilst BOD open pit remains active for in-pit mining and inaccessible for underground personnel and fleet. Various peripheral stopes are mined whilst BOD open pit advances through its lower benches. The establishment of this southern portal allows for early-stage resource and grade control drilling from the decline platforms, a program for which would be difficult in a conventional portal access method. The White Heat access requires a 580 m long decline drive to be mined which is costed within the access design (Figure 5-6).

5.3.1 Stope Optimisations

Stope optimisation software was run on the pit depleted resource to calculate the economic inventory within the underground environment. The software produced stopes beyond the lower horizons of the current PFS, though these were based on Inferred only resource and not incorporated in the Stage 1 PFS. Further drilling of this resource and more detailed studies will provide updates on the mine's vertical limits and strike extensions which will be detailed in later studies. Stope optimisations were run on the economic inputs and operating costs listed in Table 5-7 and Table 5-8.

Table 5-7: Economic inputs – stope optimisations

Item	Value	Comment
Gold price	A$ 2,500/oz	Equivalent to $ 80.4/gram
Private royalties	$2.5/oz & 1.575% NSR	Molopo and Franco Nevada
WA State Royalty	2.5% NSR	
Metallurgical recovery	98.6%	For BoD fresh material

Table 5-8: Cut-off calculations

	Operating Cost used for COG calculations
Lateral	$42.7
LH Stoping	$32.3
Mine Services	$5.1
Overheads	$5.1
Grade Control	$5.0
SUB TOTAL UG OPEX	**$90.1**
Processing	$42.3
G&A & Other	$13.0
TOTAL	**$145**
Stope COG	**>2.0 g/t**

5.3.2 Underground Dilution and Ore Loss

The modifying factors utilised in the schedule for stoping were an 85% recovery factor, and dilution skin of 0.3 m applied to both footwall and hangingwall (evaluated at 0 g/t). For lateral development ore, planned dilution was accommodated by the 4.2m wide drive profile which exceeds the ore width.

Table 5-9 displays the level of mining factors applied to the underground resource.

Table 5-9: Mine Design compared to Resource (at Mining COG and Resource cut)

	Mine Design			Resource available for UG conversion (above MRE cut)		
	Tonnes	Grade	Ounces	Tonnes	Grade	Ounces
Break of Day U/G	484,412	4.8	75,194	401,465	8.7	111,711

5.3.3 Underground Designs

Capital designs are based on conventional mining practises, with decline profiles and ventilation shafts. The decline has been designed to allow for industry standard trucking and mobile fleet configurations and at 1:7 gradient. Appropriate capital offset distances (geotechnical recommended) have been allowed for in the design. The initial decline from White Heat advances 60 m vertically within barren ground, and thereafter 140 m vertically of stope access horizons. Ventilation and pumping systems have been designed to adequately accommodate the design and mine production rates.

Level access to expose the multiple high-grade lodes have been designed at 20 m vertical sub levels. Ore drives are designed at 4.2 mW x 4.5 mH profile, with a resultant 15.5 m long hole length. Stopes are sub-vertical in majority of cases, with each lode having sufficient in situ waste between adjacent lodes to provide sufficient abutment to stress fields. Stopes are designed to remain open with in situ rib pillars.

Underground design parameters follow best practice common Western Australian mining assumptions. The design parameters and assumptions include the following:

- Mining method longhole open stoping with pillars
- 1:7 decline gradient
- Stockpile every 140 m along the decline
- Each level has a stockpile, sump, escapeway and return air link
- Primary ventilation and escape network established prior to stoping on a level
- 20 m level spacings, stopes with a minimum of 2 m minimum mining width
- 0.3 m of dilution applied to both footwall and hangingwall of optimisation shapes.

Lateral development profiles are shown in Table 5-10.

Table 5-10: Lateral development profiles and quantities

Development Type	Lateral Development Profiles	Quantity (m)
Capital	5.5 mW x 5.8 mH (Decline)	1,479
	5.5 mW x 5.8 mH (Decline SP)	224
	5.0 mW x 5.0 mH (Level Access)	1,696

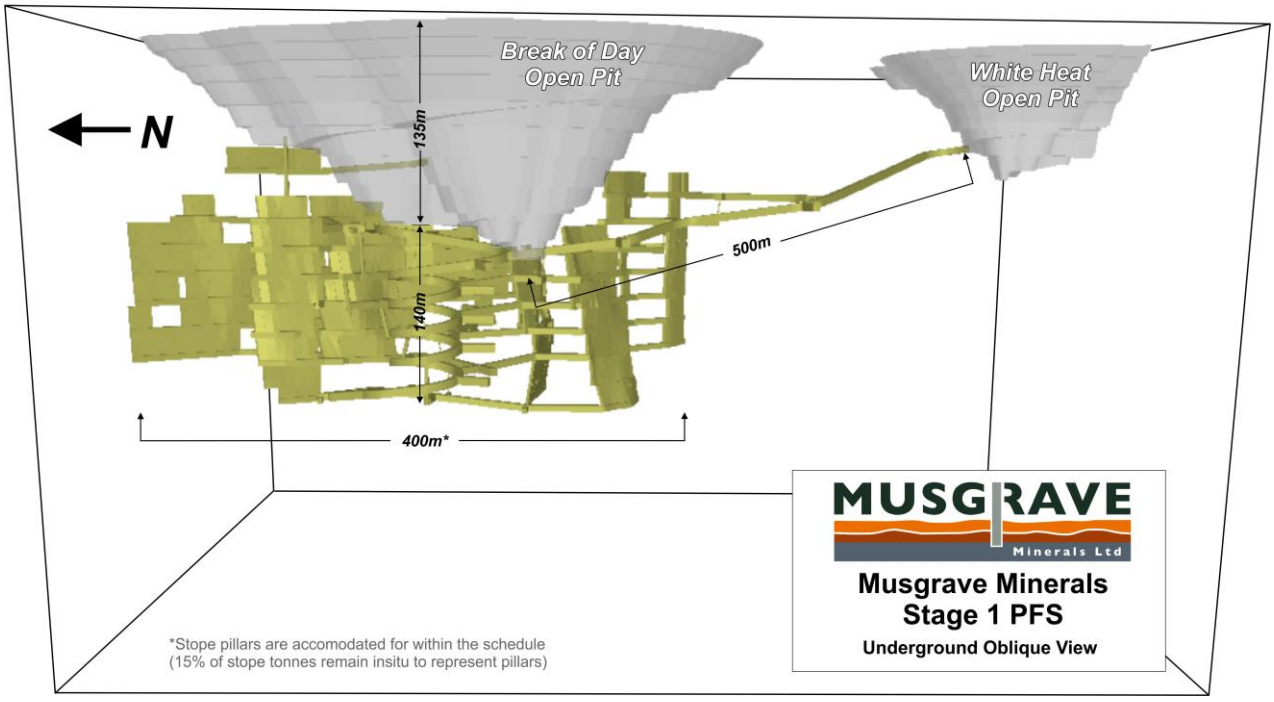
Development Type	Lateral Development Profiles	Quantity (m)
	5.0 mW x 5.0 mH (Return Air Drive)	169
	5.0 mW x 5.0 mH (Escapeway Drive)	153
	5.0 mW x 5.0 mH (Level Stockpile)	217
	4.5 mW x 4.5 mH (Sump)	49
Operating	4.2 mW x 4.5 mH (Ore Drive)	3.787

Vertical development profiles are shown in Table 5-11.

Table 5-11: Vertical development profiles and quantities

Development Type	Lateral Development Profiles	Quantity (m)
Capital	3.5m Dia Return Air Rise (raisebore)	180
	1.3m Dia Escapeway Rise (raisebore)	229

Figure 5-6: Break of Day oblique underground view



5.4 Mining Schedule

A consolidated mine schedule (Table 5-12) was created from the individual mine contributions. The schedule focused on early extraction of the Break of Day and White Heat deposits for early production and subsequent extraction of the underlying resource via underground methods. Open pit mining at Lena was used to smooth the open pit schedule constraints. Leviticus open pit was mined to ensure it was available for subsequent in-pit tailings storage. Numbers and Big Sky were used in the latter half of the schedule, based on overall head grade and geographical location.

As the various open pits develop to their lower (low strip ratio) vertical horizons, they collectively result in a significant ore stockpile. The latter half of Stage 1 PFS results in >200 kt @ 1.9 g/t Au ore being stockpiled.

As the level of study progresses for the CGP, stockpiling will be optimised, particularly where additional resources are added to the mining schedule from conversion of Inferred Resources or explorational success.

The following parameters and constraints were applied to the consolidated schedule:

1. Preferential treatment was allocated to the ore stockpiles of Break of Day and White Heat.
2. Indicated Resource material in the first 12 months of production was preferentially treated compared to Inferred material. Inferred Resource material constitutes less than 11% of recovered ounces in the first 12 months.
3. A starter pit within Break of Day has been designed and scheduled to facilitate early ore extraction and provide consistent feed rates into the processing plant. The starter pit is a 545 kbcm excavation which wins 115 kt @ 9.6 g/t Au for 35.5 koz Au mined.
4. The initial tailings storage facility (Valley TSF) earthworks contractor has been scheduled (and costed) to additionally undertake 300 kbcm pre-strip open pit mining activities in the pre-production period (allocated as a single month). This, along with the existing mining contractor, provides for sufficient mining stocks in the initial 12 months period for continuity of operations and flexibility for ore feed stocks and blend ratios.
5. The mining contractor's single fleet arrangement is capped at 11,500 bcm/day (350 kbcm/month) for the initial 27 months of mining, and progressively reduces from 6,500 bcm/day (198 kbcm/month) to 4,000 bcm/day (121 kbcm/month) in order to reflect the tighter workplaces and restricted work areas associated with pit advances.
6. The maximum number of pits able to be worked within a month period is capped at five, and all pits were scheduled to have a maximum of two 5 mV benches mined in a month period.
7. Bench mining was programmed to occur from the designed ramp entry point at its respective RL, as well as having horizontal and vertical lag constraints (ensuring the scheduling software does not mine unrealistic advance fronts).
8. Two days per year have been allocated site wide as non-working days (total of four shifts to account for Christmas and New Year productivity challenges) in addition to conventional machine and plant availability rates.
9. Underground extraction has been constrained to underground machinery productivity ratios and the number of active workplaces.
10. Though not related to mining activities, the schedule included a lower throughput rate for the initial periods of processing:
    a. Initial three months at 1,200 t/day, to account for a potentially longer than expected processing plant wet commissioning requirement as well as a period of initial circuit optimisation.
    b. Thereafter, the following 6 months at 1,355 t/day to ensure that recovery of the very high grade and coarse gold hosting Break of Day and White Heat deposits is preserved.
    c. Thereafter at the designed capacity of 1,375 t/day (500 ktpa).

Table 5-12: Mining physicals for Stage 1 PFS (yearly basis)

	Units	Total	Year Period					
			1	2	3	4	5	6
Pre-Production Active (1 yes, 0 no)			**0.6**	**-**	**-**	**-**	**-**	**-**
Open Pit Mining Active (1 yes, 0 no)			**0.3**	**1.0**	**1.0**	**1.0**	**1.0**	**-**
Underground Mining Active (1 yes, 0 no)			**-**	**-**	**-**	**0.8**	**1.0**	**0.8**
Processing Active (1 yes, 0 no)			**-**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**
Mining Quantities Schedule								
Break of Day OP								
Overburden/Waste	(bcm)	**6,193,459**	440,565	1,524,564	3,130,240	1,098,091	-	-
Ore Mined	(t)	**667,668**	79,053	11,659	280,126	296,830	-	-
Ore Grade	(g/t)	**7.0**	9.4	1.3	6.5	7.0	-	-
Ore Ounces	(oz)	**149,328**	23,847	501	58,399	66,581	-	-
White Heat OP								
Overburden/Waste	(bcm)	**1,999,258**	482,874	1,516,384	-	-	-	-
Ore Mined	(t)	**197,867**	1,730	196,137	-	-	-	-
Ore Grade	(g/t)	**9.2**	8.7	9.2	-	-	-	-
Ore Ounces	(oz)	**58,224**	485	57,739	-	-	-	-
Lena OP								
Overburden/Waste	(bcm)	**3,045,713**	312,273	911,839	735,449	513,569	572,583	-
Ore Mined	(t)	**723,403**	73,440	103,075	111,675	97,015	338,198	-
Ore Grade	(g/t)	**1.7**	1.6	1.3	1.3	1.3	2.1	-
Ore Ounces	(oz)	**39,702**	3,694	4,152	4,627	4,149	23,080	-
Big Sky OP								
Overburden/Waste	(bcm)	**996,396**	-	206,001	194,770	57,231	538,394	-
Ore Mined	(t)	**212,800**	-	30,406	26,099	3,380	152,916	-
Ore Grade	(g/t)	**1.7**	-	1.3	1.7	1.6	1.8	-
Ore Ounces	(oz)	**11,668**	-	1,295	1,408	172	8,794	-
Leviticus OP								
Overburden/Waste	(bcm)	**668,422**	-	486,515	181,906	-	-	-
Ore Mined	(t)	**40,878**	-	10,800	30,078	-	-	-
Ore Grade	(g/t)	**4.0**	-	2.8	4.4	-	-	-
Ore Ounces	(oz)	**5,206**	-	984	4,222	-	-	-

	Units	Total	Year Period					
			1	2	3	4	5	6
Numbers OP								
Overburden/Waste	(bcm)	**284,723**	-	-	284,723	-	-	-
Ore Mined	(t)	**121,739**	-	-	121,739	-	-	-
Ore Grade	(g/t)	**1.5**	-	-	1.5	-	-	-
Ore Ounces	(oz)	**5,727**	-	-	5,727	-	-	-
Break of Day UG								
Waste	(t)	**354,725**	-	-	-	147,842	140,941	65,942
Ore Mined	(t)	**484,412**	-	-	-	74,125	226,166	184,121
Ore Grade	(g/t)	**4.8**	-	-	-	3.5	5.2	4.9
Ore Ounces	(oz)	**75,197**	-	-	-	8,247	37,686	29,263
All Sources								
Ore Mined	(t)	**2,448,767**	154,223	352,077	569,717	471,350	717,279	184,121
Ore Grade	(g/t)	**4.4**	5.7	5.7	4.1	5.2	3.0	4.9
Ore Ounces	(oz)	**345,051**	28,026	64,671	74,382	79,149	69,559	29,263

6 METALLURGY

6.1 Summary

Musgrave has undertaken a series of metallurgical testwork programs and studies to establish the optimal processing flowsheet, metallurgical balances and determine gold recoveries. Understanding both the metallurgical properties of the ore and the optimal processing mechanics has enabled Musgrave to maximise the product recovery while minimising the cost and risk to the project. Minelogix was engaged by Musgrave to oversee the metallurgical studies whilst ALS Metallurgy completed the various testwork campaigns. Testwork from all deposits show free milling characteristics. The overall gold extraction for the LOM schedule is estimated at 97.8% with up to 60% of the gold gravity recoverable.

6.2 Testwork Programs

Musgrave has completed a series of metallurgical testwork programs to establish the optimal processing route and estimate of recovery factors for the various domains for the Cue Gold Project (CGP) Stage 1 PFS. The work was performed by ALS on representative samples from the major deposits (Break of Day and Lena) in 2021 and more recently on White Heat and Big Sky in 2022.

This recent work was coupled with several historical testwork programs performed by both Musgrave and previous tenement owners (Perilya and Silver Lake). Since the initial testwork program in 1996, there have been 25 additional programs of works within CGP, 15 being completed since 2020. This extensive testwork by Musgrave and others comprised 82 representative composite samples generated from 111 drill holes which represent 755 m of ½ NQ and HQ diamond core and RC drill chips. The testwork was undertaken through oxide, transitional and fresh domains. Table 6-1 illustrates the quantity of holes for testwork per deposit.

Table 6-1: Drill hole data

Type	Total	Lena	BOD	White Heat	Big Sky
Total DDH	30	14	11	5	0
Total RC	81	30	36	7	8
Total	**111**	**44**	**47**	**12**	**8**

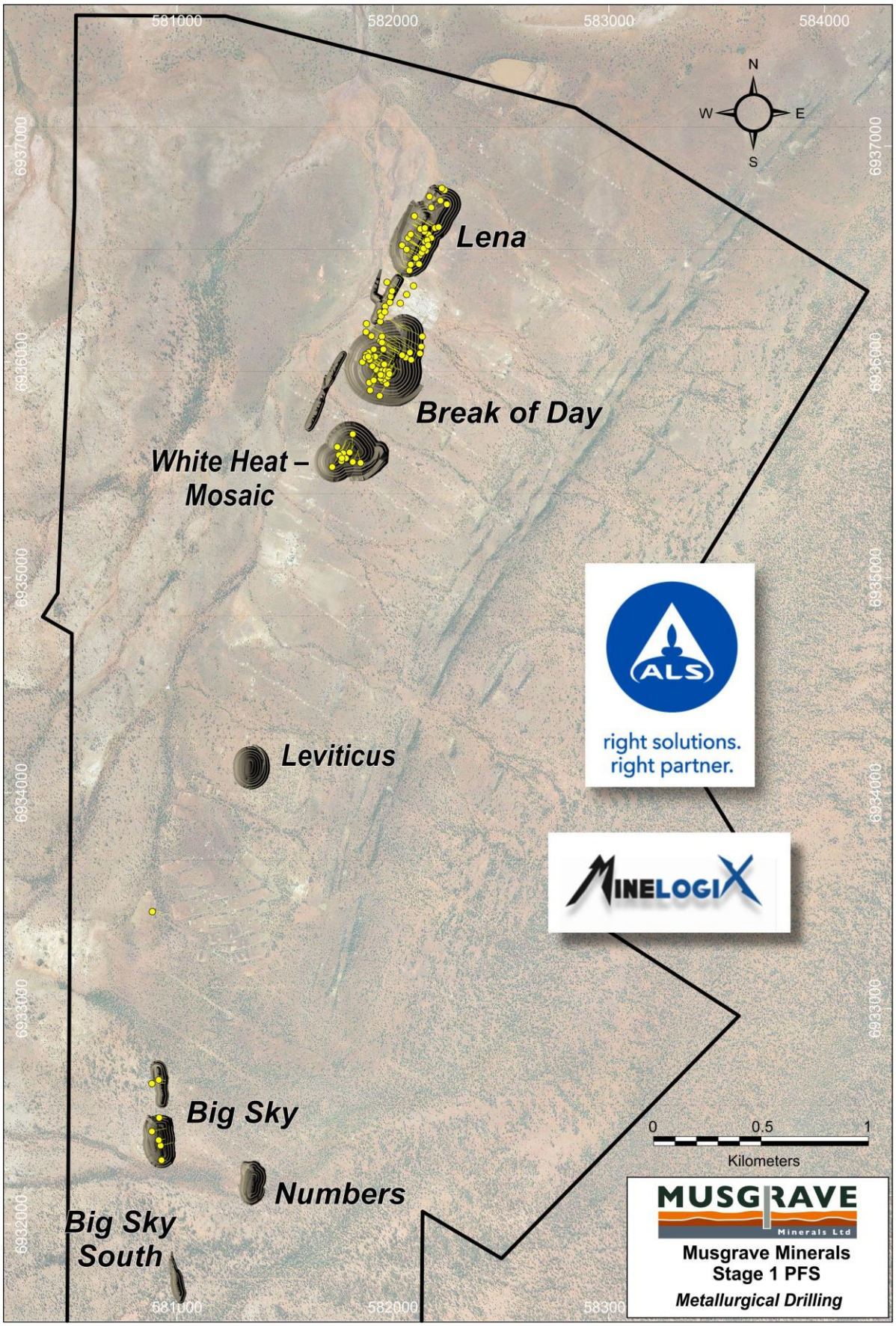
The majority of the samples are spatially representative of the mine plan and are taken from within the PFS planned open pit and/or underground excavations, refer to Figure 6-1.

The following processes were undertaken within the broader metallurgical campaigns:

- Leach testwork and gravity recoverable gold (GRG) for overall gold recovery and retention time
- Comminution works for understanding mill design and power parameters
- Thickener testwork for design and process flow requirements
- Tailings slurry works.

All testwork requested by Musgrave was performed by ALS Metallurgy Limited (ALS) in Perth, Western Australia. ALS was responsible for sample preparation, mineralogy, comminution, gravity, cyanide leaching, including grind size and reagent optimisation, oxygen uptake, viscosity, carbon loading kinetics and variability testwork. Other specialist companies completed testwork on aspects including tailings geochemistry (Graeme Campbell and Associates), tailings geotechnical studies (Resource Engineering Consultants) and tailings thickening (Metso-Outotec).

Figure 6-1: Cue Gold Project deposit location plan with drillholes utilised for metallurgical testwork



6.2.1 Gravity-Leach Testwork

A total of 95 gravity-leach tests have been carried out on samples from the CGP. The testwork demonstrates rapid leaching kinetics and a high gravity recoverable content. Forty-eight-hour leach recovery exceeded 90% for all deposit domains at relatively fine grind ranges of 63 µm to 105 µm, with high recoveries achieved within the first 12 hours. Most of the gold at the project site is relatively coarse in nature and typically 20% to 90% of the gold was recovered by gravity in the laboratory, with higher recoveries in the primary domains. Table 6-2 provides a summary of the average results for each domain tested while Figure 6-2 provides the corresponding kinetic curves. The full suite of gravity leach testwork results are presented in Table 6-3.

Table 6-2: Summary Cue domain averaged cyanidation gravity-leach data

Deposit	Domain	Tests	Grind P_{80} µm	Calc Head Au g/t	Gravity		Leach Extraction @ Time (h)					Tail Residue Au g/t	NaCN kg/t	Lime kg/t
					Amalgam %	Total %	0 hr	4 hr	8 hr	24 hr	48 hr			
Lena	Oxide	17	79	3.85	47.3	47.3	47.3	84.3	89.4	92.6	95.1	0.19	0.53	2.7
Lena	Fresh	22	72	3.63	52.9	58.7	58.7	84.3	87.3	88.8	91.0	0.33	0.64	2.63
BOD*	Fresh	8	85	5.36	63.2	79.2	77.2	92.4	96.5	97.9	97.2	0.15	0.62	2.07
BOD	Oxide/Trans	11	92	99.1	55.9	62.1	62.1	92.8	93.0	97.9	98.1	1.91	1.13	0.86
Starlight*	Fresh	8	102	14.6	51.6	82.6	82.6	97.5	98.4	98.9	99.1	0.13	0.61	0.29
Big Sky	Oxide	19	82	2.7	33.3	40.6	40.6	86.4	90.9	93.8	96.0	0.11	1.03	7.29
White Heat	Fresh	10	86	21.3	71.5	76.8	76.5	95.8	97.6	98.2	98.8	0.19	0.66	6.19

*Note: The Break of Day (BOD) data in Table 6-2 above does not include the Starlight lode. Testwork for the Starlight lode, which is part of the Break of Day MRE was tested separately and reported separately above.

Figure 6-2: CGP domain average leach kinetics – all domains

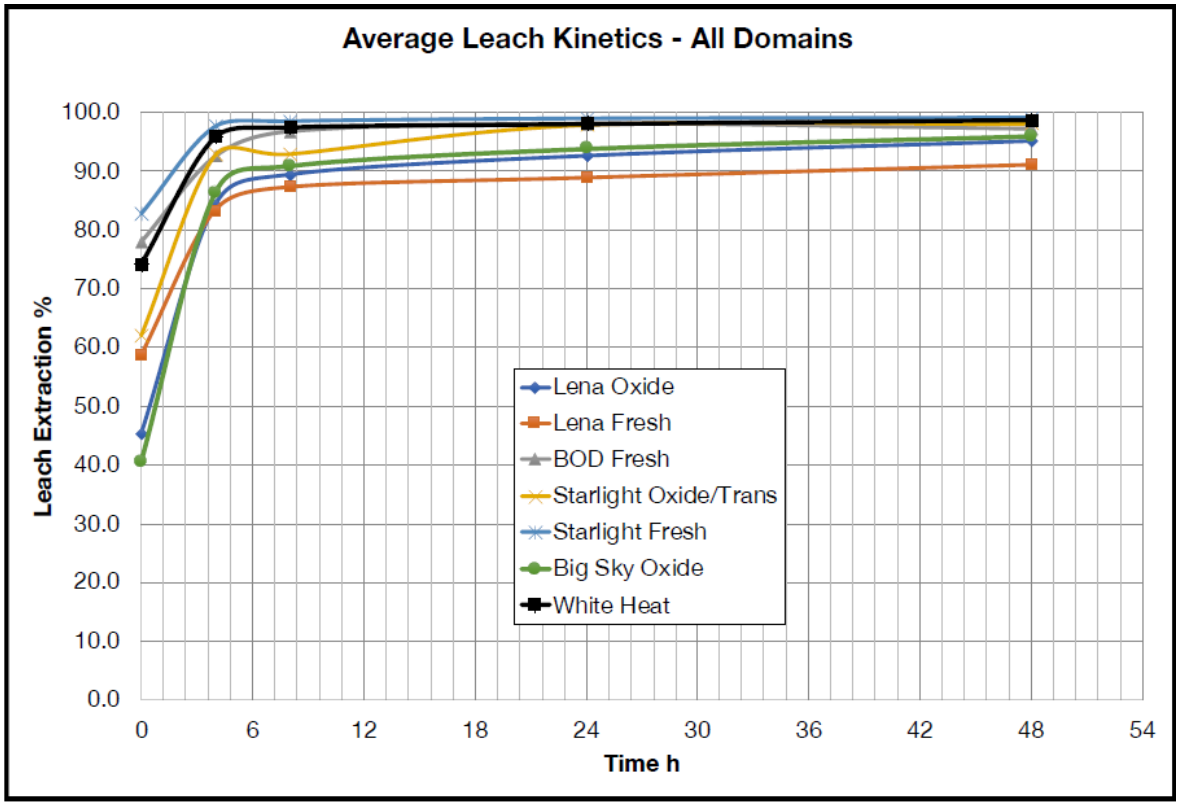


Table 6-3: Cue domain cyanidation gravity-leach data

Comp ID	Sample	Test	Head Assay	Gravity Grind Size (P_{80} µm)	Grind Size (P_{80} µm)	Initial NaCN	Gold Grade Au g/t		Gravity Gold %		% Overall Gold Extraction (Gravity + Leach)					Consumption (kg/t)	
		#	Au g/t			%w/w	Cal'd Head	Leach Residue	Amalgam	Total GRG	0 hr	4 hr	8 hr	24 hr	48 hr	NaCN	Lime
Break of Day																	
A24150	COMP 3 (BOD_CS_2022_01)	JS5756	6.18/ 10.1	150	75	0.1	5.35	0.14	66.4	71.1	71.1	91.3	94.7	97.0	97.4	0.53	6.45
A22408	21-BODF-1	JS4902	34.5	150	63	0.1	54.1	0.27	66.5	78.1	78.1	97.6	98.9	99.4	99.2	0.38	5.30
	21-BODF-2	JS4903	2.12	150	63	0.1	2.51	0.10	56.7	70.4	70.4	93.6	95.0	96.4	96.0	0.39	3.28
A19174	BOD Fresh GRG Tail	BK11733	2.32	850	150	0.1	2.25	0.175	-	67.4	67.4	82.3	90.4	95.1	92.2	0.36	0.19
	BOD Fresh GRG Tail	BK11735	2.32	850	106	0.1	2.25	0.10	-	67.4	67.4	85.5	92.9	97.0	95.6	0.36	0.20
A17727	17MOMET V1	DP745	11.0	75	75	0.1	12.9	0.12	-	84.5	84.5	100.0	100.0	99.4	99.1	1.10	0.40
	17MOMET V2	DP746	17.0	75	75	0.1	12.7	0.17	-	89.3	89.3	99.2	99.8	99.2	98.7	0.63	0.37
	17MOMET V3	DP747	16.2	75	75	0.1	18.1	0.13	-	89.4	89.4	89.4	100.0	99.8	99.3	1.22	0.38
A21422	OXIDE MC [SOMC01]	JS4711	139/ 111/ 111	212	150	0.150	120	4.90	46.0	51.7	51.7	83.0	88.2	93.3	95.9	0.92	0.93
		JS4712			106	0.150	118	3.11	46.6	52.5	52.5	86.8	92.6	95.7	97.4	0.81	1.14
		JS4713			75	0.150	108	1.30	51.0	57.4	57.4	92.9	97.4	98.7	98.8	1.25	0.68
	TRANS MC [STMC01]	JS4714	78.8/ 62.4/ 77.0/ 75.7	212	150	0.150	86.7	0.75	82.9	86.9	86.9	96.3	97.6	98.8	99.1	0.82	0.37
		JS4715			106	0.150	86.0	0.40	83.6	87.7	87.7	97.0	98.6	99.1	99.5	1.03	0.32
		JS4716			75	0.150	85.8	0.22	83.8	87.9	87.9	97.6	99.2	99.6	99.7	1.04	0.32
	OXIDE MC [SOMC01]	JS4726	139/ 111/ 111	212	53	0.150	120	2.14	46.2	51.3	51.3	96.8	98.6	100.1	98.2	0.70	1.73
		JS4727		-	75	0.200	120	2.84	46.2	51.2	51.2	92.1	96.5	99.0	97.6	0.21	1.38
		JS4728		CIL (20gpl)	75	0.150	115	2.44	48.3	53.5	53.5	92.0	94.6	97.5	97.9	1.62	1.01
		JS4740		CIL (90gpl)	75	0.150	104	2.01	45.3	55.4	55.4	92.5	96.5	98.1	98.1	2.82	0.91
	20MORC036 [OXIDE]	JS4736	22.9/ 25.1/ 24.2	212	75	0.200	26.99	0.91	34.8	47.2	47.2	93.7	95.9	97.3	96.6	1.19	0.71
	FRESH MC [SFMC01]	JS4717	18.7/ 16.2/ 18.8	212	150	0.100	16.7	0.21	68.4	82.7	82.7	96.0	97.6	98.3	98.8	0.43	0.25
		JS4718			106	0.100	16.6	0.13	68.8	83.2	83.2	97.7	98.7	99.2	99.2	0.44	0.28
		JS4719			75	0.100	16.6	0.08	69.0	83.4	83.4	98.7	99.3	99.4	99.5	0.36	0.26
	FRESH MC [SFMC02]	JS4720	17.6/ 13.7/ 14.2	212	150	0.100	11.5	0.20	71.4	81.8	81.8	96.0	97.5	98.1	98.3	0.49	0.27
		JS4721			106	0.100	11.6	0.15	70.9	81.3	81.3	97.2	98.0	98.5	98.7	0.53	0.23
		JS4722			75	0.100	11.5	0.11	71.7	82.3	82.3	98.0	98.7	99.2	99.1	0.62	0.35
	20MORC061 [FRESH]	JS4737	26.0/ 33.8/ 20.5/ 24.5	212	75	0.200	23.57	0.09	68.6	85.0	85.0	98.3	99.0	99.2	99.6	1.20	0.43
	20MORC069 [FRESH]	JS4738	11.2/ 10.4/ 8.78	212	75	0.200	9.06	0.07	72.5	81.6	81.6	98.5	98.8	99.5	99.2	0.85	0.25
White Heat																	
A23817	WHFMC-22	JS5480	5.80/ 6.22	150	150	0.1	6.08	0.11	76.7	80.0	80.0	95.1	97.2	98.1	98.2	0.58	2.45
		JS5481	5.80/ 6.22	150	106	0.1	6.06	0.09	76.9	80.3	80.3	96.1	97.6	98.3	98.5	0.71	2.84
		JS5482	5.80/ 6.22	150	75	0.1	6.07	0.07	76.8	80.2	80.2	97.1	98.6	98.8	98.8	0.57	2.82
	22MORC111 [TRANS]	JS5586	139/ 155	150	75	0.1	98.7	0.44	76.1	81.1	81.1	97.7	98.8	99.2	99.6	0.69	6.75
	22MORC109 [OXIDE]	JS5587	34.7/ 38.8	150	75	0.1	28.9	0.62	51.5	58.2	58.2	92.1	94.9	96.3	97.9	0.68	11.11
	22MORC113 [TRANS]	JS5588	13.5/ 10.7	150	75	0.1	13.1	0.03	50.5	56.9	56.9	96.1	98.6	99.2	99.8	0.72	8.05
	FRESH VC#2	JS5690	6.33/ 7.91	150	75	0.1	7.3	0.09	72.2	80.4	80.4	96.1	97.8	97.2	98.8	0.73	6.66
	FRESH VC#1	JS5691	5.74/ 1.77	150	75	0.1	3.8	0.06	69.6	76.8	76.8	96.4	96.4	97.4	98.4	0.71	8.02

Comp ID	Sample	Test	Head Assay	Gravity Grind Size (P_{80} µm)	Grind Size (P_{80} µm)	Initial NaCN	Gold Grade Au g/t		Gravity Gold %		% Overall Gold Extraction (Gravity + Leach)					Consumption (kg/t)	
		#	Au g/t			%w/w	Cal'd Head	Leach Residue	Amalgam	Total GRG	0 hr	4 hr	8 hr	24 hr	48 hr	NaCN	Lime
A24150	COMP 1 (WH_CS_2022_01)	JS5754	4.84/ 6.16	150	75	0.1	8.0	0.10	83.7	87.1	87.1	96.9	98.2	98.5	98.8	0.61	6.80
	COMP 2 (WH_CS_2022_02)	JS5755	56.1/ 35.0	150	75	0.1	42.9	0.29	81.3	87.1	84.0	94.6	98.4	99.1	99.3	0.58	6.43
Lena Oxide																	
A22408	21-LOVC-1	JS4904	1.63	150	63	0.1	1.94	0.02	16.9	21.9	21.9	92.4	96.9	97.9	98.9	0.44	13.59
	21-LOVC-2	JS4907	1.62	150	63	0.1	1.09	0.06	44.4	52.1	52.1	89	93.5	94.5	94.5	0.74	8.39
	21-LOVC-3	JS4911	4.34	150	63	0.1	6.47	0.06	76.6	79.8	79.8	95	96.2	98.3	99.1	0.67	11.54
	21-LOMC-1	JS4886	6.42	150	125	0.1	10.30	0.23	81.2	83.8	83.8	95.1	96.9	97.9	97.7	0.51	2.23
		JS4887	6.42	150	75	0.1	10.20	0.11	82.1	84.7	84.7	97.2	98.3	99.3	98.9	0.51	2.51
		JS4888	6.42	150	53	0.1	10.40	0.11	80.7	83.3	83.3	97.3	98.2	99.2	98.9	0.57	2.65
		JS4888	6.42	-	63	0.1	7.35	0.08	-	-	-	51.4	74.0	97.4	98.9	1.28	15.81
A19174	21-LOMC-1 Bulk Leach (31kg)	JS4916	6.42	150	63	0.05	9.41	0.23	74.9	77.5	77.5	91.2	95.7	97.1	97.6	1.31	2.65
	Lena Oxide GRG Tail	BK11729	1.41	850	150	0.1	1.71	0.09	-	24.0	24.0	79.8	96.7	97.4	95.0	0.69	1.06
	Lena Oxide GRG Tail	BK11731	1.41	850	106	0.1	1.53	0.08	-	24.0	24.0	83.9	92.4	93.6	94.8	0.65	1.12
A18047	Lena Oxide 01	BF1003	2.56	75	75	0.05	2.16	0.13	-	34.8	34.8	93.9	96.0	95.0	94.0	0.23	6.64
A14000	Lena Oxide#1	WH4360	1.87	75	75	0.05	2.24	0.28	13.6	13.6	13.6	81.2	83.9	85.9	87.3	2.21	0.32
	Lena Oxide#2	WH4361	1.24	75	75	0.05	1.63	0.21	-	-	-	74.6	80.1	83.8	87.4	2.60	0.11
	Lena Oxide#3	WH4362	2.90	75	75	0.05	3.08	0.34	17.8	17.8	17.8	78.0	83.3	88.2	89.1	0.15	0.12
	Lena South Oxide#1	WH4366	7.45	75	75	0.05	9.95	0.78	31.6	31.6	31.6	85.7	86.2	88.0	92.2	2.28	0.40
A13654	Lena #1	WH3698	4.60	75	75	0.05	5.92	0.43	53.7	53.7	53.7	85.6	87.7	90.7	92.7	1.57	0.00
	Lena #2	WH3699	1.73	75	75	0.05	2.58	0.01	19.4	19.4	19.4	70.9	73.8	78.1	99.6	1.72	0.00
	Lena #3	WH3700	2.04	75	75	0.05	3.09	0.14	22.4	22.4	22.4	75.6	79.6	84.5	95.6	1.78	0.00
Lena Fresh																	
A22408	21-LFVC-1	JS4905	2.77	150	63	0.1	3.45	0.80	40.0	47.4	47.4	72.5	75.8	77.3	76.8	0.39	4.82
	21-LFVC-2	JS4906	1.72	150	63	0.1	0.85	0.05	55.4	63.1	63.1	89.5	93.1	94.1	94.1	0.44	4.82
	21-LFVC-3	JS4908	4.38	150	63	0.1	4.35	0.10	66.3	70.2	70.2	96.5	97.3	97.9	97.7	0.22	5.65
	21-LFVC-4	JS4909	0.93	150	63	0.1	1.45	0.26	40.8	47.6	47.6	80.3	80.9	82.9	82.1	0.33	5.51
	21-LFVC-5	JS4910	7.65	150	63	0.1	5.54	0.17	72.4	75.9	75.9	92.8	94.1	95.5	96.9	0.40	5.17
	21-LFVC-6	JS4912	1.05	150	63	0.1	1.06	0.13	20.4	27.5	27.5	86.1	87.3	87.3	87.7	0.38	5.18
	21-LFMC-1	JS4883	1.40	150	125	0.1	2.49	0.43	50.9	60.5	60.5	78.9	80.9	82.6	82.7	0.38	1.70
		JS4884	1.40	150	75	0.1	2.54	0.45	49.9	59.3	59.3	77.3	82.1	82.3	82.3	0.46	1.88
		JS4885	1.40	150	53	0.1	2.75	0.33	46.1	54.8	54.8	82.6	85.8	88.4	88.0	0.51	1.83
		JS4913	1.40	-	63	0.1	2.20	0.30	-	-	-	55.6	70.9	85.6	86.4	0.58	7.03
	21-LFMC-1 Bulk Leach (24kg)	JS4782	1.40	150	63	0.05	2.32	0.28	52.5	58.4	58.4	78.2	83.6	87.4	88.0	0.98	2.58
A19047	Lena Transitional 02	BF1004	3.45	75	75	0.05	2.66	0.13	-	55.4	55.4	92.9	94.7	95.3	95.3	0.07	7.74
	Lena Fresh 03	BF1006	9.05	75	75	0.1	7.62	0.17	-	73.7	73.7	93.6	95.7	97.3	97.8	0.43	2.19
A14000	Lena Fresh#1	WH4363	1.28	75	75	0.05	1.58	0.12	52.0	52.0	52.0	81.4	84.7	90.8	92.3	1.76	0.07
	Lena Fresh#2	WH4364	4.82	75	75	0.05	6.27	0.15	73.0	73.0	73.0	96.2	97.1	97.4	97.6	1.71	0.08
	Lena Fresh#3	WH4365	17.05	75	75	0.05	16.31	1.21	73.8	73.8	73.8	89.9	91.5	92.6	92.6	1.75	0.08
A13654	Lena #4	WH3701	4.82	75	75	0.05	3.33	0.73	47.3	47.3	47.3	72.9	74.1	75.6	78.1	1.00	0.00

Comp ID	Sample	Test	Head Assay	Gravity Grind Size (P_{80} µm)	Grind Size (P_{80} µm)	Initial NaCN	Gold Grade Au g/t		Gravity Gold %		% Overall Gold Extraction (Gravity + Leach)					Consumption (kg/t)	
		#	Au g/t			%w/w	Cal'd Head	Leach Residue	Amalgam	Total GRG	0 hr	4 hr	8 hr	24 hr	48 hr	NaCN	Lime
A5176	R44285	HS1615	41.2	-	75	0.1	41.2	0.38	-	-	-	-	97.6	-	99.1	0.32	0.67
	R44286	HS1616	5.66	-	75	0.1	5.66	0.07	-	-	-	-	94.6	-	98.8	0.40	0.70
	R44287	HS1617	4.77	-	75	0.1	4.77	0.43	-	-	-	-	85.9	-	90.9	0.32	0.50
	R44288	HS1618	7.83	-	75	0.1	7.83	0.09	-	-	-	-	86.2	-	98.8	0.51	0.70
	R44289	HS1619	6.83	-	75	0.1	6.83	0.62	-	-	-	-	78.8	-	90.9	0.51	0.70
	R44290	HS1620	8.02	-	75	0.1	8.01	0.085	-	-	-	-	94.4	-	98.9	0.90	0.80
Big Sky																	
A23816	BSOMC-22	JS5474	2.70/ 2.02	150	150	0.10	2.63	0.38	35.8	40.8	40.8	78.5	80.9	83.3	85.6	0.89	3.19
		JS5475	2.70/ 2.02	150	106	0.10	2.56	0.18	36.9	42.0	42.0	80.9	85.9	88.3	93.0	0.89	4.07
		JS5476	2.70/ 2.02	150	75	0.10	2.53	0.15	37.2	42.4	42.4	84.3	89.3	91.7	94.1	0.87	5.02
		JS5583	2.70/ 2.02	150	150	0.10	2.78	0.17	33.9	38.6	38.6	82.9	85.7	88.5	93.9	0.80	9.64
		JS5584	2.70/ 2.02	150	75	0.10	2.75	0.13	34.3	39.1	39.1	83.9	89.6	95.3	95.3	0.81	10.11
		JS5596	2.70/ 2.02	75	75	0.10	3.05	0.15	0.0	0.0	0.0	58.6	73.1	85.3	95.1	0.75	10.42
	22MORC166 [OXIDE]	JS5712	2.19/ 2.11	150	106	0.10	2.22	0.02	9.4	20.3	20.3	99.1	99.1	99.1	99.1	1.01	16.10
	22MORC161 [OXIDE]	JS5624	2.92/ 2.91	150	75	0.10	3.05	0.15	15.1	20.7	20.7	91.7	95.0	98.3	95.1	1.66	7.00
	22MORC169 [OXIDE]	JS5577	4.13/ 3.07	150	50	0.10	2.86	0.06	34.7	37.6	37.6	95.1	97.9	97.9	97.9	1.32	5.90
	22MORC174 [TRANS]	JS5578	1.42/ 1.16	150	125	0.10	1.07	0.05	20.3	34.1	34.1	87.9	95.3	95.3	95.3	1.11	6.45
	22MORC175 [OXIDE]	JS5626	1.94/ 1.52	150	75	0.10	1.85	0.08	45.8	51.6	51.6	90.4	90.4	90.4	95.7	1.21	6.17
	22MORC185 [OXIDE]	JS5580	3.79/ 2.55	150	38	0.10	6.25	0.20	67.5	74.1	74.1	80.6	87.0	93.2	96.8	1.04	6.65
	22MORC180 [OXIDE]	JS5627	3.09/ 3.10	150	75	0.10	3.41	0.10	38.8	55.0	55.0	88.3	94.2	97.1	97.1	1.11	6.27
	22MORC035 [OXIDE]	JS5582	0.81/ 1.16	150	45	0.10	1.20	0.01	56.4	71.7	71.7	99.2	99.2	99.2	99.2	1.01	5.05
	UN-OPTIMISED RESULTS																
	22MORC161 [OXIDE]	JS5575	2.92/ 2.91	150	125	0.10	3.36	0.29	13.7	18.7	18.7	79.7	86.7	89.1	91.3	1.51	7.19
	22MORC166 [OXIDE]	JS5625	2.19/ 2.11	150	75	0.10	2.07	0.51	10.1	21.7	21.7	56.5	61.2	70.8	75.4	1.11	7.14
	22MORC175 [OXIDE]	JS5579	1.94/ 1.52	150	125	0.10	1.95	0.26	43.5	49.0	49.0	82.6	86.6	86.6	86.6	1.19	6.42
	22MORC180 [OXIDE]	JS5581	3.09/ 3.10	150	125	0.10	3.48	0.31	38.0	53.8	53.8	82.1	86.6	88.9	91.0	1.01	5.22
	22MORC166 [OXIDE]	JS5576	2.19/ 2.11	150	125	0.10	1.71	0.29	12.3	26.4	26.4	64.8	69.4	78.5	83.0	1.24	6.36

Cyanide, lime and oxygen consumptions are typical for free milling Yilgarn gold ores. Oxide lime consumption is generally less than 3 kg/t with primary domains measuring 2.5 kg/t as the processing water for the project is very saline. Cyanide consumptions were between 0.40 kg/t and 0.9 kg/t across the deposits. Oxygen consumptions are low.

As none of the domains tested exhibited any preg-robbing characteristics, a conventional process option using carbon-in-pulp (CIP) technology is likely to be suitable. The recent bottle roll work was performed at 45%w/w to 50%w/w, which was the target for process design.

Break of Day samples were all classified as free milling with typical extractions of plus 98% at a grind size of 80% (P_{80}) passing 75 µm. The gravity recoverable gold (GRG) portion was high to very high (67–90%) for all samples tested. Cyanide leach kinetics were fast post-gravity treatment with most of the gold leached within the first eight hours. Testwork performed at various grind sizes processed by bottle roll tests found that recoveries and tail grades are sensitive to grind size for all domain types tested. To optimise the recovery for all regolith composites, a grind P_{80} of 75 µm is required if the prevailing gold price and cost assumptions are maintained.

All the Lena oxide samples tested are classified as free milling with extractions typically above 95.0% at a grind size of 80% passing 75 µm with the exception of one sample (A14000 Lena Oxide #1). The removal of gravity gold has a significant effect upon gold leach kinetics. Cyanide leach kinetics are fast post-gravity treatment with the majority of gold leached within the first eight hours for all the ore types. A 24-hour residence time appears acceptable for Lena domains.

White Heat samples show a similar metallurgical signature to that of Break of Day, with rapid leaching kinetics and a very high gravity recoverable gold percentage. White Heat deposit recoveries are sensitive to grind size and an optimal grind of P_{80} 75 µm would be recommended given the current economic conditions.

All the Big Sky samples tested are classified as free milling with extractions typically above 95.0% at a grind size of 80% passing 75 µm.

6.2.2 Comminution Testwork

The most recent test programs for Break of Day and White Heat have sourced samples from diamond drilling (HQ core) to prepare suitable composites for comminution testing. The testwork included Bond Ball Work index (BBWi), Bond rod mill work index (BRWi), Abrasion index (Ai) and semi-autogenous grinding (SAG) mill comminution (SMC).

The comminution testwork results for all samples including historical data are summarised in Table 6-4 and discussed thereafter.

Table 6-4: Summary of comminution results

Deposit & Comp ID	Drill	Testwork program	BRWi (kWh/t)	BBWi P80 (µm)	BBWi BBWi (kWh/t)	Ai (g)	SMC Axb	Dwi (kWh/m3)	Mia (kWh/t)	Mih (kWh/t)	Mic (kWh/t)	Ta	True SG (kg/L)
Oxide-Trans Domains													
LENA													
Lena Oxide CC		A19174		61	8.1								
POX Master (21-LOMC-1)	DDH	A22408		59	10.6	0.03							
BIG SKY													
22MORC174 [TRANS]	RC	A24816		78	12.9								
22MORC161 [OXIDE]	RC	A24816		87	13.3								
WHITE HEAT TRANS													
22MORC111 [TRANS]	RC	A23817		91	14.2								
22MORC113 [TRANS]	RC	A23817		93	16.4								
Averages				**78**	**11.2**	**0.03**							
P80/P20				**91**	**13.1**	**0.03**							
Total tests		**6**		**6**	**6**	**1**							
Primary Domains													
LENA													
Lena Fresh CC		A19174		73	12.8								
21-LFVC-1	DDH	A22408	16.6	65	14.7	0.09	57.2	5.0	14.6	10.6	5.2	0.52	2.83
21-LFVC-2	DDH	A22408		62	12.2		58.3	4.9	14.4	10.0	5.2	0.53	2.85
21-LFVC-3	DDH	A22408		62	12.5	0.08	58.0	4.9	14.4	10.0	5.2	0.53	2.82
21-LFVC-4	DDH	A22408		61	13.0	0.08	52.4	5.4	15.6	11.0	5.7	0.48	2.84
21-LFVC-5	DDH	A22408	16.3	62	12.8	0.07	51.4	5.5	15.9	11.3	5.8	0.47	2.83
Averages			**16.5**	**64.2**	**13.0**	**0.08**	**55.4**	**5.13**	**14.98**	**10.58**	**5.42**	**0.51**	**2.83**
P80/P20			**16.5**	**65.0**	**13.0**	**0.08**	**52.2**	**5.42**	**15.66**	**11.06**	**5.72**	**0.48**	**2.84**
BREAK OF DAY													
BOD Fresh CC		A19174		75	16.7								
21-BODF-1	DDH	A22408	19.3	67	16.1	0.11	36.5	7.6	20.8	15.8	8.2	0.34	2.79
BoD_CS-2022_01	DDH	A24150	18.8	65	19.0	0.11	40.2	6.9	19.4	14.4	7.5	0.38	2.77
SFMC01	RC	A21422		52	11.2								2.84
SFMC02	RC	A21422		66	13.1								2.85
WHITE HEAT													
WH_CS-2022_01	DDH	A24150	21.5	66	16.4	0.09	38.1	7.4	20.1	15.1	7.8	0.35	2.85
WH_CS-2022_02	DDH	A24150	21.2	65	17.4	0.14	36.8	7.6	20.7	15.7	8.1	0.34	2.81
WHFMC-22	RC	A23817		90	19.0								
Averages			**20.2**	**68.3**	**16.1**	**0.11**	**37.9**	**7.39**	**20.25**	**15.25**	**7.90**	**0.35**	**2.82**
P80/P20			**21.3**	**66.8**	**18.7**	**0.12**	**36.7**	**7.61**	**20.74**	**15.74**	**8.14**	**0.34**	**2.85**
Total tests		**14**	**6**	**14**	**14**	**8**	**9**	**9**	**9**	**9**	**9**	**9**	**9**

Comminution testwork indicates that the Break of Day (BOD) and White Heat primary domains had an average SMC Axb of 38 and Lena primary was less competent at circa 55. The BOD and White Heat RMWi averaged 20.2 kWh/t which is classified as very hard, whereas the average BBWi was 16.1 kWh/t and classified hard. The Lena RMWi measures 16.5 kWh/t which is classified as hard, while the average BBWi was lower, averaging 13 kWh/t and classified as moderately hard. The average fresh sample Ai for Lena was 0.09 and 0.11 for BOD and White Heat, which is classified as low abrasive. The oxide domains were considerably softer (10 kWh/t BBWi) and less abrasive (0.03). These results are typical for Western Australian gold ores.

All samples tested were subject to a standard grind establishment test using Gold Lab Mill 04 to determine the time required to grind the various samples from P_{100} 3.35 mm to a P_{80} of 150 µm, 106 µm, 75 µm and 53 µm. The grind times could then be compared to the BBWi for the respective samples. As shown in Figure 6-3, the laboratory data was then plotted to understand the relationship and compared to industry data. The relationship between the grind establishment time and the BBWi is reasonably strong across all domains. The results are comparable with other Western Australian gold ores.

Figure 6-3: Grind establishment time vs bond ball mill work index (P_{80} 75/63 µm) – all samples

6.2.3 Tailings Slurry Testwork

Two bulk leach tailings were tested and showed that the tailings were fast settling and thickened well achieving >52%w/w solids at reasonable (>0.5 t/m^2/h) solids flux rates with excellent supernatant clarity (<250 ppm). Geochemical work on these samples was performed by Graeme Campbell & Associates.

Resource Engineering Consultants Pty Ltd (REC) was also provided solids from the two bulk leach tailings as slurry to perform various geotechnical tests and to determine the characteristics required for tailings storage design. The test results indicate that both the oxide and fresh domain tailings composites settled rapidly. The settled dry densities are high.

6.2.4 Site Water Used for Testwork

Since 2021, all metallurgical testwork have been performed using a synthetic site water. The composition of the synthetic site water was based on a weighted average composition of historical bore water data. The main analyte composition for the synthetic water is shown in Table 6-5. The high magnesium content in the site water buffers the pH.

Table 6-5: Synthetic site water composition for metallurgical testing

Analyte	Units	Site Water
Ca	mg/L	880
K	mg/L	1,370
Mg	mg/L	3,748
Na	mg/L	67,010
Cl	mg/L	108,000
SO4	mg/L	12,000
TDS	mg/L	196,000
pH		7.16

6.2.5 Grind Sensitivity Testwork and Optimisation

Master composites from recent sampling were milled to various grind sizes with the product treated via a gravity-bottle roll leach flowsheet to review the effect of grind size upon gold extraction.

The observations from this testwork show:

- That the grind sensitivity response for all BOD domains show a similar response. This makes sense geologically. The gold feed grade of the oxide and transition samples were high for which the grind response is quite steep which suggests a fine grind is more optimal.
- White Heat has a very low grind sensitivity and could be milled at a coarser grind with minimal change in gold recovery.
- The Lena domains show a lower grind sensitivity, less so in the oxide but more so in the fresh domain.

The data has been used for optimising the crushing and grinding circuit for the PFS. Optimisation recommendations have been heavily biased towards Break of Day specific outcomes due to the high percentage of gold (open pit and underground) from this deposit within Stage 1 PFS (Table 6-6).

Table 6-6: Cue Stage 1 PFS processing feed balance

	Ore (tonnes) and their % of PFS							Head Grade	Overall Recovery
	Oxide		Transitional		Fresh		TOTAL	Total	Total
Break of Day OP	76,225	3.1%	148,707	6.1%	442,736	18.1%	667,668	7.0	98.6%
White Heat OP	5,001	0.2%	71,941	2.9%	120,925	4.9%	197,867	9.2	97.7%
Lena OP	423,675	17.3%	106,440	4.3%	193,287	7.9%	723,402	1.7	94.9%
Big Sky OP	212,800	8.7%	-	0%	-	0%	212,800	1.7	95.1%
Leviticus OP	21,234	0.9%	16,878	0.7%	2,766	0.1%	40,878	4.0	95.4%
Numbers OP	109,768	4.5%	11,971	0.5%	-	0%	121,739	1.5	93.6%
Break of Day UG	-	0%	-	0%	484,412	19.8%	484,412	4.8	98.6%
Total	**848,703**	**34.7%**	**355,937**	**14.5%**	**1,244,126**	**50.8%**	**2,448,767**	**4.4**	

Table 6-7 provides economic assessment over various grind sizes for the Break of Day deposit. The base case scenario is calculated on the Stage 1 PFS base case gold price of A$2,600/oz. The outcome from the

optimisation points to an optimal 75 µm grind size. Similar style outcomes are calculated for Lena and, to a lesser degree, White Heat. Further testwork will be completed on the various deposits to provide additional data and validation of current optimisation results.

Table 6-7: Grind sensitivity data on Break of Day

GRIND P_{80}	µm	125	75	53	38
Gold Price	A$/oz	2,600	2,600	2,600	2,600
Power Costs	$/kW	0.31	0.31	0.31	0.31
Ore Gold Grade	g/t	7.00	7.00	7.00	7.00
Gross Power	kWh/t	17.6	21.7	26.1	32.2
Au Recovery	%	98.0	98.9	99.2	99.5
Au Tail Grade	g/t	0.162	0.092	0.061	0.040
Operating Costs					
Mill Power Costs	$/h	344	424	510	629
Grinding Media	$/h	80	104	131	170
Grinding Liners	$/h	30	37	44	55
Total Milling Cost	$/h	453	569	695	871
Total Costs	$/t	7.2	9.1	11.0	13.8
Gold Loss	$/t	13.0	7.4	4.9	3.2
Total Cost + Gold Losses	**$/t**	**20.2**	**16.4**	**16.0**	**17.1**

6.2.6 Oxygen Uptake Testwork

Several oxygen uptake rate (OUR) tests were performed on ground slurry from the various Cue domains. The conditions for the testwork varied slightly throughout the various programs as follows:

- 40–50%w/w solids
- P_{80} of 63–75 µm
- Initial pH ~9.5
- Initial NaCN concentration 0.1%
- Air saturation ~ 8.8–9.6 ppm.

The uptake rate of oxygen was generally low throughout all tests for both oxide and primary domains. Average primary readings after 6 hours were <0.006 mg/L/min for the oxides and 0.010 mg/L/min for the primary domains tested. The low oxygen uptake rates suggest that there are few oxygen consumers (pyrrhotite, etc.) and plant oxygen consumption (if less than saturation) should be less than 0.08 m^3/t (or 0.12 kg/t of ore) at 15% stripping efficiency.

6.2.7 Settling and Thickening Testwork

Various metallurgical samples have undergone additional settling and thickening testworks in order to determine dewater characteristics for all ore types. This type of testwork is critical to the subsequent mechanical design and implemented technology for a processing thickener, affecting capital and operating cost. Metso Outotec have performed two rounds of testwork, with samples from Lena oxide and fresh,

White Heat fresh and Big Sky oxide. All tests were dynamically thickened within a 99 mm high rate test rig, with the preliminary results confirming the materials can be thickened. Further testwork will be undertaken as the project studies develop.

6.3 Geometallurgical Algorithms

The overall gold extraction for the LOM schedule is estimated at 97.8% with up to 60% of the gold gravity recoverable.

A geo-metallurgical algorithm was prepared in order to extrapolate gold recovery from the various mined ore blocks and oxides states. These overall oxide state recoveries shown in Table 6-8 were used for informing mine optimisations, cut-off grades and finally the consolidated financial model.

Table 6-8: LOM metallurgical domain gold extraction outcomes

	Ounces							Overall Recovery
	Oxide		Transitional		Fresh		Total	Total
Break of Day OP								
Feed	19,154		32,591		97,583		149,327.7	
Recovered	18,924	98.8%	32,135	98.6%	96,216	98.6%	147,275.5	98.6%
White Heat OP								
Feed	1,028		24,700		32,496		58,223.6	
Recovered	1,016	98.9%	24,403	98.8%	31,457	96.8%	56,876.0	97.7%
Lena OP								
Feed	18,533		5,805		15,364		39,701.6	
Recovered	17,902	96.6%	5,567	95.9%	14,196	92.4%	37,665.8	94.9%
Big Sky OP								
Feed	11,668		-		-		11,668.5	
Recovered	11,097	95.1%	-	0.0%	-	0.0%	11,096.7	95.1%
Leviticus OP								
Feed	1,980		2,698		527		5,205.2	
Recovered	1,889	95.4%	2,574	95.4%	502	95.4%	4,965.8	95.4%
Numbers OP								
Feed	5,100		627		-		5,726.8	
Recovered	4,773	93.6%	587	93.6%	-	0.0%	5,360.2	93.6%
Break of Day UG								
Feed	-		-		75,194		75,194.0	
Recovered	-	0.0%	-	0.0%	74,141	98.6%	74,141.2	98.6%
TOTAL Feed	**57,464**		**66,421**		**221,166**		**345,051**	
TOTAL Recovered	**55,603**		**65,266**		**216,513**		**337,381**	

7 PROCESSING

7.1 Summary

A standalone process plant has been costed and designed for the Stage 1 PFS. GR Engineering Pty Ltd (GRES) have undertaken the works to prepare the plant design and its capital and operating cost estimates.

The Cue Gold Project processing facility has been designed to process 0.5 Mtpa of ore from the various Stage 1 PFS deposits and is of standard design equivalent to similar existing plants in the Western Australian Goldfields for free milling gold ores. The crushing circuit was designed to operate 24 hours per day, seven days per week at a nominal treatment rate of 76 t/h (dry basis) on fresh ore at a circuit utilisation of 75%. The grinding, gravity and carbon-in-pulp (CIP) plant was designed to operate 24 hours per day, seven days per week at a nominal treatment rate of 61 t/h (dry basis) on fresh ore at a circuit utilisation of 93%.[1]

The process plant flowsheet was designed for the specific ore characteristics of the Stage 1 PFS, as identified by metallurgical testwork undertaken at ALS. The process flow diagram (PFD) was developed from the process design criteria (PDC) prepared by GRES in consultation with Minelogix Pty Ltd.

The proposed processing facility design (Figure 7-1) was based on proven technology and comprises of the following unit processes:

- Two stage crushing using a primary jaw crusher with a secondary cone crusher to yield a nominal final product of 80% passing 8.4 mm
- 1,500 t emergency stockpile, with associated 75 t surge bin and apron feeder
- A single ball mill closed with hydrocyclones to achieve a product size of 80% passing 63 µm
- Treatment of approximately 60% of the mill discharge stream by centrifugal gravity concentration to maximise the gravity gold recovery, followed by batch intensive leaching of the gravity concentrate and electrowinning of the resulting pregnant solution
- Thickening of the cyclone overflow stream to approximately 50% solids w/w prior to leaching
- Leaching and adsorption in a CIP circuit comprising four leach tanks and six CIP adsorption tanks
- Acid washing and elution of the loaded carbon using a split AARL elution circuit, with thermal regeneration of the barren carbon prior to its return to the CIP circuit
- Smelting of cathode sludge from electrowinning to produce gold doré
- Treatment of the final tailings for cyanide detoxification using hydrogen peroxide (as required) and pumping the tailings to the tailings storage facility (TSF) with supernatant water will be recovered from the surface of the TSF for recycling back to the process plant.

7.2 Process Design Criteria

The process criteria adopted for the preliminary design of the comminution circuit are summarised in Table 7-1.

[1] *Utilisation is defined as the percentage of total time that the process plant is actually operated with feed, while availability is defined as the percentage of total time that the process plant is mechanically and electrically able to operate.*

Figure 7-1: Cue Gold Project plant layout

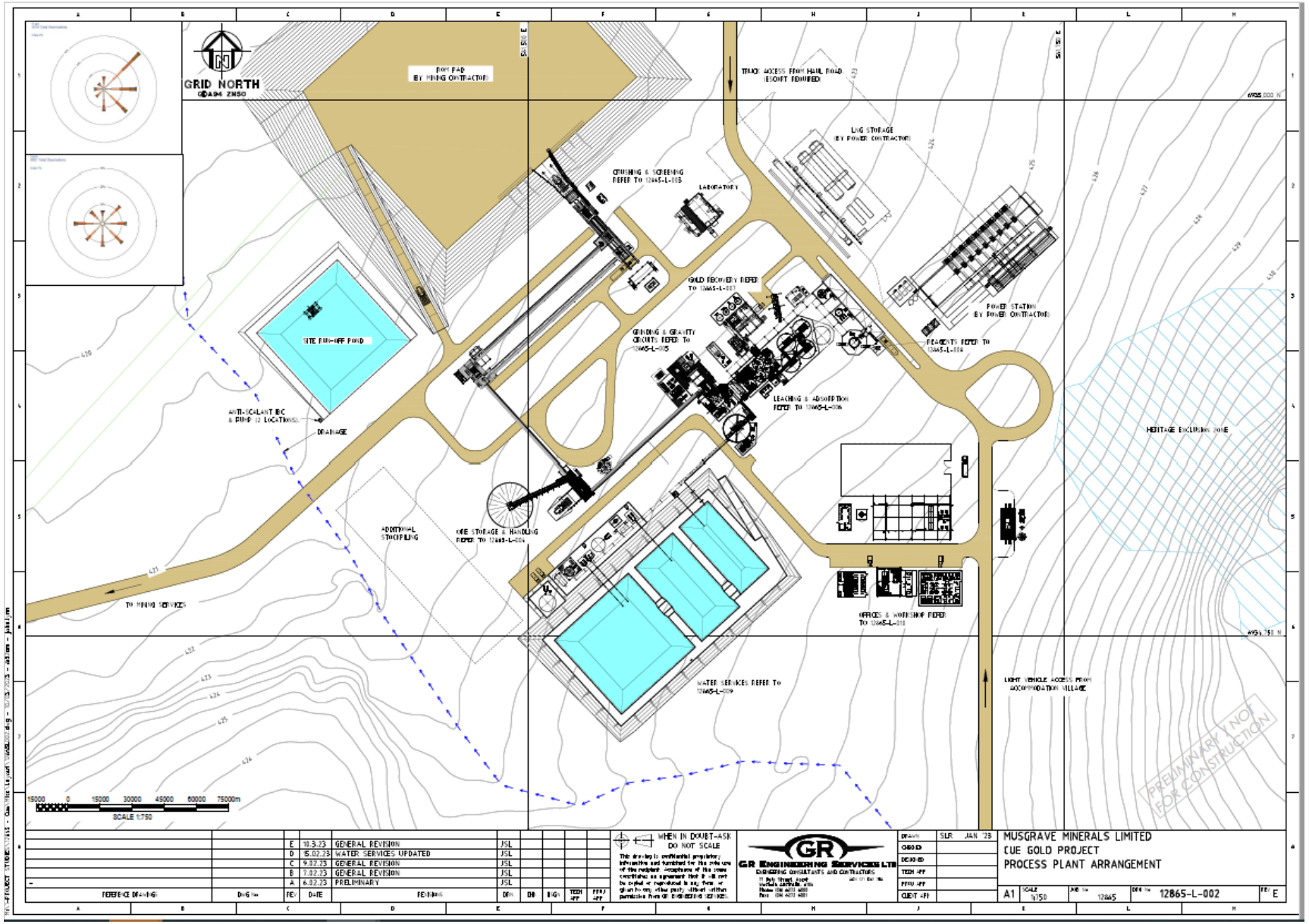


Figure 7-2: Cue Gold Project process plant schematic

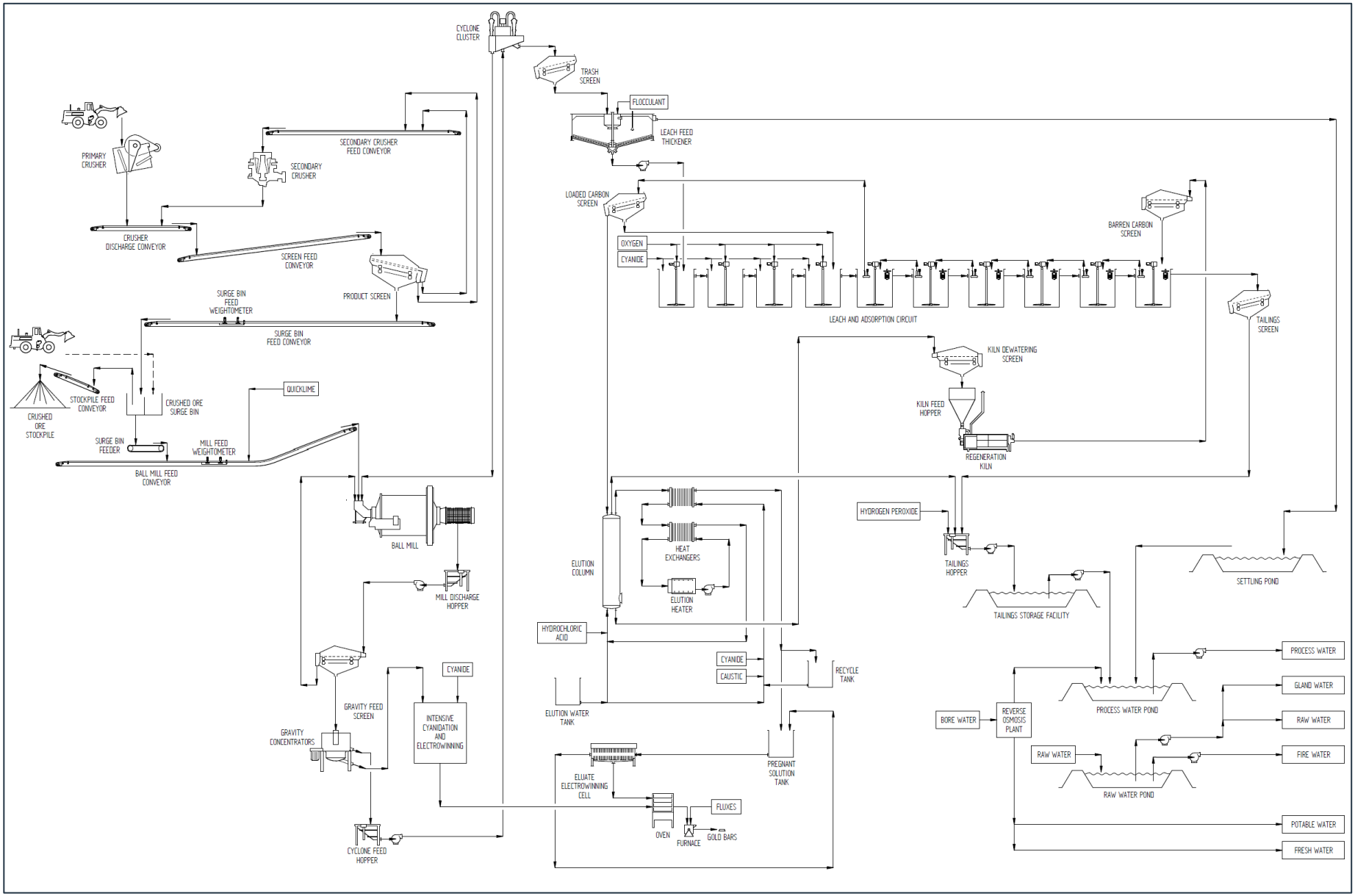


Table 7-1: Comminution circuit process design criteria

Criteria	Units	Value (Fresh/Oxide)	Source
Annual Throughput (nameplate capacity)	tpa	500,000	Musgrave
Crushing Availability (day and night shift)	%	+75%	Calculated
Crushing Circuit Operating Hours	h/a	6,570	Assumed
Crushing Circuit Throughput	t/h	76	Calculated
Milling Circuit Availability	%	93	Calculated
Milling Circuit Operating Hours	h/a	8,147	Assumed
Milling Circuit Throughput	t/h	61	Calculated
Milling Circuit Transfer P_{80}	µm	63	Musgrave

7.2.1 Ore Criteria

Ore-specific criteria were based on recent comminution testwork undertaken at ALS in 2021/22 and historical testwork. The specific data used for the recent comminution circuit modelling is presented in Table 7-2.

Table 7-2: Ore specific criteria used for circuit design

Criteria	Units	BOD and White Heat Fresh	Lena Fresh	Oxide Domains
BWi	kWh/t	16.1	13.0	11.2
Ai	-	0.11	0.08	0.03
A*b	-	37.9	55.4	N/A
SG	t/m^3	2.82	2.83	

7.2.2 Ore Feed/Mine Schedule

The pit sources and oxidations states were categorised in the mine plan and was summarised as a percentage of the total blend in Table 7-3.

Table 7-3: Cue Stage 1 PFS processing feed balance

	Ore (tonnes) and their % of PFS Plant Feed						
	Oxide		Transitional		Fresh		TOTAL
Break of Day OP	76,225	3.1%	148,707	6.1%	442,736	18.1%	667,668
White Heat OP	5,001	0.2%	71,941	2.9%	120,925	4.9%	197,867
Lena OP	423,675	17.3%	106,440	4.3%	193,287	7.9%	723,402
Big Sky OP	212,800	8.7%	-	0%	-	0%	212,800
Leviticus OP	21,234	0.9%	16,878	0.7%	2,766	0.1%	40,878
Numbers OP	109,768	4.5%	11,971	05%	-	0%	121,739
Break of Day UG	-	0%	-	0%	484,412	19.8%	484,412
Total	**848,703**	**34.7%**	**355,937**	**14.5%**	**1,244,126**	**50.8%**	**2,448,767**

7.3 Processing Circuit

7.3.1 Crushing Circuit

Ore will be fed to the process plant via the ROM pad, with blending of the various ore types to smooth ore properties and grades.

The crushing plant contains a primary crusher (C116) followed by a sizing screen and secondary crushing circuit.

The ROM bin will be fed ore from the ROM pad stockpiles using a front end loader (FEL) and have a live capacity of 80 t, with replaceable liners.

The primary crushed ore then reports to a sizing screen feed conveyor which feeds the ore onto a single deck inclined sizing screen. Screen oversize will report to a secondary crusher feed bin and secondary crusher vibrating feeder via the secondary crusher feed conveyor. The vibrating feeder will direct the ore into a cone crusher (HP300). The secondary crushed product will report to the sizing screen feed conveyor.

Screen undersize is directed to the stockpile feed conveyor which will feed directly into the 75 t surge bin. Ore is fed directly from this capacity onto the mill feed conveyor with a lime silo trickle feed system. Excess material beyond the surge bin capacity can be stockpiled separately in an external 1,500 t emergency pile which will enable a high operating crushing throughput while maintaining the capacity for the desired milling availability.

7.3.2 Reclaim, Grinding and Classification Circuit

The stockpile reclaim apron feeder under the surge bin, reclaims crushed ore from under the stockpile and onto the mill feed conveyor. Lime is added via the lime silo (150 t) located between the stockpile and mill feed conveyor weightometer.

An emergency reclaim vibrating feeder is positioned at the discharge of the surge bin, adjacent to the reclaim apron feeder, but not directly beneath the stockpile. This is to ensure that a FEL can be used to feed the emergency vibrating feeder with ore from the stockpile, in situations where the main stockpile reclaim apron feeder is under maintenance or when the crushing circuit is off-line.

A 4-m diameter, 6.0 m long effective grinding length (EGL) ball mill is proposed for the primary grinding duty of fresh ore (BBWi 15.5 kWh/t) and oxide ore (BBWi 10.2 kWh/t). The layout provides for future expansion with a second ball mill. The ball mill will operate with a maximum ball charge up to 34% v/v (80 mm top ball size) and an expected pinion operating power draw of 1.266 MW (at 29% v/v) for fresh ore. The ball mill motor is rated for 1.5 MW with a trommel screen attached on the mill discharge. A variable speed drive (VSD) is installed on the mill to vary the mill speed, so that it caters for changes in the ore characteristics.

The undersized product from the trommel screen is collected by the mill discharge hopper. Process water is added to the mill discharge hopper to dilute the slurry to ~57% solid w/w.

The slurry in the mill discharge hopper is pumped by two sets of duty and standby pumps. One set of slurry pumps are the cyclone feed pumps which feed mill discharge slurry to an six-way cyclone cluster (four duty and two standby) mounted on a tower above the mill feed spout. The cyclones will classify the feed such that the overflow product will have a P80 of 63 µm and is directed to the trash screen above the pre-leaching thickener. The cyclone underflow product is directed back to the ball mill feed spout. The second set of pumps are the gravity screen feed pumps which supply the gravity recovery circuit at a solid feed rate of 100 t/h.

7.3.3 Gravity Recovery Circuit

The mill discharge is fed into a gravity scalping screen located above the ball mill. Oversized product from the gravity scalping screen reports to the mill feed spout, while the undersized product is directed to a centrifugal gravity concentrator (30" Knelson). The concentrator will remove 40 kg of concentrate per 40-minute cycle to the gold room. Gravity tails reports to the mill discharge hopper.

The collected gravity concentrate is directed into the intensive leach reactor (batch leach process using a CS1000) which is used to extract the gold from the concentrate into a pregnant liquor. The pregnant liquor is then pumped for electrowinning in a dedicated electrowinning cell. The gold sludge collected from the electrowinning cell is refined to produce the final gold product.

7.3.4 Pre-leach Thickening

The cyclone overflow reports to a trash screen above the pre-leach thickener. The trash screen has two outlets for the oversized material. One of the outlets allows the material to be returned to the ball mill feed spout while the other outlet allows periodic dumping of trash into a bin at ground level. Screen underflow reports to the pre-leach thickener.

Flocculant is added to the 13 m diameter pre-leach thickener feed well which will aid the thickening of the dilute cyclone overflow pulp and as a result will remove approximately 67 m^3/h of clarified process water via thickener overflow. This will increase the slurry density to 45% w/w solids for oxide and 50% w/w solids for fresh ore in the thickener underflow. The thickened pulp is then pumped to the leach tanks.

7.3.5 Leaching and Adsorption Circuit

The thickened slurry from the pre-leach thickener is directed to a distribution box that allows the slurry to flow into the CIP circuit.

The CIP circuit has four stages of leaching and six stages of adsorption tanks. For a CIP circuit, all leaching is completed on the slurry in four separate leach tanks prior to any carbon being introduced. This enables higher loaded carbon values in the first adsorption tank. The carbon train is comprised of six smaller CIP tanks each with a nominal capacity of 100 m^3, providing a slurry residence time in the circuit for fresh oxide of 36 hours with a slurry density of 50% w/w solids and a slurry residence time for oxide ore of 24 hours with a slurry density of 45% w/w solids.

Carbon is advanced through adsorption tanks 2, 3, 4, 5 and 6 by recessed impeller carbon transfer pumps. The advance pump in CIP tank 1 is used to pump slurry over the carbon recovery screen to enable the recovery of the gold from the carbon through the elution circuit.

The vibrating carbon recovery screen removes carbon from the circuit and drops it into a rubber lined acid wash/carbon surge hopper.

A vibrating carbon safety screen is located adjacent to CIP tank 6. This screen collects any carbon that escapes from CIP tank 6 in a disposal drum for manual reintroduction to the circuit. The undersized product from the carbon safety screen is gravity fed to a tailings discharge hopper.

The tanks are constructed on concrete ring beams within a concrete bunded containment structure with sump pumps in place for spillage and clean-up. The bunding has been designed to contain a complete volume from a single leaking or punctured tank.

7.3.6 Elution Circuit and Gold Room Operations

Gold removal is performed using a split AARL elution circuit. The elution column has a volumetric capacity of 5 m^3 and is capable of holding 2 t of carbon.

Elution of the gold from the carbon is expected to take about six hours and pregnant liquor is collected into either one of two pregnant solution tanks. The pregnant liquor is delivered to a dedicated electrowinning cell in the circuit. At the completion of the electrowinning cycle, the barren solution from the electrowinning cells can be returned to the leaching circuit.

The gold sludge from the gravity circuit and the elution circuit electrowinning cells are filtered with a filter press to remove the water content. It is then calcined in an oven to oxidise the steel wool cathodes. The product from the calcine oven is direct smelted using fluxes in a gas fired smelting furnace to produce the final gold product doré bars, which will be stored in a gold safe, located inside a concrete vault. The gold sludge from the gravity circuit is refined separately from that of the elution circuit to allow for separate accurate metallurgical accounting of the gravity circuit.

7.3.7 Tailings Disposal

The tailings are pumped using a set of duty/standby tailings pumps that will deliver the slurry to the nearby tailings storage facility.

7.4 Process Services

7.4.1 Electrical Reticulation

Power supply for the plant will be via on site generation under a Build Own Operate (BOO) style contract with environmental, social and governance (ESG) considerations a key component in the proposed design. It is envisaged that the power station will include multiple gas powered generators with photovoltaic (PV) arrays and a battery energy storage system (BESS) for surge capacity (generating at 11 kV). The station will feed a common switchboard. Power would be reticulated within the plant at 415 V AC via step-down substation transformers.

Discussions have been initiated with several Independent Power Providers (IPP) that specialise in hybrid power solutions that include renewable energy sources and other ESG considerations. It is expected that they will be able to propose a hybrid solar/LNG power supply solution that will reduce unit energy costs and the sites greenhouse gas emissions.

7.4.2 Plant Control Systems

The process control system (PCS) will consist of programmable logic controllers (PLC), one in each motor control centre (MCC), with a supervisory control and data acquisition (SCADA) layer above providing the operator interface and means through which control of the plant will be achieved. The PCS will allow control of the plant from a central location in the plant control room. As well as being able to start and stop drives, the PCS will provide full diagnostics, trend, and alarming functionality to maximise ESG controls.

7.4.3 Process Water

Process water is delivered to the 2,500 m^3 process water pond from local sources:

- Pre-leach thickener overflow
- Raw water tank overflow
- TSF decant return water tower.

In the case where the raw water tank is filled beyond its capacity, the excess water is fed into the process water tank, but not vice versa. Process water is delivered by duty and stand-by pumps to the plant.

7.4.4 Raw Water

Raw water from a local high saline bore field (100,000 mg/L TDS to 210,000 mg/L TDS) is delivered to a 2,600 m^3 lined pond and supplemented by the camp water treatment plant reject water. A dedicated fire water pump and back up diesel powered fire pump will supply fire water from the raw water pond in the rare event of a fire outbreak in the plant.

7.4.5 Potable Water

Bore water from a local low saline bore field (820 mg/L TDS to 1,900 mg/L TDS) is pumped to the camp where it is treated and will supply both the camp and process plant. Bore water is pumped to the camp raw water tank and transferred to a water treatment plant where it will undergo filtration, reverse osmosis and then chlorination. The treated water is stored in the camp potable water tank and also pumped via transfer pumps to the plant potable water tank at the process plant site.

8 TAILINGS STORAGE FACILITY

The Stage 1 PFS is designed around a full standalone mine development with independent onsite processing facilities. A tailings storage facility (TSF) is required to store the fine slurry byproduct from processing the ore and to recover and recycle water from the slurry as the fines settle and compact. As the TSF is required for long-term storage, the design is required to comply with construction, operation, rehabilitation and closure requirements.

Musgrave has engaged Resource Engineering Consultants Pty Ltd (REC) to perform onsite testwork and to assist Musgrave in developing a tailings storage plan.

8.1 Summary

Resource Engineering Consultants Pty Ltd (REC) were engaged by Musgrave to prepare the Stage 1 prefeasibility study level design report for the TSF at the Cue Gold Project (CGP). The report has been prepared using the format detailed in the Department of Mines, Industry Regulation and Safety (DMIRS) formerly the Department of Mines and Petroleum's (DMP) Guide to the Preparation of a Design Report for Tailings Storage Facilities (TSFs) (DMIRS, 2015) and the Code of Practice Tailings Storage Facilities in Western Australia (DMP, 2013).

The proposed TSFs comprise two integrated waste landform tailings storage facilities (IWLTSF-1 and IWLTSF-2) and an in-pit tailings storage facility (IPTSF). IWLTSF-1 will provide the initial storage for tailings, while an open pit (Leviticus Pit) is developed for mining, located to the west of IWLTSF-1. Once the mining at Leviticus Pit is completed, the pit will be repurposed as an in-pit tailings storage facility (IPTSF). Additional tailings will be stored in the proposed IWLTSF-2, located south of IWLTSF-1. Waste rock is proposed to be used to construct the bulk of the IWLTSF embankments. The eastern side of IWLTSF-1 and the northeastern side of IWLTSF-2 will be contained by the natural topography.

A water recovery rate of at least 65% of the slurry water volume entering the TSFs is expected during the operations phase. The decant pumping system (return water pumps and pipelines) has been designed to accommodate a water return of up to 70% of the tailings slurry water to the process plant (located 700 m to 900 m to the north of the facilities). The high water recovery rate can be directly attributed to a small decant pond, high in situ dry density of the deposited tailings and minimal seepage losses.

At the calculated average dry density of 1.60 t/m^3, the combined facilities provide 1.81 Mm^3 of storage capacity for 2.90 Mt of tailings. The total capacity for the TSFs is based on a five-year life of mine, with an annual tailings output of 500 ktpa, resulting in an ultimate live capacity of 2.5 Mt. The TSF design capacities are presented in Table 8-1.

Tailings will be deposited from the perimeter embankments/pit crest in a sub-aerial manner in thin lifts and beaching towards the centre of the facility to form a decant pond away from the main embankment. The TSFs have capacity for the 1:100-year annual exceedance probability (AEP) 72-hour storm event, DMIRS (formerly DMP) required freeboard and ANCOLD additional freeboard requirements.

These design objectives have been developed to ensure that the premises are decommissioned and rehabilitated in an ecologically sustainable manner in accordance with the DMIRS principal closure objectives for rehabilitated mines and the Environmental Protection Authority's (EPA) objective for rehabilitation and decommissioning.

Table 8-1: Design capacities

Parameter	IWLTSF-1	IPTSF	IWLTSF-2	Total
Maximum Crest Height (m)	18.0	-	9.5	-
Crest Elevation (m RL)	450.0	428.0	437.0	-
Assumed Dry Density (t/m^3)	1.60	1.60	1.60	-
Storage Capacity (Mt)	0.88	0.89	1.13	2.90
Cumulative Tailings (Mt)	0.88	1.77	2.90	-
Storage Capacity (Mm^3)	0.55	0.56	0.70	1.81
Cumulative Capacity (Mm^3)	0.55	1.11	1.81	-
Tailings Surface Area (ha)	10.7	2.6	18.6	-
Facility Life (years)	1.8	1.8	2.2	5.8
Total Life (years)	1.8	3.6	5.8	-
Rate of Rise (m/a)	5.1	20.2	2.7	-

8.2 Tailings Testwork

Preliminary representative tailings samples have undergone a series of laboratory tests to inform embankment parameters and water balance systems. Testing of the samples were supervised by REC and undertaken at E-Precision laboratory. Testing of the samples included: particle size distribution (PSD), Atterberg limit test, air drying tests and settling tests.

Results of the settling and air dried testwork are presented in Table 8-2, further analysis will be undertaken for a feasibility level including varied slurry densities. Test results indicate that both oxide and fresh ore tailings settle rapidly and result in high, dry settling, densities. When deposited in an operating tailings facility, the dry density is often improved due to the mechanics of deposition and the large surface area (compared to a laboratory test environment). This system is expected to be designed to recover up to half of the total water recovered from the TSFs.

Table 8-2: Settling and air dried test results

Parameter	A23816_1 – Oxide Ore	A23816_2 – Oxide Ore	A23817 – Fresh Ore
	45%		
Undrained – Supernatant Water (%)	52.3	56.6	62.3
Undrained – Density (t/m^3)	1.1	1.16	1.603
Drained – Supernatant Water (%)	40.5	37.7	43.7
Drained – Underdrainage Water (%)	39.9	47	42.3
Drained – Density (t/m^3)	1.53	1.53	1.96

Graeme Campbell and Associates were commissioned to undertake geochemical analysis of the tailings to understand the potential environmental impact of the facility: water recovery quality, dissolved cyanide levels and prevalence of acid forming tailings. The works confirm the tailing classification as Non-Acid Forming (NAF) with low concentrations Weak Acid Dissociable Cyanide (CNwad), below the guideline value of 50 mg/L for protection of wildlife.

REC completed a series of surface test pits within the vicinity of the Project to assess the geotechnical 'near surface' conditions of the area. A total of 36 pits were excavated in order to understand the sub-soil stratigraphy with focus on depth of laterite and top soil profiles, as well as laboratory testing of samples for determining their suitability for closure requirements. The results were used to inform surface disturbance stockpiles as well as construction material balances.

8.3 TSF Design

The objectives of the TSF designs are to optimise tailings storage capacity, maximise tailings density, achieve water recovery of at least 65% of the slurry water, reduce seepage and minimise the environmental and societal impact. A general arrangement of the proposed TSFs is shown in Figure 8-1.

Figure 8-1: TSF general arrangement

The conceptual design for the TSFs utilises the details discussed above and the guiding principles in DMIRS, DMP and ANCOLD guides, guidelines and code of practices.

The IWLTSF embankments are proposed to be constructed in a series of downstream raises using the available mine waste rock. The series of lifts will be compacted to meet strength and moisture content requirements. Selection of the waste material from open pit mining will be required to adhere to PSD and oxide state requirements. Material won from within the footprints of the IWLTSFs are proposed to be used to construct the upstream face of these embankments. A thin layer of hardpan material is required to preserve the embankment, and is expected to have a nominal thickness of 0.5 m. This has been validated by a series of test pit works through the PFS disturbance envelope.

Figure 8-2 illustrates a representative cross-section of the IWLTSF embankment, which formed the basis for stability assessments and modelling. Table 8-3 displays the required bill of quantities for the construction of the facilities.

Figure 8-2: Cross-section of IWLTSF embankment

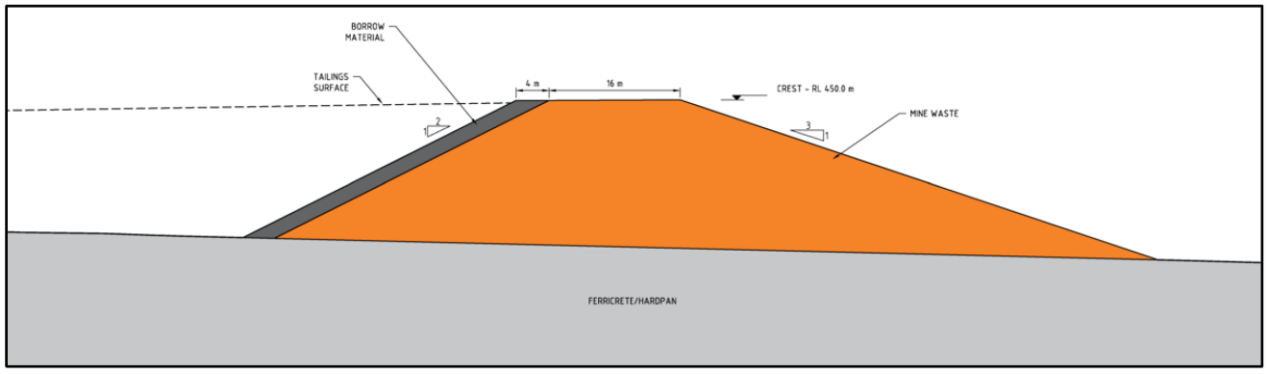


Table 8-3: Bill of quantities for IWLTSF construction

Stage	Item Description	Material Type	Quantity	Unit
IWLTSF-1	Embankment fill	Low permeability borrow	21,649	m^3
	Embankment fill	Waste (traffic compacted)	269,118	m^3
IWLTSF-2	Embankment fill	Low permeability borrow	31,116	m^3
	Embankment fill	Waste (traffic compacted)	293,706	m^3

Stability assessments have been conducted for the IWLTSFs based on their individual characteristics and preliminary embankment parameters. Factors of Safety (FOS) range from 2.6 to 3.0 (recommended standards are 1.5).

A series of monitoring bores will be drilling surrounding the facility to monitor groundwater conditions and overall subsurface water quality. A total freeboard of 1 m has been designed for the IWLTSF facilities to accommodate a 1:100 year AEP 72-hour event. Similarly, a 0.5 m value was used for the IPTSF to accommodate the same event.

9 INFRASTRUCTURE AND SERVICES

9.1 Summary

The overall site layout is shown in Figure 9-1. The site is a greenfield location with only minor existing infrastructure.

Supporting infrastructure required for the various components of the project have been designed and located in optimal positions for the current mine plan. All infrastructure avoids current heritage exclusions zones. Buildings, sensitive infrastructure and the processing plant have been located away from open pit blast envelopes. Placements of mining yards and stockpiles have been designed in order to facilitate safe and productive traffic management controls. Appropriate exclusion zones have been incorporated into the layout for infrastructure in order to adhere to regulatory requirements.

9.2 Power Station

Super Smart Energy were engaged by Musgrave to assist in the selection of a preferred power station option as part of an energy and carbon review of the Cue Gold Project. Submissions were sourced from three Independent Power Providers, all of whom offered to build, own and operate a power station on site for the use of Musgrave over the LOM for the Stage 1 PFS.

Options investigated for powering the Cue Project site included a gas renewable (PV) hybrid station, a gas renewable (PV) hybrid with battery energy storage system (BESS), and a diesel renewable (PV) hybrid with BESS. The various proposals were based upon a peak load of 3.0–3.5 MW, with average load of approximately 2.8 MW. Proposals were based on diesel at A$1.18/L (Q1CY23 RFQ price, delivered to site, with diesel fuel efficiency of 0.245 L/kWh) and LNG delivered and stored on site for A$20.0/GJ (confirmed Q1CY23 price, with a gas fuel efficiency of 9,200 kJ/kWh). Renewable energy penetrations varied across the proposals.

A gas renewable hybrid with BESS option (5.2 MW thermal, 1.48 MW solar and 1 MW BESS) was chosen for informing PFS costing and layout (Table 9-1). A total power cost of $0.3178/kWh was used in the study. The proposal has a guaranteed plant efficiency (heat rate) and minimum renewable penetration. The proposed power solution is a N+1, with diversified fuels.

The power station has been strategically located adjacent to the processing plant with a reasonable offset from crushing and ROM facilities (dust creation). The location selection has considered the site's overall wind and weather features. The 2+ ha clearance required for the 1.48 MW solar facility has been designed east of the ridge to minimise dust accumulation and optimise distance from open pit mining and blasting areas. The location allows for secondary supply to the neighbouring camp facility.

Figure 9-1: Cue Gold Mine, TSF and process plant location

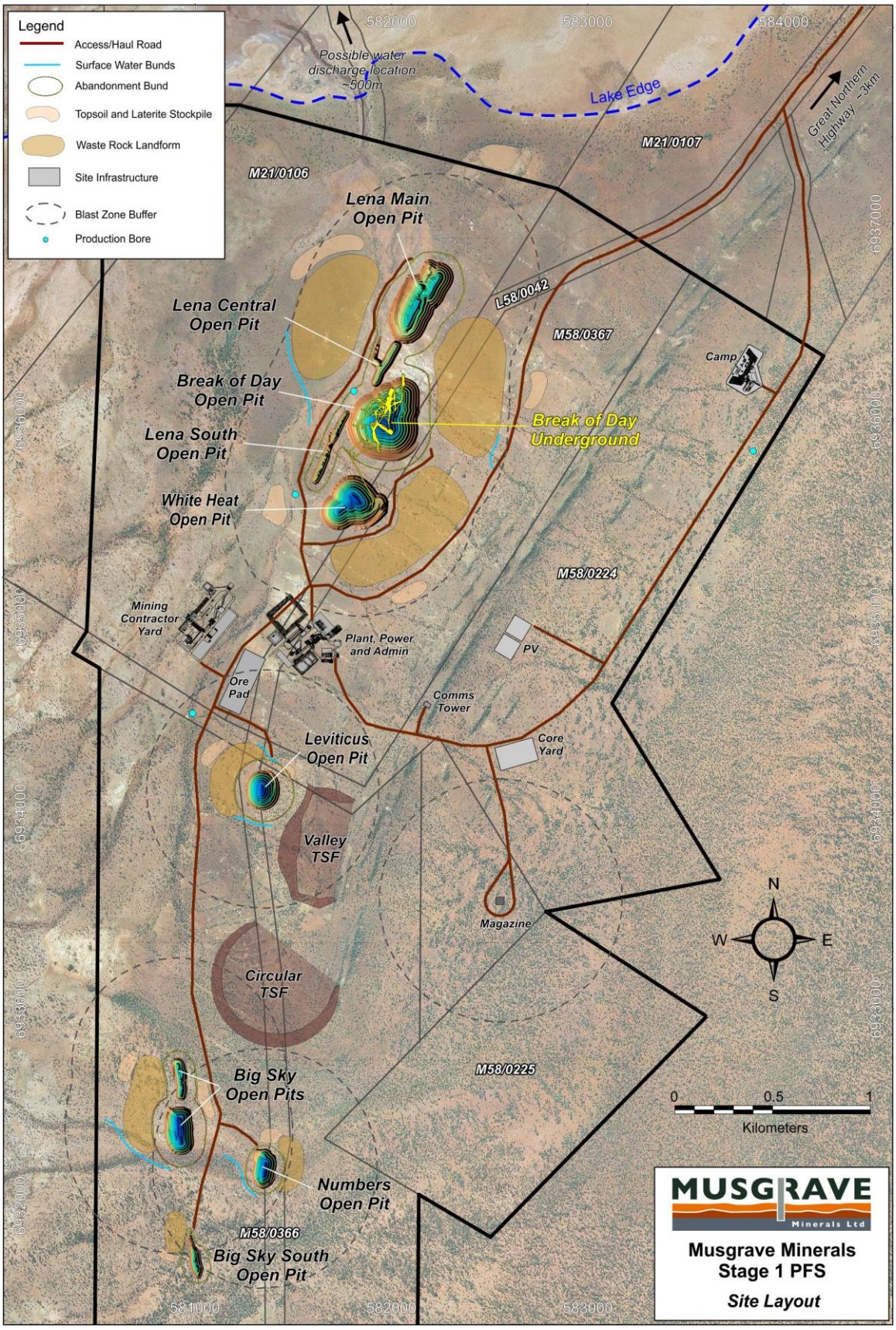


Table 9-1: Power proposal summary

	Gas Renewable Hybrid with BESS
Unit Cost (after LGC Sales)	$0.31781/kWh
Installed Capacity	• 5.2 MW Thermal • 1.48 MW Solar • 1 MW BESS
Generators & Power Station	• 3.2 MW gas generators (~1 MW each) • 2 MW diesel generators (1 MW each) • 11 kV switchboard
PV System	• 1.48 MW solar using 5B (East- West) setup • 1 MW (0.5 MWh) BESS • 13.6% RE penetration rate (guaranteed)

The Australian Government's Renewable Energy Target (RET) was introduced to encourage additional generation of electricity from renewable energy sources to meet the Government's commitment to achieving a 20 per cent share of renewables in Australia's electricity supply by 2020. The RET creates a financial incentive for investment in renewable sources through the creation and sale of certificates. The RET is split into two parts: the Large-scale Renewable Energy Target (LRET) and the Small-scale Renewable Energy Scheme (SRES). Under the LRET, large-scale generation certificates (LGCs) are created in the online Renewable Energy Certificate (REC) Registry by renewable energy power stations. One LGC is equivalent to one megawatt hour of eligible renewable electricity generated above the power station's baseline. On 20/02/2023, 1 LGC had a value of $41 (https://www.demandmanager.com.au).

9.3 Great Northern Highway Intersection

To allow for permanent, frequent and heavy vehicle access to the CGP site, Musgrave has engaged Greenfields Technical Services to undertake a design upgrade of the existing intersection with the Great Northern Highway (GNH). The highway intersection is located approximately 6 km north of the planned processing plant, 35 km south of Cue township.

A preliminary technical study was completed in 2022 which included a site visit and early measurements. The scope of the works (and subsequent design) has allowed for flexible project development scenarios, including ore cartage from the site.

The outcome of this study recommended shifting the existing intersection approximately 120 m to the north, within Musgrave's existing Miscellaneous License (L58/042). Additionally, shifting the access further north reduces the risk of flooding from the neighbouring waterway as well as allowing for improved sight distances for highway traffic.

Musgrave has completed the required onsite engineering survey and commenced the formal intersection design process. The design will be prepared in accordance with Main Roads Western Australia (MRWA) standards for access to the Great Northern Highway and will be submitted to them for approval in 2023.

9.4 Offices and Administration Area

The administrative and technical support services departments will be located at facilities adjacent to the planned process plant. The facilities will accommodate general and administration (G&A), management and support personnel, as well as all Musgrave technical and management personnel associated with open pit and underground mining.

Warehouse facilities (servicing Musgrave technical services and processing plant) will also be located adjacent to the processing plant, having access to critical reticulation services and IT. There will be an emergency response building with medical treatment room complete with ambulance and fire truck parking bays.

9.5 Open Pit Mining Contractors Area

Under the planned layout adopted during these studies, the mining contractor's area will be located to the west of the ROM pad, on the opposite side of the main haulage way. This position will ensure heavy vehicles and light vehicle interactions are minimised whilst also allowing for service reticulation from the adjacent processing plant. The mine contractor's area will be serviced with power, and raw and potable water from the process plant. The mining contractor will establish fixed facilities in this area which are likely to include: change room; workshops; warehouse; offices; washdown bay; and fuel and waste oil management services.

9.6 Underground Mining Contractors Area

The underground contractor will provide and construct the mining yard for Break of Day. The yard will be located adjacent to the White Heat pit entrance. The location will allow for mine service reticulation from the process plant and larger open pit mining yard. The mining contractor will establish fixed facilities in this area which are likely to include: change room, workshops, warehouse, offices, LV washdown bay, and fuel and waste oil management services.

9.7 Explosive Magazine and Compound

Regulatory exclusion zones for the storage of explosives have been incorporated into the site infrastructure layout. The design has included a 10,000-detonator magazine along with a 30 t ammonium nitrate fuel oil capacity to be stored within the compound.

9.8 Core Yard and General Laydown Area

The geology core yard and general storage area has been located away from the active mining locations on the eastern side of the ridge. The area will house core cutting, logging and storage facilities, whilst also providing for general site storage.

9.9 Communications

Initial enquires with communication providers have commenced, with a communication study confirming a viable option for a 600 Mbps to 1 Gbps site bandwidth link back to a regional Remote Terminal (RT). The RT microwave radio will link to an onsite 28 m high tower located on the regionally topographical ridge feature. This tower will also be used for the site two-way, SCADA and other radio-based requirements, as required. The camp facility to the north of the project will be linked to the 28 m tower for communications.

9.10 Accommodation Village

A 140-bed accommodation village, with a layout capable of expansion, will be built approximately 3 km northeast of the process plant, with its own dedicated access road. The ridge between the open pit operations and the accommodation village will provide noise protection for the accommodation village. A RFQ was performed in order to estimate the cost of the facility with all proposals received in Q1CY23. The facility includes two dedicated management style blocks (four beds), 34 four-bed units (136 beds), wet and dry mess facilities, gymnasium, laundry, administration blocks and recreational facilities.

The accommodation camp will be used to house most of the construction workforce prior to mobilisation of the operations personnel late in the construction period. This will minimise the cost of the camp facilities while providing sufficient accommodation required during the overlapping period between construction

and operation. The current housing and yard facilities within Cue township will remain in place during the operation phase of the project and provide overflow capacity for key management, exploration or technical personnel.

9.11 Aerodrome

CGP personnel will be flown into either of the two existing shire-operated airstrips located at Cue or Mt Magnet. Flight costs and associated landing tax requirements have been included within the Stage 1 PFS. Further discussions with individual shires will occur as the studies progress.

9.12 Sewage

One sewage treatment system, located at the accommodation village, will be installed to service the 140-person village and the process plant and mine buildings. Sewage from the plant and mine will be pumped to the treatment facility via a pump station fitted with macerating sewage pumps. All sewage water will be treated before the treated effluent is pumped to the TSF. Alternatives such as septic tanks will be considered at the next stage of design.

9.13 Water Supply

9.13.1 Process Water Dam and Raw Water Tank

The Process Water Dam is the main collection and storage pond for process water on site and is designed to store up to 3,500 m^3 of water. The process water dam is fed primarily by the pre-leach thickener overflow and the tails decant return water.

A raw water tank is fed by two to three high saline water bores located 2 km and 5 km from the plant, respectively. The raw water feeds the gland water and firewater systems and overflows into the process water dam.

9.13.2 Potable Water

A low saline bore will feed a potable water treatment plant located at the processing plant where the water is required for potable needs as well as the gravity and elusion circuits. Potable water is then reticulated north to the accommodation camp.

10 MATERIALS MANAGEMENT

Testwork and analysis of the site's geochemical footprint has been undertaken by Graeme Campbell and Associates.

The main aims of the geochemical testing program were to define the range of acid forming characteristics likely to be exhibited by waste rock and ore produced during mining of gold from the various deposits and to assess the implications for the management of waste dumps, run of mine (ROM) stockpiles, low grade (LG) stocks, tailings storage and mine site water quality.

A total of 199 samples have informed the PFS for management of geochemical risks associated with waste, low grade for stockpiling and tailings. Samples were derived from reverse circulation (RC) drilling chips and diamond core, and were specially chosen to ensure geographical spread in order to capture any geological variations. Additionally, oxide states were chosen as a function of the current pit envelopes to ensure the outcomes were representative of the minable inventory. The Musgrave multi-element regional soil sampling and aircore drilling database was also desktop reviewed as part of the geochemical study in order to understand the broader regional conditions.

In order to determine the suitability of stockpiling localised cap rock material for mine closure and waste dump contouring, nine 'near surface', bulk, laterite samples were also analysed.

10.1 Testworks and Implications for the Project

A total of 184 samples have informed the PFS for management of geochemical conditions associated with waste and low grade (Table 10-1). Samples were collected from all deposits and various oxidation states. Additionally, six bulk slurry tailing and nine bulk laterite samples have been analysed, representing the geographical spread of the PFS.

The main findings in relation to this testwork were as follows:

- All samples of waste rock and low grade ore from all pits, irrespective of the lithology type, are classified as Non-Acid Forming (NAF). As such, drainage from waste rock dumps and ROM ore stockpile will be pH neutral or slightly acidic.

  NAF reflects a generic mineralogy of: negligible sulphides (<0.1% S) within the oxide ore zones and trace sulphides (typically sub 1% S) and a strong calcareous groundmass within the fresh waste/ore zones.

- Various samples within Lena, Break of Day and White Heat displayed NAF-{AC} characteristics.

  NAF-{AC} is indicative of material that is acid consuming.

- The laterite, surface crust, material won as part of topsoil and pre-strip mining should be stockpiled separately and subsequently used for armouring all waste dumps and tailings facilities. Bulk samples have revealed excellent armouring and benign characteristics.

- Various Lena samples of fresh rock displayed modest arsenic concentrations. In this circumstance, the material will be housed internally within the waste dump (no closer than 5–10 m from the outer surface) and have its outer surface physically stabilised as part of the rehabilitation strategy. A similar management control will be implemented for the low-grade fresh Lena stocks, though it is expected that a majority of these piles will be processed prior to end of mine life.

- Lena and Big Sky oxide waste material (due to their high propensity of dispersion) will require isolation and subsequent surface armouring as part of the mine closure and rehabilitation requirements. The laterite material won as part of the pre-strip can be used to provide this stabilisation. Alternatively, the durable, benign basalt waste rock from Break of Day could be used for physical stabilisation.

- Break of Day and White Heat waste and low-grade ore are generally classified as benign, and therefore can be left as free draining piles post-mine closure.
- Leviticus and Numbers are similar in oxide material balance and geological conditions, and therefore have similar outcomes to that of Big Sky.
- Following water table recovery in the various pits after cessation of dewatering, the resulting hypersaline pit water will increase in salinity over time through evapo-concentration.
- Abandonment bunds around the perimeter of the decommissioned pits should comprise lithotypes that are both geochemically and physically stable; the benign basalt waste rock from White Heat and Break of Day or the regional laterite surface crust stocks would be ideal sources.
- All tailings' samples were categorised as NAF. The saline tailings-bed within the tailings-storage facility (TSF) is calculated to be geochemically very similar to the TSFs at many local goldmines. Accordingly, no specific 'geochemical-demands' for TSF design and decommissioning apply to the tailing's streams generated.

Table 10-1: PFS mining physicals - material balance

	Ore (bcm)						Waste (bcm)						Total (bcm)	
	Oxide		Transitional		Fresh		Oxide		Transitional		Fresh			
Break of Day OP	35,295	1%	57,131	1%	158,120	2%	1,370,125	21%	2,068,329	32%	2,755,005	43%	**6,444,005**	**100%**
White Heat OP	2,767	0%	31,279	2%	43,188	2%	479,047	23%	1,117,377	54%	402,834	19%	**2,076,491**	**100%**
Lena OP	211,438	6%	44,350	1%	69,031	2%	2,631,975	78%	220,056	7%	193,681	6%	**3,370,531**	**100%**
Big Sky OP	101,294	9%	Nil	0%	Nil	0%	996,396	91%	Nil	0%	Nil	0%	**1,097,690**	**100%**
Leviticus OP	11,797	2%	7,672	1%	922	0%	628,734	91%	38,594	6%	1,094	0%	**688,813**	**100%**
Numbers OP	58,024	17%	5,441	2%	Nil	0%	278,551	80%	6,172	2%	Nil	0%	**348,188**	**100%**
Break of Day UG	Nil	0%	Nil	0%	173,004	58%	Nil	0%	Nil	0%	126,687	42%	**299,692**	**100%**
TOTAL	**420,613**		**145,873**		**444,265**		**6,384,828**		**3,450,529**		**3,479,301**		**14,325,409**	

11 PERMITTING AND APPROVALS

Musgrave has commenced the government approvals and permitting process in parallel with the Stage 1 PFS. Various specialist consultants were engaged to undertake the required studies and onsite surveys for the Project. In consultation with Musgrave, Significant Environmental Services has managed the overall environmental and approval requirements.

The baseline environmental studies have been completed over the entirety of the Project disturbance envelope and to date include the following:

- Flora and vegetation surveys
- Terrestrial fauna surveys
- Subterranean fauna assessments
- Lake aquatic ecology assessments
- Materials (soil, waste rock and tailings) characterisation assessments
- Groundwater hydrogeology studies relating to mine dewatering and water supply
- Surface water hydrology studies supported by aerial drone topographic imagery.

Based on the extensive baseline studies completed and in consultation with key stakeholders, Musgrave intends to submit key project approvals in 2023. Musgrave believes that given the information available to date, there is no reason to consider that the Project has any notable risks that could prevent it from obtaining the regulatory environmental approvals required for development.

Environmental approval applications are scheduled to be submitted to the Department of Mines, Industry Regulation and Safety (DMIRS) and the Department of Water and Environmental Regulation (DWER) in 2023. Musgrave is not intending to self-refer the Project with the Environmental Protection Authority (EPA), as the Project characteristics and outcomes of environmental studies do not trigger any of the referral criteria listed in the Memorandum of Understanding (MoU) between DMIRS and the EPA.

Given the above assumptions permitting and approvals for the Stage 1 PFS are expected to take approximately 9–14 months from submission.

Key stakeholders involved with the approvals process for the Project include the following:

- Department of Mines, Industry Regulation and Safety (DMIRS)
- Department of Water and Environmental Regulation (DWER)
- Department of Biodiversity, Conservation and Attractions (DBCA)
- Main Roads Western Australia (MRWA)
- Department of Health (DoH)
- Department of Planning Lands and Heritage (DPLH)
- Badimia People (Traditional Owners)
- Badimia Land Aboriginal Corporation (BLAC) and Badimia Bandi Barna Aboriginal Corporation (BBBAC), representatives for Badimia People
- Wanarie Station (Pastoral Lease)

- Shire of Cue and Shire of Mt Magnet.

11.1 Completed Project Approvals and Permits

The approval and permitting milestones completed for the Project to date include the following:

- Granted Mining Leases over the entire resource for the Stage 1 PFS.
- Issued Groundwater Well Licence (GWL) for the abstraction of groundwater for mine dewatering and water supply purposes.

11.2 Future Project Approvals and Permits

Further key project approvals and permits that will be applied for the Project include the following:

- Native Vegetation Clearing Permit (NVCP) from DMIRS Native Vegetation Assessment Branch under the *Environmental Protection Act 1986* (EP Act) Part V; required together with Mining Proposal and Mine Closure Plan approval to commence ground disturbance/clearing activities relating to mining operations.
- Mining Proposal (MP) and associated Mine Closure Plan (MCP) from DMIRS Resource and Environmental Compliance Division under the *Mining Act 1978* (Mining Act) and EP Act Part IV; required for compliance with tenement conditions, including approval to commence ground disturbance and development activities relating to mining operations.
- Works Approvals and Licensing for prescribed premises from DWER Environmental Division under EP Act Part V; required for the construction and operation of certain facilities/activities with potential to cause notable pollution of air, land and/or water (e.g. tailings disposal and water discharge).
- Groundwater Well Licence (GWL) amendment to the existing GWL from DWER Water Division under the *Rights in Water and Irrigation Act 1914* (RIWI Act); required for increased groundwater abstraction activities for mine dewatering and water supply purposes.
- Dangerous Goods Licence from DMIRS Dangerous Goods Licensing Branch under the *Dangerous Goods Safety Act 2004* (DGS Act); required for the storage of classed consumables such as diesel, cyanide and explosives.
- Poisons Permit from the Department of Health (DoH) under the *Medicines and Poisons Act 2014*; required for the storage and use of cyanide in the processing plant.
- Project Management Plan (PMP) from DMIRS Resources Safety Division under the *Mines Safety and Inspection Act 1994*; required for the commencement of mining and processing activities.
- Sewage Treatment Licence through Shire of Cue.
- Cultural Heritage Management Plan and Relationship Agreement with BLAC and BBBAC.

12 ENVIRONMENT

12.1 Environmental Impact Assessment

Musgrave has commissioned various environmental and cultural heritage surveys within the proposed CGP disturbance envelope. These studies are required to undertake environmental impact assessments and prepare environmental approval applications for submission to the regulators.

Ecological (flora and fauna) studies undertaken include:

- Flora and vegetation assessments including Level 2 surveys have been completed (in various campaigns over the past 3 years) within the Project disturbance envelope. No Threatened Ecological Communities (TECs) were identified within the disturbance envelope during the survey efforts. However, Priority Ecological Communities (PECs) exist within the vicinity of the Project area on a regional scale and within the Project disturbance envelope. Musgrave has managed this to an acceptable level by ensuring that the population numbers removed of these Priority level species would be less than 5%. Baseline flora surveys (informing the flora and vegetation assessment outcomes) have been undertaken using Maia Environmental Consultancy, 360 Environmental and Ecologia.

- Fauna assessments including Level 2 vertebrate surveys have been completed within the Project disturbance envelope. There were no conservation significant fauna species recorded during the field surveys. Four broad habitats occur across the site. The two highest value habitats are the BIF range habitat and the ephemeral Salt Lake habitat, both of which occur to very small extents within the proposed Stage 1 PFS disturbance envelope. No evidence of Threatened fauna species (vertebrates or invertebrates) were identified within the Project site. Baseline fauna surveys (informing the fauna assessment outcomes) have been undertaken using Terrestrial Ecosystems, Coffey Environmental and 360 Environmental.

- Desktop level assessments were undertaken and considered sufficient for short range endemic (SRE) invertebrate fauna. None of the habitats identified within the Project disturbance envelope are considered to provide habitat isolates for SRE fauna species. This is further confirmed by a separate and independent assessment completed by Invertebrate Solutions. The conclusion from this assessment was that considering the small amount of potential habitat within the Project area, and that none of the habitats are restricted in nature, and all are laterally continuous within the region, no SRE or conservation significant invertebrate species are anticipated to be significantly impacted by development within the Project area.

- Desktop level assessments were undertaken and considered sufficient for subterranean (troglo and stygo) fauna. Based on the absence of confirmed stygofauna records from outside of the calcrete geology of the Project area, stygofauna habitat is generally absent or severely depauperate in the proposed Stage 1 PFS disturbance envelope. Results from previous stygofauna surveys of the Project area shows that stygofauna diversity is very low compared to calcrete communities nearby. Consequently, no significant impacts are anticipated on stygofauna species by development within the Project area. Likewise, troglofauna species occur in low numbers within the Project area and any species are reported to be common.

13 SUSTAINABILITY, COMMUNITY AND SAFETY

Musgrave Minerals recognises the need to incorporate sustainability into all aspects of Musgrave's business. The Company mission is to safely and responsibly deliver exploration success and advance development opportunities to build a profitable gold mining business, for the benefit of Musgrave's staff, contractors, shareholders and the communities within which the Company operates. This commitment extends to integrating environmental, social and governance considerations into the decision making. Environmental, social and governance (ESG) was a strong consideration in the Stage 1 PFS and will be a focus in all future development studies.

13.1 Sustainability

Musgrave is committed to integrating a sustainability strategy into the Cue Gold Project to benefit from the resulting operational efficiencies, reduction in costs, social benefits and preservation of the environment. Super Smart Energy were engaged by Musgrave to provide technical input and assessment of the various emission components, as well as completing a power station energy review.

13.1.1 Water Resource

Preserving and sustainably utilising the available water resources in the district is a key consideration for Musgrave. The DWER online register was interrogated to identify the presence of existing licensed groundwater users in the vicinity of the project, to ensure the operation is cognitive of existing requirements within the region. Within a 10 km radius of CGP there are four registered uses, all are outside of the zones of influence from dewatering activities. The processing plant (excluding the gravity circuit) has been designed on predominantly saline to super saline water, where there are no competing stakeholders.

The site's water balance has been designed to, where possible, conserve water, with maximise re-use of the resource as well as storage options. Based on tailings testwork and TSF designs, the water balance forecasts water recovery of 65% and above from the facility. Additionally, the implementation of a pre-leach thickener into the processing plant design will enable the operation to reduce water consumption as well as manage water disposal and loss from the circuit. Whilst the processing plant has incorporated adequate process and raw water storage dams, it is the intention of Musgrave to convert Lena south (post-open pit mining) into a water holding pond for subsequent re-use. The void is also able to harvest any surface water runoff from the Central Creek contours.

From initial hydrological studies, a series of production bores will be required for the CGP. Several of the bores will target high flow saline water courses, which have been mapped since commencement of drilling in the region. Given the shallow water table and nearby Lake Austin, these bores will not impact upon neighbouring water users. A smaller bore (or series of) will be drilled in discrete areas for targeting brackish water to utilise in the processing plant gravity circuit, as well as feeding the site potable water treatment plant.

13.1.2 Land Clearance

Musgrave is committed to reducing land clearance, to the extent practicable, as a result of the Project development, which leads to CO_2 emissions. Several locations within the proposed disturbance envelope have incurred historical mining and/or surface clearance, and in such cases, these will be preferentially used for any surface infrastructure or fixed buildings.

Musgrave has integrated sustainable tailing storage practices into the development plan to minimise land clearance and vegetation disturbance. The design of the valley and circular IWLTSFs take advantage of the natural topographical features to reduce embankment requirements. The proposed in-pit TSF facility within Leviticus pit reduces an equivalent facility footprint, as well as being a multipurpose asset.

Emissions for land clearing are presented in Table 13-1 over the life of project total area of 217 ha. It is noted that the emission source is not a defined emission source in the *National Greenhouse and Energy Reporting Act 2007* (NGER Act); however, it can be voluntarily reported. Total vegetation clearing activities are estimated to be 7,043 t CO_2e.

Table 13-1: Total greenhouse gas emissions from land clearing

	Debris Carbon (t)	Vegetation Carbon (t)	Burning (t)	MW Ratio (CO_2/C)	GWP	Emissions (t CO_2e)	Total Emissions (t CO_2e)
CO_2	759.0	1119.8		3.7		6,848.2	
CH_4			5.9		28.0	165.4	**7,043**
N_2O			0.1		265.0	28.9	

13.1.3 Power Station and Mobile Fleet

As part of the energy and carbon review, Musgrave investigated options of diesel, liquified natural gas (LNG) and integrated renewable energy. Three independent power providers (IPPs) submitted proposals for informing the PFS and were based on initial energy demands and peak loads. Musgrave, with the aid of Super Smart Energy, chose an LNG with solar (PV) and battery (BESS) option. Emissions for the life of the mine are noted in Table 13-2. Further work will be done in subsequent studies to integrate renewable energy into this mix and assess thermal energy options, further reducing the projected greenhouse gas emissions.

Table 13-2: Greenhouse gas emissions from gas power station

	Annual GHG Emissions (t CO_2e/year)						Life of Mine GHG Emissions (t CO_2e)			
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total	CO_2	CH_4	N_2O
Processing / Admin and Camp	4,372	8,744	8,744	8,744	8,744	4,372	**39,348**	39,249	76	23
Underground			1,022	2,282	2,105	399	**5,410**	5,387	8	15
TOTAL Gas Renewable Hybrid with BESS	4,372	8,744	9,766	11,026	10,880	4,771	**44,758**	44,645	87	26

Open pit and underground mobile fleet have been modelled as diesel powered units. As part of the Request for Quotation process, the various contractors provided estimated consumption rates. With further development of the project and in depth discussions with various contractors, Musgrave will review electrical and power saving options for the open pit and underground operations. In addition to the mining fleet, estimates have been made on the consumption of diesel for localised bore fields and site light vehicles (Table 13-3).

Table 13-3: Greenhouse gas emissions from diesel combustion from non-transport mining equipment

	Annual GHG Emissions (t CO_2e/year)						Life of Mine GHG Emissions (t CO_2e)			
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total	CO_2	CH_4	N_2O
Diesel Combustion from Non-Transport	5,665	7,688	7,688	7,688	4,045	202	**32,974**	32,834	47	94

Oils and greases are used for all mining equipment. These emissions are specifically associated with CO_2. Data inputs for oil and grease usage associated with mine operations were calculated using reference to Super Smart Energy's database of similar size mining operations (Table 13-4).

Table 13-4: Greenhouse gas emissions from consumption of oils & greases

	Annual GHG Emissions (t CO_2e/year)						Life of Mine GHG Emissions (t CO_2e)			
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total	CO_2	CH_4	N_2O
Petroleum based grease	13	15	15	15	7	4	**70**	70	0	0

Transport-related fuel combustion emissions were estimated using diesel fuel forecasts provided by Musgrave (Table 13-5). Included in this category are the mobile mining fleet light vehicles and ancillary vehicles, as well as administration light vehicles, buses and safety vehicles.

Table 13-5: Greenhouse gas emissions from diesel combustion for transport

	Annual GHG Emissions (t CO_2e/year)						Life of Mine GHG Emissions (t CO_2e)			
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total	CO_2	CH_4	N_2O
Diesel Combustion from Transport	876	1,181	1,730	2,843	2,124	182	**8,936**	8,871	2	63

13.1.4 Summary of Project Emissions

The total projected scope 1 emissions over the life of the mine are shown in Table 13-6. The largest categories are the combustion of LNG at the power station, and the combustion of diesel for non-transport mining operations.

Table 13-6: Life of mine greenhouse gas assessment summary

	Emissions (t CO_2e)			
Description	CO_2	CH_4	N_2O	Total
Diesel - Mining Operations Transport (Scope 1)	8,871	2	63	8,936
Diesel - Mining Operations Non-Transport (Scope 1)	32,834	47	94	32,974
LNG – Non-Transport Power Station (Scope 1)	44,645	87	26	44,758
Oils & Greases (Scope 1)	70	0	0	70
Land Clearing (Scope 1)	6848	165	29	7,043
Total Scope 1 Emissions	**93,268**	**301**	**212**	**93,781**

The anticipated life of mine emissions are expected to fall between 87,000 t CO_2e to 120,000 t CO_2e depending upon fuel type and renewable options used. Stage 1 PFS has employed (and costed) an emissions mix that results in 93,800 t CO_2e over the life of the project with a GHG intensity range of 0.27–0.32 t CO_2e/oz. Further optimisation of the power station renewable energy fraction will be undertaken for the Stage 2 PFS, as well as assessment of mobile fleet efficient measures and 'on demand' underground technologies.

13.2 Social and Community

13.2.1 Nearest Towns

The closest town to the Cue Gold Project is Cue and is approximately 30 km to the north of the Project along the Great Northern Highway and 659 km northeast of Perth. Known as the 'Queen of the Murchison', Cue was once the centre of the Murchison Goldfields with a population of more than 10,000. Today, Cue's population is approximately 228 (2021 Census) with approximately 396 people across the broader Shire. Cue has a long history of gold mining dating back to 1892 with the town gazetted in 1893 and named after prospector Tom Cue.

The town of Mt Magnet is 565 km northeast of Perth and 45 km south of the Cue Gold Project. Mt Magnet is a gold mining town which also services the local pastoral industry with a population of 583 (2021 census). Gold was first discovered at Mt Magnet in 1892 and the town was proclaimed in 1895.

13.2.2 Traditional Owners

The Badimia People registered a Native Title claim in 1998 (WCD2015/001) which was determined by the National Native Title Tribunal in 2015. The Native Title Tribunal determined from the evidence provided that Native Title did not exist in the land a waters of the claim area.

The Badimia people have a strong connection to the land and Musgrave recognises and respects that connection and culture.

The Company has consulted with the Badimia Land Aboriginal Corporation (BLAC) and Badimia Bandi Barna Aboriginal Corporation (BBBAC) throughout the exploration phase of the Project and will continue to consult with the Badimia throughout the study, development, operations, rehabilitation and closure phases of the Project.

Musgrave has a strong relationship with the Badimia and is in the consultation phase to negotiate a Cultural Heritage Management Plan and Relationship Agreement aligned with the new *Aboriginal Heritage Act 2021* in Western Australia.

The intent is for Musgrave to work together with Badimia for the benefit of all stakeholders.

13.2.3 Aboriginal Heritage

Since acquiring 100% ownership of the Project in 2017, Musgrave has undertaken numerous heritage surveys with the Badimia across the Cue Gold Project. A number of sites containing isolated artifacts of varying significance have been identified within Musgrave's tenure. No ethnographic sites were identified. No sites exist over any of the mineral resources within the Stage 1 PFS area. Infrastructure layout is currently designed to avoid all known sites.

13.2.4 Non Indigenous Heritage

The Heritage Council of Western Australia maintains a State register of Heritage Places under the *Heritage Act 2018*. No heritage places are listed within the Cue Gold Project area.

13.2.5 Community Relations

Musgrave is continuing to involve multiple stakeholders in our exploration and development discussions including Traditional Owners, local pastoral lease holders, local shires, health and emergency services, aboriginal service providers, accommodation and produce providers and fuel, equipment and service providers.

As part of prefeasibility level studies, 360 Environmental Pty Ltd (now part of SLR Consulting) was commissioned to undertake a desktop Social Impact Assessment (SIA) to inform the development of a Social Impact Management Plan (SIMP). A SIA aims to analyse, monitor and manage the social consequences of development. The resulting SIMP uses the results of the SIA to develop mitigation and management controls for material risks that may result from the proposed development of the Project.

The SIMP presents a framework with which Musgrave will be able to monitor impacts to stakeholders which include the Shire of Cue, Shire of Mt Magnet, the community (including the Badimia people), local businesses of the Murchison District, the local pastoral lease holders and relevant government agencies of WA.

The results of the SIA concluded that the most significant social risk involved with the proposed Cue Gold Project is strained relationships with key stakeholders. Ongoing engagement with neighbours and regulators will minimise this risk, including the establishment of a Cultural Heritage Management Plan with the Badimia people. This risk is considered to be able to be appropriately managed and is not a constraint to the development of the Cue Gold Project.

The SIA also will assess opportunities resulting from the proposed Cue Gold Project which included local investment opportunities within the Shire, increased demand for local skills, increased employment opportunities and the potential for the Project to provide services back to the Shires (e.g., emergency support).

13.3 Safety Management

Musgrave believes that sound occupational health and safety management practices are in the best interests of Musgrave's employees, contractors, associates, shareholders, the Company's business and the communities in which Musgrave operates.

Musgrave is committed to achieving the highest performance in occupational health and safety to create and maintain a safe and healthy environment at the workplace. The Company has policies in place including a health and safety policy, alcohol and other drugs policy, personal protective equipment policy, risk management policy and smoke free workplace policy, and operates a Health and Safety Management Plan with systems and procedures to align with the relevant legislation, laws and regulations.

Musgrave seeks to eliminate work-related incidents, illnesses and injuries, and minimising the risk of transmissible diseases and viruses by identifying, assessing and, where reasonably practical, eliminating or otherwise controlling hazards. Musgrave is committed to continuous improvement in occupational health and safety performance.

14 COST ESTIMATE

14.1 Capital Cost Estimate

Total capital expenditure for Stage 1 PFS has been estimated at $214M, which is a combination of $121M for pre-production development activities (including 3 months of pre-production mining activities) and an ongoing sustaining capital requirement of $93M to maintain conventional operations. Pre-production and sustaining capital over the life of the project are shown in Table 14-1.

Note: The Stage 1 PFS has focused on a standalone development scenario. The Stage 2 PFS, which will commence in May 2023 will focus on growing the resource base and extending the mine life beyond Stage 1. During this time, Musgrave will continue to assess alternative development options including toll processing, ore sales, plant lease and different site processing solutions which may have potential to further enhance value.

Table 14-1: Capital expenditure – pre-production and sustaining.

Capital Item	Cost (A$)	Source
Pre-Production Capital		
Pre-production mining (direct)	$12.1M	Q1CY23 RFQ Entech
Pre-production mining PP&E (direct)	$5.2M	Q1CY23 RFQ Entech
Pre-production mining G&A (indirect)	$1.0M	Q1CY23 RFQ for flights and accommodation
500 ktpa processing plant	$70.8M	Q1CY23 GRES
Camp and site facilities	$14.3M	Q1CY23 GRES
Tailings facility (Valley TSF)	$4.1M	Q1CY23 GRES
Site earthworks (non-plant) and mobile fleet	$4.5M	Q1CY23 GRES
Contingency	$9.4M	Q1CY23 GRES estimate ($6.0M)+ additional (MGV Cost Model)
Total Pre-Production Capital	**$121.3M**	
Sustaining Capital		
Underground mining (capital development and PP&E)	$43.8M	Q1CY23 RFQ Entech
Open pit (waste defer cost)	$33.8M	Q1CY23 RFQ Entech
Processing PP&E	$5.5M	Q1CY23 GRES + additional (MGV Cost Model)
Right of use assets (power station)	$9.8M	Q1CY23 Super Smart
Total Sustaining Capital	**$92.9M**	
Total LOM Capital	**$214.3M**	

14.1.1 Startup (Pre-Production) Capital

Startup capital includes all direct capital projects and infrastructure (plant, tailings, roadworks, site setup) as well as 100% allocation of conventional operating costs (such as G&A and initial open pit mining) during the startup period. The estimates include all costs associated with management, design and engineering, supply, transportation and delivery, site construction, site accommodation and flights, as well as first fills

and critical spares. The cost profiles are based on first quarter calendar year 2023 (Q1CY23) estimates and are therefore representative of the current operating and inflationary environment.

Table 14-1 provides a breakdown of the pre-production cost components, with the following inclusions:

- Pre-production mining direct – Q1CY23 RFQ open pit costs, based on the initial 3 months of open pit mining. Costs are inclusive of direct mining, FIFO costs and accommodation.
- Pre-production mining (PP&E) – assets associated with the commencement of open pit mining including: Great Northern Highway intersection upgrade, explosive magazine, mining yard client costs and mobilisation of contractor.
- Pre-production mining (G&A) – Q1CY23 costs associated with general site requirements and management as a consequence of open pit mining commencing prior to full commercial production. Costs include: site management costs, service department costs and associated expenses, FIFO and accommodation requirements.
- 500 ktpa CIP processing plant – supply, install and commissioning of the processing plant and associated infrastructure based on Q1CY23 cost profiles from GR Engineering Services (GRES).
- Camp and facilities – supply, install and commissioning of a 140 person camp inclusive of: dry and wet mess facility, recreational grounds, administrative buildings, camp services and bores, site earthworks and foundations, laundry and gymnasium. Based on Q1CY23 cost profiles from GRES.
- Tailings storage facilities – construction of the first tailings LOM facility (Valley TSF), inclusive of: contractor mobilisation, surface area clearing and grubbing, borrowing appropriate materials and compaction of 213 kbcm, construction of decant and catchment sumps. Based on Q1CY23 RFQ.
- Site earthworks (non-plant) and mobile fleet – onsite roadworks (including cut and fill activities covering +6 km of access), as well as the outright purchase of all processing and G&A fleet requirements.
- Contingency – 10% (or $9.4M) additional cost across all capital line items associated with the plant, camp and site setup. Contingency percentage does not include pre-production mining activities.

The GRES method for generating a capital cost estimate includes the following:

- 2–3 quote system on large critical items such as ball mill and crusher circuits
- Processing consumables (cyanide, mill balls, caustic, lime, etc) from recently obtained RFQ
- Concrete etc estimated from similar current Q1CY23 builds
- Manning costs estimated from similar current Q1CY23 builds.

Total startup capital is $121M and is inclusive of $9.4M in contingencies. Table 14-1 illustrates the breakdown of this total as well as the source of the cost estimate.

14.1.2 Sustaining Capital

Sustaining capital has been reported as all capital expenditure post-production commencement. Open pits with an expected life greater than 12 months, have deferred waste capitalised (totalling $33.8M). The underground mine allocates its capital profile based on direct physical costs and allocation of support services to capital. Sustaining capital for the processing plant includes allocation of capital replacements and throughput optimisation as well as the construction of the second integrated tailings facility (Circular TSF). Closure costs associated with the individual mines are expensed at the time of mine closure, whilst the overall site closure cost has been offset in the financial model by the salvage value of the processing

plant. It is anticipated that based on a 12.5% recoverable value on the plant and infrastructure at the end of the 5-year term ($11.7M), this would offset costs associated with plant removal and tailings rehabilitation.

Table 14-1 provides a breakdown of the sustaining costs components, with the following inclusions:

- Open pit mining direct (waste defer cost) – waste defer costs as a result of schedule periods exceeding the overall strip ratio and therefore this portion being capitalised. Q1CY23 RFQ open pit costs.
- Underground mining (capital development and PP&E) – capitalised costs as a result of mining long-term infrastructure and access drives into the underground. This includes $32.6M of capital development, $2.1M mobilisation as well as $9.1M of plant property and equipment.
- 500 ktpa CIP processing plant PP&E – costs ($5.5M) allocated for the ongoing operational optimisation of the processing plant as well as the construction of the second surface tailings facility (Valley TSF).
- Right of use (ROU) assets – fixed component of long-term contracts which reflect Musgrave's right to use ($9.8M).

14.2 Operating Cost Estimate

The total project operating cost ($351M or A$1,040/oz Au) is built from recent Q1CY23 Request for Quotations (RFQ) and is therefore reflective of the current Western Australian conditions and inflationary environment (Table 14-2).

Processing costs (representing 26% total project operating costs) have been calculated from a first principles approach based on the mine schedule. Differentiated costs have been estimated between the various oxide states of the ores to accommodate their individual characteristics, throughput rates and metallurgical needs. Processing costs are inclusive of the staffing flights and accommodation requirements. Key consumables for the processing plant (cyanide, lime, grinding balls, caustic) are reflective of recent Q1CY23 RFQs. LNG (delivered and stored) used for power generation is forecasted at A$20.0/GJ. Any diesel requirements used for processing plant operations is forecasted at A$1.18/L, which excludes GST and includes the $0.41/L rebate.

Open pit mining (38% of projects operating costs) has been built up from a recent Q1CY23 RFQ process with five reputable Western Australian companies providing conforming submissions. RFQ Companies were provided preliminary designs and a conceptual schedule as well as a detailed responsibility matrix. Open pit costs are inclusive of fuel requirements, flights and accommodation, Musgrave technical and management costs, as well as grade control. Diesel used for open pit operations is forecasted at A$1.18/L, which excludes GST and includes the $0.41/L rebate.

Expensed underground costs (representing 17% total project operating costs) are based on a recent Q1CY23 RFQ with four specialised underground contractors providing submissions. The submissions were based on a packaged design and conceptual schedule with hydrological and geotechnical conditions noted. Additional costs associated with technical support, management, grade control, power, flights and accommodation are included within this allocation. Diesel used for the underground operation is forecasted at A$1.18/L, which excludes GST and includes the $0.41/L rebate.

General and administrative (G&A) costs (representing 7% of the operating projects cost) were derived from an internal Musgrave cost model and reflect recent industry rates and manning requirements for a similar style and size of operation. Surface haulage costs were based on a Musgrave internal cost model and are reflective of current contractual rates for similar style and size haulage operations. The Financial Model has assumed all ore tonnes are surface-carted to the processing plant; however, this may be alleviated with further refinement of the study and surface layout schedules.

The Cue Gold Project (CGP) is in Western Australia and as such, subject to the standard state government royalty which equates to 2.5% of the value of gold metal produced. The first 2,500 oz gold metal produced per annum are exempt from this royalty. The gold deposits within the CGP included in this Stage 1 PFS are all subject to the following third-party royalties that date back to the 1990s: 1.575% gold royalty to Franco Nevada and a $2.50/oz gold royalty to Molopo.

Table 14-2: Operating costs

Capital Item	Cost (A$)	Source
Underground mining	$58.9M	Q1 CY23 RFQ Entech
Open pit	$134.8M	Q1 CY23 RFQ Entech
Surface haulage	$4.2M	MGV Cost Model
500 ktpa processing plant	$91.0M	Q1 CY23 GRES
Site G&A	$26.1M	MGV Cost Model
Gold royalties	$35.8M	MGV Cost Model
Total LOM Operating	**$350.8M**	

14.2.1 Benchmark Cost Profiles

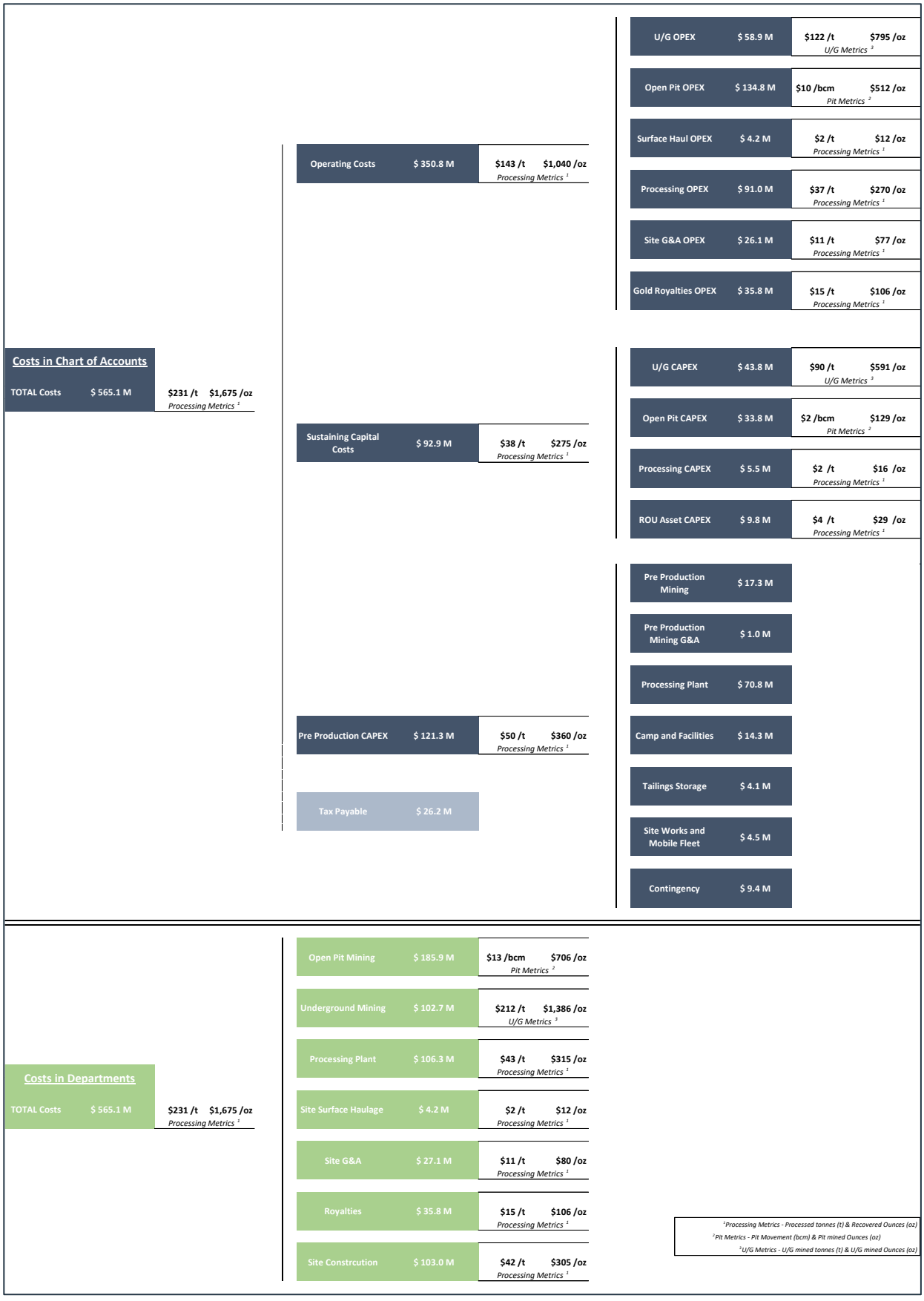
Based on various cost components being capitalised or distributed, Table 14-3 provides a total department cost metric for which various operations are often benchmarked against.

Table 14-3: Department costs

Department Cost	Total and Unit Cost (A$)	Comment
Open Pit Mining	$186M or $13.3/open pit bcm	Direct open pit mining, technical services, FIFO, grade control, open pit sustaining capital.
Underground Mining	$103M or $212/ underground ore t	Direct underground mining, technical services, FIFO, grade control, underground sustaining capital.
500 ktpa CIP processing plant	$106M or $43.4/ore t processed	Direct processing, management, operators, FIFO, sustaining capital, and ROU power.
Site G&A	$27M or $11.1/ ore t processed	Site management, support service departments, FIFO.
Site Haulage	$4M or $1.7/ ore t hauled	Load and haul of all ore to processing plant.
Gold royalties	$36M or $106/ oz produced	Western Australian State and two private royalty holders.
Total	**$462M**	

Figure 14-1 illustrates the total project cost of $556M (pre-tax) in subsets of accounting and departmental categories.

Figure 14-1: CGP cost profile – accounting and departmental.



15 FINANCIAL ANALYSIS

15.1 Financial Model

The Project's key financial outputs and gold metrics are displayed in Table 15-1. They illustrate that the project is a robust economic opportunity with the generation of high net cash flows and overall low unit costs on a yearly basis and a short payback period.

An internal Musgrave financial model on the Stage 1 PFS was created to consolidate the Cue Gold Project's key financial outputs with focus on the Indicated component of the May 2022 Mineral Resource Estimate. The financial model is based on a site standalone (0.5 Mtpa processing plant) operational basis and as such, corporate and exploration costs are not included within the study. The PFS financial model accounts for revenues, operating and capital costs monthly, and allocated for the first 10 months pre-production and construction activities.

Financial assessment has been undertaken on a base case A$2,600/oz gold price (which is approximately 15% below the current market spot price), constant over the full term of the PFS. No escalation or inflation in costs have been modelled.

Unless otherwise stated, all costs are in Australian dollars and exclude the Goods and Services tax (GST).

The cumulative financial metrics are displayed in Figure **15**-**1**. They display an exceptional pre-tax Internal Rate of Return (IRR, 95%), low C1 operating cost of A$934/oz and a low All-In Sustaining Cost (AISC) of A$1,315/oz generating high margins. The first 3-years of the project produce an average 80,000/oz of gold per year with an impressive 9 month payback from commencement of first production. This is indicative of the near surface, high grade, characteristics of Break of Day and White Heat.

Over the initial 5-year life-of-mine (LOM) the Project is expected to return a strong Earnings Before Interest Tax Depreciation and Amortisation (EBITDA) of $528M from total revenues of $879M. Total startup capital required in the initial 10 months of development is forecasted at $121M (inclusive of $9.4M contingency). The Project is forecasted to produce an undiscounted net cash position of $314M (or $288M after tax).

The total LOM production in the project schedule is underpinned by 1.7 Mt of ore in the Indicated Resource classification which equates to 77% of recovered gold ounces. The remaining 23% of recovered gold ounces is mined from 0.7 Mt of Inferred Resources. Processing within the 9-month payback period includes 23,000 t of ore (or 1,187 ounces of gold ~1.7%) in Inferred Resources.

The financial model has projected current tax losses held by the Company (end of June 2022 was at $54.0M) to a notional start date of the Project to arrive at a notional starting position of $61.5M.

A healthy pre-tax unleveraged IRR of 95% (post-tax IRR 91%) is calculated based on the upfront $121M pre-production capital investment.

The project yields an unleveraged pre-tax Net Present Value (NPV), at a nominal 8% discount rate of approximately $235M (NPV post-tax $215M). Beyond the initial $121M capital investment (Stage 1), the Project is self-funded on a cashflow basis to continue the development into Stage 2.

The Project has impressive operational metrics including a C1 LOM cost of A$934/oz and an AISC of A$1,315/oz.

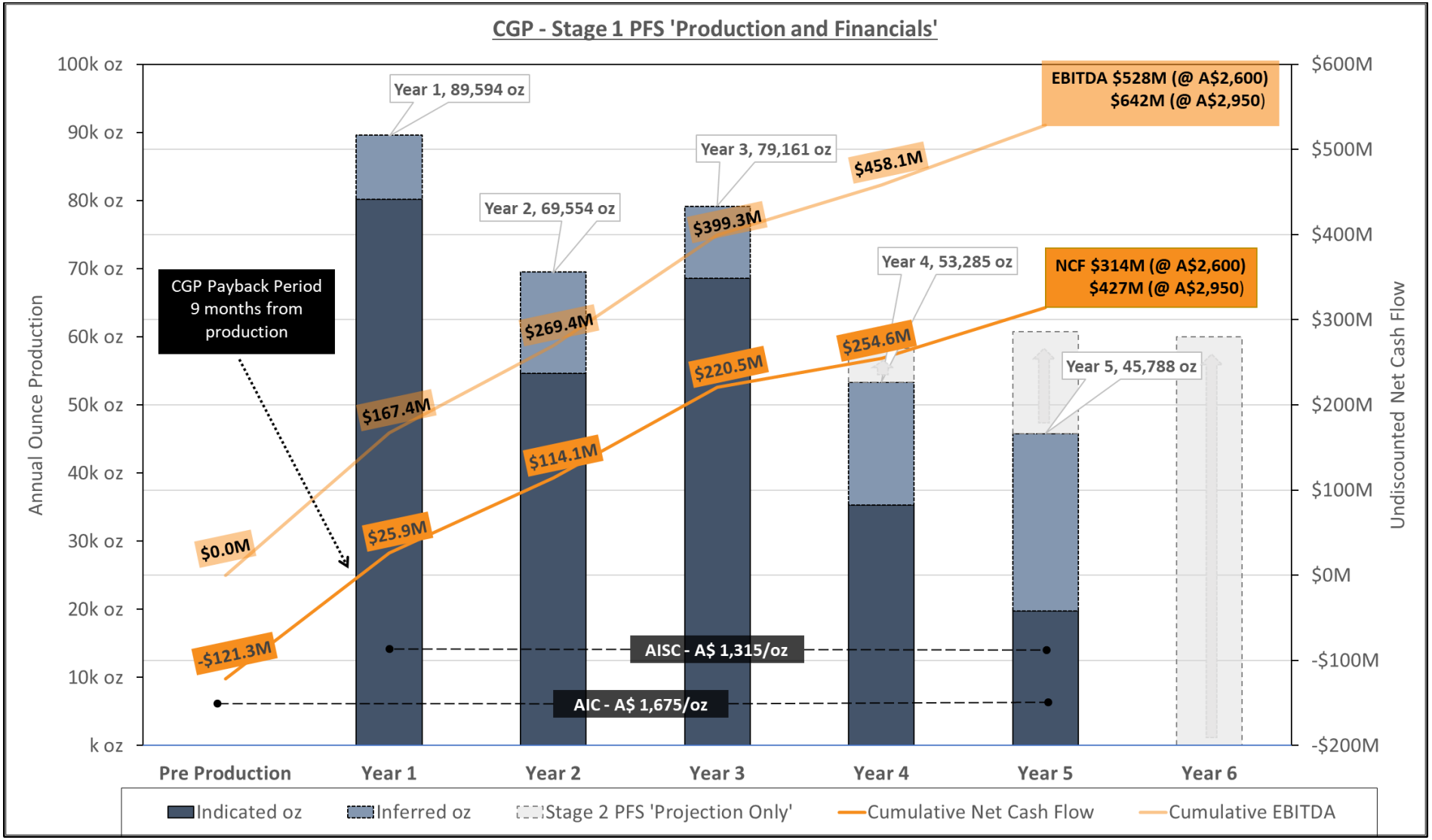
Based on the current April 2023 spot gold price of A$2,950/oz, the Project would generate an undiscounted net cash position of $427M, with an EBITDA of $642M.

Table 15-1: Key project metrics

Key Project Metrics (Real unless stated)	Unit	Stage 1 PFS @ $2,600 Au	Stage 1 PFS @ $2,950 Spot Au
Initial Project Life (Total)	months	70 Mth(s)	70 Mth(s)
Initial Operating Life (Total)	months	62 Mth(s)	62 Mth(s)
Nominal Processing Plant throughput (annum)	ktpa	500	500
			-
Gold Price	AUD / oz	2,600 / oz	2,950 / oz
			-
Process Plant Feed Tonnes	t	2,448,767	2,448,767
Process Plant Feed Grade	g/t	4.4	4.4
Gold Recovery Overall Percentage	%	97.8%	97.8%
Gold Recovered	oz	337,381	337,381
Gold Recovered- Annual Average over initial 5 yrs	oz	Approx. 65,000 oz	
Operating Cost	AUD M	(350.8)	(355.5)
Sustaining Capital	AUD M	(92.9)	(92.9)
Pre Production Capital	AUD M	(121.3)	(121.3)
Undiscounted Cashflow (before Tax)	AUD M	314.0	427.3
Undiscounted Cashflow (After Tax)	AUD M	287.7	367.3
EBITDA	AUD M	528.2	641.6
EBIT	AUD M	288.8	402.2
NPAT	AUD M	262.6	342.1
C1 Cost	AUD / oz	934 / oz	934 / oz
All-in-Sustaining Cost (AISC)	AUD / oz	1,315 / oz	1,329 / oz
Pre-production CAPEX	AUD M	121.3	121.3
Project NPV (Pre-Tax 8%)	AUD M	235.1	325.7
Project NPV (Post Tax 8%)	AUD M	215.0	279.5
Project IRR (Pre-Tax)	%	95%	124%
Project IRR (Post Tax)	%	91%	116%
Project Payback Period from Production Start	Period	9 Mth(s)	7 Mth(s)
Maximum Project Drawdown	AUD M	(121.3) and W/C of (5.3)	(121.3) and W/C of (5.3)
(W/C - Working Capital)			

Project Physicals (LOM)	Unit	Stage 1 PFS @ $2,600 Au	Stage 1 PFS @ $2,950 Spot Au
Total Movement: Open Pits	bcm	14,025,717	14,025,717
Ore Mined: Open Pits	t	1,964,355	1,964,355
Ore Grade: Open Pit	g/t	4.3 g/t	4.3 g/t
Gold Contained: Open Pit	oz	269,853	269,853
Strip Ratio: Open Pits	x	15.7 x	15.7 x
Ore Mined: Break of Day Underground	t	484,412	484,412
Ore Grade Break of Day Underground	g/t	4.8 g/t	4.8 g/t
Gold Contained: Break of Day Underground	oz	75,197	75,197
			-
Process Plant Feed Tonnes	t	2,448,767	2,448,767
Process Plant Feed Grade	g/t	4.4	4.4
Process Plant Feed Ounces	oz	345,051	345,051
			-
Total Gold Recovered from Processing Plant	oz	337,381	337,381
Ore Fed- Indicated Category		1,722,898 @ 4.8g/t for 258,371 oz rec	1,722,898 @ 4.8g/t for 258,371 oz rec
Ore Fed- Inferred Category		725,869 @ 3.5g/t for 79,010 oz rec	725,869 @ 3.5g/t for 79,010 oz rec

Figure 15-1: Production and key financials

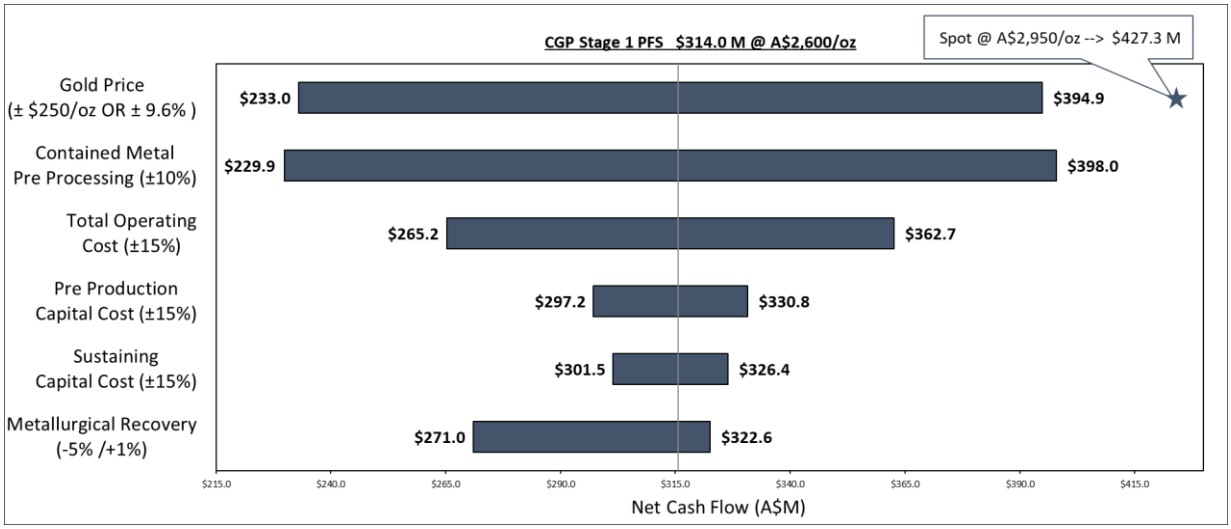


15.2 Sensitivity Analysis

Figure 15-2 illustrates the Undiscounted Net Cash Flow variations due to altering key physical metrics or cost profiles for CGP. Six variations were investigated on the following basis:

- Gold price variation by A$250/oz either side of the base A$2,600/oz input. The gold price in the past 12 months (in Australian dollars at closing trade) has varied A$542/oz from a low of A$2,471 to a high of A$3,013. Musgrave believes it prudent to therefore assess the Project over a variation of +/- A$250/oz.
- Operating costs varied by +/-15% to accommodate any future inflationary environments or potential deflationary conditions. The sensitivity analysis altered all operating costs excluding royalties (private and state), as these are fixed contractual or regulatory profiles.
- Pre-Production capital costs varied by +/-15% to accommodate any future inflationary environments or potential deflationary conditions. The discretionary components of pre prediction ($9.4M) was not part of the sensitivity. The initial 3 months of open pit mining and associated G&A costs were part of this pre-production sensitivity.
- Sustaining capital costs varied by +/-15% to accommodate any future inflationary environments or potential deflationary conditions.
- Contained metal varied by +/-10% to illustrate the effects of resource estimation and/or mining execution. The analysis was undertaken on metal prior to the processing plant recoveries. This analysis is also analogous to feed grade variation.
- Processing recovery varied by +1% and -5%. With the base case having a recovery of 97.8%, any increase greater than 1% (on top of the base case) would be unrealistic, whilst the low case of -5% is the lower end of a possible outcome.

Figure 15-2: Sensitivity factors on net cash flow



The sensitivity analysis shows the CGP to be resilient to operating and capital cost variations. As is usual in most mining projects, gold price and contained metal demonstrate the highest sensitivity to the Project's economics.

The Project illustrates significant leverage to improved contained metal and current spot gold price and demonstrates overall the robust economic case for development of the Project.

The exceptional nature of the Stage 1 PFS economics for the CGP provide a solid foundation to move to a Stage 2 PFS. The Stage 2 PFS will focus on further discovery, resource growth and conversion of Inferred to Indicated Mineral Resources to add additional mine life to the project, which will continue to add value and further enhance the Project economics.

16 PRICE FORECAST, EXCHANGE RATE AND FUNDING

16.1 Price Forecast

The consensus market view on short- to medium-term pricing for gold is positive. A design gold price of A$2,500/oz is utilised in the open pit and underground design works and the sale price of A$2,600/oz was utilised for the project economic modelling (Table 16-1). The consensus mean of 29 independent gold price forecasts was A$2,594/oz as at 12 December 2022. The current spot gold price is circa A$2,950/oz.

The Company has taken a moderately conservative view on gold price over the life of mine compared to current spot gold price. This is also in contrast to the current use of costings for capital and operating costs which are considered to be high given the strong inflationary environment currently experienced in the resources sector in Australia. This differential has the potential to provide further upside financial benefits for the Cue Gold Project if inflation eases and costs equilibrate to the longer term averages.

Table 16-1: Gold price parameters

Unit	Gold
Study Gold Design Price (COG's and Optimisations)	A$2,500/oz
Gold Sell Price	A$2,600/oz
Spot Gold Price	A$2,950/oz
Difference from Sale Price to Spot	+13.5%

It is assumed that the gold doré will be transported from site to the Perth mint for refining and costs have been included in the financial model to account for this.

There are a number of global structural reasons favouring a strong gold price outlook:

1 Central banks are gradually building gold allocations and have been net buyers of gold for more than a decade now, amid a broader trend of diversifying dollar-denominated reserves.

2 The combination of the global COVID-19 pandemic, Russia-Ukraine war and south-east Asia political tensions increase global uncertainty.

3 Demand for gold has risen as a safe-haven asset given rising tensions in global financial markets and the US banking sector.

16.2 Exchange Rate

All costings within the Stage 1 PFS are based in Australian dollars with requests for quotes, sourced from Q1 2023 third-party costings where the AUD:USD exchange rate varied from 0.67 to 0.71. As at early April 2023, the exchange rate was 0.68 (one Australian dollar equals 0.68 United States dollars).

16.3 Funding

The estimated pre-production CAPEX for the Project is $121.3 million, while the maximum cash drawdown is $127 million. The difference represents working capital requirements, ensuring Musgrave can meet its short-term liabilities and continue the day-to-day operations.

As part of the Stage 2 PFS, the Company may consider small batch, alternate processing options to generate cash-flow and thus lower the initial capital requirements. Further evaluation of these options will be considered in the Stage 2 PFS.

Project financing for the development of the Project has not yet been secured, which is typical for a PFS stage project. The Company will initiate discussions with a number of financiers and will advance these discussions through the feasibility stages.

Potential funding instruments include the following:

- Equity
- Senior-secured project debt finance
- Secured corporate bond
- Pre-paid off-take and other forms of off-taker financing.

Overall, the Company's Board considers that, based on the positive Stage 1 PFS, there is a reasonable basis to assume that the necessary funding for development of the Project can be obtained, based on the following:

- The Project's economics support a decision to invest, given that the Project is forecast to generate $288M of free cash (post tax) over the LOM.
- The projected cash-flows can support a component of debt funding for the total construction CAPEX and meet typical project debt financing requirements.
- Post-tax $NPV_{8\%}$ of $215M, a strong IRR of 91% (significantly above typical returns sought by investors of circa 20%) and pay-back period of under 9 months.
- Total cash drawdown of $127M which includes the $121M pre-production capital.
- The Project is located in the Tier-1 gold mining jurisdiction, approximately 40 km north of Mt Magnet in Western Australia.
- The Project has Mineral Resources with two cornerstone high-grade deposits (Break of Day and White Heat) and numerous smaller deposits which provide the potential for satellite operations and resource growth.
- A growing resource base with approximately 0.93 Moz comprising Indicated (0.43 Moz) and Inferred (0.49 Moz) with the Stage 1 PFS focused on the Indicated component of this Mineral Resource. Further resource growth and resource conversion (Inferred to Indicated) will be the focus of further drilling to grow the Indicated component of the resource and enhance the Project's life.
- Musgrave has been able to raise over $30 million in the last two years to fund exploration drilling, resource growth and the Stage 1 PFS. The Company's major investors and shareholders have been strongly supportive of the Company since acquisition of the Project and subsequent gold discoveries and continue to demonstrate strong support for the Company.
- The Board, Senior Management and its financial advisers and brokers have substantial experience in financing development projects in Australia and overseas and have an appropriate mix of skills to oversee and direct the progression of the Project through to Final Investment Decision (FID), project funding, construction, commissioning, and into operations.

The Company is in a strong position with cash (as at 31 December 2022) of $14.6 million, and no debt. Additional expenditure would be required to progress the Project to the completion of Stage 2 PFS and DFS, which will form the basis of the FID. The Company believes, on the same basis as noted above, that additional capital can be raised if required, to complete this task.

17 OPPORTUNITIES

17.1 Existing Resources

Stage 1 PFS has primarily focussed on the Indicated Resource component of the May 2022 Mineral Resource Estimate. Drilling and more detailed interpretation of the current deposits and mineralised trends may enhance further resource conversion (Inferred to Indicated) and or lead to further discoveries. This work is significantly advanced and is continuing throughout the first three quarters of 2023.

Additionally, new prospects (Amarillo and Waratah) have been discovered and will progress to initial resource definition stage over the next three months. Updating the Mineral Resource Estimate in late 2023 will enable the project to review the life of mine term and subsequent financials with the focus on extending the LOM beyond the initial 5 year term. In the case of extending the mine life, any additional Resources have the potential to add significant value without the impediment of the Stage 1 startup capital.

Stage 1 PFS exploits only the upper levels of the underground resource at Break of Day and does not consider underground mining at any of the other deposits. Further infill and extensional deeper drilling on existing deposits and analysis may result in other CGP resources being amenable for underground mining, in which case the LOM term would be expanded. Future drilling success at the high-grade deposits of Break of Day and White Heat have the potential to increase the LOM processing head grade in future operating years.

Stage 1 PFS has converted 264 koz into a mine plan from the 417 koz of equivalent Indicated Resource and 81 koz into a mine plan from the 452 koz of equivalent Inferred Resource. The potential to improve these conversion ratios is expected to develop as further drilling continues to enhance the understanding of geological controls on mineralisation within the deposits. This has the potential to add to the LOM.

Resources in the Tuckabianna and Eelya regions of Musgrave tenement package (totalling 59 koz), have not been assessed as part of this Stage 1 PFS. Further resource definition and assessment of this region and its existing resource base could convert portions of this material into a mine plan for delivery into the Stage 2 PFS LOM.

Further assessment of project operational methods and options, additional optimisations, further technical studies, along with revised cost models and input parameters may lead to enhanced financial outcomes.

Further metallurgical testing on the peripheral deposits of Numbers, Leviticus and Lena Fresh may result in increased forecasted recoveries which would increase the overall blend of these resources into a Stage 2 PFS.

Further analysis of data and input parameters may result in the expansion of pit envelopes and optimisation of waste rock dumps and infrastructure. In such a case, along with various aspects mentioned above, this may increase the overall LOM term and further enhance the Project economics.

17.2 Exploration Potential

Further exploration success may lead to new discoveries, which could have the potential to trigger redesign of the processing plant and associated infrastructure including increased scale and throughput. The Musgrave team has a strong record of discovery success in the region to expand the LOM. New discoveries may result in an increased annual throughput demand on the Project, with resultant lowering of the operating cost profiles.

Exploration success in the CGP and wider Musgrave tenement packages has the potential to add mine life and value to the project. Significant opportunity could arise from continued drilling and understanding of

the mineralised trends within the Cue Gold Project area. Additionally, early-stage exploration at Mt Magnet south tenements, where modern drilling and exploration techniques have not been employed, could result in further new mineral discoveries and resource growth.

Based on the impressive endowment of the Murchison region, Musgrave continues to review and assess regional opportunities for acquisition (both for resources and assets). The release of this Stage 1 PFS allows for a base economic position to be set, with opportunities to leverage off these results into other localised regions.

17.3 Improved cost environment

Musgrave will continue to monitor the industry's inflationary environment, both for pre-production capital and for operating cost profiles and consumables. In the case where recent cost pressures ease, including energy prices, wages and input supplies, a revision of the overall cost profile may trigger a re-assessment of the resource economics, mining cut-off grades and therefore overall project economics.

Capital cost reduction may be possible if macro conditions are altered and a tighter tendering process is commissioned for progressive development studies and/or execution of the pre-production activities.

Gold price volatility provides for an opportunity in the Project's economics by providing increased financial returns as a result of a higher gold price environment. Whilst a lower gold price environment is a risk, the low cost profile of the Stage 1 PFS ounces provide for assurance of continuity of operations during these times if a lower gold price was to occur.

17.4 Options for integrating processing

There are multiple existing gold processing facilities in the region. The integrated use of an existing processing facility would alleviate the requirement to build a standalone processing plant at the CGP, also reducing the requirements for onsite tailings storage and enable a reduced camp and operational site set-up. This would reduce the initial start-up capital requirements but may introduce additional hurdles and operational complications over the LOM. A smaller or refined processing circuit may also reduce the initial start-up capital requirement. These options will be further examined in detail in the Stage 2 PFS.

18 RISKS

18.1 Economic Factors, Inflation and Supply Chain Risks

Musgrave's performance and the value of its shares may be affected by fluctuations in commodity prices and exchange rates, such as the USD and AUD denominated gold prices and the AUD/USD exchange rates. Financial performance will be highly dependent on the prevailing commodity prices, capital costs, operating costs and exchange rates. These prices along with other inputs to capital and operating costs can fluctuate rapidly and widely and are affected by numerous factors beyond the control of Musgrave including, among others, expectations regarding inflation, the financial impact of movements in interest rates, global economic trends and confidence and conditions, each of which are currently experiencing material changes.

The above factors may have an adverse effect on Musgrave's exploration activities and the potential for future development and production activities, as well as the ability to source adequate staff and fund those activities. In particular, if activities cannot be funded, there is a risk that tenements may have to be surrendered or not renewed.

Musgrave's ability to progress its business depends upon robust global supply chains and the ability to source adequate staff. The tightening market and growing inflation may affect the general economic conditions, both domestic and global, and may affect the performance of Musgrave and its shares.

While Musgrave's directors and management are closely monitoring domestic and global events, it is difficult to state with certainty what the impacts will be on the demand for gold, and Musgrave's ability to develop its projects and generate revenue from them in the short to medium term.

Musgrave's future revenues (if any), the economic viability of its projects, the market price for its listed securities, and its ability to raise future capital and source adequate staff may be affected by these factors, which are beyond Musgrave's control.

18.2 Mineral Resource Risks

Resources estimates are expressions of judgment based on knowledge, experience and resource modelling. As such, resource estimates are inherently imprecise and rely to some extent on interpretations made. Additionally, resource estimates may change overtime as new information becomes available. Should Musgrave encounter mineralisation or geological formations different from those predicted by past drilling, sampling and interpretations, resource estimates may need to be altered in a way that could adversely affect Musgrave's operations or result in the inability to satisfy production and economic objectives of the Cue Gold Project. There is no guarantee mineral resources can be converted to ore reserves.

Subject to the results of exploration and testing programs to be undertaken, Musgrave has completed a stage 1 prefeasibility study and intends to progressively undertake a number of additional studies in respect to its projects. These studies may include further scoping, prefeasibility, definitive feasibility and bankable feasibility studies. These studies will be completed within parameters designed to determine the economic feasibility of the projects within certain limits. There can be no guarantee that any of the studies will confirm the economic viability of the projects, or the results of other studies undertaken by Musgrave (e.g. the results of a definitive feasibility study may materially differ to the results of a preliminary feasibility study). Even if a study confirms the economic viability of the projects, there can be no guarantee that the project will be successfully brought into production as assumed or within the estimated parameters in the feasibility study (e.g. operational costs and commodity prices) once production commences. There is no guarantee production will reflect the resource model. Further, the ability of Musgrave to complete a study may be dependent on Musgrave's ability to raise further funds.

18.3 Infectious Disease and COVID-19 Risks

The global economic outlook is uncertain and could be influenced by the lingering COVID-19 pandemic. This could continue to have an impact on global capital markets, commodity prices and foreign exchange. Uncertainty may re-emerge as to the ongoing and future response of government authorities and regulators as well as a likelihood of a global or more localised economic recession of unknown duration or severity. Therefore, the ongoing impact of COVID-19 or other future potential infectious diseases to the Company, is not fully known.

Any further governmental or industry measures taken in response to COVID-19 or other potential new infectious diseases may adversely impact the Company's operations and are likely to be beyond the control of the Company and could have consequential disruption and cost implications on the ongoing activities at the Cue Project as it works towards the objective of a gold operation at Cue. In particular, a sustained lockdown or sustained community transmission of an infectious disease in Western Australia may have a materially adverse impact on the Company's operations.

The Company has a policy in place to address the risks presented by COVID-19 and outlines risk mitigation strategies to address a range of scenarios.

Further supply chain disruptions resulting from the transmission of COVID-19 or other potential new infectious disease in the community and measures implemented by governments around the world to limit the transmission of the virus may further adversely impact Musgrave's share price, operations, financial position, prospects and ability to raise capital.

18.4 Access Risks

It is also possible that, in relation to tenements which Musgrave has an interest in or will in the future acquire such an interest, there may be areas over which legitimate rights of Traditional Owners or surface rights holders exist. In this case, the ability of Musgrave to gain access to tenements (through obtaining consent of any relevant Traditional Owner, body, group or landowner), or to progress from the exploration phase to the development and mining phases of operations may be adversely affected. Musgrave's mineral titles may also be subject to access by third parties including, but not limited to Traditional Owners. This access could potentially impact Musgrave's activities and/or may involve payment of compensation to parties whose existing access to the land may be affected by Musgrave's activities.

Musgrave is respectful or Aboriginal culture and preservation of significant Aboriginal sites. In relation to tenements which Musgrave has an interest in or will in the future acquire such an interest, there may be areas or objects of Aboriginal heritage. If Aboriginal heritage sites or objects exist, these areas may need to be avoided or Musgrave may need to enter into agreements with the Traditional Owners of the sites. The ability of Musgrave to implement its work program may be adversely affected in access, time and cost.

18.5 Personnel and Labour Risks

Poor implementation of policies or practices and ESG related decisions can materially adversely impact Musgrave's social licence to operate.

The responsibility of overseeing the day-to-day operations and the strategic management of Musgrave depends substantially on its senior management and its key personnel. Key personnel are important to attaining the business goals of Musgrave. Musgrave believes that it has, in general, good relations with its employees and contractors. There can be no assurance given that there will be no short-term detrimental impact on Musgrave if one or more of these key employees cease their employment or if one or more directors leave the Board.

Critical functions of Musgrave's operations may be affected in the short to medium term as replacement key personnel are sought, which can incur additional costs or cause loss of productivity during the recruitment and onboarding phases. Musgrave is also exposed to a general resources industry risk of not being able to appoint operational personnel on reasonable terms if labour costs in the resources industry increase. In these circumstances Musgrave's operating and financial performance may be adversely affected.

There can also be no assurance that Musgrave's operations or those of its contractors will not be affected by labour related problems in the future, such as disputes relating to wages or requests for increased benefits. There are risks associated with staff including attracting and retaining key personnel and, no matter where located, staff acting out of their permitted authority and with contractors not acting in accordance with Musgrave's policies.

18.6 Tax Law and Application

The application of and changes in relevant tax laws (such as income tax, goods and services tax (or equivalent) and stamp duty), rules relating to deductible liabilities, or changes in the way those tax laws are interpreted, will or may impact the tax liabilities of Musgrave or the tax treatment of a Shareholder's investment. An interpretation or application of tax laws or regulations by a relevant tax authority that is contrary to Musgrave's view of those laws may increase the amount of tax paid or payable by Musgrave.

Both the level and basis of tax may change. Any changes to the current rates of taxes and/or any changes in tax rules and tax arrangements may increase the amount of tax paid or payable by Musgrave and may also impact Shareholders.

18.7 Dilution

In certain circumstances, the Directors may issue equity securities without any vote or action by Shareholders. When Musgrave issues equity securities, the percentage ownership of Shareholders may be reduced and diluted.

18.8 Accounting Standards

Australian Accounting Standards (AAS) are adopted by the Australian Accounting Standards Board (AASB) and are not within the control of Musgrave and its Directors. The AASB may, from time to time, introduce new or refined AAS, which may affect the future measurement and recognition of key statement of profit or loss and statement of financial position items. There is also a risk that interpretation of existing AAS, including those relating to the measurement and recognition of key statement of profit or loss or statement of financial position items may differ. Any changes to the AAS or to the interpretation of those standards may have an adverse effect on the reported financial performance and position of Musgrave.

18.9 Trading in Securities of Musgrave May Not Be Liquid

There is no guarantee that there will be an ongoing liquid market for securities of Musgrave. Accordingly, there is a risk that, should the market or Musgrave's securities become illiquid, the Shareholders will be unable to realise their investment in Musgrave.

18.10 Metallurgical Recovery

The economic viability of mineralisation depends on a number of factors such as metal distribution, mineralogical association and an economic process route for metal recovery, which may or may not ultimately be successful. The recovery of gold ores in Western Australia utilises a commonly used process although changes in mineralogy that are currently not known, may result in inconsistent metal recovery.

18.11 Return Risks

Musgrave's ability to benefit from any future mining operations (if any eventuate, which may never occur) will depend on market factors, some of which may be beyond its control. The world market for minerals is subject to many variables and may fluctuate markedly. General economic conditions, movements in interest and inflation rates and currency exchange rates may also have an adverse effect on Musgrave's exploration, development and (if any) production activities, as well as on its ability to fund those activities.

18.12 Expected Future Events May Not Occur

Certain statements in this report constitute forward looking statements. Such forward looking statements involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance and achievements of Musgrave to be materially different from any future results, performance or achievements expressed or implied by such forward looking statements. Given these uncertainties, prospective Shareholders should not place undue reliance on such forward-looking statements. In addition, under no circumstances should forward looking statements be regarded as a representation or warranty by Musgrave, or any other person referred to in this report, that a particular outcome or future event is guaranteed.

18.13 Third Party Risks

Musgrave, although it has no material litigation on foot, is exposed to the risks of litigation and disputes.

Musgrave is and may in the future become a party to further joint venture agreements governing the exploration and development of its projects. There is a risk that one of Musgrave's joint venture partners or other contractors may default in their joint venture obligations (or that Musgrave may default in its obligations and become liable) or not act in the best interests of the joint venture. There is a risk of insolvency or managerial failure by any of the contractors or other suppliers used by Musgrave in any of its activities, or that any of those agreements are terminated in accordance with their terms. There is also a risk of legal or other disputes between Musgrave and co-venturers or contractors or other suppliers. This may have an adverse effect on the interests and prospects of Musgrave.

The operations of Musgrave will require the involvement of a range of third parties, including suppliers, contractors and consultants. With respect to these third parties, and despite applying pre-contracting due diligence, Musgrave is unable to avoid the risk of financial failure, performance failure or default by a contractor or customer or a delay in services, equipment or supplies.

18.14 Exploration Risks

Musgrave's tenements (including those for which it may have rights to acquire) include a number of prospects which have had significant exploration works undertaken and are considered to be at an advanced stage. Musgrave intends to continue its extensive exploration work.

The exploration costs of Musgrave are based on certain assumptions with respect to the method and timing of exploration. By their nature, these estimates and assumptions are subject to significant uncertainties and, accordingly, the actual costs may materially differ from these estimates and assumptions.

There is no assurance that, exploration and development of the mineral interests currently held by Musgrave or any other projects that may be acquired by Musgrave in the future, will result in an economic deposit. Even if an apparently viable deposit is identified, there is no guarantee that these can be profitably exploited. Potential investors should understand these are high-risk undertakings.

18.15 Future Development Risks

Possible future development of a mining operation at any of Musgrave's projects is dependent on a number of factors including, but not limited to, the acquisition and/or delineation of economically recoverable mineralisation, favourable geological conditions, receiving the necessary approvals from all relevant authorities and parties, seasonal weather patterns, unanticipated technical and operational difficulties encountered in extraction and production activities, mechanical failure of operating plant and equipment, shortages or increases in the price of consumables, spare parts and plant and equipment, cost overruns, and contracting risk from third parties providing essential services and commodity prices.

There can be no guarantee the development studies will be completed on time, on budget, or support an economic development of the Cue Gold Project.

Musgrave's operations may be disrupted by a variety of risks and hazards which are beyond its control, including environmental hazards, flooding and extended interruptions due to inclement of hazardous weather conditions and fires, explosions or accidents or force majeure, hostilities (such as the war in Ukraine) or terrorism, pandemics, climate change, industrial accidents, technical failures, labour disputes, unusual or unexpected rock formations. No assurance can be given that Musgrave will achieve commercial viability through the development or mining of its projects.

Development of a commercial mining operation is also dependent on Musgrave's ability to obtain and retain necessary titles and governmental and other regulatory and third-party approvals. Even if Musgrave successfully develops its projects, there is a risk Musgrave will not achieve a commercial return.

The risks associated with the development of a mine will be considered in full should the projects reach that stage and will be managed with ongoing consideration of stakeholder interests. The risk also includes that Musgrave may not be able to obtain adequate insurance at an appropriate price, or at all.

Cautionary Statement

The production inventory and forecast financial information referred to in the Stage 1 PFS comprise Indicated Mineral Resources (approximately 77%) and Inferred Mineral Resources (approximately 23%). The production has been scheduled such that <7% by tonnage and <1.7% by gold ounces of the Inferred material is mined and processed in the first year (during the payback period), with the remainder mined through to the end of the mine life. The Inferred material does not have a material effect on the technical and economic viability of the Cue Gold Project. There is a lower 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.

18.16 Regulatory Risks

Musgrave's interests in tenements (including tenement applications) situated in Western Australia as well as its interests in tenement applications in South Australia are governed by legislation as evidenced by the granting of leases and licences by the relevant States. Musgrave's granted tenements and tenement applications in Western Australia are subject to, without limitation, the *Mining Act 1978* (WA) and *Mining Regulations 1981* (WA), while Musgrave's applications for exploration licences in South Australia are subject to, without limitation, the *Mining Act 1971* (SA) and *Mining Regulations 2020* (SA). Musgrave has an obligation to meet the conditions that apply to the tenements under the above-mentioned legislation (in addition to other regulatory requirements).

Each licence or lease is for a specific term and carries with it annual expenditure and reporting commitments, as well as other conditions requiring compliance. Consequently, Musgrave could lose title to or its interest in the tenements if licence conditions are not met or if insufficient funds are available to meet expenditure commitments.

There are no guarantees that the tenements that are subject to renewal will be renewed or that any applications for exemption from minimum expenditure conditions will be granted, each of which could adversely affect the standing of a tenement. A number of the tenements may be subject to additional conditions, penalties, objections or forfeiture applications in the future. Alternatively, applications, transfers, conversions or renewals may be refused or may not be approved with favourable terms. Any of these events could have a materially adverse effect on Musgrave's prospects and the value of its assets.

Further, Musgrave is subject to other laws and regulations, including relating to exploration, mining, processing, development, tax, labour, subsidies, royalties, environmental impact and land access. Any materially adverse changes to government application, policy or legislation in relevant areas, or community or government attitudes could impact the assets, profitability or viability of Musgrave's projects.

Musgrave is not aware of any reviews or changes that would affect its current or proposed interests in tenements. However, changes in political and community attitudes on matters such as taxation, competition or foreign investment policy and ESG issues may bring about reviews and possibly changes in government policies. There is a risk that such changes may affect Musgrave's exploration and/or development plans or its rights and obligations in respect of the tenements in which it holds interests. Any such government action may also require increased capital or operating expenditures and could prevent or delay development of the Cue Gold Project.

18.17 Health, Safety and Security Risks

Mining activities have inherent hazards and risks. Musgrave is committed to providing a safe and healthy workplace and environment for its personnel, contractors and visitors including inductions on commencement. Musgrave provides appropriate instructions, equipment, preventative measures, first aid information, and training to all employees through its health and safety management system.

A serious site health and safety incident may result in significant interruptions and delays in Musgrave's projects. A health and safety incident which results in serious injury, illness or death may also expose Musgrave to significant penalties and Musgrave may be liable for compensation. These liabilities may not be covered by Musgrave's insurance policies or, if they are covered, may exceed Musgrave's policy limits or be subject to significant deductibles. Also, any claim under Musgrave's insurance policies could increase Musgrave's future costs of insurance.

Accordingly, any liabilities for workplace accidents could have a material adverse impact on Musgrave's liquidity and financial results and reputation. In addition, it is not possible to anticipate the effect on Musgrave's business of any changes to workplace health and safety legislation or directions necessitated by concern for the health of the workforce. Such changes may have an adverse impact on the financial performance and/or financial position of Musgrave. Musgrave has also taken out and maintains what it considers to be an adequate level of workers compensation insurance.

Musgrave has in place a group health and safety management system to ensure significant risks have robust sustainable safety controls. If the health and safety management system is not implemented or complied with adequately, there is a risk that a serious health and safety incident may occur which can result in (among other diverse events) delays in the Cue Gold Project as described above. There are also risks that cannot be mitigated by such a system.

18.18 Environmental and Climate Risks

The operations and proposed activities of Musgrave are subject to state and federal laws and regulations concerning the environment. As with most exploration projects and mining operations, Musgrave's activities are expected to have an impact on the environment, particularly if advanced exploration or mine development proceed. It is Musgrave's intention to conduct its activities to the highest standard of

environmental obligation, including compliance with all environmental laws. For example, the flora and fauna surrounding the Cue Gold Project may require certain adjustments to project planning.

Mining operations have inherent risks and liabilities associated with safety and damage to the environment and the disposal of waste products occurring as a result of mineral exploration and production. The occurrence of any such safety or environmental incident could delay production or increase production costs. Events, such as unpredictable rainfall or bushfires may impact on Musgrave's ongoing compliance with environmental legislation, regulations and licences. Significant liabilities could be imposed on Musgrave for damages, clean-up costs or penalties in the event of certain discharges into the environment, environmental damage caused by previous operations or noncompliance with environmental laws or regulations. The disposal of mining and process waste and mine water discharge are under constant legislative scrutiny and regulation.

There is a risk that environmental laws and regulations become more onerous, making Musgrave's operations more expensive. Approvals are required for mining, land clearing and for all ground disturbing activities. Delays in obtaining such approvals can result in the delay to anticipated exploration programs, development, construction or mining activities.

Climate change is a risk that Musgrave has considered. The climate change risks particularly attributable to Musgrave include the emergence of new or expanded regulations associated with the transitioning to a lower carbon economy and market changes related to climate change mitigation. Musgrave may be impacted by changes to local or international compliance regulations related to climate change mitigation efforts, or by specific taxation or penalties for carbon emissions or environmental damage. Climate change may cause certain physical and environmental risks that cannot be predicted by Musgrave, including events such as increased severity of weather patterns and incidence of extreme weather events and longer-term physical risks such as shifting climate patterns. All these risks associated with climate change may significantly change the industry in which Musgrave operates.

As Musgrave is progressing towards a mining operation, new data may emerge that would require Musgrave to amend its climate change mitigation strategies which may incur additional costs.

19 FORWARD WORK PLANS

Musgrave's forward work plan for the CGP in 2023 and early 2024 will comprise:

- Advance and de-risk the development plan for CGP, with further studies and testwork scheduled for 2023. This will include geotechnical, hydrology, metallurgy and material classification on existing deposits within the Stage 1 PFS and those that may develop in the Stage 2 PFS.
- Mineral Resource Estimate update in 2H2023 to reflect drilling results since May 2022 and new discoveries (Amarillo and Waratah). The update will subsequently inform a Stage 2 PFS update in Q12024.
- Continuing exploration to make new discoveries and grow the resource base.
- Release of a maiden Ore Reserve Statement to accompany the Stage 2 PFS in Q12024.
- Finalisation and subsequent submission of critical mining approvals and permitting in 2023 including:
    - Mining Proposal and Mine Closure Plan
    - Native Vegetation Clearing Permit
    - Prescribed Premise Licenses for dewatering discharge and processing plant tailings
    - Update the Ground Water License to accommodate updated mining and processing requirements
    - Discharge license for excess water to Lake Austin.
- Complete the design report and liaise with Main Roads WA on the proposed Great Northern Highway intersection.
- Ongoing optimisation of the mine plan with updated cost profiles and capital requirements. Further optimisation of the processing plants mechanics and flow sheet.
- Continue discussions with Badimia on an integrated Cultural Heritage Management Plan.
- Delivery of a Stage 2 PFS in Q12024 optimising processing options, revising costs, utilising additional resources and potentially extending the LOM.
- Financing discussions.

20 DISCLOSURE

20.1 Forward Looking Statements and Forecasts

Any forward-looking statements and forward-looking information included in this report involve subjective judgment and analysis and are subject to uncertainties, risks and contingencies, many of which are outside the control of, and may be unknown to, Musgrave. In particular, they speak only as of the date of this document, they assume the success of Musgrave's strategies, and they are subject to significant regulatory, business, competitive and economic uncertainties and risks. Actual future events may vary materially from the forward-looking statements and forward-looking information and the assumptions on which they are based. Recipients of this report are cautioned to not place undue reliance on such forward-looking statements and forward-looking information.

The information in this report is strictly confidential. It may not be disclosed, reproduced, disseminated, quoted or referred to, in whole or in part, without the express consent of Musgrave.

This report contains certain 'forward-looking statements' and comments about future matters. Forward-looking statements can generally be identified by the use of forward-looking words such as, 'expect', 'anticipate', 'likely', 'intend', 'should', 'could', 'may', 'predict', 'plan', 'propose', 'will', 'believe', 'forecast', 'estimate', 'target' 'outlook', 'guidance' and other similar expressions within the meaning of securities laws of applicable jurisdictions and include, but are not limited to, the outcome and effects of the Offer and the use of proceeds. Indications of, and guidance or outlook on, future earnings or financial position or performance are also forward-looking statements. You are cautioned not to place undue reliance on forward-looking statements. Any such statements, opinions and estimates in this report speak only as of the date hereof, are preliminary views and are based on assumptions and contingencies subject to change without notice, as are statements about market and industry trends, projections, guidance and estimates. Forward-looking statements are provided as a general guide only. The forward-looking statements contained in this report are not indications, guarantees or predictions of future performance and involve known and unknown risks and uncertainties and other factors, many of which are beyond the control of Musgrave, and may involve significant elements of subjective judgement and assumptions as to future events which may or may not be correct.

There can be no assurance that actual outcomes will not differ materially from these forward-looking statements. Any such forward looking statement also inherently involves known and unknown risks, uncertainties and other factors that may cause actual results, performance and achievements to be materially greater or less than estimated. These factors may include, but are not limited to, changes in commodity prices, foreign exchange fluctuations and general economic factors, increased capital costs and operating costs, the speculative nature of exploration and project development (including the risks of obtaining necessary licenses and permits, diminishing quantities or grades of Mineral Resources and the ability to exploit successful discoveries), general mining and development operation risks, closure and rehabilitation risks, changes to the regulatory framework within which Musgrave operates or may in the future operate, environmental conditions including extreme weather conditions, geological and geotechnical events, and environmental issues, and the recruitment and retention of key personnel, industrial relations issues and litigation.

Any such forward looking statements are also based on assumptions and contingencies which are subject to change and which may ultimately prove to be materially incorrect, as are statements about market and industry trends, which are based on interpretations of current market conditions. Investors should consider the forward looking statements contained in this report and not place undue reliance on such statements (particularly in light of the current economic climate and significant market volatility). The forward looking statements in this report are not guarantees or predictions of future performance and may involve significant elements of subjective judgment, assumptions as to future events that may not be correct,

known and unknown risks, uncertainties and other factors, many of which are outside the control of Musgrave.

Except as required by law or regulation Musgrave undertakes no obligation to finalise, check, supplement, revise or update forward-looking statements or to publish prospective financial information in the future, regardless of whether new information, future events or results or other factors affect the information contained in this report.

20.2 Exploration Results

The information in this report that relates to Musgrave's Exploration Results has been extracted from Musgrave's previous ASX announcements. Copies of these announcements are available at www.asx.com.au or https://musgraveminerals.com.au/asx-annoucements/. Musgrave confirms that it is not aware of any new information or data that materially affects the information included in those announcements. The Competent Person for these announcements was Mr Robert Waugh, a Competent Person who is a Fellow of the Australasian Institute of Mining and Metallurgy (AusIMM) and a Member of the Australian Institute of Geoscientists (AIG). Mr Waugh is Managing Director and a full-time employee of Musgrave Minerals Ltd. Mr Waugh has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken 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'. Mr Waugh consents to the inclusion in the report of the matters based on his information in the form and context in which it appears. Musgrave confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from those announcements.

20.3 JORC Code and Mineral Resources

It is a requirement of the ASX Listing Rules that the reporting of ore reserves and mineral resources in Australia comply with the Joint Ore Reserves Committee's (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code). Investors outside Australia should note that while mineral resource estimates of Musgrave in this report comply with the JORC Code, they may not comply with the relevant guidelines in other countries and, in particular, do not comply with (i) National Instrument 43-101 (Standards of Disclosure for Mineral Projects) of the Canadian Securities Administrators (the Canadian NI 43-101 Standards); or (ii) Item 1300 of Regulation S-K, which governs disclosures of mineral reserves in registration statements filed with the United States Securities and Exchange Commission (SEC). Information contained in this report describing mineral deposits may not be comparable to similar information made public by companies subject to the reporting and disclosure requirements of Canadian or USA securities laws.

This announcement contains estimates of Musgrave's Mineral Resources. The information in this report that relates to Musgrave's Mineral Resources has been extracted from Musgrave's previous ASX announcements including: ASX Announcement 'Cue Mineral Resource Increases to 927,000 Ounces' dated 31 May 2022. The Competent Persons were Mr Paul Payne and Mr Peter Van Luyt.

A copy of this announcement is available at https://musgraveminerals.com.au/asx-announcements/ and www.asx.com.au. Musgrave confirms that it is not aware of any new information or data that materially affects the information included in that announcement and, in relation to the estimates of Musgrave's Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the announcement continue to apply and have not materially changed. Musgrave confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from that announcement. Competent Person's Statements can be found in Section 2 of this report.

For the purposes of ASX Listing Rule 5.16.2, the Company confirms that the Mineral Resource estimates underpinning the production targets referred to in this report were prepared by a competent person in accordance with the requirements of the JORC Code.

20.4 No Liability

The information contained in this report has been prepared in good faith by Musgrave. None of Musgrave's advisors, nor any of its advisers or any of their respective affiliates, related bodies corporate, directors, officers, partners, advisers, employees and agents have authorised, permitted or caused the issue, lodgement, submission, dispatch or provision of this report in a final form and none of them makes or purport to make any binding statement in this report and there is no statement in this report which is based on any statement by them.

To the maximum extent permitted by law, Musgrave and its advisers, affiliates, related bodies corporate, directors, officers, partners, employees and agents:

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Statements made in this report are made only as at the date of this report. The information in this report remains subject to change without notice.

21 ABBREVIATIONS

Abbreviation	Description
3D	Three dimensional
AC	Acid consuming
AEP	Annual exceedance probability
Ai	Abrasion index
AIG	Australian Institute of Geoscientists
AISC	All-in sustaining costs
ALS	ALS Metallurgy Limited
ANCOLD	Australian National Committee on Large Dams
ARI	Annual recurrence interval
AUD	Australian dollar
AusIMM	Australasian Institute of Mining and Metallurgy
BBBAC	Badimia Bandi Barna Aboriginal Corporation
BBWi	Bond ball work index
bcm	Bank cubic metres
BESS	Battery energy storage system
BIF	Banded iron formation
BLAC	Badimia Land Aboriginal Corporation
BOCO	Base of complete oxidation
BOD	Break of Day
BOO	Build Own Operate
BRWi	Bond rod mill work index
CAPEX	Capital expenditure
CGP	Cue Gold Project
CIP	Carbon-in-pulp
CNwad	Weak acid dissociable cyanide
CO_2e	Carbon dioxide equivalent, a measurement of greenhouse gases
COG	Cut-off grade
CY	Calendar year
DBCA	Department of Biodiversity, Conservation and Attractions
DDH	Diamond drill hole
DER	Distributed Energy Resource
DFS	Definitive feasibility study

Abbreviation	Description
DGS Act	*Dangerous Goods Safety Act 2004*
DMIRS	Department of Mines, Industry Regulation and Safety, formerly Department of Mines and Petroleum
DMP	Department of Mines and Petroleum
DoH	Department of Health
DPLH	Department of Planning Lands and Heritage
DS	Direct shear
DWER	Department of Water and Environmental Regulation
EBITDA	Earnings before interest tax depreciation and amortisation
EGL	Effective grinding length
EP Act	*Environmental Protection Act 1986*
EPA	Environmental Protection Authority
ESG	Environmental, social and governance
FEL	Front end loader
FID	Final Investment Decision
FIFO	Fly-in/fly-out
G&A	General and administration
GDE	Groundwater Dependent Ecosystem
GHG	Greenhouse gas
GNH	Great Northern Highway
GRES	GR Engineering Services
GRG	Gravity recoverable gold
GRM	Groundwater Resource Management
GST	Goods and services tax
GWL	Groundwater Licence
EPA	Environmental Protection Authority
Evolution	Evolution Mining Limited
FOS	Factor of safety
IPP	Independent power producers
IPTSF	In-pit tailings storage facility
IRA	Inter Ramp Angle
IRR	Internal rate of return
IT	Information technology
IWL	Integrated waste landform

Abbreviation	Description
IWLTSF	Integrated waste landform tailings storage facility
JORC Code	'The Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' (JORC, 2012)
JV	Joint venture
LG	Low grade
LGC	Large-scale generation certificates
LNG	Liquified natural gas
LOM	Life of mine
LRET	Large-scale Renewable Energy Target
LV	Light vehicle
MCC	Motor control centre
MCP	Mine Closure Plan
MGV	Musgrave Minerals Ltd
Mining Act	*Mining Act 1978*
MoU	Memorandum of Understanding
MP	Mining Proposal
MRWA	Main Roads Western Australia
Musgrave	Musgrave Minerals Ltd
NAF	Non-acid forming
NGER Act	*National Greenhouse and Energy Reporting Act 2007*
NPV	Net present value
NSR	Net Smelter Return
NVCP	Native Vegetation Clearing Permit
OP	Open pit
OSA	Overall Slope Angle
OUR	Oxygen uptake rate
P_{80}	80% passing size
PayneGeo	Payne Geological Services Pty Ltd
PCS	Process control system
PDC	Process design criteria
PEC	Priority Ecological Community
PFD	Process flow diagram
PFS	Prefeasibility study
PLC	Programmable Logic Controller

Abbreviation	Description
PMP	Project Management Plan
PP&E	Property, plant and equipment
PSD	Particle size distribution
PV	Photovoltaic
Q	Calendar or financial year quarter
RAB	Rotary air blast
RC	Reverse circulation
REC	Resource Engineering Consultants Pty Ltd
RET	Renewable Energy Target
RFQ	Request for quotation
RIWI Act	*Rights in Water and Irrigation Act 1914*
RL	Reduced level
RMWi	Rod mill work index
ROU	Right of use
RQD	Rock Quality Designation
RT	Remote terminal
SAG	Semi-autogenous grinding
SCADA	Supervisory control and data acquisition
SIA	Social Impact Assessment
Silver Lake	Silver Lake Resources Limited
SIMP	Social Impact Management Plan
SLR	Silver Lake Resources Limited
SMC	SAG mill comminution
SRE	Short range endemic
SRES	Small-scale Renewable Energy Scheme
TDS	Total dissolved solids
TEC	Threatened Ecological Community
TOFR	Top of fresh rock
TSF	Tailings storage facility
UCS	Uniaxial compressive strength
UG	Underground
USD	United States dollar
WASM	Western Australian School of Mines

22 ADDITIONAL JORC INFORMATION

Further details relating to the information provided in this release can be found in the following Musgrave Minerals' ASX announcements:

- 24 March 2023, "Cue Project – 3D Interactive Model and PFS Update"
- 23 February 2023, "New high-grade lode identified along Break of Day corridor"
- 14 February 2023, "Company Presentation – RIU Explorers Conference"
- 14 February 2023, "Amarillo and Big Sky drilling results, Cue Gold Project"
- 31 January 2023, "Quarterly Activities and Cashflow Report"
- 24 January 2023, "Further gold intersections, West Island, Cue JV"
- 12 January 2023, "Evolution satisfies earn-in milestone Cue JV"
- 16 December 2022, "Mining Lease grant and strong metallurgical test results"
- 2 December 2022, "Share Purchase Plan Offer Document"
- 25 November 2022, "Investor Update Presentation"
- 25 November 2022, "$10 Million Capital Raising to Progress Cue Project"
- 21 November 2022, "Encouraging gold intercepts continue at Big Sky"
- 8 November 2022, "2022 AGM Presentation"
- 7 November 2022, "High-grade drilling results continue at White Heat-Mosaic"
- 28 October 2022, "Quarterly Activities and Cashflow Report"
- 20 October 2022, "Gold intersections continue at West Island, Cue JV"
- 7 October 2022, "Annual Report to Shareholders"
- 23 September 2022, "Full Year Statutory Accounts"
- 19 September 2022, "High-grade gold at Waratah and new regional targets at Cue"
- 30 August 2022, "Further High Grade Gold Intersected at Big Sky"
- 2 August 2022, "Bonanza Grades from Further Drilling at White Heat-Mosaic"
- 21 July 2022, "Company Presentation – Noosa Mining Conference"
- 21 July 2022, "Further high-grade gold at West Island, Cue JV"
- 29 June 2022, "High grade gold at Amarillo and new regional targets"
- 21 June 2022, "Appointment of General Manager - Development"
- 31 March 2022, "Musgrave consolidates its position in the Murchison"
- 31 May 2022, "Cue Mineral Resource increases to 927,000 ounces"
- 21 April 2022, "Thick basement gold intersections at West Island, Cue JV"
- 5 April 2022, "High grades confirm Big Sky's upside potential"
- 31 March 2022, "Musgrave consolidates its position in the Murchison"
- 25 March 2022, "Strong drill results at Amarillo"
- 15 March 2022, "Further near-surface high grades intersected at Mosaic"
- 2 February 2022, "Exceptional gold grades near-surface at new Mosaic Lode"
- 27 January 2022, "High-grade gold intersected at West Island, Cue JV"
- 6 January 2022, "New high-grade gold trend identified in regional RC program"
- 15 December 2021, "High grades continue at Big Sky"
- 1 December 2021, "New lodes identified. Stunning high-grade intercept at Cue"
- 27 October 2021, "Bonanza hit highlights high-grade potential at Big Sky"
- 12 October 2021, "Thick aircore intercepts enhance West Island Prospect"
- 13 September 2021, "More thick intervals of near-surface gold at Target 14 and Big Sky"
- 16 August 2021, "Bonanza gold grades at White Heat"
- 12 August 2021, "Big Sky delivers more near-surface gold"
- 19 July 2021, "Significant gold intersections enhance Big Sky"
- 30 June 2021, "High-grade gold at West Island target – EVN JV, Cue"
- 18 June 2021, "Thick gold intersections in RC drilling at Big Sky"
- 25 May 2021, "Further RC drill results from White Heat and Numbers prospects"
- 17 May 2021, "Big Sky gold mineralisation strike length more than doubled"
- 21 April 2021, "New high-grade gold results at Target 14, Cue"
- 8 April 2021, "New Big Sky target extends high-grade gold anomaly to >1.2km"
- 19 March 2021, "High grades continue at White Heat, Cue"
- 8 March 2021, "New Gold Corridor Identified at Cue"
- 24 February 2021, "Outstanding high-grade gold at White Heat, Cue"
- 4 February 2021, "Appointment of Non-executive Director"
- 27 January 2021, "New basement gold targets defined on Evolution JV"
- 19 January 2021, "High-grade near-surface gold extended at Target 5, Cue"
- 14 December 2020, "$18M raising to fund resource growth and commence PFS"
- 9 December 2020, "High-grade near surface gold at Target 17, Cue"
- 3 December 2020, "Scout drilling intersects high-grade gold and defines large gold zones under Lake Austin, Evolution JV"
- 23 November 2020, "New White Heat discovery and further regional drilling success"
- 11 November 2020, "Break of Day High-Grade Mineral Resource Estimate"
- 2 November 2020, "Exceptional metallurgical gold recoveries at Starlight"
- 8 October 2020, "Drilling hits high-grade gold at new target, 400m south of Starlight"
- 19 August 2020, "Starlight gold mineralisation extended"
- 28 July 2020, "Bonanza gold grades continue at Starlight with 3m @ 884.7g/t Au"
- 6 July 2020, "85m@11.6g/t gold intersected near surface at Starlight"
- 29 June 2020, "New gold lode discovered 75m south of Starlight"
- 9 June 2020, "Bonanza near surface hit of 18m @ 179.4g/t gold at Starlight"
- 5 June 2020, "Scout drilling defines large gold targets at Cue, Evolution JV"
- 3 June 2020, "12m @ 112.9g/t Au intersected near surface at Starlight"
- 21 April 2020, "High grades confirmed at Starlight"
- 1 April 2020, "More High-grade gold at Starlight Link-Lode, Break of Day"
- 16 March 2020, "Starlight Link-lode shines at Break of Day"
- 28 February 2020, "High-grade gold intersected Link-lode, Break of Day"
- 17 February 2020, "Lena Resource Update"
- 3 December 2019, "New high-grade 'link-lode' intersected at Break of Day, Cue Project"
- 27 November 2019, "High-grade gold intersected in drilling at Mainland, Cue Project"
- 17 September 2019, "Musgrave and Evolution sign an $18 million Earn-In JV and $1.5M placement to accelerate exploration at Cue"
- 28 May 2019, "Scout Drilling Extends Gold Zone to >3km at Lake Austin North"
- 16 August 2017, "Further Strong Gold Recoveries at Lena"
- 31 March 2017, "Exceptional metallurgical test work results at Break of Day"

22.1 JORC Table 1

Table 22-1: JORC Table 1 – Section 1 Sampling Techniques and Data

Criteria	Explanation	Commentary
Sampling techniques	Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.	MGV sampling is undertaken using standard industry practices including the use of duplicates and standards at regular intervals. A Thermo Scientific Niton GoldD XL3+ 950 Analyser is available on site to aid geological interpretation. No XRF results are reported here. Historical sampling criteria are unclear for pre 2009 drilling. <u>MGV RC and aircore drill programs</u> RC and aircore samples are composited at 6m intervals using a stainless-steel scoop with all composite intervals over 0.1g/t Au resampled at 1m intervals using a cyclone splitter. Individual 1m samples are submitted for initial gold assay where significant obvious mineralisation is intersected (e.g. quartz vein lode within altered and sheared host) and are split with a cyclone splitter. <u>Diamond drilling</u> Diamond samples were collected at geologically defined intervals (minimum sample length 0.25m, maximum sample length 1.5m) for all drill holes in the current program Samples are cut using an automated diamond saw and half core is submitted for analysis. Individual samples weigh less than 5kg to ensure total preparation at the laboratory pulverization stage. The sample size is deemed appropriate for the grain size of the material being sampled.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	All co-ordinates are in UTM grid (GDA94 Z50) and drill hole collars have been surveyed by handheld GPS to an accuracy of ~1.0m. The accuracy of historical drill collars pre-2009 is unknown.
	Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1m samples from which 3kg was pulverised to produce a 30g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.	<u>MGV drill programs</u> Regional RC and aircore drill samples are composited at 6m intervals using a stainless-steel scoop with all composite intervals over 0.1g/t Au resampled at 1m intervals using a cyclone splitter. Individual 1m samples are submitted for initial gold assay where significant obvious mineralisation is intersected and are split with a cyclone splitter (e.g. quartz vein lode within altered and sheared host). The 3kg samples are pulverised to produce a 50g charge for fire assay with ICP-MS finish for gold. All 1m samples are sampled to 1-3kg in weight to ensure total preparation at the laboratory pulverization stage. In this RC drill program 1m samples were immediately submitted for laboratory analysis from the cyclone splitter on the rig. The sample size is deemed appropriate for the grain size of the material being sampled. Diamond samples were collected at geologically defined intervals (minimum sample length 0.25m, maximum sample length 1.5m) for all drill holes in the current program Samples are cut using an automated diamond saw and half core is submitted for analysis. Some samples are sent to the Genalysis -Intertek laboratory in Maddington or Bureau Veritas in Canning Vale, WA, where they are pulverized to 85% passing -75um and analysed using a 50g fire assay with ICP-MS (inductively coupled plasma - mass spectrometry) finish gold analysis (0.005ppm or 0.01ppm detection limit). Some samples are sent to the NATA accredited Genalysis -Intertek laboratory in Maddington, Perth and analysed via PhotonAssay technique along with quality control samples and duplicates. Individual samples are assayed for gold after drying and crushing to nominally 85% passing 2mm and a 500g linear split taken for PhotonAssay. The PhotonAssay technique was developed by CSIRO and Chrysos Corporation and is a fast, chemical free non-destructive, alternative using high-energy X-rays to traditional fire assay and uses a significantly larger sample size (500g v's 50g for fire assay). This technique is accredited by the National Association of Testing Authorities (NATA). Coarse gold is present in some samples and may affect sample accuracy. Repeat analysis and screen fire assaying is regularly undertaken on samples with coarse gold.
Drilling techniques	Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).	Drilling was undertaken by multiple drilling contractors with MGV's main RC contractor, Challenge Drilling Pty Ltd utilising a KWL350 with an 350psi/1100 cfm on board compressor with a 1000cfm auxiliary. RC holes were drilled with a 5.75-inch hammer. Ausdrill and Strike also undertook significant RC drilling programs. A combination of historical RAB, aircore, RC and diamond drilling has been utilised by multiple companies over a thirty-year period across the broader project area. No aircore or RAB drilling has been incorporated in any Mineral Resource Estimates. Diamond drilling was undertaken by multiple drilling contractors with MGV's main diamond contractor, West Core Drilling Pty Ltd utilising a LF90D drill rig. PQ, HQ and NQ core is obtained. Ausdrill and Mt Magnet Drilling also undertook significant diamond drilling programs on the Cue Gold Project. Harrington drilling installed water monitoring bores at the Cue Gold Project utilising an 8 inch hammer and cased with 6 inch PVC.

Criteria	Explanation	Commentary
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	In RC drill programs 1m samples were immediately submitted for laboratory analysis from the cyclone splitter on the rig. In regional RC drilling 6m composite samples are collected and re-assayed at 1m intervals where comps are above 0.1g/t Au. Sample weights, dryness and recoveries are observed and noted in a field Toughbook computer by MGV field staff. Diamond core samples are considered dry. The sample recovery and condition is recorded every metre. Generally, recovery is 98-100% but occasionally down to 70% on rare occasions when ground is very broken.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	MGV contracted drillers use industry appropriate methods to maximise sample recovery and minimise downhole contamination including using compressed air to maintain a dry sample in aircore drilling. Historical sampling recovery is unclear for pre 2009 drilling.
	Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	No significant sample loss or bias has been noted in MGV drilling or in the historical reports from historical drilling campaigns.
Logging	Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.	All geological, structural and alteration related observations are stored in the database. Aircore or RAB drill holes are not used in any resource estimation, mining or metallurgical studies.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	Logging of lithology, structure, alteration, mineralisation, weathering, colour and other features of core or RC/aircore chips is undertaken on a routine 1m basis or on geological intervals for diamond core.
	The total length and percentage of the relevant intersections logged.	All drill holes are logged in full on completion.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	All diamond core samples are cut using a Almonte automated core saw with either quarter or half core sent for analysis. Pre 2009 drilling results noted in this report are historical and not reported in detail. As such these details are unknown.
	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	RC samples are taken from 1m sample piles and composited at 6m intervals using a stainless-steel scoop, with all intervals over 0.1g/t Au resampled at 1m using a stainless-steel scoop. Diamond samples were collected at geologically defined intervals (minimum sample length 0.25m, maximum sample length 1.5m) for all drill holes in the current program Samples are cut using an automated diamond saw and half core is submitted for analysis.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Drill sample preparation and precious metal analysis is undertaken by registered laboratories (Genalysis – Intertek, Bureau Veritas and MinAnalytical). Sample preparation by dry pulverisation to 85% passing 75 micron to industry standard.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	MGV field QC procedures involve the use of certified reference standards (1:50), duplicates (~1:30) and blanks at appropriate intervals for early-stage exploration programs. High, medium and low gold standards are used. Where high grade gold is noted in logging, a blank quartz wash is inserted between individual samples at the laboratory, before analysis. Historical QA/QC procedures are unclear for pre 2009 drilling.
	Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate/second-half sampling.	Sampling is carried out using standard protocols and QAQC procedures as per industry practice. Duplicate samples are inserted (~1:30) and more frequently when in high-grade gold veins, and routinely checked against originals. Duplicate sampling criteria is unclear for historical pre 2009 drilling. Historical QA/QC procedures are unclear for pre 2009 drilling.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample sizes are considered appropriate for grain size of sample material to give an accurate indication of gold mineralisation. Samples are collected from full width of sample interval to ensure it is representative of complete mineralised interval. Either quarter or half core is cut and sent for analysis in diamond drilling.
Quality of assay data and laboratory tests	The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.	On composite sampling and 1m RC re-samples, analysis is undertaken by Intertek-Genalysis or Bureau Veritas (registered laboratory's), with 50g fire assay with ICP-MS finish undertaken for gold. Some RC samples are sent to the NATA accredited Minanalytical laboratory in Canningvale or the Genalysis-Intertek laboratory in Maddington, Perth and analysed via PhotonAssay technique. Individual samples are assayed for gold after drying and crushing to nominally 85% passing 2mm and a 500g linear split taken for PhotonAssay. Internal certified laboratory QAQC is undertaken including check samples, blanks and internal standards. This methodology is considered appropriate for base metal mineralisation and gold at the exploration phase. Coarse gold is present in some samples and may affect sample accuracy. Repeat analysis and screen fire assay is regularly undertaken on samples with coarse gold.

Criteria	Explanation	Commentary
	For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.	No geophysical tools were used to estimate mineral or element percentages. Musgrave utilise a Thermo Scientific Niton GoldD XL3+ 950 Analyser to aid geological interpretation. No XRF analysis is used for gold.
	Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	MGV field QC procedures involve the use of certified reference standards (1:50), duplicates (~1:30) and blanks (1:50) at appropriate intervals for early-stage exploration programs. Historical QA/QC procedures are unclear for pre 2009 drilling.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	MGV samples are verified by the geologist before importing into the main MGV database (Datashed).
	The use of twinned holes.	No twin holes have been drilled by Musgrave Minerals Ltd during this program.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Primary data is collected using a standard set of templates. Geological sample logging is undertaken on one metre intervals for all RC drilling with colour, structure, alteration and lithology recorded for each interval. Data is verified before loading to the database. Geological logging of all samples is undertaken.
	Discuss any adjustment to assay data.	No adjustments or calibrations are made to any assay data reported.
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	All maps and locations are in UTM grid (GDA94 Z50) and have been surveyed or measured by hand-held GPS with an accuracy of >±2 metres.
	Specification of the grid system used.	Drill hole and sample site co-ordinates are in UTM grid (GDA94 Z50) and historical drill holes are converted from local grid references.
	Quality and adequacy of topographic control.	All MGV drill hole collars are planned and set up using hand-held GPS (accuracy +-2m).
Data spacing and distribution	Data spacing for reporting of Exploration Results.	Variable drill hole spacings are used to complete 1st pass testing of targets and are determined from geochemical, geophysical and geological data together with historical drilling information. Resource drilling varies from 12.5m spaced to 60m spaced holes along individual traverse lines.
	Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.	Mineral Resource interpretation, assessment and classification was undertaken by independent consultant Payne Geological Services Pty Ltd in accordance with JORC 2012. Drill spacing is appropriate for the mineral resource classification reported. For further details on individual deposits please refer to MGV ASX release dated 31 May 2022, 'Cue Mineral Resource Increases to 927,000 ounces'
	Whether sample compositing has been applied.	6m composite samples are submitted for initial analysis in most cases. Composite sampling is undertaken using a stainless-steel scoop at one metre samples and combined in a calico bag. Where composite assays are above 0.1g/t Au, individual 1m samples are submitted for gold assay from calico bags collected at 1m intervals from the cyclone splitter. One metre individual samples may be submitted without composites in certain intervals of visibly favourable gold geology. All RC samples used for resource estimation are 1m samples, no composite sampling was used in resource estimation.
Orientation of data in relation to geological structure	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	Drilling is designed to cross the mineralisation as close to perpendicular as possible on current interpretation whilst allowing for some minor access restrictions and mitigating safety risks. Most drill holes are designed at a dip of approximately -60 degrees.
	If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	Orientation-based sampling bias exists for individual drill holes in different gold lodes. Holes are planned to intersect gold lodes as close to perpendicular as possible, however variable oriented lodes make this planning difficult. All mineralisation is framed in a 3D context and true widths estimated for resource modelling.
Sample security	The measures taken to ensure sample security.	Chain of custody is managed by MGV internal staff. Drill samples are stored on site and transported by a licenced reputable transport company to a registered laboratory in Perth (Genalysis-Intertek at Maddington, Bureau Veritas in Canning Vale or MinAnalytical in Canning Vale). When at the laboratory samples are stored in a locked yard before being processed and tracked through preparation and analysis (e.g. Lab-Trak system at Genalysis-Intertek).
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	Audits have been completed on sampling techniques and data during the resource estimation process by Payne Geological Services Pty Ltd. No significant concerns or irregularities were identified.

Table 22-2: JORC Table 1 – Section 2 Reporting of Exploration Results

Criteria	Explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	Musgrave Minerals secured 100% of the Moyagee Project area in August 2017 (see MGV ASX announcement 2 August 2017: "Musgrave Secures 100% of Key Cue Tenure"). The Break of Day, Starlight, Lena and White Heat-Mosaic deposits are located on granted mining lease M21/106 and the primary tenement holder is Musgrave Minerals Ltd. Other deposits including Big Sky, Leviticus and Numbers are located on M58/366 in an area also held 100% by MGV. The Cue project tenements consist of 38 licences. The tenements are subject to standard Native Title heritage agreements and state royalties. Third party royalties are present on the Cue Gold Project tenements (1.575% to Franco Nevada and $2.50/oz to Molopo). The Mainland prospects are on tenements P21/731, 732, 735, 736, 737, 739, 741 where MGV has has acquired 100% of the basement gold rights on the tenements (not part of the EVN JV). AnEarn-in and Exploration Joint Venture was executed with Evolution Mining Ltd on 16 September 2019 covering Lake Austin and some surrounding tenure but excludes all existing resources including the Cue Gold Project resources (see MGV ASX release dated 17 September 2019, "Musgrave and Evolution sign an $18 million Earn-in JV and $1.5 million placement to accelerate exploration at Cue") and the Mainland area. No mineralisation or gold deposits from these areas are incorporated into the Stage 1 PFS. To the North, Musgrave has a joint venture with Cyprium Australia Pty Ltd. On 1 May 2020, Musgrave entered into a joint venture with Cyprium Australia Pty Ltd ("Cyprium") on the non-gold rights over the northern Cue tenure including the Hollandaire copper deposit. Cyprium (ASX: CYM) has earned an 80% interest in the non-gold rights over this area with Musgrave retaining 20% and is free carried to a definitive feasibility study. Musgrave also retains 100% of the rights to any gold dominant mineralisation. No mineralisation or gold deposits from this area are incorporated into the Stage 1 PFS.
	The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	The tenements are in good standing and no known impediments exist.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	Historical drilling, soil sampling and geophysical surveys have been undertaken in different areas on the tenements intermittently by multiple third parties over a period of more than 30 years. At Break of Day, Lena and Mainland historical exploration and drilling has been undertaken by a number of companies and at Break of Day and Lena most recently by Silver Lake Resources Ltd in 2009-13 and prior to that by Perilya Mines Ltd form 1991-2007. Musgrave Minerals has undertaken exploration since 2016. Historical mining was undertaken at Break of Day during the turn of the century and reported historical production is documented in the body of this release. Mining voids were incorporated into the resource estimation process. Historical metallurgical sampling and analysis was undertaken in limited form for the Lena deposit by both Perilya and Silver Lake Resources and the results are sumarised in the body of this report. Historical environmental, heritage and hydrological works have also been incorporated in this Stage 1 PFS where applicable.
Geology	Deposit type, geological setting and style of mineralisation.	Geology comprises typical Archaean Yilgarn greenstone belt lithologies and granitic intrusives. The main styles of gold mineralisation is typical Yilgarn Archaean Orogenic lode gold.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: easting and northing of the drill hole collar, elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar, dip and azimuth of the hole, down hole length and interception depth and hole length.	All drill hole collars from drill holes referenced or utilised in this announcement have been previously reported or are reported in the body of this announcement. All relevant historical drill hole information has previously been reported by Musgrave, Perilya, Silver Lake Resources and various other companies over the years.
Data aggregation methods	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.	Significant assay intervals are recorded above 1g/t Au. No cut-off has been applied to any raw sampling. Cut-off grades and high grade cuts are reported as per the Mineral Resource Estimation and JORC 2012 reporting.

Criteria	Explanation	Commentary
	Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low-grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.	No cut-off has been applied to any sampling. Reported intervals are aggregated using individual assays above 1g/t Au with generally no more than 2m of internal dilution <0.5g/t Au for any given interval.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No metal equivalent values have been reported.
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results. If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').	Drilling true widths are variable but 3D geological and mineralisation modelling is utilised to ensure true widths are incorporated in resource work, interpretation and mining assumptions. All drilling is planned as close to perpendicular to the interpreted strike of the target lodes as can be estimated at the time of drilling.
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	Diagrams referencing data can be found in the body of this report.
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced avoiding misleading reporting of Exploration Results.	All reporting within this release is of a competent and balanced nature.
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	All material assay results from geochemical and geophysical surveys and drilling, related to this Stage 1 PFS has been reported or disclosed previously.
Further work	The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).	A range of exploration techniques will be considered to progress the Cue Gold Project and grow the resource base including additional surface sampling and drilling. The Stage 2 PFS will focus on increasing the life of mine and include further metallurgical testing, environmental surveys and analysis, hydrology and surface water management reviews, waste rock and geotechnical studies, operating and capital cost analysis, processing option analysis, mining optimisations, infrastructure assessments and sustainability considerations.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Refer to figures in the body of this announcement.

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