



# MT CARBINE BANKABLE FEASIBILITY STUDY

2022 ECONOMIC UPDATE

NOVEMBER 2022



## Document History

REVISION	DATE	AUTHOR	CHANGE DESCRIPTION	APPROVED BY
0	04/11/2022	PJ	Issued for Use	KM

# CONTENTS

<b>1.</b>	<b>REQUIREMENT FOR UPDATE .....</b>	<b>7</b>
<b>2.</b>	<b>EXECUTIVE SUMMARY .....</b>	<b>10</b>
2.1.	Overview .....	10
2.2.	BFS Purpose and History.....	10
2.3.	Material Changes to BFS .....	12
2.4.	Environment Social Governance (ESG) .....	16
<b>3.</b>	<b>STRATEGY AND MARKET ANALYSIS .....</b>	<b>20</b>
3.1.	Update to BFS Market Assumptions .....	20
3.2.	Product Specification .....	20
3.3.	Customers .....	21
<b>4.</b>	<b>GEOLOGY AND RESOURCES .....</b>	<b>22</b>
4.1.	Regional Geology.....	23
4.3.	Resource Estimation .....	27
4.4.	QAQC.....	28
<b>5.</b>	<b>MINING .....</b>	<b>30</b>
5.1.	Operational Overview.....	30
5.2.	Material Characterisation .....	32
5.3.	Hydrogeology .....	33
5.4.	Geotechnical .....	33
5.5.	Mine Production .....	36
5.6.	Waste Dumps.....	38
5.7.	Mining Method.....	39
<b>6.</b>	<b>PROCESSING .....</b>	<b>41</b>
6.1.	Overview .....	41
6.2.	Crushing Screening and Sorting Area .....	42
6.3.	Processing Area .....	44
<b>7.</b>	<b>INFRASTRUCTURE .....</b>	<b>50</b>
7.1.	On Site Infrastructure .....	50
<b>8.</b>	<b>PROJECT EXECUTION .....</b>	<b>52</b>
8.1.	Schedule and Milestones .....	52
8.2.	Project Management .....	52
8.3.	Construction Safety Approach .....	53
8.4.	Construction Risk .....	54
8.5.	Construction Surface Water Management.....	54
8.6.	Contracting Strategy – Phase 2 .....	55
8.7.	Shut Downs and Tie Ins .....	56
<b>9.</b>	<b>OPERATIONS MANAGEMENT .....</b>	<b>57</b>
9.1.	Operating Philosophy .....	57
9.2.	Maintenance.....	58
9.3.	Transport and Logistics.....	59
9.4.	Procurement and Supply.....	59
9.5.	Administration.....	59
9.6.	Health and Safety.....	59
9.7.	Control of Records .....	63

9.8.	Accommodation .....	63
9.9.	Emergency Response Plans .....	63
<b>10.</b>	<b>CLOSURE AND REHABILITATION .....</b>	<b>64</b>
10.1.	Approach .....	64
10.2.	Risk .....	64
<b>11.</b>	<b>ENVIRONMENT AND APPROVALS .....</b>	<b>65</b>
11.1.	Current Status .....	65
11.2.	Relevant Environmental Legislation .....	66
11.3.	Required Approvals .....	66
11.4.	Environmental Management and Monitoring .....	67
<b>12.</b>	<b>COMMUNITY AND STAKEHOLDERS .....</b>	<b>68</b>
12.1.	Guiding Principles to Community and Stakeholders .....	68
12.2.	Engagement Approach .....	68
12.3.	Stakeholders .....	68
12.4.	Potential Issues and Mitigations .....	69
12.5.	Communication and Engagement .....	70
12.6.	Complaints and Enquires Management .....	70
12.7.	Timing .....	70
<b>13.</b>	<b>CAPITAL COST ESTIMATE .....</b>	<b>72</b>
13.1.	Accuracy of Estimate .....	72
13.2.	Estimate Basis .....	72
13.3.	Estimate Summary .....	73
<b>14.</b>	<b>OPERATING COST ESTIMATE .....</b>	<b>75</b>
14.1.	Basis of Estimate .....	75
14.2.	Key Assumptions .....	75
14.3.	Operating Cost Summary .....	76
<b>15.</b>	<b>RISK AND OPPORTUNITY .....</b>	<b>77</b>
15.1.	Scope .....	77
15.2.	Risk Assessment Process .....	77
15.3.	Risks .....	77
<b>16.</b>	<b>OWNERSHIP, LEGAL AND CONTRACTUAL .....</b>	<b>80</b>
16.1.	Tenure .....	80
<b>17.</b>	<b>INVESTMENT EVALUATION .....</b>	<b>81</b>
17.1.	Summary .....	81
17.2.	Methodology .....	82
17.3.	Taxation .....	84
17.4.	Financial Analysis .....	84
17.5.	Sensitivity Analysis .....	85
<b>18.</b>	<b>LIST OF ABBREVIATIONS .....</b>	<b>88</b>

## LIST OF TABLES

Table 1: Material Updates to Investment Evaluation .....	13
Table 2: Material Updates to Geology and Resources .....	14
Table 3: Material Updates to Mining Values .....	14

Table 4: Capital Costs to Go by WBS .....	16
Table 5: Material Updates to Operating Cost Values .....	16
Table 6: EQR ESG Alignment with United Nations Sustainable Development Goals (SDG) .....	17
Table 7: Tungsten Concentrate Specifications .....	21
Table 8: Mt Carbine License Register .....	23
Table 9: Mt Carbine Mineral Resource – August 2022 .....	27
Table 10: Updated Resource and Reserves .....	28
Table 11: LOM Primary Physical Metrics .....	32
Table 12: Material Characteristics .....	32
Table 13: Geotechnical Parameters of Open Cut Pit Design .....	35
Table 14: Ground Stabilisation Requirements for Southern Pit Wall .....	35
Table 15: Annual Production Schedule .....	36
Table 16: Open Pit Design Parameters .....	37
Table 17: Contractor Mining Fleet Details .....	40
Table 18: Equipment Productivities .....	40
Table 19: Phase 2 Crushing, Screening and Sorting Design Criteria .....	44
Table 20: Design Basis .....	48
Table 21: Key Milestones .....	52
Table 22: Major Contract Packages .....	55
Table 23: Roles and Responsibilities .....	61
Table 24: Existing ERAs for the Project Site .....	65
Table 25: Approvals Register .....	67
Table 26: Guiding Principles .....	68
Table 27: Risk Considerations .....	69
Table 28: Estimate Contributors .....	72
Table 29: Direct Cost Estimate Methodology .....	72
Table 30: Indirect Cost Estimate Methodology .....	73
Table 31: Estimate Summary .....	73
Table 32: Operating Cost Estimate Key Assumptions .....	75
Table 33: Summary of Operating Costs per Tonne .....	76
Table 34: Key Risks .....	77
Table 35: Key Opportunities .....	79
Table 36: Investment Evaluation Key Outputs .....	81
Table 37: Financial Model Revenue Parameters .....	83
Table 38: Financial Model Parameters .....	83
Table 39: Tax Assumptions .....	84
Table 40: Breakeven Analysis .....	87

## LIST OF FIGURES

Figure 1: Mine Location .....	10
Figure 2: Upgraded Crushing and Screening Area – Completed in Phase 1 .....	11
Figure 3: LGS & Open Pit locations relative to the Crushing and Screening Plant and Processing plant .....	12
Figure 4: Updated Capital Cost and Cost to Go .....	15
Figure 5: Stakeholder Sentiment and Materiality Survey Summary .....	18
Figure 6: APT Price Forecasts .....	20
Figure 7: Mt Carbine Lease Boundaries and Surrounding Exploration Tenements .....	22

Figure 8: Regional Geological Setting of Mt Carbine .....	23
Figure 9: King Veins Showing Coarse Vein Textures of Wolframite Crystals .....	25
Figure 10: Core Showing Late Replacement of Wolframite by Fine Network Retrograde Scheelite .....	25
Figure 11: Open Pit Cross Section Location .....	26
Figure 12: Typical Ore Section Through Open Pit .....	26
Figure 13: QAQC Results .....	29
Figure 14: OC and LGS Mining Limits.....	30
Figure 15: Isometric View of Ore Reserves Pit Shell .....	31
Figure 16: Open Pit Material Characterisation .....	33
Figure 17: Defect Logging and Structural Model of Exploration Drill Holes (plan view) .....	34
Figure 18: Concentrate Production Profile .....	38
Figure 19: Dump Locations .....	39
Figure 20: Processing Infrastructure Locations .....	41
Figure 21: Existing Ore Sorter .....	42
Figure 22: Phase 1 Crushing and Screening Circuit .....	43
Figure 23: Phase 1 Rehandling Circuit.....	43
Figure 24: Phase 2 Crushing and Screening and Sorting Circuit.....	44
Figure 25: Processing Plant Site Layout .....	45
Figure 26: Wet Concentrator Plant .....	46
Figure 27: Jig Recovery vs Feed Grade by Feed Type.....	47
Figure 28: Plant Recovery Comparison with Tails and without Tails .....	47
Figure 29: Owner's Team Contracting Structure .....	53
Figure 30: Sitewide Drainage .....	55
Figure 31: Stakeholder Matrix (Source: Mara Consulting) .....	69
Figure 32: Mining Lease Boundaries.....	80
Figure 33: Sensitivity of the NPV to Changes in Key Assumptions .....	86
Figure 34: Sensitivity of the IRR to Changes in Key Assumptions.....	86

# 1. Requirement for Update

EQ Resources Limited (EQR) completed a bankable feasibility study (BFS) in December 2021 for the Mt Carbine Expansion Project.

The BFS was separated into two distinct phases. Phase 1 focused on minimal capital expenditure (capex), incremental improvements to increase the mine's productivity and profitability focusing solely on the mining and processing of the low grade stockpile (LGS).

Phase 2 focused on the activities and works required to dewater and commence mining of the open pit as well as the crushing and screening plant and processing plant to be upgraded to further reduce operating costs and increase the tungsten recovery.

Since the release of the BFS, additional drilling increasing the mine reserves and optimization of the mining methodology combined with significant changes to the underlying market conditions have given rise to the requirement to provide an update to the results of the BFS to provide a more realistic economic outlook of the Mt Carbine Expansion Project.

The key changes and updates to the underlying economic inputs are summarised below and detailed in subsequent sections of this update.

## Phase 1 Complete

The Phase 1 activities are now complete and the existing crushing and screening plant throughput capacity has been increased to in excess of 350tph and wet weather performance significantly improved through the introduction of wet screening.

Some Phase 1 scope items have been deferred to Phase 2 and will be included in the updated Phase 2 costs. These include:

- Design and installation of the product dewatering circuit
- A portion of the gravity processing plant controls system upgrade
- Installation of the standby rolls crusher in the gravity processing plant
- Installation of two (2) off containerised workshops
- Purchase of a Komatsu WA500 6.4m<sup>3</sup> front end loader

## Market Analysis

Since completion of the BFS, the ammonium paratungstate (APT) price has been sustained at a price on the upper end of the forecast range due to the post covid market conditions. The forecast for APT pricing remains high with continued demand coupled with delays in projected projects reducing global supply. On this basis, the underlying pricing assumptions have been adjusted. Market participants generally price tungsten according to metric ton units (MTU) of ammonium para tungstate (APT). This is the primary raw material traded in the market.

As part of the ongoing development of the Mt Carbine Project, the Government has placed its confidence in the development of the project through the allocation of AU\$6M grant funding, significantly lowering the cost of capital and therefore development of Phase 2 of the Project. First drawdowns of funding are anticipated for Q4 2022 with the orders for the Phase 2 expansion ongoing.

## Geology

Further resource drilling of 10 holes for 2,121.9m combined with a revised cut-off grade from 0.2% WO<sub>3</sub> to 0.05% WO<sub>3</sub> resulted in a significant increase in the resource. The previous BFS included 9.21Mt at 0.63% WO<sub>3</sub> which has been superseded by 20.32Mt at 0.32% WO<sub>3</sub>. The justification for the lower grade cut off has been driven by the continued performance of the TOMRA XRT ore sorters on the low grade stockpile (LGS) feed of an equivalent 0.075% WO<sub>3</sub>.

## **Mining**

After completion of the BFS, EQR has engaged Golding Contractors (Golding) on an early contractor involvement (ECI) basis.

Golding have reviewed and updated the pit shell, mine design and fleet selection and provided updated contractor rates based on current market conditions. The notable changes to the mining assumptions from the previous BFS include:

- Strip ratio from open pit mine reduced from 11:1 to 3.1:1 based off the revised cut off grade
- Increase of the open pit area by 12% based off the improved ore reserves
- Increase in mining cost based on updated contractor pricing and significant increase in fuel price, explosives and labour costs since release of the BFS

## **Processing**

The Phase 1 crushing and screening and processing plant upgrades have been completed. The slurry pipeline from the crushing and screening plant feeding directly into the process plant has been successfully commissioned.

Minor updates to the timing of the processing infrastructure have been included in this update. Based on the requirements of EQR customers, the grinding and flotation circuit shall be deferred indefinitely as the concentrate is acceptable to final clients in its current form and product specification.

Additionally based on the continued high performance of the gravity processing plant, the scavenging circuit will be deferred until scale trials are completed to determine whether yield benefits will be achieved beyond current performance. Phase 2 will include upgrades to the front end jig circuit to handle the increase in grade and the tables circuit will also be upgraded to handle resulting increase in concentrate production.

An agreement for the design and supply of the crushing and screening plant front end has been negotiated and executed with Sandvik. Based on the current market supply chain conditions, the design and supply duration for this package has been factored into the updated schedule. The capital cost estimate has been updated to reflect actual pricing.

The commissioning of the Sandvik plant does not impact the commencement of open pit mining as the Phase 1 upgrade has allowed the existing crushing and screening plant to handle the open pit run of mine at the design throughput.

## **Infrastructure**

Based on further assessments of the water infrastructure and water balance by ATC Williams some additional scope has been included in this update to allow for remedial work to be undertaken on the tailings storage facility (TSF) 4 and TSF 3 for inclusion in the site water circuit.

## **Approvals**

The BFS forward work plan outlined water, noise, dust and vibration analysis work that was required to be carried out to facilitate the submission of the Environmental Authority (EA) amendment submission.

This work has been carried out and the EA amendment submission is on track for submission in November 2022.

## **Timing**

The project timing has been updated to reflect the current forecast taking into account higher than average rainfall that has impacted the rate of the open pit dewatering. Supply chain constraints have increased the lead times on the project's long lead items, the execution schedule has been amended to reflect the increased timeframes.

The completion of the Phase 1 upgrade has been instrumental in alleviating schedule pressure on the completion of the new crushing and screening plant. The upgrades to the existing crushing plant in Phase 1 will allow it to handle the full throughput requirements of open pit mining.



A schedule focus on the additional tables in the processing plant has also been included in the update. Based on the revised timing, high grade material will commence prior to the completion of the expanded crushing and screening plant. In order for the processing plant to maintain recoveries, the table circuit upgrade will be prioritised to be completed in time for receipt of high grade ore.

## 2. Executive Summary

### 2.1. Overview

Mt Carbine is an operating tungsten mine and rock quarry located 130 km north of the city of Cairns in Far North Queensland, Australia.

The mine is at the northern end of the Atherton Tableland approximately two hours (130 km) by sealed highway from the port and major centre of Cairns and 45 minutes from Port Douglas. There is a small historic hotel and caravan park adjacent to the mine site and a small town. The mine location is shown in Figure 1.

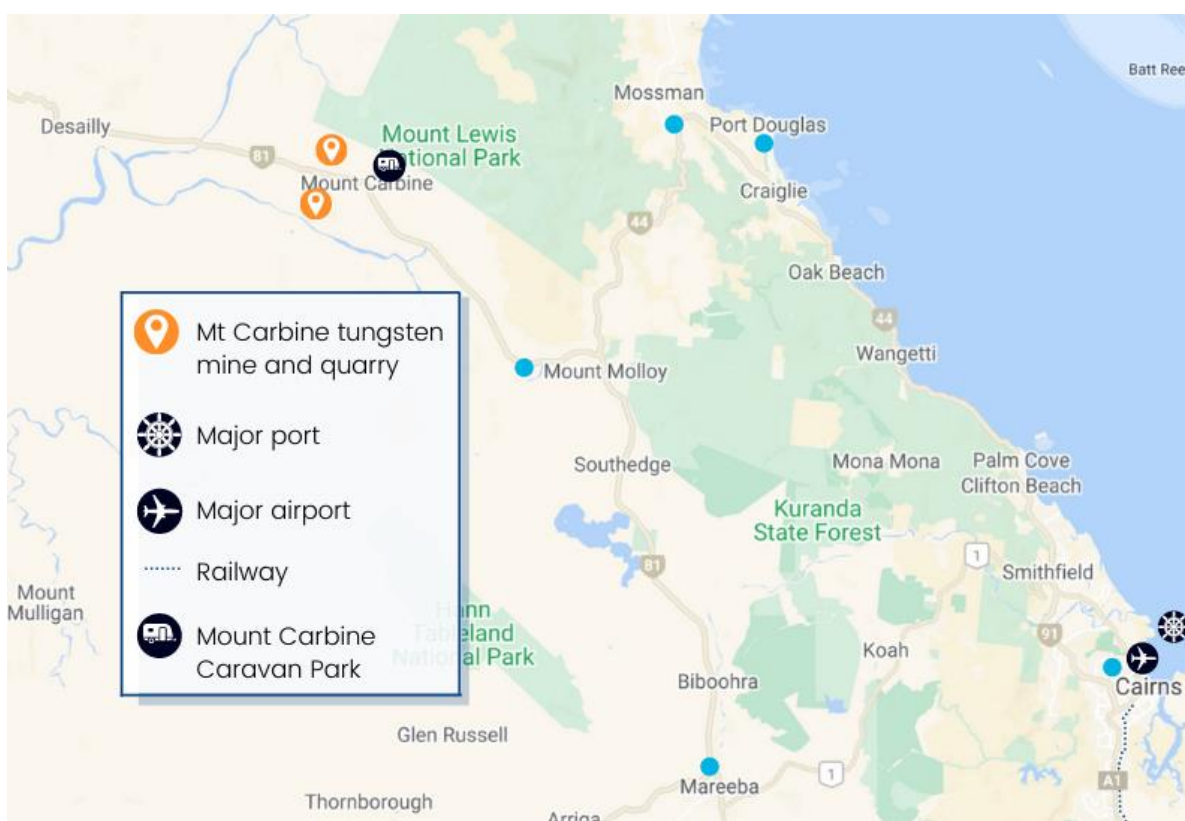


Figure 1: Mine Location

EQ Resources Limited (EQR) acquired a 100% interest in Mt Carbine Quarries Pty Ltd, an entity that owns mining leases ML4867 and ML4919 along with the associated Quarry in June 2019.

EQR has been operating the mine and quarry concurrently, with the mine currently processing tailings and low grade ore stockpiles located on the site that are remnant from previous operations on the site.

The mine is well supported by existing services and infrastructure.

### 2.2. BFS Purpose and History

The purpose of the Bankable Feasibility Study (feasibility study or study) was to assess the cost and operational benefits of increasing the capacity and throughput of the existing processing plant to support the currently approved 1Mtpa mining rate of the low grade ore stockpiles located on the site.

Subsequently, the study assessed the cost and operational benefits the of recommencement of open pit mining from the existing pit and the introduction of a new stand-alone crushing, screening and x-ray transmission (XRT) sorting plant and additional processing plant upgrades to improve overall concentrate recovery to support the open pit mining and introduction of high grade ore into the processing circuit.

The strategy for the feasibility study was to minimise the capital expenditure of the upgrade where possible and maximise the use of all existing on-site mining, processing and supporting infrastructure.

The low-grade ore stockpiles (LGS) are currently being mined by EQR. The infrastructure supporting the crushing, screening, ore sorting and processing activities already exist on the site and will continue to be used for the upgraded facility.

**Phase 1** focused on minimal capital expenditure (capex), incremental improvements to increase the mine's productivity and profitability focusing solely on the mining and processing of the LGS.



Figure 2: Upgraded Crushing and Screening Area – Completed in Phase 1

**Phase 2** focused on the activities and works required to dewater and commence mining of the open pit as well as the crushing and screening plant and processing plant to be upgraded to further reduce operating costs, increase the tungsten recovery and overall output.



Figure 3: LGS & Open Pit locations relative to the Crushing and Screening Plant and Processing plant

## 2.3. Material Changes to BFS

Some significant changes to the underlying inputs of the 2021 BFS have occurred during 2022 necessitating this economic update to the BFS. The material changes to the 2021 BFS and outcomes from the work undertaken in 2022 are summarised below.

### 2.3.1. Investment Evaluation

The BFS update has seen significant improvements to the financial outcome of the project. The key changes to the financial metrics are provided in Table 1. A number of factors drove the improvement in outcome including:

- Completion of Phase 1 and relevant reduction in capital;
- Elimination of stockpiling of low grade halo material but instead processing through successfully ramped up XRT sorters
- Increase in total tungsten tonnes and reduction in mining strip ratio; and
- Deferral of capital items no longer immediately required.

Table 1: Material Updates to Investment Evaluation

Description	Original BFS Value	Updated Value
NPV (pre-tax and ungeared)*	\$131.5M AUD	\$209.5M AUD***
IRR	154%	397%**
Payback Period	2.25 years	1.5 years
Discount Rate	8.00%	8.00%
Cash Cost	113 USD/mtu	118 USD/mtu
Total Concentrate Production	26.680 kt	30.960 kt
NPV:Capex	5.7x	9.8x

\*The NPV reported is before tax and financing.

Both the attributable NPV and IRR to EQR have increased significantly since the 2021 BFS. Cronimet Australia Pty Ltd has an ownership stake in the concentrate produced from the LGS, but not the open pit. As the updated mine plan has changed the cut off grade, the mining of the LGS is deferred for the duration of open pit mining which significantly increases the proportion of NPV that is attributable to EQR. Further details Cronimet Australia Pty Ltd's stake in the LGS treatment is included in Section 16.

\*\* The significant increase in IRR from the original BFS is caused by a number of factors including:

- EQR has secured \$6M AUD of grant funding from the Federal Government (as a grant – no repayment is required and therefore not treated as financing);
- 15% increase in total concentrate sold
- Weaker Australian Dollar against the US Dollar exchange rate (average exchange rate of 0.70 long term used in update compared to 0.73 used in the original BFS); and
- The Project is now 12 months closer to steady-state operations, and in particular, closer to the 4 years of much higher revenue from Open-pit, compared to the BFS, therefore the time value of money has a positive effect (less time until strong revenue is achieved through open pit mining).

\*\*\* \$209.6M NPV is Project NPV; NPV attributable to EQR as 50% portion of LGS Joint Venture and 100% of Open Pit results to \$172.5M.

### 2.3.2. Market Analysis

Since completion of the BFS, the ammonium paratungstate (APT) price has been sustained at a price on the upper end of the of the forecast range due to the post covid market conditions. The forecast for APT pricing remains high with continued demand coupled with delays in projected projects reducing global supply. On this basis, the underlying pricing assumptions have been adjusted.

The Australian dollar has also performed weaker than was forecast and the foreign exchange assumptions have been modified to reflect this.

### 2.3.3. Geology and Resources

The material changes to the geology and resource results from the BFS are included in Table 2.

Table 2: Material Updates to Geology and Resources

Description	Original BFS Value	Updated Value
LGS Resource (Indicated)	900,000 WO <sub>3</sub> (mtu)	900,000 WO <sub>3</sub> (mtu)
Open Pit Resource (Indicated)	1,776,000 WO <sub>3</sub> (mtu)	3,296,800 WO <sub>3</sub> (mtu)
Open Pit Resource (Inferred)	4,017,900 WO <sub>3</sub> (mtu)	3,281,500 WO <sub>3</sub> (mtu)
<b>Total Resource</b>	<b>6,693,900 WO<sub>3</sub> (mtu)</b>	<b>7,478,300 WO<sub>3</sub> (mtu)</b>

The resources above do not include any tungsten from an identified opportunity adjacent to the current open pit. Addition drilling is planned for early 2023 to further define the resource that may form part of a western pit extension which has the potential further increase the life of the open pit beyond the current resource.

### 2.3.4. Mining

The material changes to mining values from the BFS are included in Table 3. Note the LGS reserves have depleted slightly from the BFS as a result of mining of the LGS.

Table 3: Material Updates to Mining Values

Description	Original BFS Value	Updated Value
Strip Ratio	11:1	3.1:1
Average Mining Cost	\$4.50/t	\$6.00/t
LGS Reserve (Probable)	759,750 WO <sub>3</sub> (mtu)	750,000 WO <sub>3</sub> (mtu)
Open Pit Reserve (Probable)	898,380 WO <sub>3</sub> (mtu)	1,161,693 WO <sub>3</sub> (mtu)

The updated drilling results and mine planning has resulted in an increase to the open pit reserves of 29.3% which is being delivered from a slightly smaller pit than the BFS mine design.

The Phase 1 crushing and screening and processing plant upgrades have been completed. The slurry pipeline from the crushing and screening plant feeding directly into the process plant has been successfully commissioned.

Minor updates to the timing of the processing infrastructure have been included in this update. Based on the debottlenecking upgrades that have been delivered on site already and requirements of EQR customers, portions of the grinding and flotation circuit are no longer required.

Additionally based on the continued high performance of the gravity processing plant, the scavenging circuit will be deferred until scale trials are completed to determine whether yield benefits will be achieved beyond current performance. The Phase 2 upgrades will include upgrades to the front end jig circuit to handle the increase in grade and the tables circuit will also be upgraded to resulting increase in concentrate.

An agreement for the design and supply of the crushing and screening plant front end has been negotiated and executed with Sandvik. Based on the current market supply chain conditions, the design and supply duration for this package has been factored into the updated schedule. The capital cost estimate has been updated to reflect actual pricing.

The commissioning of the Sandvik plant does not impact the commencement of open pit mining as the Phase 1 upgrade has allowed the existing crushing and screening plant to handle the open pit run of mine at the design throughput. A temporary jaw crusher is required on the front end of the existing crushing and screening plant to handle >600mm feed material.

### 2.3.5. Infrastructure

Based on further assessments of the water infrastructure and water balance by ATC Williams some additional scope has been included in this update to allow for remedial work to be undertaken on the tailings storage facility (TSF) 4 and TSF 3 for inclusion in the site water circuit.

### 2.3.6. Project Execution

The key dates for project execution have been updated to reflect the current project timing due to pit dewatering and approvals. The project execution timing has also been modified to allow for the commencement of open pit mining prior to commissioning of the expanded crushing and screening facility.

### 2.3.7. Capital Cost Estimate

The updated capital cost required to complete the Mt Carbine Project is \$16.5M AUD. This is \$6.5M AUD less than the BFS capital cost estimate. This is due to the Phase 1 and portions of Phase 2 scope having been completed. It also allows for the cost reductions based on the optimisation and deferral of grinding and flotation circuit scope, as well as cost and scope increases identified post completion of the BFS.

The changes to the total Project capex as well as completed scope and costs to go are shown in Figure 4.

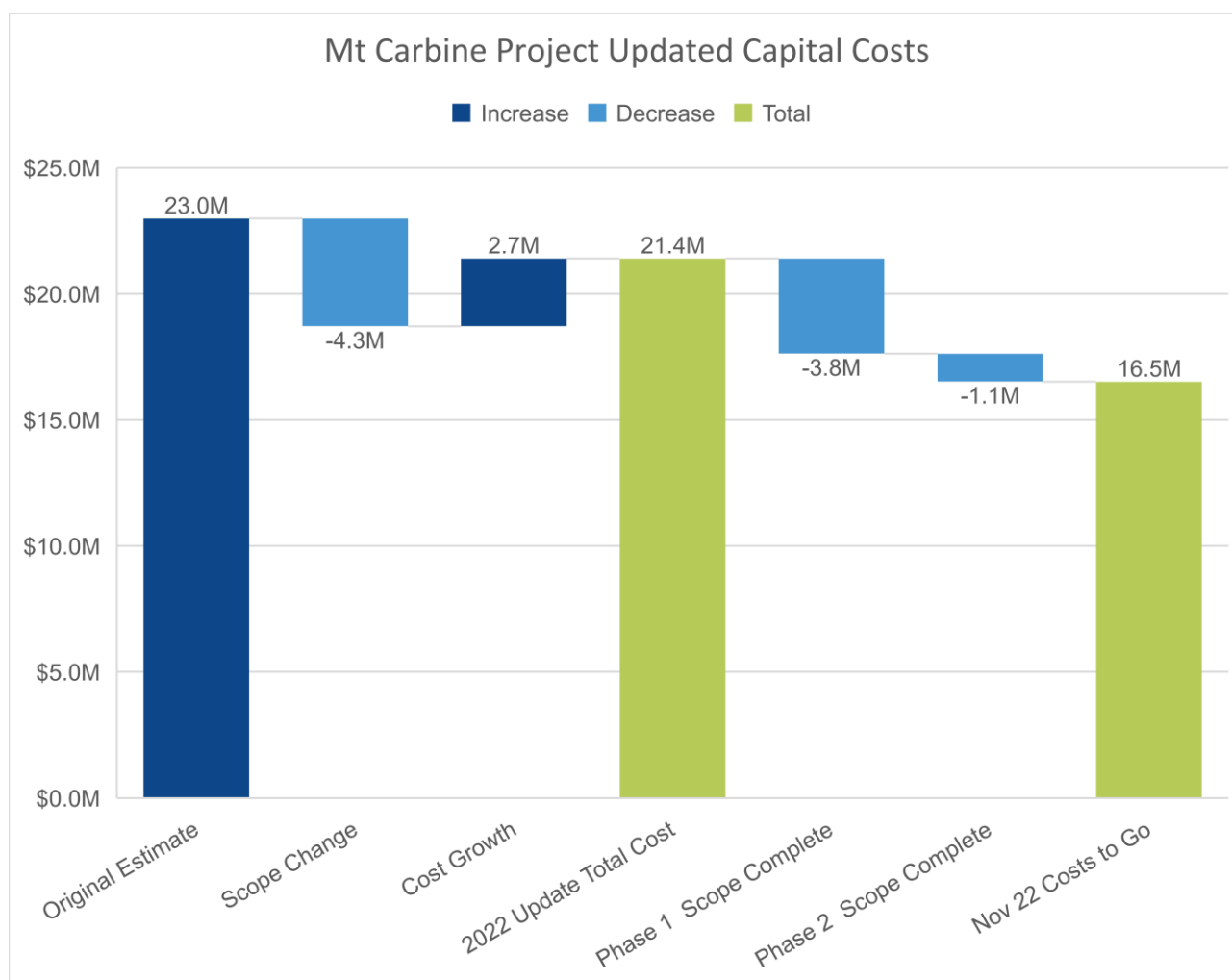


Figure 4: Updated Capital Cost and Cost to Go

Table 4 summarises the Project costs to go by the work breakdown structure (WBS).

Table 4: Capital Costs to Go by WBS

WBS	Updated Capital Cost (AUD M)
10000 – Mining	2.4
20000 – Processing	10.2
30000 – On-site Infrastructure	0.7
70000 – Project Indirects	0.8
80000 – Owner's Costs	0.9
90000 – Escalation and Contingency	1.5
<b>Total</b>	<b>16.5</b>

### 2.3.8. Operating Cost Estimate

The material changes to the operating costs from the BFS are included in Table 5. The cost increase was largely driven by the increase in diesel fuel, explosives and other consumable costs as well as increased labour costs. The mining contractor operating costs for the BFS update have been provided by Golding Contractors who have been engaged on an ECI basis.

Table 5: Material Updates to Operating Cost Values

Description	Original BFS Value	Updated Value
Mining Contractor Operating Costs	\$4.50/t	\$6.00/t

## 2.4. Environment Social Governance (ESG)

No material changes occurred to the approach to ESG. The ESG outcomes from the BFS are provided below.

### 2.4.1. Current Perspective

ESG has grown in prominence thanks to capital investment pressures, heightened consumer and stakeholder expectations, and global regulatory pressures for greater ESG reporting disclosures. Underpinning this is the broad realisation that its relevance is not only about addressing climate change, but also providing organisational long-term performance insights, both operationally and financially. ESG is not a separate business strategy, but the application of shared values and principles that realise commercial benefit whilst achieving positive social and environmental outcomes.

### 2.4.2. ESG Maturity

EQR appreciates the opportunities that an ESG focus can provide. As a resource efficient, value-oriented and resource critical mining company of the future, EQR has already aligned its purpose, mission, and values with some high level ESG objectives. The Company aims to contribute to sustainable development and align to United Nations Sustainable Development Goals, refer Table 6.


EQR defines their ESG adoption profile as an 'early adopter'. Existing ESG environmental initiatives include:

- The implementation of a new waste sorting technology;
- A review of pollution prevention treatment options; and
- Ongoing participation in a pilot greenhouse gas (GHG) emissions tracking scheme in partnership with the University of Queensland.



They also have several ‘S’ centric employee attraction and retention programs underway centering on improving employee diversity and capability within the organisation. Additionally, EQR sponsor a range of community programs and events, engaging regularly and collaboratively with the community to develop initiatives that positively impact employees and the local community.

Table 6: EQR ESG Alignment with United Nations Sustainable Development Goals (SDG)

ESG Framework SDG Alignment		
Environment	We are committed to embedding and embracing resource efficiency in our operations. As a producer of a new economy critical mineral, we aim to minimize our impacts on the environment and prevent degradation through the optimal extraction of tungsten from a secondary source and through the integration of advanced processing technology.	     
Social	Safety is a core value and a strategic priority, and we are committed to promoting and enhancing a safety culture in our operations. Our commitment to society includes promoting workforce diversity and inclusion, empowering local communities through creating employment opportunities, sourcing materials locally where possible and investing in our employees and communities for social development.	     
Governance	As a value-oriented resources company, we are committed to acting in a transparent, accountable, and responsible manner in all our business dealings and operations.	  

Through active engagement with local communities, environmental experts, and supply chains, EQR is building solid credentials for the future. Underpinning a philosophy of pragmatism and effectiveness, EQR has taken a multi-process approach including:

- Working sessions with the Leadership Team on purpose, core values and key principles;
- Revision of the Risk Management Policy; and
- The completion of an independent ESG Stakeholder Sentiment Survey and ESG status report.

### 2.4.3. Stakeholder Sentiment

An ESG Stakeholder Sentiment Survey was disseminated to 22 EQR stakeholders, with 19 respondents. The survey consisted of 56 questions and took approximately 10 minutes to complete.

Survey questions were broken into 12 themes aligning to the three Environment, Social, and Governance pillars. The purpose of the survey was to gather information on which ESG themes that stakeholders felt are of material importance to EQR.

Survey respondents were a mix of internal and external stakeholders including representation from the senior leadership team, shareholders, employees as well as external stakeholders such as local community members, suppliers, and financial service providers.

Stakeholders were asked to rate whether the organisation was perceived to be leading or lagging across each of the 12 ESG themes. They were asked to do this for both the current state of the business, as well as for where they felt the organisation should be positioned / aiming to be.

The results are included in Figure 5.

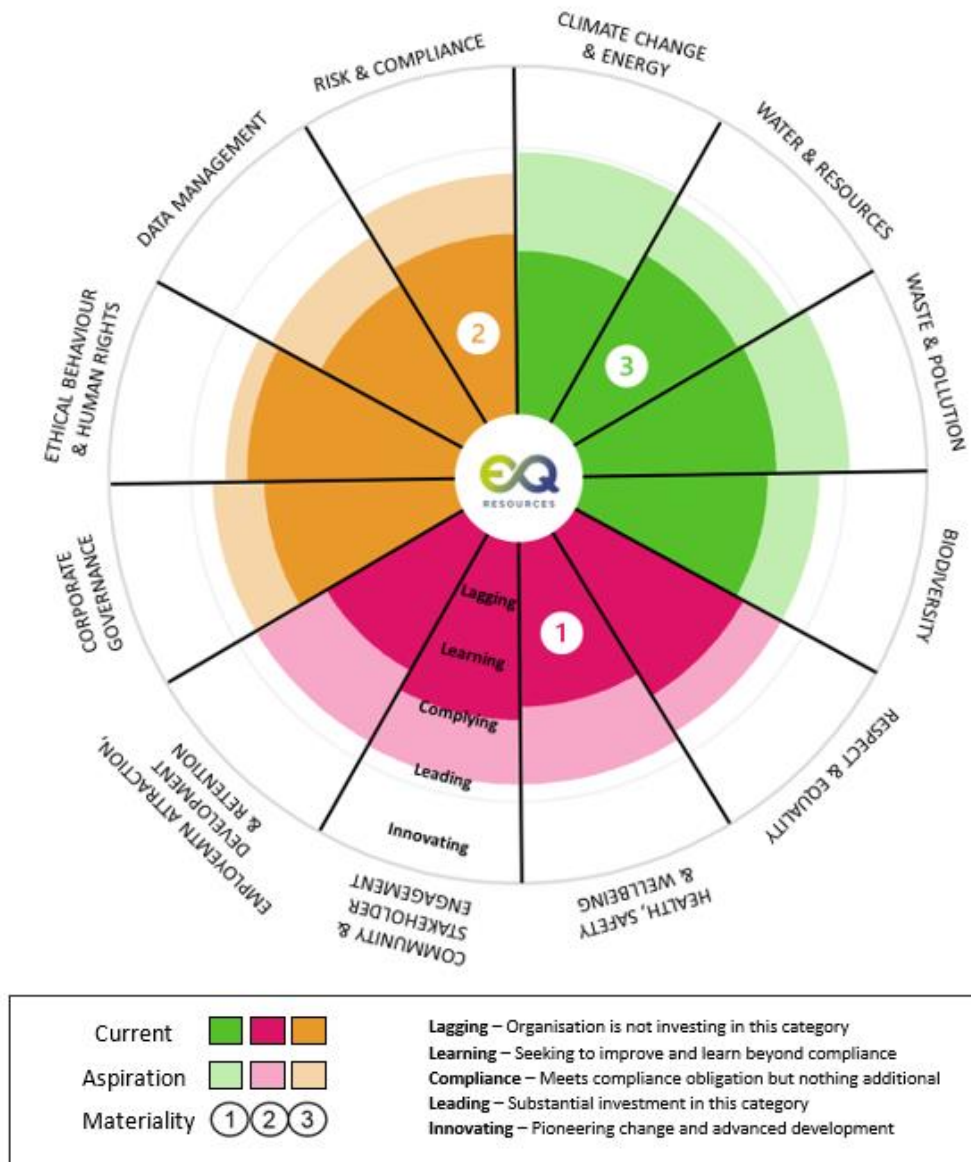


Figure 5: Stakeholder Sentiment and Materiality Survey Summary

#### 2.4.4. Material Themes

Across the EQR leadership team and stakeholders surveyed, shared perceptions and aspirational goals were prevalent. The close alignment between stakeholder feedback and current ESG positioning and intentions reinforces EQR’s high degree of confidence in its evolving ESG program. Multiple threads were identified, with five material themes highlighted:

- Employee and contractor health, safety, and wellness (Social);
- Proactive management of risk and compliance management (Governance);
- Creation of meaningful jobs and the creation of local talent pipelines (Social);
- Water, energy, and resources management and efficiency (Environmental); and
- Commitment to the accelerated transition to a low carbon future (Environmental).

### **Societal Challenges:**

When applying a societal lens, additional opportunities were uncovered, including:

- Reducing site environmental impacts especially noise and dust;
- Reduce, recycle or repurposing waste;
- Provide local and regional employment especially for disadvantaged and minority groups;
- Maximise the opportunity for female participation in non-traditional work areas (currently at 25%);
- Stimulate a sustainable local supply chain including accommodation and essential services; and
- Support community health, wellbeing and resilience through sponsorships and volunteer work.

### **Strategic Positioning:**

The outputs from the leadership workshops and a sentiment survey provided both insight and foresight. Recognising that ESG is a tightly intertwined series of process and practices across all business operations, EQR has adopted the following approach:

- Be an early adopter of 'Environmental' opportunities using technology and robust systems that deliver highly efficient extraction processes, minimising its physical footprint, developing low carbon operations, and minimising waste and consumables such as water, energy, explosives;
- Lead across a range of 'Social' opportunities especially, supporting sustainable communities and local supply chains, driving diversity and inclusion, preferencing local employment and developing a long-term pipeline of regional talent; and
- Deliver transparency and compliance regarding 'Governance', reporting and public disclosures, recognising that compliance is the floor not the ceiling of its obligations.

### **2.4.5. Strategic Direction**

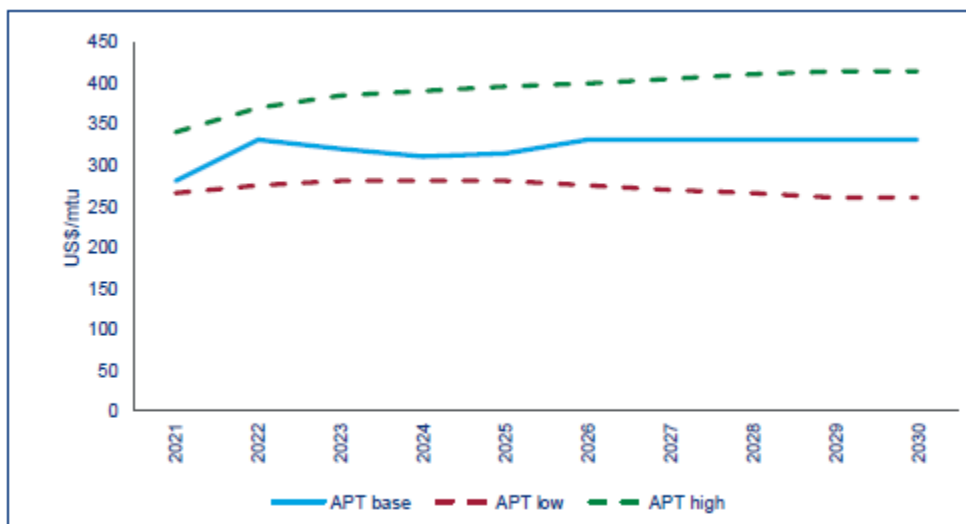
An ESG focus affords the Mt Carbine mine with significant opportunities to maximise positive environmental and social impacts both now and into the future. The EQR leadership team are committed to advancing their current ESG program with material consideration being given to both immediate opportunities and those longer term. From prospects for employment and industry expansion created within the local community, to the potential for a development of green energy via solar powered farms on rehabilitated stockpile and tailing areas, there are many areas under consideration for future incorporation.

Insight into current stakeholder priorities and suggestions will shape the future direction of the EQ Resources ESG program, with a particular focus on further developing a robust ESG framework that delivers environmental and social benefit with a positive and sustainable commercial return.

### 3. Strategy and Market Analysis

#### 3.1. Update to BFS Market Assumptions

The APT price forecast utilised in the BFS is shown in Figure 6. The BFS used the APT base price for the APT pricing assumptions.



Source: Wood Mackenzie

Figure 6: APT Price Forecasts

Based on the high performance of the APT price relative to the Wood Mackenzie forecast to date since the release of the BFS, combined with the softening Australian Dollar against the US Dollar, the approach taken with the updated economics was to apply the straight average of the Base and High price trends of the Wood Mackenzie forecast.

This position was justified by the tungsten price performance to date combined with delays to projects assumed in the forecast to supply global demand since it was commissioned in 2021.

There has been positive pricing pressure in the current market due to supply constraints and increasing demand metrics which further reinforces the update to the BFS APT pricing assumptions.

#### Note on Tungsten Concentrate Price Forecast

In consideration to the above-mentioned APT price forecast, it must be noted that the above discussed prices are all expressed in \$/mtu in APT, where typically tungsten concentrate sells for about 75-77% of the APT price on a FCA basis. This payable factor varies with the product quality (WO<sub>3</sub> grade, but mostly impurities' levels), and its delivery term.

Given the range shown above, applying a 70-75% payable factor on the APT price forecast in the financial model has been deemed to be fair assumption of the tungsten concentrate price forecast.

#### 3.2. Product Specification

Based on the Off-take Agreement in place between CRONIMET Australia Pty Ltd, CRONIMET Asia Pte Ltd and Mt Carbine Retreatment Pty Ltd (a wholly owned subsidiary of EQR) in 2019, the specifications for tungsten concentrate are provided in Table 7.

Table 7: Tungsten Concentrate Specifications

Name of Element	Specification
WO <sub>3</sub>	50% min
S	1.5% max
Sn	0.50% max
Mo	0.40% max
Sb	1.0% max
As	0.15% max
H <sub>2</sub> O	1.0% max
Radioactivity: ≤1,000 bq/kg	

These specifications are in line with the overall market requirements for tungsten concentrate and shall remain applicable on the new products being defined in the frame of this BFS.

### 3.3. Customers

Currently CRONIMET is the sole off-taker for the Project from the rights secured through early investment into the Mt Carbine Project. Since the start of the Project, concentrate has been sold to customers in Europe, the United States, Vietnam, and China.

While CRONIMET will retain a portion of the off-take at least equivalent to the existing deliveries, new off-takers might be considered as strategic project partners.

In addition, it has to be noted that CRONIMET has also a specific interest in off-taking part of the wolframite concentrate for its “in-house” conversion into ferrotungsten, which shall then be marketed to its existing steel clients.

Going forward, should CRONIMET no longer wish to trade the concentrates from the Mt Carbine operation, several other large commodity trading companies have verbally expressed interest in the concentrate being produced at Mt Carbine and therefore could be engaged if required.

## 4. Geology and Resources

The Mt Carbine mining area is confined within two Mining Leases (ML), ML4867 and ML 4919 totalling 366.39 hectares. The mining licenses are surrounded by EQR's Exploration Tenements (EPM) EPM 14872, EPM 14871 and EPM 27394 covering an additional 115 km<sup>2</sup>.

A map of the tenure boundaries is shown in Figure 7.

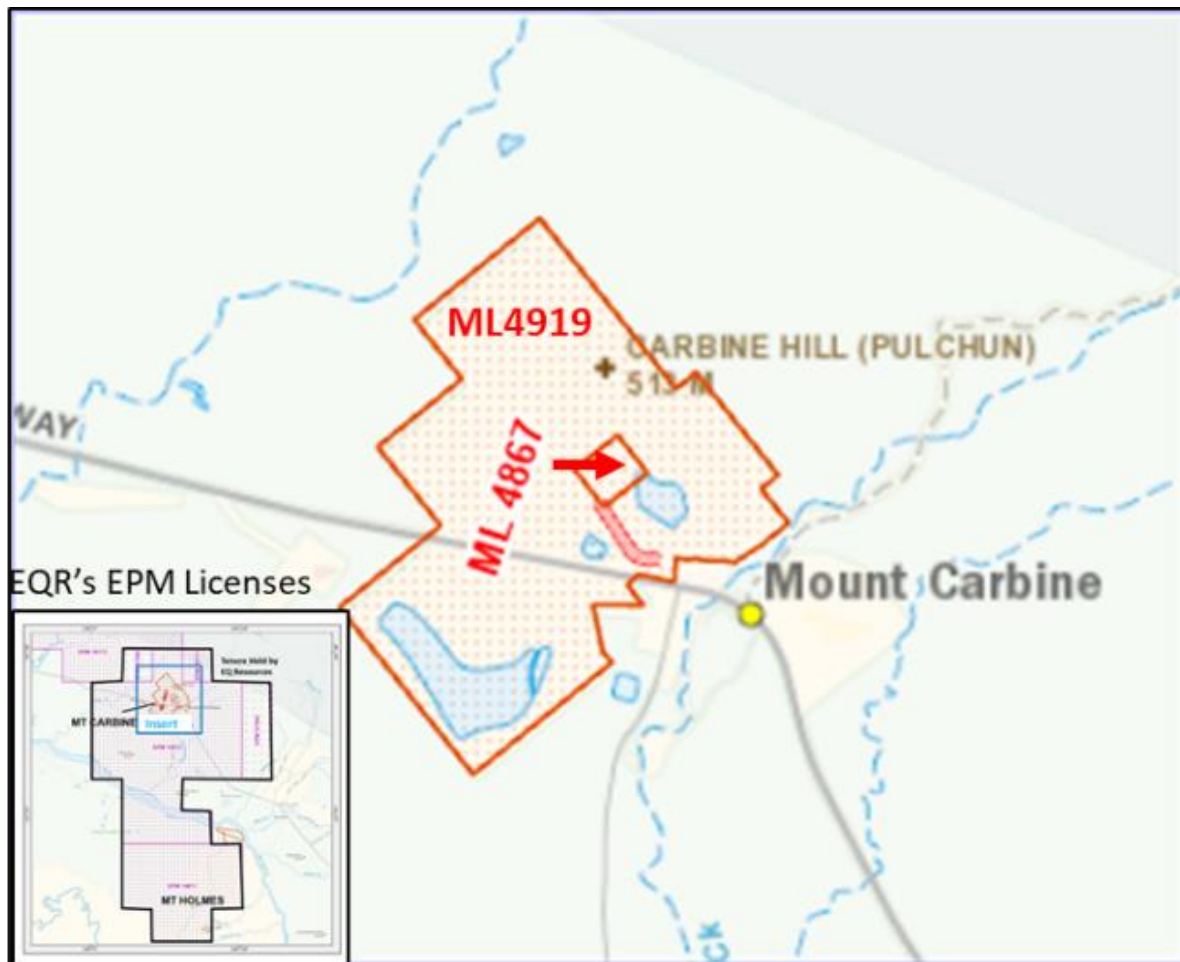


Figure 7: Mt Carbine Lease Boundaries and Surrounding Exploration Tenements

ML4867 (358.5 Ha) was first granted on 25 July 1974 and has been continually renewed until today. The latest renewal of 19 years expired on 31 July 2022, upon which time EQR has submitted a renewal application for a further 19 years. The renewal is based on the new resources / reserves and the Mt Carbine Bankable Feasibility Study that outlines the planned future mining activity. ML4919 (7.891 Ha) was first granted on 24 August 1974 and has been continually renewed with the latest 19 year renewal expiring on 23 August 2023 and likewise a renewal application will be submitted in Q1, 2023.

A summary of the current licenses and status is provided in Table 8.

State	Ownership	Area	Status	Interest Held at Year End	Expiry Date
<b>Queensland, Australia</b>					
ML 4867	Mt Carbine Quarries Pty Ltd (wholly owned subsidiary of the Company)	358.5 ha	Granted	100%	31/07/2022 <sup>1)</sup>
ML 4919	Mt Carbine Quarries Pty Ltd (wholly owned subsidiary of the Company)	7.891 ha	Granted	100%	31/08/2023
EPM 14871	EQ Resources Limited	10 sub-blocks	Granted	100%	12/12/2025
EPM 14872	EQ Resources Limited	21 sub-blocks	Granted	100%	11/12/2025
EPM 27394	EQ Resources Limited	4 sub-blocks	Granted	100%	01/06/2025

ML = Mining Lease;  
EPM = Exploration Permit for Minerals (QLD);  
EL = Exploration Licence (NSW)

1) Renewal in progress. The application for renewal was submitted on 31 January 2022 accompanied by an initial Development Plan. The renewal process is advancing smoothly with good communication between all parties. This process may take longer than normal given the Department's review of the Company's open cut development proposal planned for 2023.

Table 8: Mt Carbine License Register

### 4.1. Regional Geology

The Mt Carbine mine site is located within the Siluro-Devonian Hodgkinson sedimentary province. The thick sedimentary sequence was complexly folded and regionally metamorphosed prior to and during extensive granitic intrusions in the Carboniferous and Permian. The regional geology is shown in Figure 8.

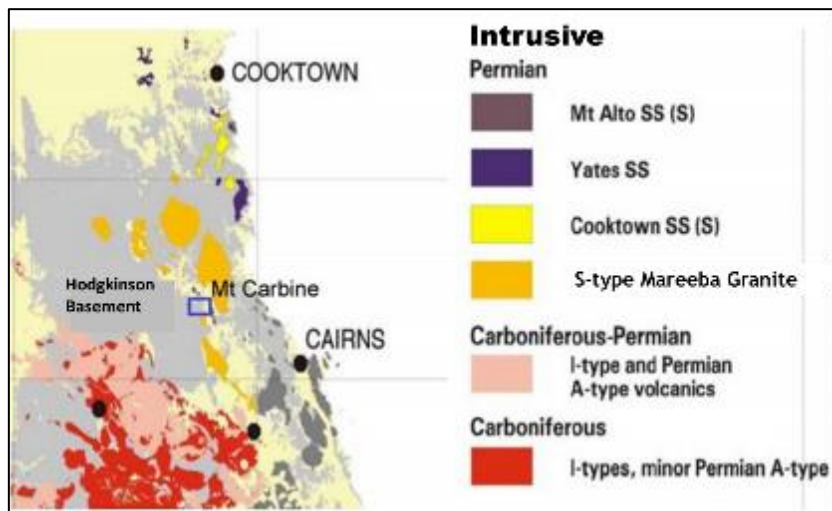


Figure 8: Regional Geological Setting of Mt Carbine

Within the permit north-north-west trending Hodgkinson Formation turbidite and siltstones are intruded by the Mareeba Granite dated at 277My, and the Mt Alto Granite, dated at 271±5My (Bultitude et al., 1999). Contact metamorphic aureoles marked by formation of cordierite Hornfels surround the granite intrusive and numerous acid to intermediate dykes intrude the metasediments. In the western portion of the tenement, a prominent metabasalt-chert ridge is a significant Hodgkinson formation stratigraphic component.

## 4.2. Mineralisation

The Mt Carbine tungsten deposit consists of a number of vertical to sub vertical sheeted quartz veins ranging in width up to 7m but averaging around 50cm. Only about 20% of the quartz veins are mineralised due to an early barren quartz event and a later mineralising quartz event. Economic minerals are the tungsten minerals of scheelite and wolframite mineralisation that occur in the ratio of 1:4 respectively.

A typical section through the center of the deposit has over 35 quartz veins ranging from 10cm to 7m in width with 5-8 zones of overprinting mineralised quartz veins of 10 -150cm widths. These high grade veins containing rich quartz - feldspar tungsten minerals and have been designated as “King Veins”.

The tungsten occurs as coarse crystalline varieties of Wolframite up to 10cm crystal size and with varying degrees of intergrown scheelite that is volumetrically less significant. Tungsten minerals can form up to 50% of the quartz vein zone, as intersected and with such a coarse nature to the mineralisation causes a nugget effect to the mineralisation. In a later retrograde stage a scheelite overprinting event occurs that is represented mostly as fine scheelite replacing wolframite on fractures and progressive wholesale replacement.

The Scheelite-Wolframite ratio is seen to increase to the grid north and grid east of the deposit and this mostly reflects the host rocks change to a more calcareous metavolcanic-chert horizon. In general the veins are persistent and strong and cross all rock types. The occurrence of the veins is thought to be a conjugate veins set as the result of movement on faults occurring on the fold nose of an isoclinal fold. The sheeted parallel nature to the veins locally have jogs along strike resulting in movement of local structures during tungsten deposition. Examples of mineralisation in core samples are shown in Figure 9 and Figure 10.





Figure 9: King Veins Showing Coarse Vein Textures of Wolframite Crystals



Figure 10: Core Showing Late Replacement of Wolframite by Fine Network Retrograde Scheelite

The mineralisation interpretation is that there are two primary mineralising events with the first phase being a pervasive gaseous front that forms broader scale silicification / veining and deposits a lower grade background level of tungsten mineralisation. A rich brine fluid then entered later through later fracturing of the now silicified host rock. These brine veins (king veins shown above) are recognised to have higher temperature and higher salinities in fluid inclusion work attesting to their direct magmatic origin. Conversely the gaseous veins result in fluid inclusions with more gases and a composition showing mixing with groundwater has occurred. The king veins can be as high as 50%  $WO_3$  but typically are in the 1-2%  $WO_3$  range.

Along the grid E-W strike to the mineralisation, the veins have been grouped into lenses, where one or more of the high-grade king veins are close enough to define a composite value above a cut off of 2m 0.25%  $WO_3$ .

An indicative cross section through the open pit indicating vein locations is shown in Figure 11 and Figure 12 showing Indicated Resources in red and Inferred Resources in green. Note position of new pit outline in blue relative to current pit outline in red.

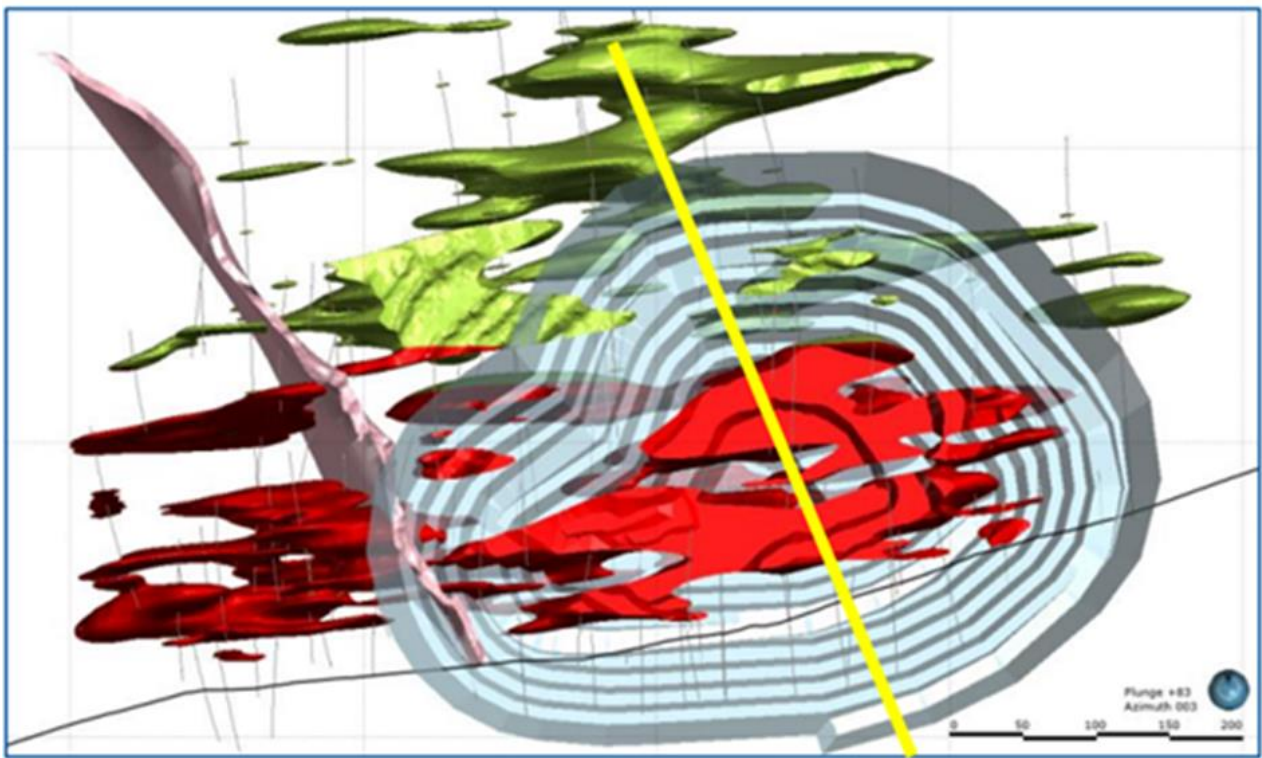


Figure 11: Open Pit Cross Section Location

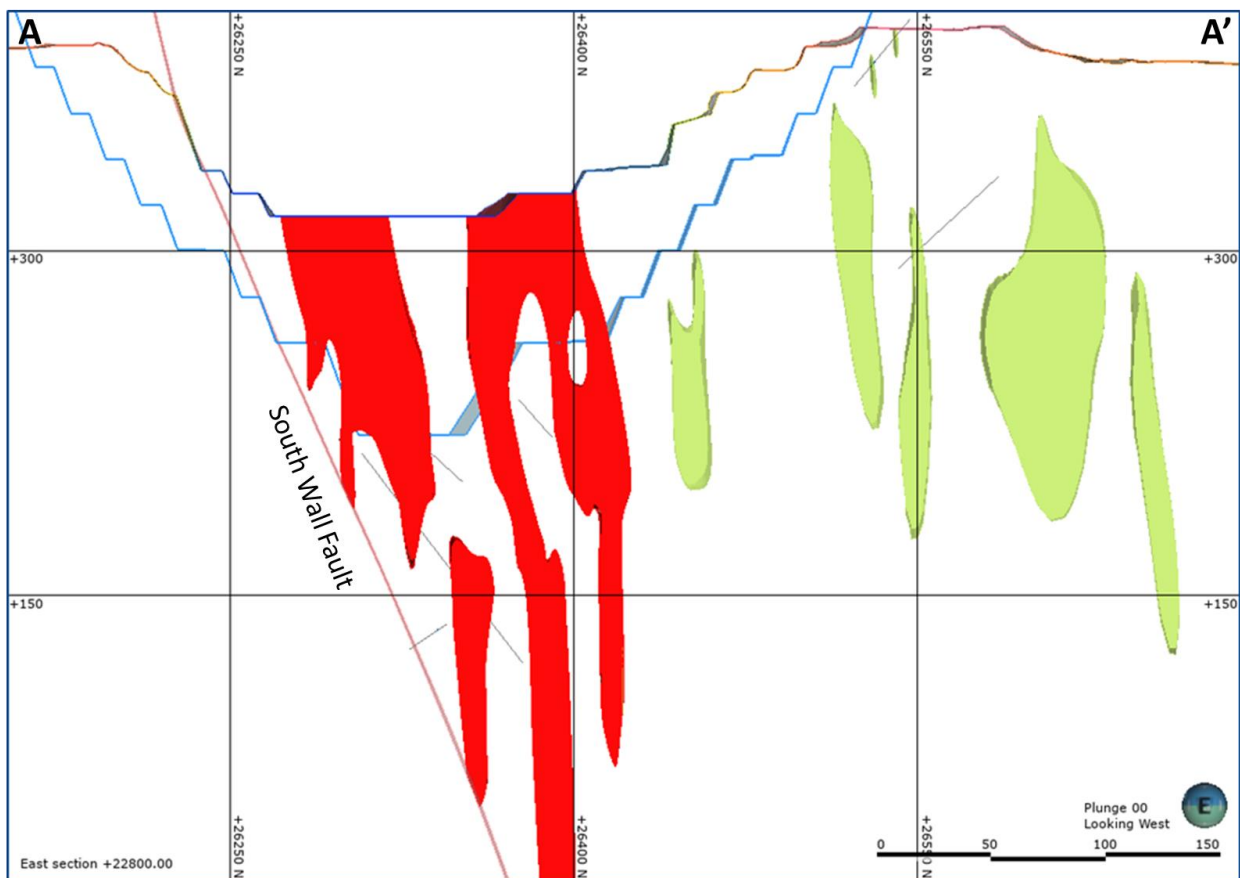


Figure 12: Typical Ore Section Through Open Pit

### 4.3. Resource Estimation

EQR engaged Brisbane-based consultancy, Measured Group, to complete the independent resource re-calculation. The re-assessment of the resource was seen as the priority and work was supported by a 2021 program of 4,074m of diamond drilling and a successful completion of a METS Ignited Grant funded trial operation campaign for the material from the LGS. This maiden resource was followed up with further drilling in March 2022 for 10 holes for 2,121.9m and a lowering of the cut-off grade from 0.15% to 0.05% to give an new updated resource & reserve as highlighted in Table 9.

Table 9: Mt Carbine Mineral Resource – August 2022

Cut-off (%WO <sub>3</sub> )	Tonnes (million)	Grade (% WO <sub>3</sub> )	WO <sub>3</sub> (mtu)
0.05*	20.32	0.32	6,578,300
0.1	15.9	0.39	6,246,300
0.15	12.6	0.46	5,792,270
0.2	10.6	0.52	5,522,540
0.25	8.1	0.61	4,941,960
0.5	3.6	0.95	3,364,790
0.75	1.7	1.30	2,235,490

**NOTES:**

\* Cut-off used in resource statement

The decision to lower the cut-off grade to include more tungsten metal recovered, albeit at a lower grade, is off the back of excellent results of the ore sorting operations and corresponding upgrade of the LGS where the grade is only 0.075% WO<sub>3</sub>. Being able to mine larger ore zones typically results in lower mining costs, as larger equipment can be used, and drastically will reduce the strip ratio for the mine.

Various cut-off grades were examined with the maximum contained metal chosen. Given the experience of the low grade stockpiles discussed above it is clear that the optimizer should have access to the entire mineralization potential of the pit area when computing the Reserves. The lower cut of 0.05% WO<sub>3</sub> gives a resource of 20.32Mt at 0.32% WO<sub>3</sub>. A large portion of the indicated category of this resource proves to be economic in the redesigned pit shell.

The updated Resources and Reserves as published in August 2022 and September 2022 respectively is summarised in Table 10.

Table 10: Updated Resource and Reserves

<b>Mt Carbine Mineral Resources</b>				
<b>Orebody</b>	<b>Resource Classification</b>	<b>Tonnes (mt)</b>	<b>Grade (WO<sub>3</sub>%)</b>	<b>WO<sub>3</sub> (mtu)</b>
<b>Low Grade Stockpile</b>				
	Indicated	12.00	0.075%	900,000
<b>In Situ</b>				
	Indicated	12.04	0.27	3,296,800
	Inferred	8.28	0.40	3,281,500
	<i>Total</i>	<i>20.32</i>	<i>0.32</i>	<i>6,578,300</i>
<b>All</b>	<b>Total</b>	<b>32.32</b>		<b>7,478,300</b>

Table 11: Mt Carbine Ore Reserve Estimate at September 2022

**Mt Carbine Ore Reserves**

<b>Reserve Category</b>	<b>ROM Tonnes (mt)</b>	<b>WO<sub>3</sub>%</b>	<b>Contained WO<sub>3</sub> (mtu)</b>
Open Cut - Proved	-	-	-
Open Cut - Probable	3.54	0.33%	1,161,693
<b>Open Cut - Total</b>	<b>3.54</b>	<b>0.33%</b>	<b>1,161,693</b>
LGS - Proved	-	-	-
LGS - Probable	10.00	0.075%	750,000
<b>LGS - Total</b>	<b>10.00</b>	<b>0.075%</b>	<b>750,000</b>
<b>Total - Proved</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Total - Probable</b>	<b>13.54</b>	<b>0.142%</b>	<b>1,911,693</b>
<b>Total</b>	<b>13.54</b>	<b>0.142%</b>	<b>1,911,693</b>

**NOTES:**

- Total estimates are rounded to reflect confidence and resource categorisation.
- Classification of Mineral Resources incorporates the terms and definitions from the Australasian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves (JORC Code, 2012) published by the Joint Ore Reserve Committee (JORC).
- No uppercut was applied to individual assays for this resource, a lower cut of 0.05% was applied to the Southern Domain 1 block and 0.15% WO<sub>3</sub> to the area outside of this area was applied, which is the grade where the mineralisation forms distinct veins.
- Drilling used in this methodology was all diamond drilling with 1/2 core sent according to geological intervals to ALS for XRF15b analysis.
- Resource estimation was completed using the Kriging Methodology.
- Indicated spacing is approximately 30m x 30m; Inferred in approximately 60m x 60m.

A comparison to the previous Ore Reserve estimate (as of 31<sup>st</sup> Dec, 2021) is summarised below:

- The Indicated Resources have grown significantly from a contained 1,776,000 mtu to 3,296,800 mtu, an increase of 85.6%
- Open pit ROM tonnes increased from 1.26Mt to 3.54Mt
- Open pit ROM WO<sub>3</sub> grade decreased from 0.71% to 0.33% due to lowering the cutoff grade
- Open pit contained WO<sub>3</sub> increased from 900,000 to 1.16 M mtu (1 mtu =10kg WO<sub>3</sub>)

This significant increase in tungsten within the updated reserves has led to a one year extension to mine life from three to four years in addition to deferring the mining of the LGS.

#### 4.4. QAQC

EQR continued its rigorous QAQC program with >10% of its sampling being blanks, standards or duplicates. ALS Laboratory in Brisbane completed all the assaying using the analysis method of ME-XRF15b for tungsten and associated minerals with results shown in Figure 13.

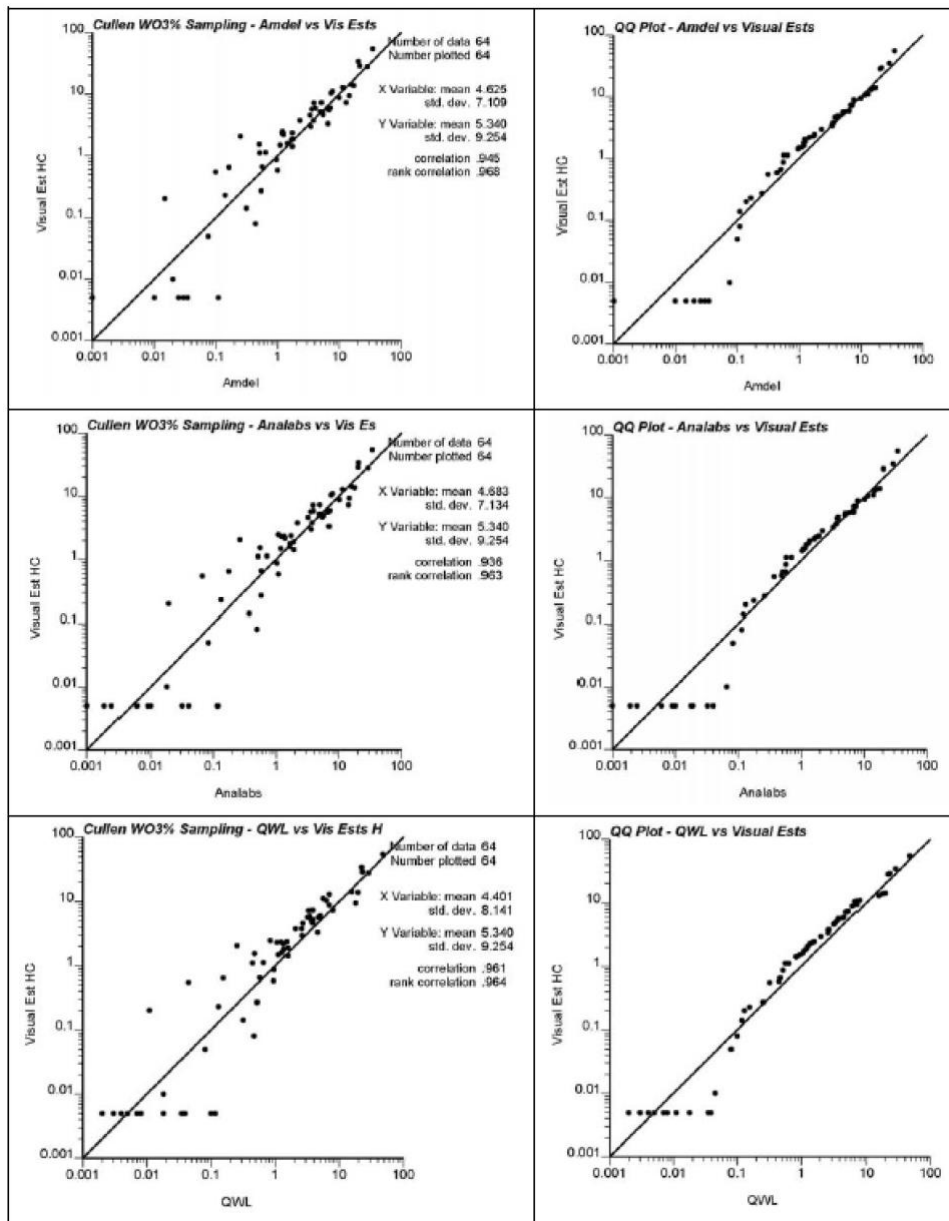


Figure 13: QAQC Results

A review of the QAQC protocol by the Measured Group had the following conclusion. (Extract 5.3 from Reserve Statement Published in September, 2022).

The laboratory employed the required industry standards for sample preparation and the techniques of analyses were appropriate for the level of tungsten mineralisation. The results of the QA/QC study verified that no systematic assay bias was present in the samples supporting the resource estimate. Extensive QA/QC analyses involving comparisons of visual estimates against XRF WO<sub>3</sub>% assay results over the same sample intervals have shown a consistent linear relationship with no issues that would impact resource estimation.

## 5. Mining

### 5.1. Operational Overview

The Mt Carbine mine is a surface operation, with two sources of tungsten ore available – an in-situ open pit resource and a historical low-grade stockpile, locations as shown in Figure 14. Ore Reserves are 3.54Mt at 0.33% WO<sub>3</sub> and 10.0Mt at 0.075% WO<sub>3</sub> for open Pit and LGS respectively.



Figure 14: OC and LGS Mining Limits

The increase to Ore Reserves has reduced the ROM strip ratio within the open pit from 11.1:1 (waste to ore tonnes) to 3.1:1

The updated Ore Reserve estimated was used to inform the optimisation process using an updated set of criteria to account for rising tungsten price as well as rising costs. The Ore Reserves are limited to a practical pit shell based on current economic limits using ramps of suitable widths and gradient.

The planned open pit is essentially a deepening by 95m of the current historical open pit from a 315m RL down to a 220m RL pit floor. The footprint of the new pit is an increase by 12% in size. The extension will extract a total of 14.4Mt of rock in the current design. The design of the new pit is shown in Figure 15.

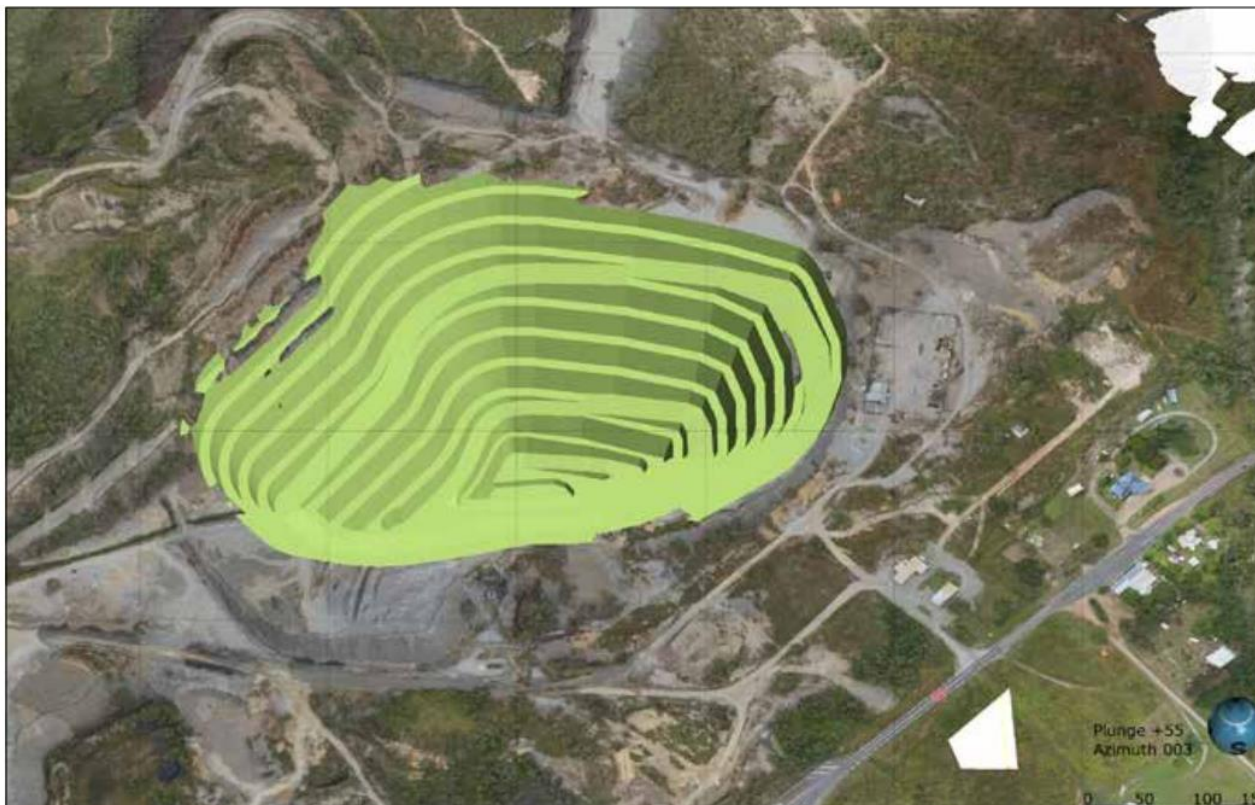


Figure 15: Isometric View of Ore Reserves Pit Shell

Extraction from both sources will be undertaken by conventional excavator and truck fleets. Selective ore mining practices will be employed in the in-situ open pit, with bulk ore mining of the LGS occurring due to local grade variability and lack of historical records.

Ore from both sources will be treated at a dry processing plant prior to concentrate production at the gravity plant. Through this process, ore grade to the gravity plant is significantly improved, with an associated reduction in mass.

The primary operational constraints are as follows:

- Processing plant capacity of ~408kt per annum;
- Mobile fleet capacity of ~4.9Mt per annum total material movement.

Based on these constraints a life of mine (LOM) schedule has been developed. Following regulatory approvals, a four-year contract mining operation of the in-situ reserves will be undertaken, with supplementary LGS feed for a further ten years. Upon depletion of the in-situ reserves, ore feed will revert solely to the LGS.

It is planned to complete further drilling to evaluate a Stage 3 Pit extension to the west as well as evaluate underground mining to supplement the depletion of the open pit in-situ ore. This will be the subject of further study and is not considered in this mine schedule.

Table 11 includes the primary physical metrics of the LOM schedule.

Table 11: LOM Primary Physical Metrics

Variable	Unit	Annual Minimum*	Annual Maximum	LOM
Total Mined Tonnes	T	1,000,000	4,900,000	24,517,791
Mined Ore Tonnes	T	1,000,000	1,020,000	13,935,932
Mined Waste Tonnes	T	629,700	4,233,207	10,581,859
Gravity Wet Plant Feed	T	424,000	408,000	1,200,000
Gravity Plant Head Grade	%	0.18	0.44	0.32
<b>Produced Concentrate</b>	<b>T</b>	<b>921</b>	<b>5,707</b>	<b>30,963</b>

\*Annual minimum excludes 2022, as production will not be in place for the full year duration as calculated in the updated financial model,

Operations of the open pit mining will comprise the following:

- A primary fleet of 1 x 190t class excavator and 13 x 55t articulated dump trucks. The focus of this fleet will be open pit waste movement and some LGS ore mining depending on scheduling

The operation will undertake mining on a 12hr x 7-day a week basis, with processing to be operated on a 24hr x 7-day a week operation. Management personnel will be on a standard 5-day work week.

## 5.2. Material Characterisation

Material to be extracted at Mt Carbine can be divided into two main lithologies – hornfels and metasediments. The weathered profile of the two rock types varies considerably, the hornfels is ~2-4 metres, whilst the metasediments have a deep (up to 30 metres) weathered profile, particularly adjacent to the South Wall and Iron Duke Faults. As such, weathered metasediments can be classified as a separate ‘material type’.

Characteristics of the material types is detailed in Table 12.

Table 12: Material Characteristics

Material	Estimated Hardness	Unconfined Compressive Strength (MPa)	Insitu Density	Loose Density	Swell Factor (%)	Contaminants (PAF/NAF)	Comments
Hornfels	R4 to R5	62.5 to 91	2.74	2.28	20	8% of Material has >3% sulphides	Waste Storage Facility needed for 0.1Mt of material
Meta-sediment	R3 to R4	4 to 91	2.74	2.28	20	Low sulphide content with no contaminants	Likely to slake and desiccate based on field observations

Figure 16 outlines of material within the open pit. Light Green indicates Metavolcanics, Grey indicates Metasediments, Red, Yellow, Dark Green indicates high grade lenses.



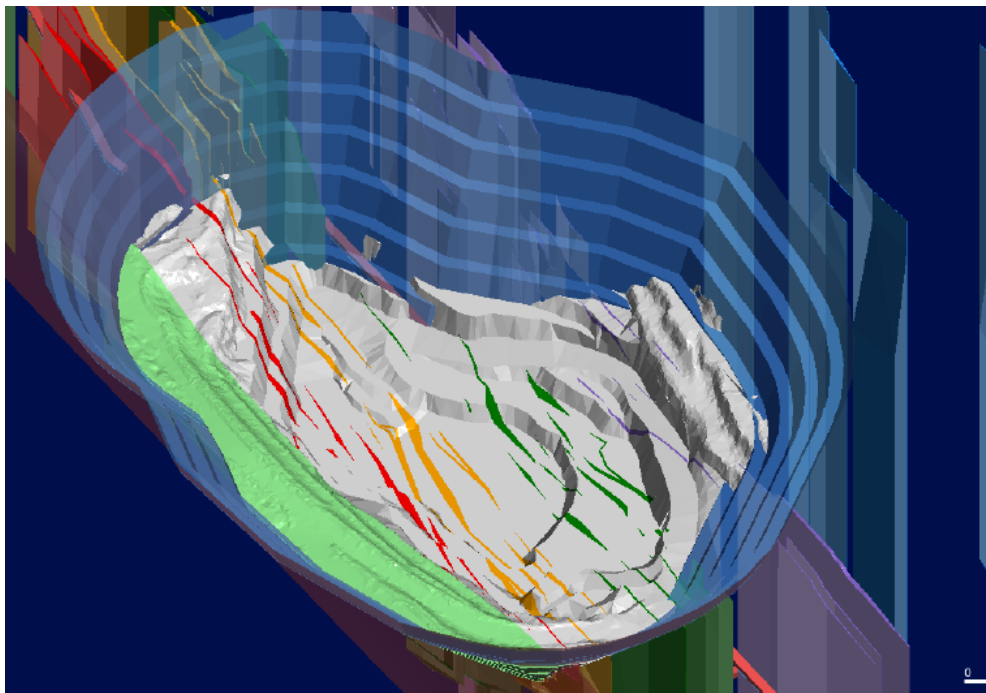


Figure 16: Open Pit Material Characterisation

The other material characteristic of note is the high quartz content of the tungsten bearing veins. The prevention of silicosis (a lung disease caused by inhaling large amounts of crystalline silica dust) has become a priority of QLD regulatory bodies and the operational management plan includes respirable dust controls. These controls include specific drill and blast practices and dust suppression through water spraying.

### 5.3. Hydrogeology

A series of groundwater bores were drilled around the Mt Carbine local area in 2011, providing a good groundwater monitoring network for the mining operation. Sampling and analysis of the network was undertaken by hydrogeological consultants Rob Lait & Associates, with a report “*Report on Carbine Tungsten Groundwater Study*” delivered in December 2012.

The findings of the report are as follows:

- There is low hydraulic conductivity within the Hodgkinson Formation aquifers and minimal groundwater inflow is expected into the open pit.
- Testing of groundwater samples indicates the open pit water is better quality than the surrounding groundwater aquifers.

Based on these findings, groundwater is not considered a major risk from either a ground stability or contamination perspective and will be managed via a typical suite of operational controls – pumping, sediment settling dams, dilution, reuse, and approved discharge if necessary.

### 5.4. Geotechnical

The current pit excavation provides a good opportunity for understanding the future open pit geotechnical performance for the area. Additionally, the underground development has provided further insight into the rockmass condition and has several consultant investigations completed over the years. The previous work has developed a broad understanding, albeit over many decades, during which time changes in geotechnical data collection methodologies and evaluation techniques have evolved.

The geotechnical dataset supporting the basis of the open pit pit shell is as follows:

- RQD and defect information from 79 diamond drill holes across deposit;

- Two images and a PowerPoint presentation of the above drill hole information; and
- Four geotechnical reports, entitled as follows:
  - GCPL – MC – 160421 – *Preliminary Geotechnical Assessment of Ground Conditions & Remedial Support (2021)*;
  - HCOVGlobal – *Brief Review & Structural Assessment/Scoping of Iron Duke – Petersens – Mt Carbine EPM 14872 (2020)*;
  - Golder Associates – *Report to R.B Mining Pty. Ltd. On Mt Carbine Mine Review of Rock Mechanics (1984)*; and
  - HD042 – Piteau & Associates – *Slope Stability Analysis & Design of the Open Pit Slopes (1982)*.

### 5.4.1. Current Data Evaluation

Defect and RQD logging of the 79 diamond drill holes (over 20,000 metres of core) was completed by EQ Resources geological personnel. The data was compiled into a three-dimensional model in Leapfrog software and corresponds well with historical fault, shear and fractured zones.

The majority of the fractures observed are associated with the South Wall Fault, being found in the 10-15m zone of foot wall. The South Wall Fault is well exposed in the existing pit and has over eighty intersections recorded in exploration drilling to date. It varies from 0.5 to 2.0m in thickness and is marked by a clay filled fault gouge.

Figure 17 illustrates the defect logging completed and alignment with historical defect mapping.

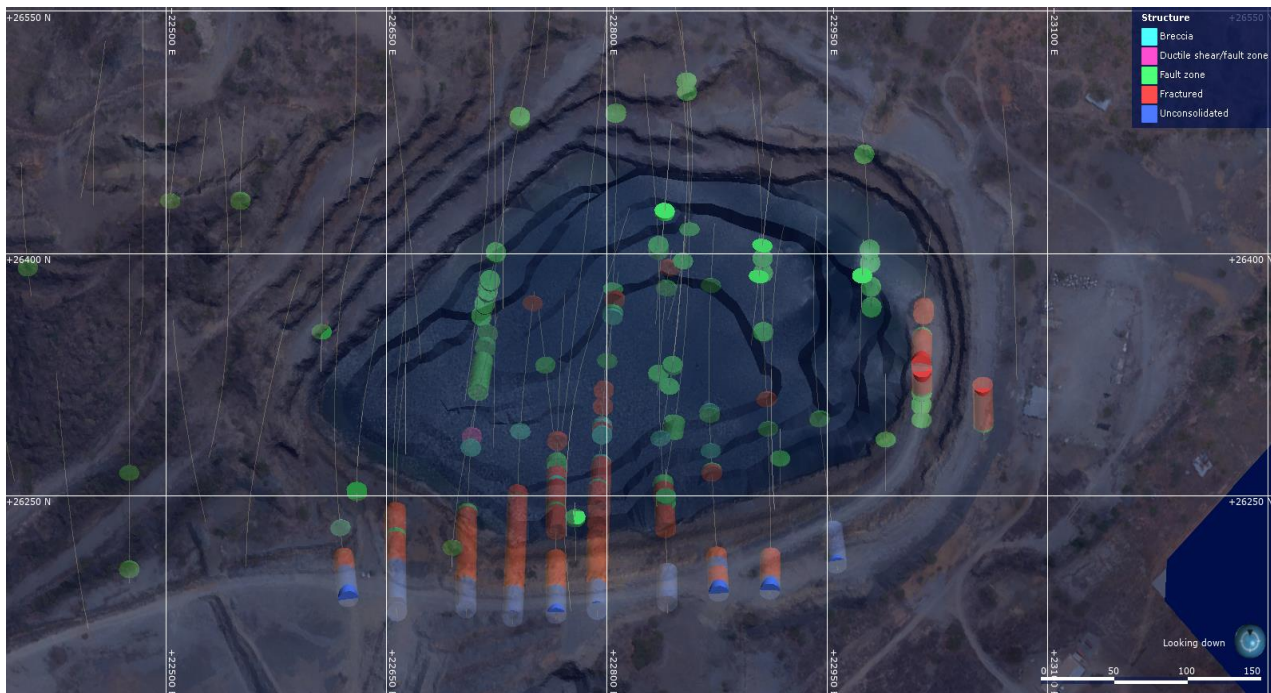


Figure 17: Defect Logging and Structural Model of Exploration Drill Holes (plan view)

### 5.4.2. Current Pit Design

Geotechnical parameters of the current pit design and ground stabilisation requirements are included in Table 13 and Table 14.

Table 13: Geotechnical Parameters of Open Pit Pit Design

Parameter	Value	Comment
Bench Height (m)	20	Suitable in hornfels material north of the South Wall Fault, see Table 9 for mechanical ground stabilisation requirements south of the fault.
Bench batter angle (°)	70	
Bench width (m)	8	
Ramp angle (%)	10	
Inter-ramp slope angle (°)	70	

Table 14: Ground Stabilisation Requirements for Southern Pit Wall

Toe Elevation (m)	Length of pit wall (m)	Area (m <sup>2</sup> )	Horizontal Spacing	No. of Rows	Min. bolt length (m)	No. of bolts	Bolting metres (m)
380	261	2463	3	2	10	174	1740
360	491	9820	3	4	10	655	6547
340	453	9060	3	6	10	906	9060
320	413	8260	3	5	10	688	6883
300	349	6980	3	5	10	582	5817
280	333	6660	3	5	10	555	5550
260	270	5400	3	5	10	450	4500
240	211	4220	3	5	10	352	3517
220	51	1020	3	5	10	85	850
<b>Total</b>	<b>2832</b>	<b>53,883</b>				<b>4446</b>	<b>44,463</b>

The key element of the current pit design is the requirement for mechanical ground stabilisation on the southern wall, behind the South Wall Fault. The ground stabilisation is based off the work completed by Piteau (1982) and comprises the following:

- Horizontal groundwater drainage holes (up to 20m long) at the base of each bench, with associated drainage channel.
- Vertical 10m twin strand cable bolts, two rows at 3 metres spacing, above the 380RL.
- Inclined (-10°) 10m twin strand cable bolts, four rows at 3 metres spacing, above the 360RL.
- Inclined (-10°) 10m twin strand cable bolts, six rows at 3 metres spacing, above the 340RL.
- Below the 340RL, 10m twin strand cable bolts, five rows at 3 metres spacing for all benches
- Cable bolt loading above the 340RL is 20 tonne, below the 340RL is 50 tonne.

## 5.5. Mine Production

A LOM mining schedule was developed on the existing Joint Ore Reserves Committee (JORC) Reserves from the LGS and in-situ orebody. The considerable inferred resources in the in-situ orebody were excluded from the schedule.

Key drivers for mining schedule development were:

- Utilising all the gravity plant annual capacity to realize maximum revenue for the project
- Optimising the volume and timing of high-grade ore from the in-situ orebody to the processing plant

A number of scenarios with ranged input variables were analysed to deliver an optimized LOM mining schedule.

The LOM schedule consists of three main components:

- 2022 – continued mining from the LGS, allowing for open pit regulatory approvals, infrastructure upgrades. The mining contractor Golding Contractors has been awarded the mining contract with mobilisation planned for Q1, 2023.
- Four years of in-situ open pit mining to deplete the current JORC Reserves, with supplementary feed from the LGS to maximize gravity processing plant throughput.
- Approximately ten years of mining to deplete the remaining LGS reserves.

A pit optimisation model was established in the Deswik mine planning software package. The package utilises pseudo flow algorithms to determine the economic pit limit based on several input parameters, including:

- Operational parameters such as loss, dilution, recovery,
- Processing parameters such as recovery, moisture adjustments, grade adjustments, etc.
- Geotechnical parameters to define the overall pit wall angles,
- Unit cost rates for all processes,
- Revenue assumptions.

Mining shall occur on day shift only delivering a maximum of 4.9Mt per annum from the open pit operation. The annual mine production schedule is shown in Table 15.

Table 15: Annual Production Schedule

Year	Waste (t)	Ore (t)	Waste and Ore (t)	Mtu (insitu)	Concentrate (t)
2022	0	166,000	166,000	12,450	198
2023	2,957,512	1,000,000	3,953,512	303,325	4,818
2024	4,407,917	1,027,000	5,435,182	174,194	2,770
2025	1,566,325	1,057,000	2,616,325	280,278	4,456
2026	1,020,405	1,020,000	2,040,405	360,895	5,738
2027	629,700	1,008,000	1,723,033	196,174	2,738
2028	-	1,000,000	1,000,000	75,000	1,193
2029	-	1,000,000	1,000,000	75,000	1,193
2030	-	1,000,000	1,000,000	75,000	1,193
2031	-	1,000,000	1,000,000	75,000	1,193

Year	Waste (t)	Ore (t)	Waste and Ore (t)	Mtu (insitu)	Concentrate (t)
2032	-	1,000,000	1,000,000	75,000	1,193
2033	-	1,000,000	1,000,000	75,000	1,193
2034	-	1,000,000	1,000,000	75,000	1,193
2035	-	1,000,000	1,000,000	75,000	1,193
2036	-	583,333	583,333	43,167	696
<b>Total</b>	<b>10,581,859</b>	<b>13,935,932</b>	<b>24,517,791</b>	<b>1,970,483</b>	<b>30,963</b>

The economic pit limit shells generated by the pit optimisation model were then converted into practical pit shells and stages. Each stage was designed to BFS level of detail using the parameters shown in

Table 16.

Table 16: Open Pit Design Parameters

Item	Value	Units
Final Wall Batter Angle	70	degrees
Final Wall Bench Height	20	m
Final Wall Bench Width	8	m
Access Ramp Width	20	m
Access Ramp Maximum Grade	10	%

Internal dig solids were created in Deswik and then imported into a BFS level of detail schedule in the Spry scheduling package. All LGS dig solids plus the out-of-pit dump solids were created and imported into the schedule. The Spry scheduling model including all dig scheduling, dumping and haulage modelling which provided accurate truck hours and numbers as the pit progressed.

Cut off parameters Ore Reserves for the Mt Carbine open pit are reported using a ROM cut-off grade of 0.08% WO<sub>3</sub>. The cut off was based on the lowest grade ore that still generated a positive cash flow from the pit optimisation calculations using a WO<sub>3</sub> APT sales price of US\$340/mtu and BFS level cost inputs.

The monthly concentrate production profile from the gravity processing plant is shown in Figure 18.

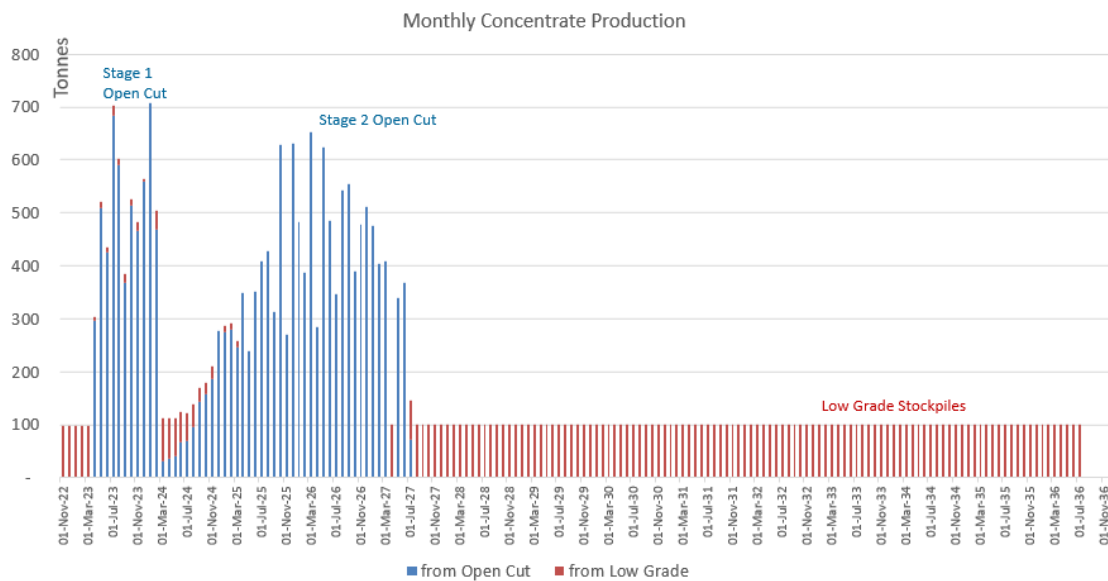


Figure 18: Concentrate Production Profile

Geotechnical reports and the existing open pit walls have guided the overall final pit wall design parameters for 20m high benches with a 70-degree batter and 8m wide catch benches. Haul ramps have been designed for the 55t trucks at a maximum gradient of 10% with dual lane ramps being 20m wide and single lane ramps 14m wide. All material mined is hauled out of the pit with ore trucked to the ROM stockpile or direct fed to the crusher and waste trucked to the out of pit dumps.

Due to the resource model including a lower grade halo around higher grade mineralised veins, a minimum width of 2m was applied to determine if ore blocks could be recovered. Any blocks that did not pass this assessment were converted to waste and regarded as losses. Any remaining ore blocks that were adjacent to a waste block had an edge loss and dilution width of 0.36m applied along the ore/waste boundary.

### 5.6. Waste Dumps

Due to the in-situ orebody shape (tungsten grade and width increasing with depth), the initial mining Stage 1 (year 1) has an extraction of 776,000t of ore from the bottom of the pit whilst completing approximately 4.62Mt of waste stripping on the perimeter of the pit. This is followed by three years of Stage 2 mining where 3.32Mt of waste is extracted for 3.75Mt of ore.

Total rock extracted from the pit in the Stage 1 and 2 pits is 14.4Mt of which 3.54Mt will be run through the beneficiation plant to reduce the material to 1.2Mt of ore for wet processing. Of the 14.4Mt 91.6% of the material (13.2Mt) is quarry suitable material and will be stored at site, within the quarry approved boundary for future feed stock material.

The dump locations are illustrated in Figure 19.

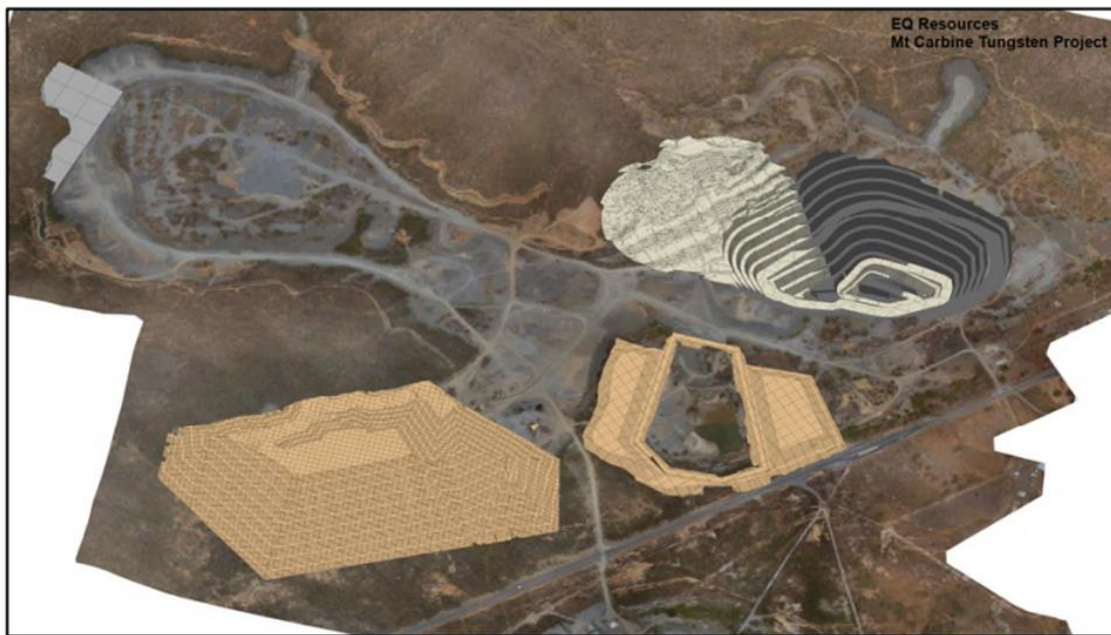


Figure 19: Dump Locations

## 5.7. Mining Method

Following early extraction of the Stage 1 high grade zone at the bottom of the pit further pit development adheres to a conventional top-down approach, with pit floor reached at 220RL.

Production scenarios were developed using Spry value optimisation software, with the main constraints being mobile fleet capacity, particle ore sorting capacity and gravity plant capacity. No constraint on the gravity plant head grade was applied.

As the open pit mining will be a contract mining operation, particular emphasis is placed on delivering a schedule with consistent year-on-year physical metrics. Scenarios with varying mobile fleet capacities (2-4Mtpa) were scheduled and analysed against the following criteria:

- Overall project cash flow;
- Volume and year on year consistency of ore flow to the gravity plant; and

Year on year consistency of total material movement.

The base case for equipment selection was the existing EQR mobile fleet of 90t excavator and 50t articulated dump trucks for the following reasons:

- Small footprint and good performance in tighter working areas;
- Utilisation flexibility between the LGS and open pit; and
- Simplification of fleet maintenance (and associated infrastructure) requirements.

A mining method assessment determined that medium sized excavators and accompanying trucks are the most optimal fleet for restarting the existing open pit. Benches will be blasted in 10m heights and mined off in 3.5m fitches by a 190t class excavator loading 55t rigid rear dump trucks. The mine fleet used as the basis of the design is shown in Table 17.

Table 17: Contractor Mining Fleet Details

Machine	Type	Qty	Annualised Hours	Comments
Excavator	EX1900	1	2960	Day shift only. Maintenance on night shift where possible
Excavator	ZX450	1	As required	Production assistance for tight spots or small ore bands
Loader	LH980	2	As required	Used for LG stockpile rehandle to ROM with CAT773 trucks. Second for redundancy
Truck	CAT773	13	2960	Main pit production 7-8 truck limited. 2 trucks from LG rehandle and ROM activities
Dozer	D9	2	As required	1 dump and 1 pit dozer. Dump dozer covers LG if required
Drill	ROC F9	1	As required	Top hammer drill rig or similar

The equipment productivities assumed are included in Table 18.

Table 18: Equipment Productivities

Component	Productivity rate per hour (t)	Operating hours (hr)	Annual capacity (t)
LGS Mining fleet	331	3024	1,000,000
OC Mining fleet	824	6048	5,000,000
Crushing & Screening	200	6804	1,500,000
Ore Sorting	120	6804	648,000
Gravity Plant	60	6804	408,000
Front End Loaders	350	6048	2,110,000

Mining of both the LGS and open pit shall be performed using conventional excavator and truck operations. Similar sized fleets are utilised in both areas, providing flexibility for mine design, scheduling and operational execution.

Extraction from the LGS is a straightforward load and haul process. Mining will be completed by a 190t excavator working on four metre flitches, with a fleet of Cat773 rigid dump trucks hauling material to the crushing and screening plant.

After year 1, mining will be undertaken from top to bottom on 20m metre benches, commencing in the south-eastern section of the LGS and progressing to the north-west. As the LGS thickens, multiple benches will be excavated producing a conventional strip-mining arrangement.

Similarly, open pit mining will be undertaken in a standard drill and blast, load and haul configuration.

Bench geometry will be slightly smaller than the LGS, with a 4-metre height and minimum 20-metre width.

Approximately 8.62 million tonnes of material require blasting in 2023 and 2024, tapering off to 5.6 million tonnes in 2025-27. To maintain sufficient blasted inventory, a minimum 100kt of blasted material is required on a weekly basis. Mining blocks will be a minimum 20x20x30 metres in size, equating to 12,000bcm or 33,000 tonnes. Accordingly, at least 3 blocks will be blasted weekly to maintain the required inventory.



## 6. Processing

### 6.1. Overview

The site processing infrastructure is split into two distinct areas on the site. Adjacent to the LGS is the crushing, screening and sorting area, where ROM material is screened and sized. +6,-40mm material is sorted using XRT sorting equipment where approximately 10% of the XRT sorter feed is then crushed and stockpiled for feeding into the processing plant. The remaining 90% of material is barren of tungsten and utilized as quarry material.

-6mm material and the XRT sorter concentrate are then trucked and fed into the processing plant located on the opposite side of the Mulligan Highway. The processing plant is dry fed and produces a tungsten product and waste tailings material.

The locations of the crushing, screening and sorting area, and processing area is shown in Figure 20.

The details of the current and future processing infrastructure is detailed further in Chapter 5: Processing.

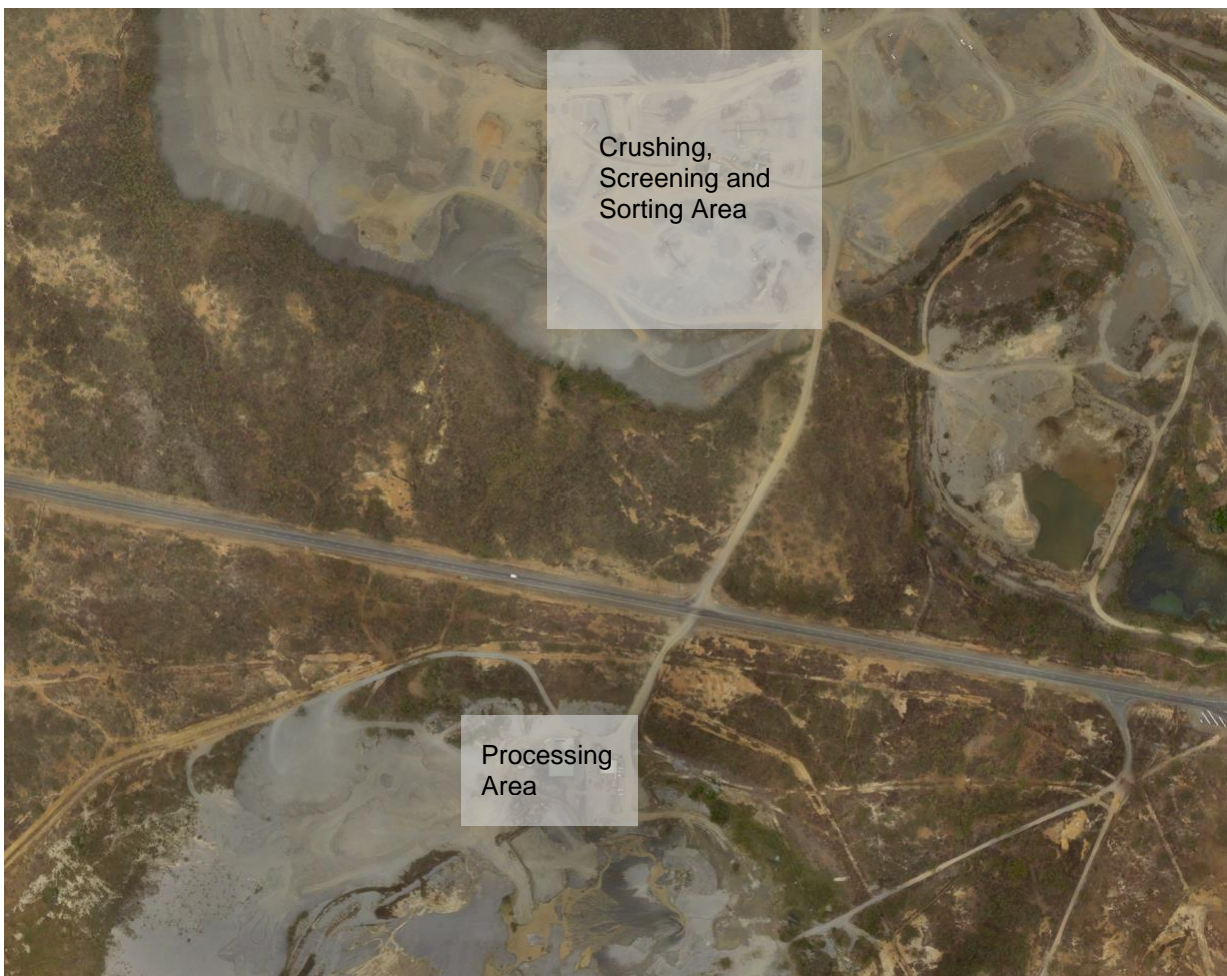


Figure 20: Processing Infrastructure Locations

The scope of the processing infrastructure modernisation and expansion for each of the is split into two distinct phases, these are summarised below.

## 6.2. Crushing Screening and Sorting Area

### 6.2.1. Phase 1 Overview

The Phase 1 upgrade of the existing crushing and screening plant has been completed. The scope of these upgrades included:

- Modify the existing crushing and screening infrastructure
- Increase ROM throughput to a nominal 350tph of -700mm material
- Introduce wet screening of -6mm material to improve screening efficiencies during the wet season
- Introduce direct process plant feed of -6mm material to reduce materials rehandling requirements

The existing ore sorter circuit will be utilised for Phase 1. The existing ore sorter is shown in Figure 21.



Figure 21: Existing Ore Sorters

The Phase 1 modifications for the crushing, screening and rehandling circuits are shown in Figure 22 and Figure 23.

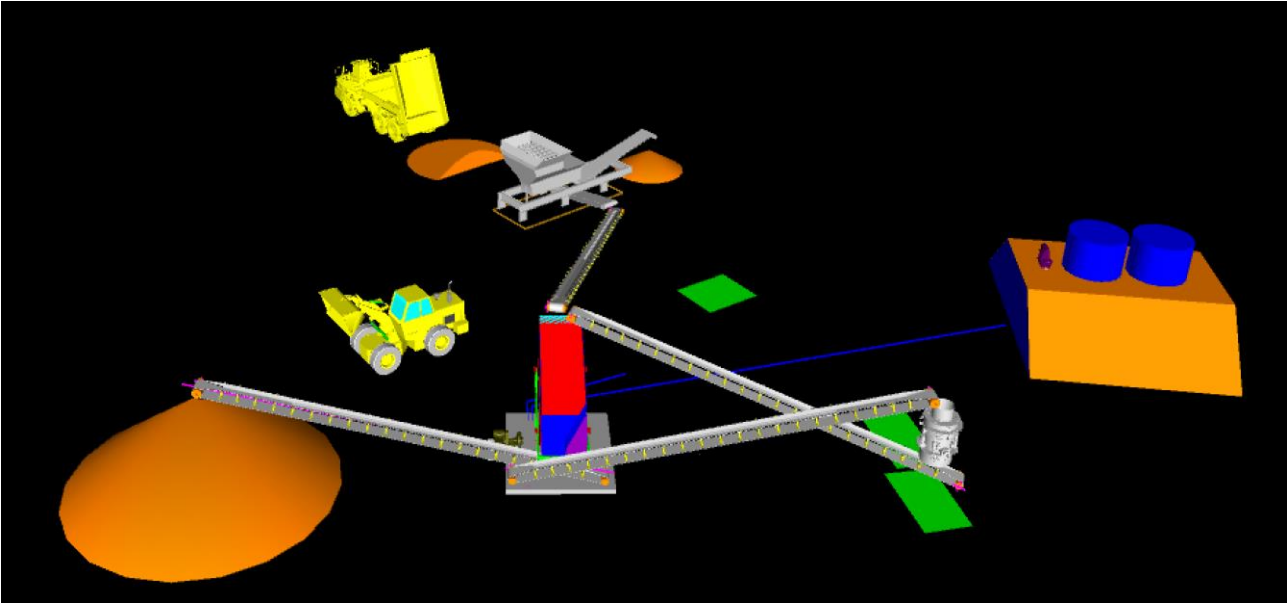


Figure 22: Phase 1 Crushing and Screening Circuit



Figure 23: Phase 1 Rehandling Circuit

### 6.2.2. Phase 2 Overview

The process design philosophy for Phase 2 for the crushing, screening and sorting plant was to achieve the following process outcomes:

- Construct a new crushing, screening and sorting plant adjacent to the existing plant

- Increase ROM throughput to a nominal 350tph to allow day shift only operations (ore sorter circuit and processing plant to operate 24/7) to reduce the overall operating costs of the operation
- Reduce material rehandling through combining the crushing and screening circuit with the ore sorting circuit
- Increase maximum feed size from 700mm to 1000mm through introduction of a jaw crusher

The Phase 2 crushing, screening and sorting circuits were designed in accordance with the design criteria in Table 19.

Table 19: Phase 2 Crushing, Screening and Sorting Design Criteria

Description	Criteria	Unit
<b>General</b>		
Ore Type	Dry and clean ore	
Ore Hardness	7	Mpa
Ore Abrasiveness	0.79	Ai
Maximum Lump Size	750	mm
Design Life	20	Years
Plant Size	1,000,000	tpa

The Phase 2 crushing, screening and sorting plant is shown in Figure 24.

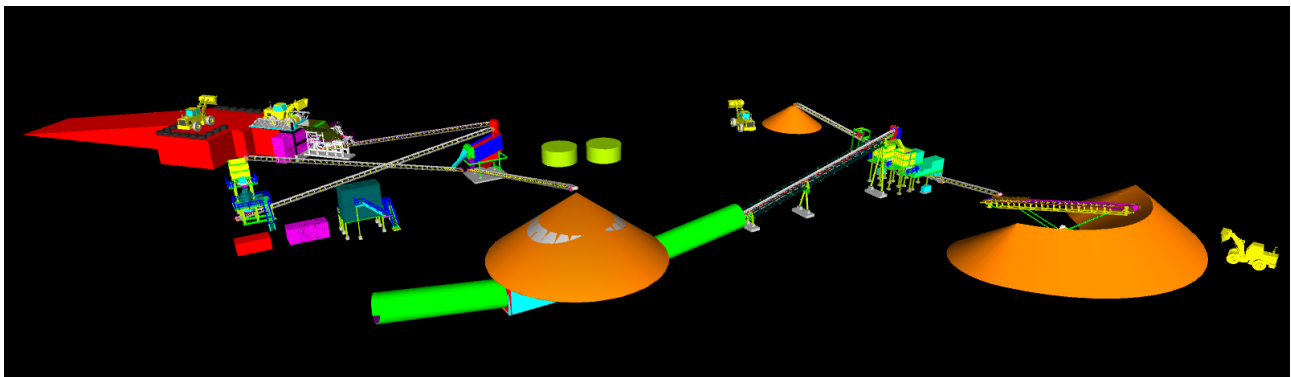


Figure 24: Phase 2 Crushing and Screening and Sorting Circuit

## 6.3. Processing Area

### 6.3.1. Phase 1 Overview

The existing processing plant at Mt Carbine is currently operating and successfully treating low grade stockpile and tailings material at a rate of approximately 60tph. EQR has an in-depth knowledge of the processing plant as an owner operator that has treated significant material volumes.

The processing plant is currently achieving the desired plant performance requirements for the feasibility study. Since commencing operations and the treatment of the low-grade stockpiles, EQR has achieved significant plant performance improvements over time by modifying the plant and feed conditions to maximise performance and yield.

Ausenco was engaged as a process plant specialist to review and audit the existing processing plant and identify and prioritise a range of upgrade options to further improve the plant performance for Phase 1.

### Scope

The Phase 1 upgrade of the existing gravity processing plant has been completed. The scope of these upgrades included:

- Pump change outs required to improve the pump reliability and availability; and
- Control room and SCADA replacement as existing components are aged and have been discontinued by the vendor.

Layout drawings of the processing plant are shown below in Figure 25 and Figure 26.

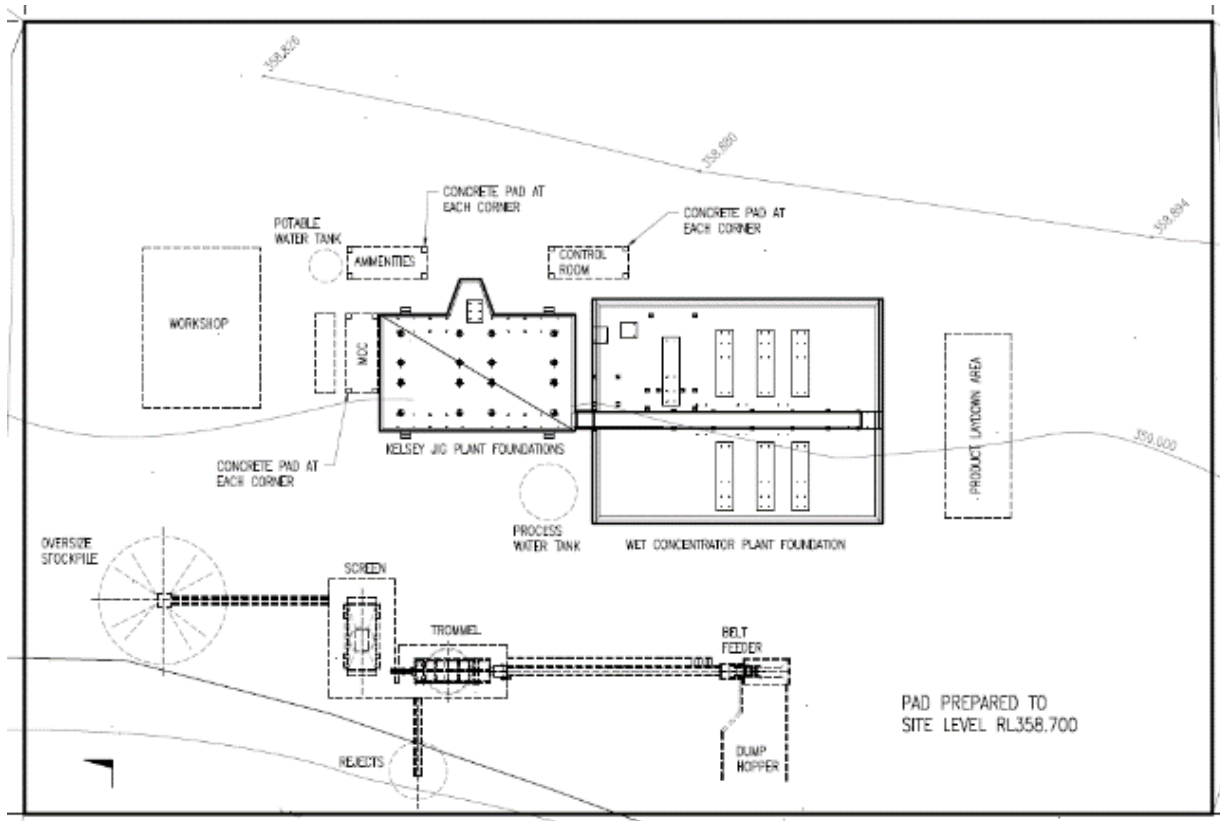


Figure 25: Processing Plant Site Layout

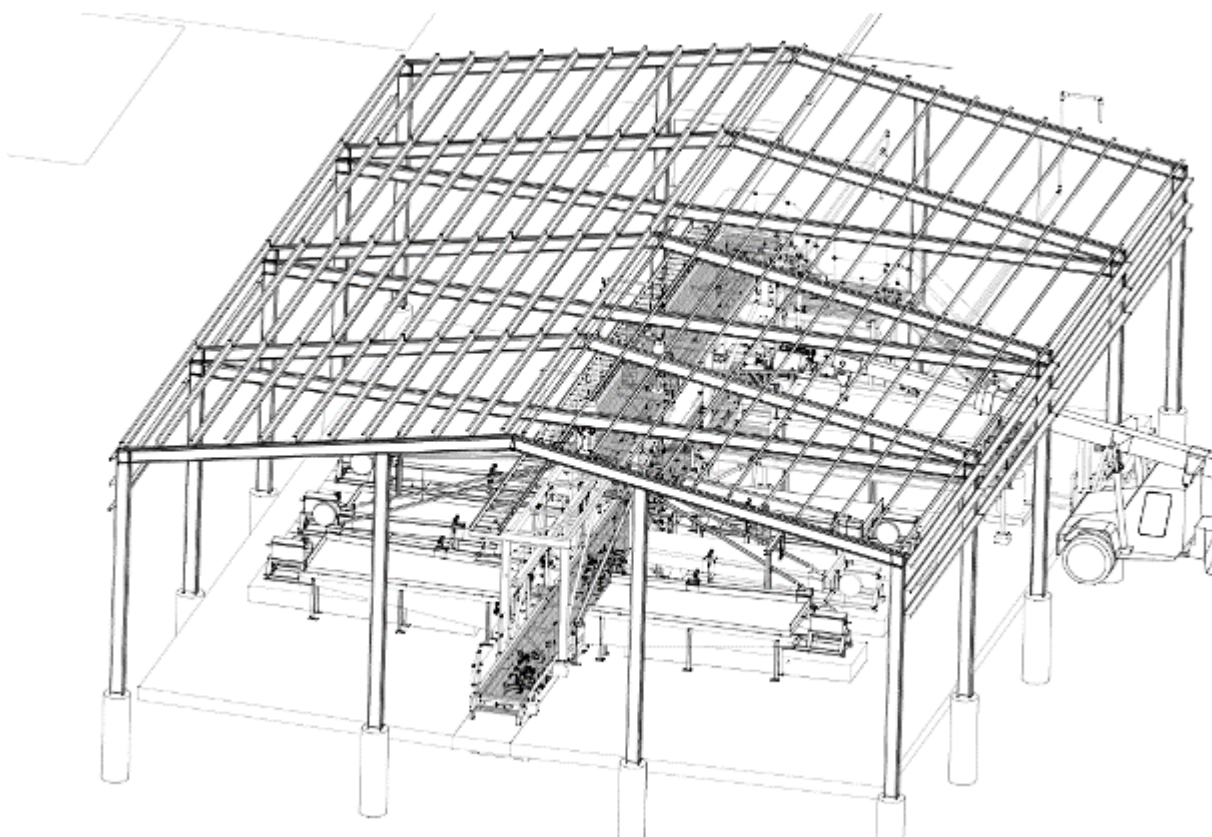


Figure 26: Wet Concentrator Plant

### 6.3.2. Phase 2

#### Overview

Based on the current recovery data, the existing processing plant is performing well and the approach to the plant upgrades was to maintain the plant circuitry and process as much as possible while improving the plant recovery performance to support the higher grade feed through the introduction of a scavenging circuit and additional tables capacity.

#### Operational Review

Ausenco attended the Mt Carbine site on two occasions. The first visit was in May 2021, where preliminary review of operating data and circuit configuration was conducted. Following the site visit several recommendations were made to improve the reliability and recovery of the operation and to collect data to confirm the tungsten losses and flowrates through the circuit.

A second site visit was performed at the beginning of September to further review the operation and to perform a plant sample campaign to confirm the operating parameters and performance for the plant. Two plant surveys were performed by Ausenco personnel during the visit to provide a snapshot of operational performance and to form the basis of engineering work.

Initial review of the site operating data showed that the Mt Carbine plant had an average tungsten shift recovery of approximately 47% between January and May 2021 producing a concentrate grade of 49%  $WO_3$  during the same period.

Analysis of the operating and shift samples showed that the key issue in the plant recovery was in the jigging circuit, associated with high losses from lower grade material. This data is shown in Figure 27.

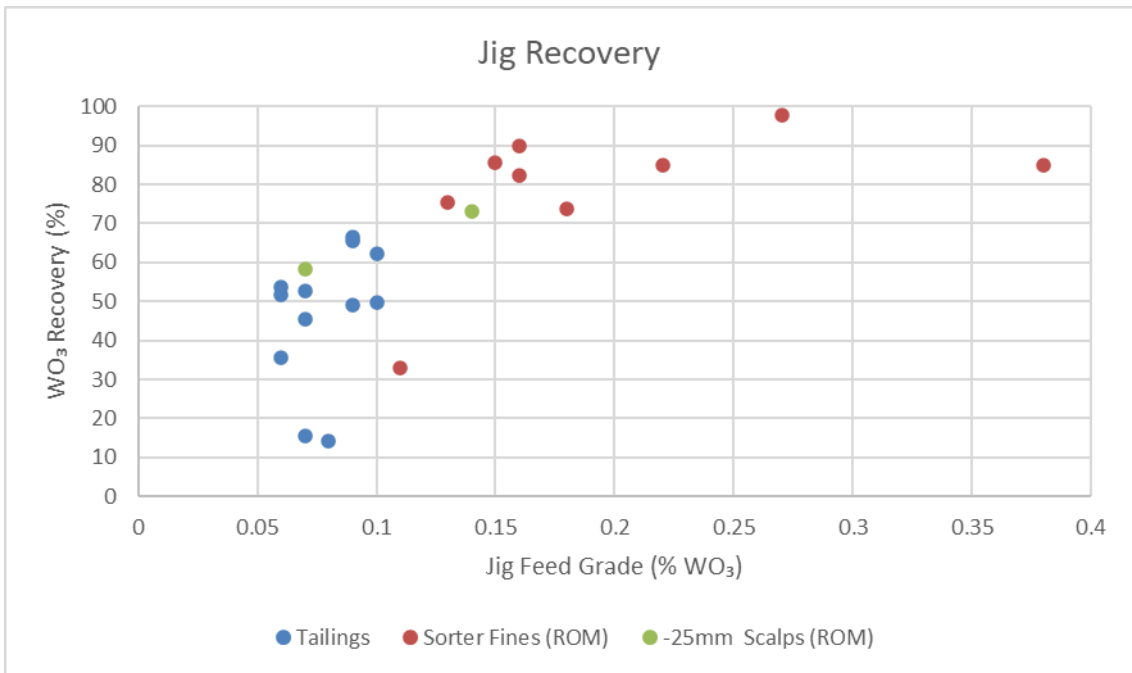


Figure 27: Jig Recovery vs Feed Grade by Feed Type

A subsequent review of overall plant recovery by ore feed showed two distinct periods of performance. Since the decision not to retreat tailings was made, plant recovery has increased and the range of performance outcomes has also decreased.

Based on the data below recoveries on ‘fresh’ ore are ~25% higher than those with tailings mixed, averaging 85% WO<sub>3</sub> recovery vs 60% which is clearly shown in Figure 28. The goal of the upgrades is to consistently produce above 80% recovery from the plant through scavenging the jig tailings and increasing the capacity of the table recovery circuit.

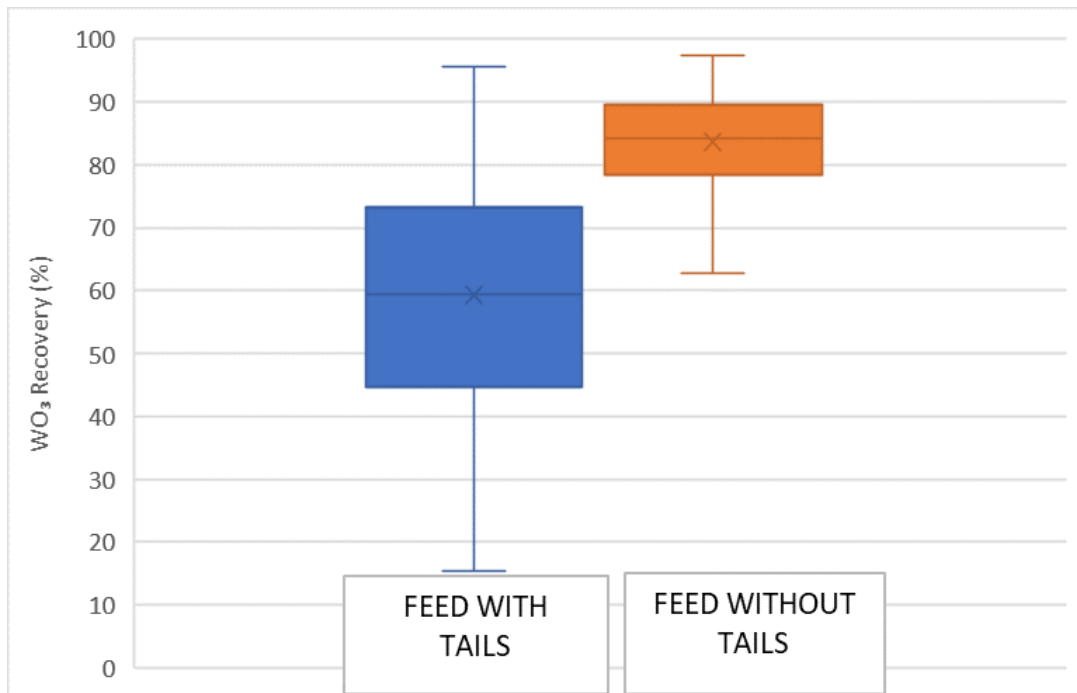


Figure 28: Plant Recovery Comparison with Tails and without Tails

### Planned Improvements

The Phase 2 scope has been designed to ensure that the plant recovery does not reduce through the introduction of high grade ore from the open pit.

To support the higher head grade, a scavenging circuit will be introduced to minimise potential losses from the jig circuit. Additional tables will be included to account for the increased WO<sub>3</sub> grade in the feed.

Upgrades to the circuit have been developed based on an incremental and modular approach to design, with the additional facilities targeting the areas of major losses from the existing circuit. Where possible, changes to existing equipment have been minimised to reduce interruption to the existing operation, however due to capacity constraints upgrades to some equipment and pumps are required.

The basis for design (Table 20) for the process plant is summarised below:

- Plant nominal capacity of 60 t/h treating ore with a feed size of P95 -6mm
- Capacity to treat ore with feed grades into the front end of the circuit (jigs) of up to 0.5% WO<sub>3</sub>
- Capacity to treat 16 t/h of ore sorter product at 0.85% WO<sub>3</sub> into the table circuit, with the balance of feed from the jigging circuit.
- Operate at average tungsten recovery of 77% from ROM feed to the Jig,
- Design flexibility to process 16 t/h of ore sorter product direct to the table circuit. Under this case, the circuit has been designed for 92% overall recovery which represents the maximum for design case.

Table 20: Design Basis

Criteria	Units	Design
Plant Throughput	t/h	60
Feed Size (P95)	mm	6
Design Feed Grade	% WO <sub>3</sub>	0.5
Overall Recovery (nominal)	%	79.5
Overall Recovery (max for design for table circuit)	%	92%

The main strategy to improve recovery through the circuit is based in increasing current jig capacity to reduce increase jig residence time. Review of the operating parameters and flow through the jigs highlighted that losses in the coarse fraction are most likely due to the low residence time in the jig and also due to the interstitial void of the ragging used.

As an additional means of recovery improvement, the two jigs will treat different size fractions (coarse and fine) which allows individual operating parameters and ragging to be optimised for each size fraction, being:

- Jig Duplication
- Jig Scavenging

In addition to recovery improvements, equipment was checked for capacity constraints. At higher head grades, the table circuit will become overloaded and require additional tables to remain within design loading rates.



### 6.3.3. Timing and Deferred Scope

Since the completion of the BFS, the timing of the implementation of the gravity processing plant has been updated. The deferred components of the scope are described below.

#### **Jig Scavenging Circuit**

EQR plans to undertake onsite trials of the scavenging process using spirals and reflux classifiers with implementation of the additional jig to better understand the circuit recovery and optimise the plant yield. The scavenging circuit is not deemed a critical requirement given the current plant performance of ~85% yield from the current jig configuration which is comfortably above the nominal 79.5% recovery. The scavenging circuit is likely to provide additional yield improvements, and this circuit will be optimised based off scale testing on site, and any capital upgrades will be justified accordingly based off real site data.

#### **Flotation Circuit Removal**

The original BFS identified the need for the removal of certain impurities in the concentrate that were originally anticipated to be deleterious to off-take arrangements.

This risk has been mitigated through current sales agreements that will accept the current concentrate elements, this circuit has therefore been deferred indefinitely.

## 7. Infrastructure

### 7.1. On Site Infrastructure

#### 7.1.1. Overview

Mt Carbine is currently operating and is well serviced with existing on-site infrastructure to support its operations.

The site infrastructure strategy for the project is to utilise as much as possible the existing site infrastructure and only construct new infrastructure if required to support new or upgraded facilities.

As the overall changes to the footprint and capacity of the mining and associated crushing, screening, XRT sorting and processing infrastructure is minimal, there are only minor site infrastructure modifications required to support the upgraded facility.

#### 7.1.2. Existing Site Infrastructure

The site is already supported by well-established infrastructure supporting the current mine and quarry operations. The facilities include:

- Site access roads;
- Office buildings;
- Car park;
- Laboratory;
- Ablutions facilities;
- Crib areas;
- Power;
- Workshops;
- Site dams & drainage;
- Water supply pipelines;
- Safety and first aid equipment and
- Phone and internet connectivity.

#### 7.1.3. Site Infrastructure Scope (Phase 1)

The scope for the on-site infrastructure work for Phase 1 have been completed and included:

- High voltage power supply and reticulation upgrades (sufficient for Phase 1 and 2);
- Fuel storage tank capacity increase (additional 12,000L) for mining operations; and
- Workshop and warehouse upgrades to store equipment spares and tools etc (containers).

In addition to the planned Phase 1 activities, the following Phase 2 scope items were accelerated and have been completed:

- Water production bore prior to pit depletion to supply the sites raw water requirements and
- Existing site offices will be refurbished to improve general amenities.

#### **7.1.4. Site Infrastructure Scope (Phase 2)**

The scope for the on-site infrastructure work for Phase 2 that was included in the original BFS includes:

- Containerised igloo workshops will be constructed for use at the crushing and screening plant and for the mining contractor.

The following Phase 2 scope of work has been deferred based on the elimination of the grinding and flotation circuit:

- Waste management facilities at the wet processing plant;

The following scope for Phase 2 has been identified post completion of the BFS and included in the updated scope and costs.

#### **Dams – TSF4 and TSF3**

Phase 2 will include some minor civil remedial works of the TSF4 and TSF3. This work will be undertaken to reinforce the existing dams walls and allow for the proper management of the water circuit. The water circuit and TSF design will be guided by ATC Williams.

The remedial work on TSF3 will allow it to be included as an intermediate component of the site water circuit.

## 8. Project Execution

### 8.1. Schedule and Milestones

The key Project execution milestones forecast dates are summarised in Table 21.

Table 21: Key Milestones

Milestone	Forecast Date
<b>Phase 1</b>	
Complete	
<b>Phase 2</b>	
Submit EA Amendment	November 2022
Commence Engineering and Procurement	November 2022
Commence Mining Contractor Mobilisation	February 2023
Approvals Received	March 2023
Commence Construction	April 2023
Open Pit Mining Commencement	April 2023
Construction Complete	December 2023
Commissioning Complete	December 2023
Phase 2 Complete	December 2023

### 8.2. Project Management

The Project and construction management approach has been determined by the Project's procurement and contracting strategy summarised in Section 8.6.

EQR will engage a project management firm to lead the project management of the Project and operate on its behalf in the management of the services, while incorporating relevant existing site personnel where necessary to provide input and management support.

The integrated management model is presented as a simplified chart below in Figure 29 where dotted line connectors reflect contract agreements while solid lines represent reporting and management responsibilities.

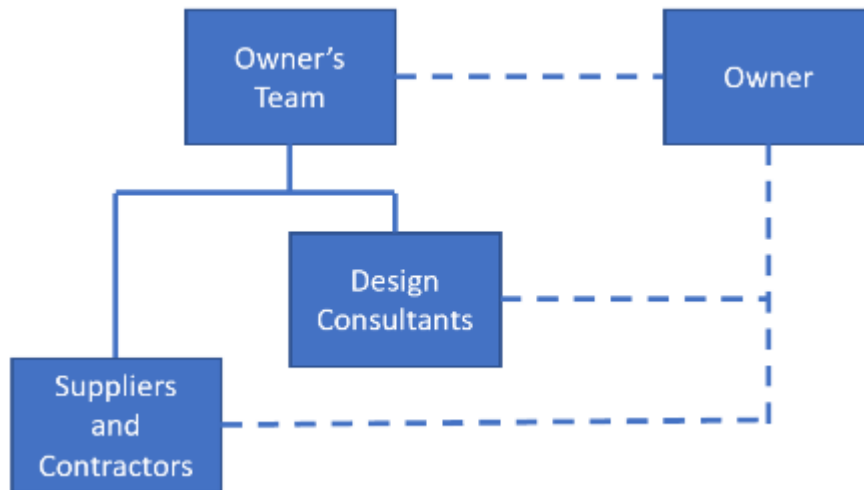


Figure 29: Owner's Team Contracting Structure

The benefits of executing the Project in an integrated owner's team capacity over a traditional engineer, procure, construct (EPC) approach include:

- Elimination of margin duplication (EPC contractor margin on subcontractor margin);
- Greater control of scope packaging and contractor selection;
- Enhanced ability to utilise local labour and contractors; and
- Greater ability to utilise and leverage operations personnel and experience in the management and delivery of the works.

The Owners' Team will coordinate and manage the execution of the delivery packages in accordance with the endorsed contracting strategy. Recognising the brownfield nature of the works and EQR's knowledge of the site, the project management partner will work closely with EQR and its preferred contractors, where appropriate, to maximise the existing knowledge and understanding of the site and existing infrastructure.

### 8.3. Construction Safety Approach

EQR's policies, procedures and legislative requirements establishes the minimum standards for safe work practices on the site. EQR's execution strategy will develop a culture where leadership is by example. EQR will demonstrate care and ensure an ongoing process of continuous improvement in this model. This will involve everyone, and the ultimate accountability will be by all.

The Project health and safety strategy will include:

- The safety and health management system (SHMS) will be fully integrated into the Project's delivery;
- Construction contractor's construction safety management plans will be assessed to ensure that at a minimum they meet the requirements of the site's SHMS prior to mobilisation. Where contractor specific procedures and instructions are missing, these will be developed by the contractor, approved by the Owners' Team and incorporated into the sitewide SHMS;
- Statutory requirements as per the Mining and Quarrying Safety and Health Act 1999; and
- Aim to reduce employee risk by minimising high risk activities and reducing the labour requirements on site through the use of off site works, pre-assembly, modularisation and lower labour installation methodologies.

In accordance with the Mining and Quarrying Safety and Health Act 1999, the SSE will be the statutory safety authority over all activities on the mining leases. Once construction commences, the construction team will be required to liaise with the Site Senior Executive (SSE).

The SSE will appoint in writing suitable parties to fulfill electrical obligations for the execution and operations in accordance with the Mining and Quarrying Safety and Health Regulation 2017.

Leadership of safety will be at all levels and a key criteria of individuals' site performance and position descriptions.

## 8.4. Construction Risk

The Owners' Team will actively manage construction risks and work closely with all contractors involved with construction on a regular basis. The Owners' Team will routinely audit the safety performance and risk management activities of its contractors utilising the site's existing risk management platform.

The Project's approach to risk management is detailed in Chapter 14: Risk and Opportunity.

## 8.5. Construction Surface Water Management

There is no requirement to substantially alter the existing drainage infrastructure currently supporting the site and its operations. As far as construction activities are concerned, the only surface water management requirement is to ensure that all local runoff from the contractor's site is captured and directed into the site's existing drainage system.

Figure 30 below illustrates the site's drainage system.

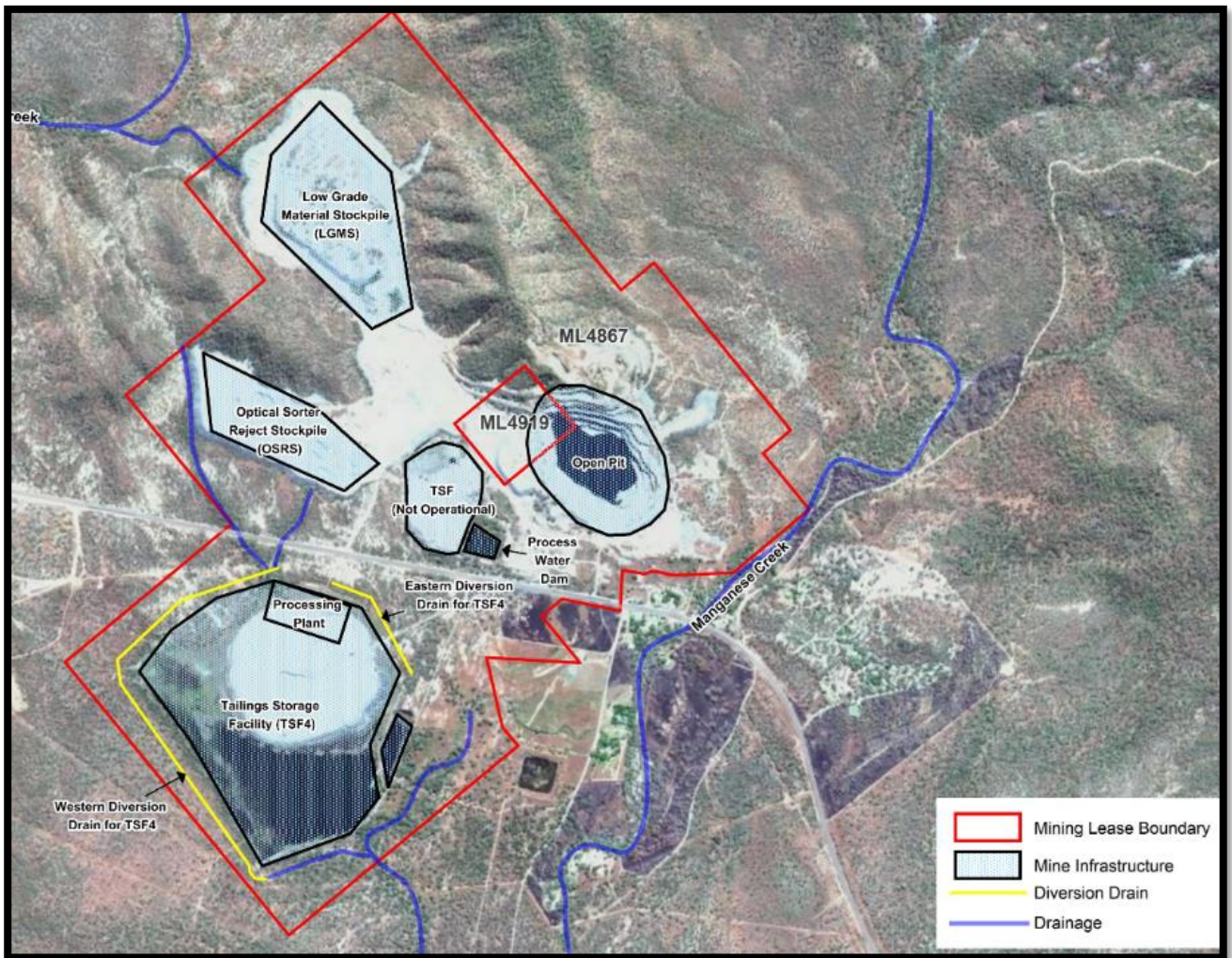


Figure 30: Sitewide Drainage

## 8.6. Contracting Strategy – Phase 2

The scope of Phase 2 has been assessed and split into contract packages for the procurement and implementation management by the Owner’s Team. The major packages are summarised in Table 22.

Table 22: Major Contract Packages

Package Type	Description
Design	Crushing, Screening and Sorting Plant
	Process Plant Upgrade
Supply	Structural Steel and Platework
	Pipework
	Valves
	Conveyors
	Crushing and Screening Equipment
	Process Equipment
	Electrical and Instrumentation
	Core Shed

Package Type	Description
	Water tanks
	Workshop
<b>Construct</b>	Concrete
	Structural, Mechanical and Piping
	Electrical
	Electrical and Instrumentation
	Workshop
	Core Shed

At the commencement of detailed design, long lead items will be identified and procured as a priority to ensure the schedule.

A decision will be made during the procurement phase as to whether any or all of the concrete, structural, mechanical, piping (SMP) and electrical and instrumentation (E&I) packages are split between the crushing screening and XRT sorting plant or combined into sitewide packages.

## 8.7. Shut Downs and Tie Ins

Whilst the Project is by nature a brownfield upgrade, a large proportion of the scope can be constructed effectively with minimal interface with the ongoing operations.

### 8.7.1. Phase 2

#### Crushing Screening and Sorting Plant

The new crushing, screening and XRT sorting plant is physically separated from the existing crushing plant, so its construction can occur with minimal interference to existing operations.

The XRT ore sorters will be relocated at the latest possible time, after no load commissioning of the feed and discharge conveyors is completed to minimise the down time in XRT sorter operations.

The electrical tie in to the 500kVA substation will be completed during operational down time.

#### Gravity Processing Plant

The gravity processing plant requires a significant number of tie ins to allow for the installation of new additional process equipment.

The equipment will largely be installed in and around the existing plant equipment. The tie in strategy for the new equipment to minimise the impacts on the existing operations involves the installation of a new motor control centre (MCC) for all new equipment. This allows for the electrical wiring of the equipment to be done to an MCC that is not live and mitigates the risk of incorrect electrical isolation when installing the equipment.

Where pipes and equipment tie into the existing gravity processing plant, as much will be installed as possible prior to a plant shut down to install the tie ins. These may be done on a circuit-by-circuit basis to minimise the length of each shut down. A detailed shut down and tie in philosophy and plan will be developed in the execution phase.



## 9. Operations Management

### 9.1. Operating Philosophy

The Mt Carbine site is a mature operating site that has been running since the gravity plant started hot commissioning in February 2020. The EQR CEO is involved through strategically guiding the operation and Company from an explorer to a fully-fledged operation. The EQR CEO has over 30 years' of experience in managing mining operations through North America, Europe, and Africa. This experience has aided the development of a cohesive hands-on management approach and operations team development and restricted the reporting chain to ensure employees are empowered in their roles for efficient decision making and optimal outcomes.

EQR is an equal opportunity employer with support for bullying and harassment in the workplace as it works to build a team of skilled individuals from surrounding communities. The operation has an extensive Health and Safety Management system that protects employee's physical safety.

The operations are guided by the Integrated Management System (IMS) which addresses the intended outcomes of ISO 9001:2015 Quality Management Systems, ISO 14001:2015 Environmental Management Systems and IOS 45001:2018 Occupational Health and Safety Management Systems. The application of the Integrated Management System Manual (IMSM) will:

- Demonstrate EQR's ability to consistently provide quality quarry products that meets customer requirements and tungsten concentrate to meet the requirements of CRONIMET Australia and its downstream customers;
- Enhance customer satisfaction;
- Enhance environmental performance;
- Continually improve occupational safety and health;
- Achieve legal and other requirements; and
- Deliver on quality, environment, safety, and health objectives.

#### 9.1.1. Operations Roster

The Operations Roster states the shift and leave cycles and demonstrate the impact of the cycles on productivity, ability to attract the required workforce, lost time, and costs. The operating cycles should be benchmarked against current local practice and international best practice.

#### 9.1.2. Operational Approach (Phase 2)

The operating philosophy for Mt Carbine at completion of the Project will split between owner-operated and contract operated.

The open pit mining inclusive of drill and blast will be contract mined. The reasoning for this is that the skill requirement for the mining is outside of EQR's core capability, and to retain a lean organisational chart, contract mining was deemed to be the most sensible approach for the operations.

Given the inherent interrelation between the open pit mining and the LGS mining (a constant feed to the crushing and screening plant is required, though the source between the LGS and the open pit will alternate to suit the mine plan), the mining of the low-grade stockpiles will also be included in the open pit contract miner's responsibilities.

The battery limit for the contract mining will be the discharge of the run of mine (ROM) material either in the crushing and screening plant feed bin or adjacent. The basis of the feasibility study has allowed for the crushing and screening plant to be owner operated. If commercial benefits are identified in shifting to a contracting crushing and screening operation this option may be pursued in the future.

The gravity processing plant circuitry and operating philosophy remains largely unchanged and the operating philosophy for this reason will also remain unchanged. The gravity processing plant operating time will increase from week on-week off to full time operations, so the manning will increase, but the operating philosophy and shift and management structure will remain the same.

EQR will retain responsibility for the overall safety of the site through the SSE and the IMS as a guiding document for the site. EQR will also be responsible for the development of the quarterly mine and production planning along with the ore quality management. All these costs have been accounted for in the EQR financial modelling. More detailed mine planning will be the responsibility of the contract miner appointed at the relevant time in the future.

## 9.2. Maintenance

The full-time maintenance team will comprise of the following positions:

- 1 x Maintenance Superintendent;
- 1 x Maintenance Foreman;
- 2 x Fitter;
- 1 x Boiler Maker;
- 1 x Boiler Maker Apprentice; and
- 2 x Electricians.

### 9.2.1. Mining

All maintenance on the mining equipment shall be the responsibility of the mining contractor. Mining equipment owned by EQR shall be provided for use free of charge to the contractor. The contractor shall be responsible for the maintenance of the free issued equipment in accordance with an approved maintenance schedule.

Until the mining contractor takes on the maintenance of the heavy earth moving equipment, a maintenance contractor will continue to complete heavy vehicle maintenance at site, working 2-3 days at site each week while the LGS mining is ongoing. This arrangement has been proven to work as it is currently being used on site.

### 9.2.2. Crushing, Screening and Processing

The day-to-day maintenance of the crushing and screening plant and the gravity processing plant will largely be undertaken by the maintenance team that is on site on a full-time basis. The team is highly skilled in the repair and maintenance of the plant and equipment and are currently providing all standard maintenance for the crushing, screening, and gravity processing plant.

Preventative Maintenance will be completed on an ongoing basis with each section of the processing plants, crushing and screening, sorting and the gravity plant receiving a planned 12hr shut down weekly to undertake required maintenance tasks. Any specialty jobs will have the relevant contractor brought in to complete the work. Capital projects will be outsourced to contractors as and when required to ensure the maintenance team stay focused on the maintenance of the crushing and screening plant.

To manage the maintenance at the Mt Carbine operations, EQR has taken out a subscription on the FIIX Maintenance Management software, this provides for the detailed tracking of maintenance and inventory for the site along with cost allocations to the plant and equipment used by the mine and associated analysis and reporting.

### 9.2.3. Mobile Machinery

Mobile machinery will be serviced at regular hour service intervals of 250, 500, 1,000, 2,000, 3,000, 5,000 and 6,000. This will be completed by an external service provider such as Toddy's Machinery Maintenance that

specialises in work of this nature. A service schedule will be put in place to ensure work is completed according to required scheduled service intervals to maximise life of machines and their continued operational capabilities.

### 9.3. Transport and Logistics

The mine is located at 6888 Mulligan Highway, Mt Carbine which is easily accessible from all main ports, rail heads and cities in Far North Queensland. The highway is completely sealed and in good condition. As the mine is currently operational, supply chains and strong relationships have been setup with all major suppliers for equipment on site and ongoing spares required.

Transport of oversize equipment to site is easily achievable as evidenced by the delivery of the earth moving fleet delivered by CRONIMET in September 2021.

The concentrate is then transported via truck, by others, to the Townsville Port for export. Other Ports available for use are the Port in Mackay and Brisbane. Therefore, there are several major ports available to use for any international shipments.

The Cairns airport is approximately a 2-hour drive from site and is easily accessible for either people or freight deliveries. Due to the site being in Far North Queensland, spares are often flown into Cairns or Townsville and trucked to Mareeba as a central distribution point.

### 9.4. Procurement and Supply

Accounts have been setup with all major suppliers as the operation has been running for nearly two years through its pilot phase operations. Relationships and supply chains required for the operation have been established with a secure supply of parts and consumables required for ongoing operations.

The operation is relatively simplistic in nature and therefore no complicated sourcing of materials is foreseen by the operations team. The site is seen as semi-remote as it is approximately a 1-hour drive from a major township, therefore, planning is required for some of the more mine specific items as major transporters only deliver 3-days per week or for the items that are not be held in stock in Mareeba or Cairns.

With the industrial support base of Far North Queensland industry, it has been found that operationally, most spare parts can be delivered within a 24-hour period should a rush order be required. All deliveries are made via sealed highway, with no access issues to the site for oversized deliveries.

### 9.5. Administration

The administration for the project will continue to operate under the Corporate Services team led by the Administration Manager in a holistically similar manner regarding the current systems and protocols in place for ongoing operations. Going forward, EQR will employ an additional accountant to support the current staff contingent with the Corporate Services team operating on an 8hr per day, 5-days per week basis. EQR has established accounting and procurement systems and service providers to satisfy all requirements.

### 9.6. Health and Safety

#### 9.6.1. Eliminating Hazards & Reducing Risks

Risk planning and management is central to the Company's activities, EQR's operations are only conducted when the risk is within acceptable limits and as low as reasonably practicable (ALARP).

The risk planning and management processes developed and implemented at the Mt Carbine site aim to provide a logical and systematic method of identifying, analysing, evaluating, treating, monitoring, and communicating risks.

The following hierarchy of controls is applied to mitigate risk to a level which is ALARP:

- Elimination/Removal;
- Substitution;
- Engineering/Isolation Control;
- Administration;
- Personal Protective Equipment; and
- Human Behaviour.

The hierarchy of control is to be used to control hazards identified for all risk management processes. Less reliable control measure (e.g., administrative, PPE or safe behaviour controls) should only be implemented as part of a holistic control strategy in addition to controls from the other, more effective categories, or on their own where the level of current risk is ALARP.

### **9.6.2. Risk Management – Principles and Guidelines**

EQR's risk management is developed to comply with the requirements of *AS/NZ ISO 31000:2009 Risk Management – Principles and Guidelines*.

### **9.6.3. Management of Change**

EQR Change Management (EQ RESOURCES-SAF-PRO-0034) procedure outlines processes for the prevention of non-compliances resulting from changes in the workplace at the Mt Carbine operations.

### **9.6.4. Procurement**

All purchasing of materials, equipment and services are undertaken to ensure that any safety and health considerations are considered. Hazards are to be identified and assessed prior to the hire or lease of equipment or the supply of services or goods. Verification must be supplied that the delivery of equipment or supply of services complies with appropriate safety and health specifications, the Procurement Officer on site is responsible for this task.

### **9.6.5. Contractor Management**

Contractors are pre-approved according to Contractor Management Procedure (EQ RESOURCES-SAF-PRO-0017) prior to attending site. Contractors approved by the SSE receive an induction before working on site. The induction covers site procedures necessary for that contractor's role.

If a contractor is required for a short-term emergency task on the mine site (such as repairs to phone lines) then that contractor will receive the visitor's induction and remain under the supervision of a fully inducted person during their time on site.

All contractors are required to provide and maintain a safe and healthy work environment and are responsible, as a minimum, for performing work to EQR safety and health standards.

### **9.6.6. Safety and Health Monitoring**

It is essential to assess performance to evaluate progress against the requirements, targets, objectives, and to establish plans for continuous improvement.

To properly assess needs EQR:

- Conducts a systematic review of the corporate guidelines, standards, systems, and processes to verify the current standards and controls in place;
- Conducts audits and assessments at determined frequencies to measure the level of compliance and progress to the standards, and assist in the correction and prevention of any systemic issues;

- Reviews performance and accountability processes to indicate progress or deviations for early corrections; and
- Ensure procedures for Management Review and Health and Safety Objectives detail the processes to be applied.

### 9.6.7. Safety and Health Compliance

Periodic, at least annual, evaluation of compliance with applicable legal and other requirements will be planned to use the EQR internal and external audit schedule, in addition, legal compliance system Safety Law provides regular updates (at least monthly) to legal and other requirements.

### 9.6.8. Environment

The Environmental Programs (EPs) (maintained by EQR) are used to establish, implement, control, and maintain processes to meet the requirements of the IMS and implement the environmental objectives identified by the Company. The Environmental Monitoring and Reporting System (EMRS) records information pertinent to the implementation of the IMS governing the operations. The data is used to identify potential environmental risks that require management to assess achievement of the environmental objectives.

### 9.6.9. Roles, Responsibilities and Authorities

EQR’s SSE has responsibility to ensure that the IMS is implemented. Tasks have been assigned by the SSE to Department Managers. The Department Managers may delegate the task to other personnel; however, the responsibility remains with the Department Manager. Safety, Health, Environmental & Training Manager supports the SSE and other managers in meeting the quality, environment, safety, and health objectives, and have responsibility for monitoring the implementation of the quality, environment, safety and health procedures.

Table 23: Roles and Responsibilities

Roles	IMS Responsibilities
Site Senior Executive	<ul style="list-style-type: none"> <li>• Establish and communicate overall direction.</li> <li>• Develop quality, environment, safety and health policies.</li> <li>• Consider quality, environment, safety, and health requirements.</li> <li>• Develop quality, environment, safety, and health objectives.</li> <li>• Appropriately resource quality, environment, safety, and health management.</li> <li>• Ensure quality, environment, safety, and health compliance.</li> <li>• Promote continual improvement.</li> <li>• Identify interested party needs and expectations.</li> <li>• Review the operation of the IMS.</li> <li>• Conform to IMS requirements.</li> <li>• Promote customer focus throughout the Company.</li> </ul>
Operations Manager	<ul style="list-style-type: none"> <li>• Consider quality, environment, safety, and health requirements.</li> <li>• Develop quality, environment, safety, and health objectives.</li> <li>• Appropriately resource quality, environment, safety, and health management.</li> </ul>

Roles	IMS Responsibilities
	<ul style="list-style-type: none"> <li>• Ensure quality, environment, safety, and health compliance.</li> <li>• Promote continual improvement.</li> <li>• Identify interested party needs and expectations.</li> <li>• Review the operation of the IMS.</li> <li>• Conform to IMS requirements.</li> <li>• Promote customer focus throughout the Company.</li> </ul>
Department Foreman	<ul style="list-style-type: none"> <li>• Implement quality, environment, safety, and health procedures.</li> <li>• Review the operation of the IMS.</li> <li>• Conform to IMS requirements.</li> <li>• Participate in Management reviews.</li> <li>• Ensure loaded product meets physical and chemical specifications.</li> </ul>
Safety, Health, Environment & Training Manager	<ul style="list-style-type: none"> <li>• Monitor and report on overall IMS performance .</li> <li>• Review the operation of the IMS.</li> <li>• Identify and deliver training requirements.</li> <li>• Communicate and correspond with relevant regulators/local government regarding quality and environmental management.</li> <li>• Conform to IMS requirements.</li> <li>• Develop quality and environmental policy.</li> <li>• Ensure the IMS conforms to the relevant ISO Standards.</li> <li>• Maintain quality and environmental management system changes.</li> <li>• Ensure loaded product meets physical and chemical specification.</li> <li>• Develop safety and health policy.</li> <li>• Maintain safety and health management system changes.</li> <li>• Report on the performance of the safety and health management system to management.</li> </ul>
All Personnel	<ul style="list-style-type: none"> <li>• Conform to IMS requirements.</li> <li>• Discuss quality, environment, safety, and health improvement ideas with management.</li> <li>• Stop the process when the quality of the product is compromised, the environment has or can be affected, or the safety and health of workers is at risk.</li> <li>• Participate in quality, environment, safety, and health improvement programs.</li> </ul>

## 9.7. Control of Records

Records shall be kept of all tasks and activities which relate to the IMS and to operational aspects which have the potential to affect the quality of the product, safety and health of people or the environment.

The records to be kept, shall include records required by acts, regulations, statutory codes of practice, and required by Australian Standards referenced in acts, regulations, and statutory codes of practice.

## 9.8. Accommodation

Employment will continue from the local region, so that the employees can work on a drive in, drive out (DIDO) basis. Employees are currently doing this, and it has worked fine for all parties involved. Certain personnel that live in more distant locations, for example Cairns, rent a space at the Mt Carbine Caravan Park, next to the mine site, for the duration of their shift and commute to their place of residence at the conclusion of their swing. The Mt Carbine Motel also offers operators and contractors nightly rates with meals included for those working on shift or performing contracts in the area.

## 9.9. Emergency Response Plans

EQR's Emergency Response Management Plan (EQ RESOURCES-SAF-PLN-0003) minimises the level of risk to life, property, and the environment due to an emergency situation.

The EQR Emergency Response Management Plan describes the immediate actions required by designated site personnel.

All personnel are required to undergo site and specific area inductions to familiarise themselves with locations of emergency equipment and evacuation points. Emergency contact details and procedures are provided during their induction.

## 10. Closure and Rehabilitation

### 10.1. Approach

The closure strategy encompasses a staged approach to rationalising land and water management, environmental monitoring and compliance.

- Stage 1 includes a review of existing site conditions and the Environmental Authorities (EAs); identifying necessary modifications as relevant and developing a plan to affect change.
- Stage 2 is the development of an optimisation plan for the land and water management and monitoring across the Project site.
- Stage 3 involves updating supporting regulatory and management documentation and implementation.

Although a source of licensing complexity, the co-existence of the quarry and mining activities results in the beneficial re-use of tailings and low-grade ore stockpiles located on the site that are remnant from previous operations on the site; as well as the use of non-mineralised material and reuse of process residues associated with the renewed open pit mining. This is a significant outcome for rehabilitation and closure considerations *ie* the solid wastes (process residue and waste rock materials) associated with mining are inventory for the quarry.

### 10.2. Risk

The Risk Assessment for the Project is presented in the BFS and have not materially changed in this update. From a closure perspective, failure to achieve the intended outcome, expressed as being the successful surrender of the EAs that apply to the land on which quarry and mining activities occur, is the risk. The reason for failure may be technical or regulatory and are not necessarily independent. Technical reasons for failure broadly concern environmental values such as land and water; whereas the regulatory reasons pertain to, for example, license conditions and overarching legislation.



# 11. Environment and Approvals

## 11.1. Current Status

The land relevant to the Project site is used for quarry and mining activities as per the respective licenses (EA EPPR00438313, dated 16 March 2021 for the quarry and EA EPML00956913, dated 1 December 2020 for the mine). Notifiable activities are defined in Schedule 3 of the Environmental Protection Act 1994 (EP Act). No notifiable activities are planned to occur as part of the quarry activities under EA EPPR00438313. Lot 13 on Plan SP254833 is included on the Environmental Management Register (EMR) as the site has been subject to the following notifications associated with the mining activity undertaken pursuant to EA EPML00956913: Mine Waste, Mineral Processing, Petroleum Product or Oil Storage. Environmentally relevant activities (ERAs) are defined in the Environmental Protection Regulation 2019 (EP Reg). The ERAs listed in Table 24 are licenced under EA EPPR00438313 for the quarry and under EA EPML00956913 for the mine.

Table 24: Existing ERAs for the Project Site

ERA No.	Activity	Threshold
<b>EA EPPR00438313 for the quarry activity</b>		
16	Extractive and Screening	Extraction and Screening 3: Screening, in a year, the following quantity of material (b) more than 100,000t but not more than 1,000,000t
16	Extractive and Screening	Extraction and Screening 2: Extracting, other than by dredging, in a year, the following quantity of material (b) more than 100,000t but not more than 1,000,000t
<b>EA EPML00956913 for the mine activity</b>		
14	Electricity Generation	Ancillary 14 - Electricity Generation 2: Generating electricity by using a fuel, other than gas, at a rated capacity of (a) 10MW electrical to 150MW electrical
8	Chemical Storage	Ancillary 08 - Chemical Storage 4: storing 200t or more of chemicals that are solids or gases, other than chemicals mentioned in items 1 to 3, under subsection (1)(d)
15	Fuel Burning	Ancillary 15 - Fuel burning: Using fuel burning equipment that is capable of burning at least 500kg of fuel in an hour
31	Mineral Processing	Ancillary 31 - Mineral processing 2: Processing, in a year, the following quantities of mineral products, other than coke (a) 1000t to 100,000t
8	Chemical Storage	Ancillary 08 - Chemical Storage 3: Storing more than 500 cubic metres of chemicals of class C1 or C2 combustible liquids under AS 1940 or dangerous goods class 3 under subsection (1)(c)
8	Chemical Storage	Ancillary 08 - Chemical Storage 5: storing 200 cubic metres or more of chemicals that are liquids, other than chemicals mentioned in items 1 to 3, under subsection (1)(d)
8	Chemical Storage	Ancillary 08 - Chemical Storage 1: Storing a total of 50t or more of chemicals of dangerous goods class 1 or class 2, division 2.3 under subsection (1)(a)
Schedule 3 19	Mining	Schedule 3 19: Mining metal ore, other than a metal ore mentioned in items 11, 12, 14, 15, 16,17 or 18

In regard to the requirement for an End Of Waste (EOW) code for the Mt Carbine Project, the Administering Authority has determined that an EOW approval or code is not required.

## 11.2. Relevant Environmental Legislation

There are Commonwealth, Queensland and local government legislation that are relevant to the broad topic of management of values, a list of legislation is provided below. The Project is an existing activity and is licensed to operate. For the proposed renewal of open pit mining an application to amend the existing EA will be necessary and is discussed in Chapter 10.

### **Commonwealth legislation:**

- Environmental Protection and Biodiversity Conservation Act 1999
- Native Title Act 1993
- National Environmental Protection Council Act 1994
- National Greenhouse and Energy Reporting Act 2007
- Energy Efficiency Opportunities Act 2006
- Clean Energy Act 2011

### **Queensland legislation:**

- Environmental Protection Act 1994
- Mineral and Energy Resources (Financial Provisioning) Act 2018
- Mineral Resources Act 1989
- Aboriginal Cultural Heritage Act 2003
- Queensland Heritage Act 1992
- Water Act 2000
- Planning Act 2016
- Transport Infrastructure Act 1994
- State Development and Public Works Organisation Act 1971
- Nature Conservation Act 1992
- Environmental Offsets Act 2014
- Vegetation Management Act 1999
- Biosecurity Act 2014
- Waste Reduction and Recycling Act 2011
- Local Government Act 2009

### **Local Government – Mareeba Shire Council**

- Local Government is not recognised in the nation's constitution and owes its existence to State Government legislation (Local Government Act 2009). The role, functions and boundaries of Local Governments are subject to the discretion of the State Government.
- Mareeba Shire Council Planning Scheme 2016.

## 11.3. Required Approvals

The EA for the mining activity i.e. EA EPML00956913, dated 1 December 2020, permits mineral processing at an annual rate of 1,000t to 100,000t. An application for an increased rate of mineral processing to an annual rate of 500,000t was submitted on 1 December 2021.

Notwithstanding that the renewed activities:

- will be limited to the existing bounds of the MLs;
- occur on land areas that have been disturbed by previous mining activities; and
- the existing EA EPML00956913 includes conditions relevant to these impacts;

it will be necessary to apply for an EA amendment for the mining activity *ie* EA EPML00956913.

A register of the required approvals is included in Table 25.

Table 25: Approvals Register

Application Path	Permit	Legislation	Agency/ Assessment Manager	Project Aspect	Required to commence construction or to commence operation	Comments
EA amendment application	EA EPML00956913	EP Act	Department of Environment and Science	Mine	Necessary for increased rate of production through the process plant.	Complete
EA amendment application	EA EPML00956913	EP Act	Department of Environment and Science	Mine	Necessary for renewal of open pit mining.	Required for Phase 2.
Application	Water Licence	Water Act 2000	Department of Regional Development, Manufacturing and Water	Mine	Not expected to be required.	There is no moratorium over the area, or a groundwater management plan, and no requirement for development approval for drilling. It is not expected that a licence will be required.
Application	Road Corridor Permit	Transport Infrastructure Act 1994	Department of Transport and Main Roads (TMR)	Mine	Not expected to be required.	The Project area has been dissected by the State Road since grant of title. It is expected that the Blast Management Plan, developed with stakeholder engagement, will address TMR's requirements.

## 11.4. Environmental Management and Monitoring






As detailed in Chapter 9: Closure and Rehabilitation, a strategic approach has been adopted to monitoring and reporting. The overarching intent is for all environmental monitoring and compliance programs, together with all associated reporting prepared under the auspices of the EAs, Progressive Rehabilitation & Closure Plan (PRCP) and PRCP schedule and similarly for future regulatory tools, to serve not only the purpose of compliance but to ultimately provide evidence for successful closure and final relinquishment.

## 12. Community and Stakeholders

### 12.1. Guiding Principles to Community and Stakeholders

EQR is a value-oriented resource company, sustainably producing and managing new economy minerals and metals. Embedded in our philosophy is minimising our footprint where possible. The guiding principles for community and stakeholder engagement are summarised in Table 26.

Table 26: Guiding Principles

Guiding principles					
					
<b>We will be</b>	<b>Proactive</b>	<b>Flexible and inclusive</b>	<b>Genuine</b>	<b>Respectful</b>	<b>Responsive</b>
<b>This means</b>	We will engage with communities early and often, so that we understand and respond to their interests and concerns.	We will offer a range of engagement opportunities that are tailored to the variety of needs and preferences of the community.	We will have authentic conversations with the community, clearly explaining what can and can't be influenced.	We understand that not everyone will support our projects. We will create an environment to have professional conversations.	We will close the loop, providing feedback to the community on how input has been taken into consideration.

### 12.2. Engagement Approach

The focus for EQR is delivering value for investors and sustainably producing new economy minerals and metals, while minimising its footprint where possible. This including in the communities in which it operates. The Community and Stakeholder Engagement Plan (CSEP) sets out the framework for effective consultation and engagement. While the implementation plan uses a broad range of tools and techniques to ensure we are meeting the needs of stakeholders and delivering consistent messages in a timely manner.

Gathering different views contributes to a richer understanding of how to effectively meet the organisation's goals and inform the engagement or communication that needs to take place. It is important for EQR because:

- **Support** - It will support its operations and help new growth projects in the region.
- **Social licence** - Maintain and improve its social licence, supporting current and future opportunities in the region.
- **Trust** - Lead the conversation about change, creating trust, and open communication with the community and all stakeholders.

The focus of engagement activities is to work with those most impacted by the Project's operations or who have a high level of influence on the Project at each phase.

### 12.3. Stakeholders

A stakeholder risk assessment was carried out to map relevant stakeholders in terms of their interest in potential sites for different option types and their potential to influence Project outcomes. The analysis identified four overarching stakeholder categories, defined in the Stakeholder Mapping and Consultation Register (the

Register). The Register is a living document and to be updated as interactions with stakeholder occur. The Register will help identify trends, monitor activities for which reporting metrics can be extracted.

Figure 31: Stakeholder Matrix (Source: Mara Consulting)



## 12.4. Potential Issues and Mitigations

During the planning and research of developing the plan, a SWOT analysis was completed. This assisted in the evaluation of the Project, including identifying internal and external factors, that may impact the Project in both positive and negative ways. Each statement was examined with appropriate actions identified to capitalise on strengths and opportunities and mitigate weaknesses and threats. An analysis of the items raised helped to set clear priorities for the engagement.

Pre-empting and proactively managing stakeholder issues is crucial to the overall success of the Project. Given the nature and profile of the Project, stakeholder expectations require careful management.

Table 27 identifies risk considerations related to the Project.

Table 27: Risk Considerations

Risk Considerations*	Yes	No	Potentially
Is the Project politically sensitive (either local or state government level)?		✓	
Is the Project likely to cause disruption to essential community services?		✓	
Is the Project likely to impact on environmentally sensitive areas?			✓

Risk Considerations*	Yes	No	Potentially
Is the Project likely to cause disruption to local residents or businesses?	✓		
Is the Project likely to be opposed by any groups or individuals within the community?			✓
Does the Project deal with issues or decisions that are likely to be controversial or divisive?			✓
Is the Project likely to attract a media attention (either positive or negative)?			✓

\* Note – the risk considerations will be regularly updated as the Project progresses. This is an overview of potential risks.

## 12.5. Communication and Engagement

Underpinning the Project team’s commitment to effective engagement is mutual respect. The team is committed to:

- Honest and straightforward dealings with stakeholders;
- Providing accurate and timely information to stakeholders;
- Using plain language to describe Project activities;
- Actively listening and acknowledging other points of view; and
- Respecting individual and cultural differences always.

Engagement methods will vary depending on the purpose and expectations of the engagement. Selecting the right tool and taking time to plan the engagement process will help build trust and buy-in from stakeholders.

## 12.6. Complaints and Enquires Management

EQR (or designated contractor) will receive Project enquiries and complaints via a dedicated Project hotline and Project specific email. This contact information will be included on all communications materials related to the Project. The Consultation Register will be used for the duration of the Project. EQR (or designated contractor) will:

- Record details of every complaint or enquiry in the Consultation Register including date and time of complaint and how the complaint was received;
- Record full name, address and preferred method of contact for the complainant;
- Record how the complaint or enquiry was managed and closed out;
- Investigate and determine the source of the complaint;
- Record action taken, officers involved, details of resolution and response times;
- Refer misdirected complaints or enquiries to the appropriate authority; and
- Produce monthly reports to ensure complaints are managed effectively.

## 12.7. Timing

Engagement and communication are a cradle to grave approach, that is it is ongoing through the operations of the Mt Carbine facility. During operations, there will be a need to increase activities to support the Project’s lifecycle phase. Specifically, between late 2021 and early 2023 two environmental approvals will be sought.

Phase 1 EA to increase processing of current stockpiles to 500,000 tpa was received in early 2022.

Phase 2 EA is seeking to dewater and recommence mining tungsten in the existing pit area. The crushing and screening plant and processing plant will be upgraded to further reduce operating costs and increase the tungsten recovery. The Project timeline is summarised in Section 8.1.

Consultation will support the technical studies, with targeted engagement with affected stakeholders. An implementation plan will guide communication and engagement tied to the Project timeline. Initially, the focus will be to introduce the operation and amendments to stakeholders, followed by gathering feedback on the Phase 2 proposal, particularly with directly impacted stakeholders.

Communication and engagement are rarely static, and they are likely to change on a regular basis. Mt Carbine will change and have different stakeholder requirements at each stage of the Project. Each stage of the Project will be an opportunity to gather feedback and support the Project. At each point in preparing engagement activities, we follow four general phases: preparation, planning, delivery, and review.

## 13. Capital Cost Estimate

### 13.1. Accuracy of Estimate

The accuracy of the capital cost estimate is considered to be in accordance with Budget / Authorisation Estimate as defined by AACE 47R-11 Standard: Cost Estimate Classification System – As Applied in Engineering, Procurement, and Construction for the Mining and Mineral Processing Industries.

Updates to the BFS estimate have been included when more accurate pricing has been obtained post BFS closure.

### 13.2. Estimate Basis

#### 13.2.1. Direct Costs

Consultants were engaged to provide engineering and estimating services for their relevant scopes in accordance with a AACE 47R-11 Class 3 estimate.

The consultants engaged to provide input into the estimate are listed in Table 28.

Table 28: Estimate Contributors

Estimate Scope	Consultant
Crushing and Screening Plant Sorting Plant Tailings Dewatering Plant	Mincore
Processing Plant	Ausenco
High Voltage Power Upgrade	Woodburn Electrical
Site Infrastructure Project Management	JukesTodd
Approvals and Rehabilitation	NRA Environmental Consultants

The basis of the estimating methodologies for the various scope components are summarised below in Table 29.

Table 29: Direct Cost Estimate Methodology

Description	Base Case
Earthworks	Consultant in-house database of costs for recently completed projects.
Buildings	Recent historic equivalent purchases by EQR.
Concrete Works	Priced from consultant in-house database and compared to previous Mt Carbine project actual costs.
Major Mechanical Equipment (packages over \$10k)	Budget quotes from OEMs based on equipment datasheets.
Minor Mechanical Equipment (packages under \$10k)	Consultant in-house database of costs for recently completed projects.
Structural Steel Supply	Consultant in-house database of costs for recently completed projects.



Description	Base Case
Platework	Consultant in-house database of costs for recently completed projects.
Structural, Mechanical and Plate Work Installation Costs	Unit man-hours per tonne of steel and equipment.
Piping	Consultant in-house database of costs for recently completed projects.
Electrical Control and Instrumentation supply	Factored from historic projects and checked using reference projects.
First Fills and Spares	Factored from historic projects and checked using reference projects.
HV Upgrade	Firm quote from local contractor familiar with the site and project.
SCADA Replacement	Firm quote from local contractor familiar with the site and project.
Container Workshops	Consultant in-house database of costs for recently completed projects.
Engineering	Budget estimates provided by engineering consultants delivering the relevant study scope.
Mobile Equipment	Firm pricing from OEM suppliers or advertised available second hand prices.

### 13.2.2. Indirect Costs

The basis of the estimating methodologies for the indirect cost components are summarised below in Table 30.

Table 30: Indirect Cost Estimate Methodology

Description	Base Case
Approvals	Known government fees and budget pricing for consultant activities.
Project Management	First principles manhour build-up against the execution schedule.
Contingency	Risk ranging was performed on the capex items and a Monte Carlo simulation was performed to develop a P90 contingency estimate.
Escalation	Given the short duration of the Project, escalation was not included in the capital estimate.

## 13.3. Estimate Summary

Estimate summaries at WBS level 1 are provided in Table 31 for the Phase 2 project costs to go.

Table 31: Estimate Summary

WBS Code	WBS Descriptions	Cost (AUD)
10000	Mining	2,401,000
20000	Processing	10,198,531

WBS Code	WBS Descriptions	Cost (AUD)
30000	On-site Infrastructure	746,676
70000	Project Indirects	773,024
80000	Owner's Costs	879,786
90000	Contingency	1,516,591
	<b>Total</b>	<b>16,515,608</b>

## 14. Operating Cost Estimate

### 14.1. Basis of Estimate

#### 14.1.1. Accuracy of Estimate

All operating costs are presented in real terms as of 15 October 2022. All cost assumptions were derived from cost data from varying sources:

- Mining costs were developed using a combination of existing real mining cost data combined with contractor pricing (Golding Contractors);
- Crushing screening and sorting pricing from existing data combined with consultant pricing (Mincore); and
- Processing plant pricing from existing data combined with consultant pricing (Ausenco).

Based on the alignment between contract data, and DAS Mining Solutions equipment data base, the order of accuracy for mining equipment has been determined to be between -10%/+15%. This order of accuracy also applies to the crushing, screening, sorting, and processing opex costs based on current expenditure at Mt Carbine.

#### 14.1.2. Source Documentation

For the compilation of the operating cost estimate, all activities were identified relating to the extraction of ore from the open pit mine and LGS to loading of trucks at the mine gate. Cost estimates were then developed for each activity benchmarked against the following:

- First principles estimates;
- Consultants' data derived from similar external projects;
- Use of actual costs from the existing operation; and
- Contracts currently in place at Mt Carbine.

The activities were separated into:

- Mining activities to deliver ore to the ROM pad;
- Crushing, screening, and sorting;
- Processing; and
- Other site related costs.

### 14.2. Key Assumptions

The key assumptions utilised in the operating cost estimate are included in Table 32.

Table 32: Operating Cost Estimate Key Assumptions

Item	Assumption
<b>Base Data</b>	Products or services used in more than one function of the operation were identified and used as standard cost assumptions. These items include diesel fuel, explosives, and electricity.
<b>Diesel Fuel Prices</b>	The fuel price is based on the current average prices of existing operations at Mt Carbine. The wholesale cost of diesel fuel was estimated at AUD2.101. Upon application of the diesel rebate (after GST removal) of AUD0.401/L, the diesel price used for opex costs was AUD1.70.

Item	Assumption
<b>Explosives Costs</b>	Estimates were provided for drill and blast costs by Golding. to include drilling, emulsion supply, loading, stemming, and shot firing and included in the all in \$6.00/t rate.
<b>Electricity</b>	The electricity price is based on the forecast provided by the current mine supplier (Ergon). Forecasted data is based on recent historical usage and was considered the most accurate. The electricity price used for opex costs was AUD0.19 per kWh.
<b>Exchange Rates</b>	The base case AUD/USD foreign exchange forecasts assumed, for the duration of the operations is an average of 0.68.

### 14.3. Operating Cost Summary

All operating costs are presented in real terms as of 15 October 2022 in Table 33. Further details pertaining to the development of the mining and processing scope and costs can be found in Chapter 4: Mining and Chapter 5: Processing.

Table 33: Summary of Operating Costs per Tonne

Operating Cost Item	Cost (USD)
<b>Operating costs of FCA (real) steady state life of mine (C1 cash cost)</b>	<b>118/mtu</b>
<b>Operating Cost Components</b>	<b>Cost (AUD)</b>
Mining Costs	
<ul style="list-style-type: none"> <li>Open pit mining costs of for mining of the open pit by a contractor</li> </ul>	6.00/t
<ul style="list-style-type: none"> <li>LGS Mining for 24/hr operations (Phase 1)</li> </ul>	2.48/t
<ul style="list-style-type: none"> <li>LGS Mining for 12/hr operations (Phase 2)</li> </ul>	1.69/t
Mine Closure/Rehabilitation & Ancillary Equipment	0.26/t
Dry processing costs	2.00/t (feed)
Ore Sorting costs	1.30/t (feed)
Gravity processing plant costs incl. by-product management	12.15/t (feed)
Other costs based on internal estimates, lease vehicles, grade control, sampling, drilling and lab testing, contractor mobilisation to site, maintenance facility cost and contractor demobilisation.	1.671/t

## 15. Risk and Opportunity

### 15.1. Scope

The risk management activities which were conducted to support the development of the feasibility study and prepare for the execution phase of the project include:

- Completion of initial Project risk assessments and identification;
- Establishment of the Project Risk & Opportunity Register;
- Identification of Project related compliance obligations, including any risks of non-compliance; and
- Ongoing management of risks, compliance obligations and actions.

### 15.2. Risk Assessment Process

The risk assessment process has to date and will in future continue to involve desktop reviews, interviews with key EQR personnel and stakeholders, and subject specific workshops. The consolidated product of that assessment process is presented to the EQR management team to validate.

All risks are captured in the Project Risk & Opportunity Register.

Risk management involves identification, assessment and management of risks and opportunities with the ability to impact on:

- Health and Safety
- Security
- Natural environment
- Assets
- Project cost / schedule
- Schedule / production
- Project return
- Compliance / governance
- Community
- Reputation
- Shareholder value

### 15.3. Risks

The key risks identified during the feasibility study are summarised in Table 34.

Table 34: Key Risks

Risk ID	Risk	Cause	Impact	Current Controls	Current Rating
2	HV / LV interaction	Poor traffic management Fatigue	Injury, vehicle damage	Installation of berms on the haul road (divided road) LV to have separate roads Radio protocols Fatigue Management Plan	High

Risk ID	Risk	Cause	Impact	Current Controls	Current Rating
5	Noise and dust pollution	High silica content in dust Older equipment First crusher (rock) screen has no dust control	Health impact on site personnel Impact on neighbours (town)	Water trucks Water added to crusher PPE Wet screen being added to crusher Good stakeholder communications	High
7	Loss of production	Poor mining productivity Wet season impact	Failure to achieve financial targets	Mine planning Redundancy in mining equipment Addition of wet screening Increased equipment sizing	High
10	HV / LV accident on the Mulligan Highway crossing	No controls on the road HV operator not stopping before crossing highway	Fatality	Traffic speed control on both sides of the highway installed. Phase 1 design includes slurry of fines to reduce number of crossings required.	High
11	Personal injury	Heavy equipment impacting on OH HV power lines Increased site traffic Energy sources - electrical, air, hydraulic	Fatality	High vis signage around electrical equipment Operators trained in lockout / tagout procedures	High
15	Increased rehabilitation obligations	Application for new EA due to increased production plan	Delays in approvals Increased ERC bonding	Maintaining current disturbance footprints under both EAs	High
17	Pit retains mine affected water at the time of commencing the cutback	Big wet season	Delay in commencement of mining	Current dewatering process, readily escalated in need	High
20	Unknown pit stability on completion of dewatering and on cut into South Wall Fault	Unknown deterioration of rock face and geotechnical conditions	Potential safety incidents Pit wall failure	Plan for detailed geotech assessment before introduction of people and equipment into the pit. Conservative rock bolting and face stability design included in operating costs.	High
22	Blasting impact on local community	Proximity to local community Location of magazine	Fly rock, dust, fumes, vibrations, etc Delays in approvals	Comprehensive Blast Management Plan to be developed, following detailed risk assessment	High
25	Waste rock may prove to not meet quarry rock spec	Higher sulphate	Additional areas required to separate mine waste from quarry waste rock Increased ERC	Planned geochemistry testwork and geological testing to ensure compliance with licensing requirements	High
26	Beneficial reuse comes into question	Policy change	Increased ERC	Received written direction from the State	High

A number of Medium and Low Risks have also been identified and included in the Project Risk Register and will be carried forward for consideration during subsequent stages of the Project. The Project Risk Register is a dynamic document, revised as appropriate to reflect changes as the project develops.

The key opportunities identified during the study are summarised in Table 35.

Table 35: Key Opportunities

Risk ID	Risk	Cause	Impact	Current Controls	Current Rating
29	Increased quarry revenue	Increased marketing By-products from process plant Large volumes of quarry inventory	Increase production revenue	Test work and R&D under way - suitable for road construction materials EOIs released	Significant
32	Potential reduction in the cost of funding	Potential NAIF and the Critical Minerals Fund	Lowest interest rate on debt	Meeting with Critical Minerals Facilitation Office planned for early October NAIF application process underway	Significant
35	Additional resource identification	Current cut off grade of resource model is 0.2%, changing cut off grade to 0.7% for a low grade feed similar to LGS could increase revenue and ore significantly	Increase in resource quantity and overall tungsten production from open pit	Plan to redo resource model with additional drill data to be obtained early 2022	Significant
37	Favourable geotechnical conditions on South Wall Fault found during future geotechnical investigation	A rock wall stabilising cost has been included in the operating estimate. Future geotechnical data may indicate a lower level of reinforcement is required to maintain wall stability.	Operating cost savings for pit wall stabilising.	A conservative design and costing is in place in the event that significant reinforcement is required.	Significant

A number of Medium and High Opportunities have also been identified and included in the Project Risk Register and will be carried forward for consideration during subsequent stages of the Project.

## 16. Ownership, Legal and Contractual

### 16.1. Tenure

Mt Carbine Quarries Pty Ltd, a wholly owned subsidiary of EQR, is the authorised holder of mining leases ML 4867 and ML 4919, with the boundaries shown in Figure 32 in relation to the existing site infrastructure. All operations on the Mt Carbine site are carried out by either Mt Carbine Quarrying Operations Pty Ltd or Mt Carbine Retreatment Management Pty Ltd (MTCRM) based on their operational areas. Mt Carbine Quarrying Operations Pty Ltd is 100% owned by EQR. Mt Carbine Retreatment Management Pty Ltd which is an unincorporated Joint Venture (JV) between EQR and CRONIMET Australia (Pty) Ltd (CRONIMET).

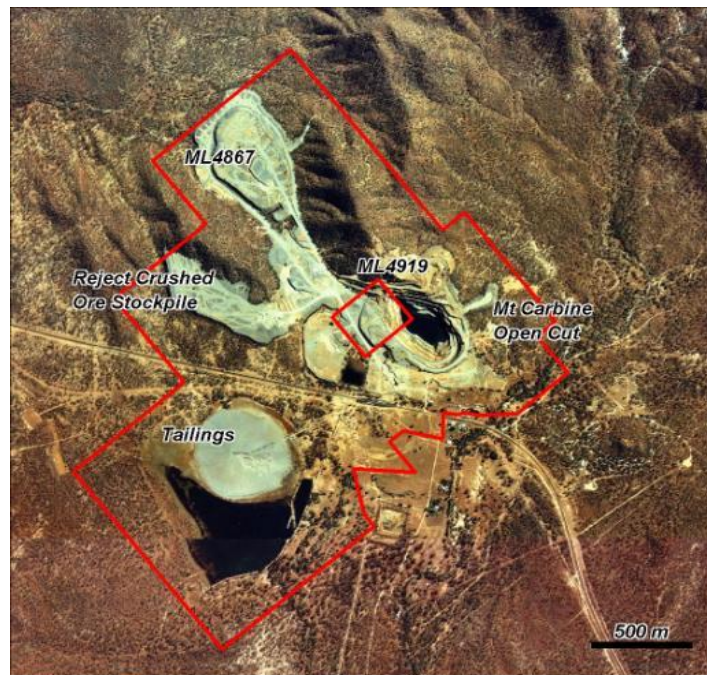


Figure 32: Mining Lease Boundaries

MTCRM is the operating company for the unincorporated JV between EQR and CRONIMET Australia. The JV was established for the funding and processing of the historic tailings at Mt Carbine and the 12,000,000t Low Grade Stockpile (LGS) and the recovery of the tungsten contained therein. As it is a 50/50 JV, funding for the establishment of the gravity processing plant, XRT Sorting Plant, earth moving fleet and ongoing operational costs have been carried by the JV since 2019 on an equal basis. Where either of the parties have carried additional costs, this has been accounted for in the accounts of the JV.



## 17. Investment Evaluation

### 17.1. Summary

Investment evaluation of the Project has been undertaken to support EQR in the determination of the viability of the Mt Carbine Expansion Project.

The overall valuation has been completed to the standard required by EQR to put forward the business case for an investment approval request and support the necessary project financing required to deliver the project.

A financial model for evaluating the Project has been created by Rock Financial Advisory (Rock), where the key outputs examined are net present value (NPV) and internal rate of return (IRR).

Since the original model, the latest model has been refined further to incorporate the new mining schedule as defined in EQR's most recent Mineral Reserve Estimate. This has replaced the original mine scheduling for the open pit with the methodology of using the LGS to top up crushing/screening and gravity processing plant should there be additional capacity available. All other fundamentals and principles have been held across the models with certain parameters being upgraded as set out in Section 14 – Operating Costs.

The financial model was created using inputs based on both, actual operating history of the project over 2022, as well as forecasts from site-staff and consultants.

The financial model reflects only the activity in this feasibility study, and does not include any underground mining which there is potential for

The key outputs from the model can be seen in Table 36 below, and please note that this document presents only pre-tax and ungeared returns (NPV and IRR).

Table 36: Investment Evaluation Key Outputs

Description	Financial Model
NPV (pre-tax and ungeared)	\$209.5 million
IRR	397%
Payback Period	1.5 years
Discount Rate	8.00%

The NPV has increased by circa AUD\$80 million since the last BFS released nearly 12 months ago (December 2021), which reported an NPV of \$131 (using the same 8% discount rate).

The macroeconomic, operational, and strategic factors presented in this section underpin the comprehensive financial model analysis completed for the basis of this economic study.

The economic model was developed to incorporate critical financial impacts required to undertake the development and operation of the project including estimated capital expenditures and deferred capital, revenues generated, and operational expenditures. Tax payable and funding options are contained in the financial model, but not included in the NPV and IRR reported.

Based on current assumptions data the project is estimated to generate cashflows, starting 1 November 2022 of:

- \$324M before any capex, tax or financing;
- \$299M after adding on capex, and GST and equipment finance costs (which are akin to operating costs);
- Pre-tax, pre-financing NPV of \$209.5M
- IRR of 397%. The IRR is substantial, due to the double benefits of:

- Some of the capex has now been spent (versus at time of writing the original BFS in December 2021)
- The Project is now nearer to steady state production and also closer to the five years of larger open-pit revenues (versus where the Project was last year)
- Expected payback is June 2023, being 18 months from the Project start date of January 2022 (when capital first started to be spent) calculated via:
  - Taking the Capex of \$20.6M, being the total capex of the Project (approximately \$4.9M already spent)
  - And calculating when cumulative forecast cashflow (starting 1 November 2022) exceeds the capex amount of \$20.6m - and this occurs in July 2023

The strong cash flow is driven by the cut back of the historic open pit and the ramp-up of mining and ore delivery from the open pit to the crushing and screening plant. It is noted that tax is not payable until mid 2025- thus further increasing early post-tax cashflows.

Based on current modelling, the economics of the open pit peak is in 2026, delivering a pre-tax cash flow of \$81M, this is due to:

- The low strip ratio is the lowest of any year;
- The highest grade open pit of any year at 0.35% (LGS grade is constant at 0.075% every year); and
- APT payable increases to 72.5% from 72% in the previous year.

On depletion of the current ore reserve accessible through open pit mining, that has been modelled for the purposes of this document, the intention is to extract additional ore from pit extensions that will be firmed up by additional drilling and underground mining activities. A scoping study on the underground mining option was completed April 2022 with a positive outlook on the underground potential and further definition will be undertaken in the future. Should an economic solution be defined for the potential underground ore reserves, the positive economics and strong cash flow is expected to continue.

## 17.2. Methodology

The financial model was built on the various inputs as described above. The valuation and the design were based on a 15-year life of mine, from 2022 to 2036.

Typical finance calculations have been added to arrive at a range of valuation measures as well as being a cashflow forecasting tool, which can show cash balances out to 2036. The parameters used in the financial model are summarised in Table 37 and Table 38.

Table 37: Financial Model Revenue Parameters

Calendar Year	Price USD/ t	AUD/USD	Price AUD\$/t	APT Payable
2022	\$ 34,000	0.620	\$ 54,798	0.700
2023	\$ 34,000	0.652	\$ 52,147	0.700
2024	\$ 35,000	0.670	\$ 52,239	0.700
2025	\$ 35,500	0.670	\$ 52,985	0.700
2026	\$ 36,500	0.670	\$ 54,478	0.725
2027	\$ 36,750	0.700	\$ 52,500	0.750
2028	\$ 37,000	0.700	\$ 52,857	0.750
2029	\$ 37,250	0.700	\$ 53,214	0.750
2030	\$ 37,250	0.700	\$ 53,214	0.750
2031	\$ 37,250	0.700	\$ 53,214	0.750
2032	\$ 37,250	0.700	\$ 53,214	0.750
2033	\$ 37,250	0.700	\$ 53,214	0.750
2034	\$ 37,250	0.700	\$ 53,214	0.750
2035	\$ 37,250	0.700	\$ 53,214	0.750
2036	\$ 37,250	0.700	\$ 53,214	0.750

Table 38: Financial Model Parameters

Item	Assumption
Valuation date	A valuation date of 1 November 2022 has been used.
Inflation Rates	All data is in real dollars as at October 2022 i.e. no inflation has not been applied, thus no CPI index used
Discount Rate	The pre-tax NPV uses a discount of 8.00%
Discount Period	Over the LOM of 15 years i.e., 1 November 2022 to 31 December 2036
Other Revenue Parameters	<ul style="list-style-type: none"> <li>Concentrate production with a minimum of 50% WO<sub>3</sub>, within product specifications. As the project progresses and higher-grade ores are accessed, higher grade concentrates will be produced;</li> <li>Base Price: calculated on a metric tonne unit (mtu) of WO<sub>3</sub> contained in a dry metric tonne delivered FCA Mt Carbine (INCOTERMS 2010);</li> <li>Index: London Metal Bulletin (LMB) European APT;</li> <li>Payment terms: 95% payment upon delivery of product and 5% balance payment upon final settlement based on weighing and assay results.</li> <li>Recovery through plant: <ul style="list-style-type: none"> <li>Ore sorter product - 90%</li> <li>Gravity processing plant - 79.5%</li> </ul> </li> </ul>
Royalty Payable	<ul style="list-style-type: none"> <li>2.7% of gross Tungsten revenue to Queensland State Government</li> <li>Paid to Traditional Owners: Nil</li> <li>Paid to other parties: Nil</li> </ul>
Timing	1 November 2022- 31 December 2036 (14.1 years), with open pit mining over five years and thereafter LGS mining and quarry revenue continue All key capex spent over 2022 and 2023 (with some already spent in 2022)
Native Title Compensation	No payments are applicable

Item	Assumption
Rehabilitation	A cost of \$0.20/tonne of open pit ore mined has been included

As this document reports only a pre-tax and pre-funding NPV, assumptions with regards to debt, interest rate, depreciation, and income tax rate (which all feed into tax payable), do not affect the NPV reported. However, for information, basic details are shown in Table 39.

Table 39: Tax Assumptions

Item	Details
Debt	<ul style="list-style-type: none"> <li>\$10M of funding via a royalty has been modelled, with \$5M received in CY2022, and \$5M received in early CY2023</li> <li>Approximately \$4M of yellow goods and XRT Sorter under equipment finance at 5% over 3 to 5 years</li> </ul>
Depreciation	<p>Depreciation has been calculated as follows:</p> <ul style="list-style-type: none"> <li>Accumulated depreciation and amortization at time of writing of \$13.4m, which is further depreciated/amortized over 10 years</li> <li>All other capex that is yet to be spent is depreciated on a linear basis over 10 years</li> </ul>
Corporate Income Tax	<p>Corporate Income tax of 25%</p> <p>Carry forward tax losses as at time of writing of \$30M</p>

### 17.3. Taxation

The Project falls under the Australian taxation system and is an incorporated Australian legal entity that is taxed as part of the EQR consolidated group.

For simplicity, the financial analysis in this chapter utilises stylised Australian tax rules to estimate tax payable:

- Capital costs and certain expenses are capitalised during construction as assets and depreciated for tax using a straight-line depreciation over a 10-year period;
- All expenses incurred by the project during operations are assumed to be tax deductible, with capital costs depreciable;
- All interest expenses incurred in financing the project have been assumed to be tax deductible.
- As EQR has significant tax losses, this analysis includes those losses and has modelled them accordingly;
- The impact of GST has been included in the economic evaluation.

### 17.4. Financial Analysis

The Project Base Case is premised on a stand-alone project with a mine life of approximately 14 years. EQR will design, construct, finance and manage the project. The open pit mining is expected to be operated via a mining contractor who will provide all mining equipment and with the Company's current earth moving fleet used for mining of the LGS and the removal of wastes. The dry and wet processing plants will be operated by the Company and will be a scale-up of ongoing operations with general site infrastructure being upgraded as required. Capital costs for the project will therefore be limited with ample capacity to support a feed processing rate of 1 Mtpa, split between the LGS and the open pit mining operations.

The project is currently operating and going through the early works expansion to increase production outputs. FY2022, is planned to produce 1,203t of concentrate, with the next four years producing between 2,764 to 5,783t of concentrate per annum, before reducing to an average of 1,193 tonnes of concentrate produced yearly for the remainder of the project.

This analysis has been based on the assumptions listed in the previous sub-sections and the following:

- Mining method which operates open pit mining and low-grade stockpile mining;
- Average of 2,063 tpa of minimum 50% WO<sub>3</sub> concentrate sold on a FCA basis;
- Capital costs to go of \$16.5M (real) (including contingency of \$1.5M);
- Tungsten concentrate production has an estimated C1 Cash Cost of AUD\$174/mtu (US\$118/mtu) (real) steady state life of mine;
- Mining costs broken down as follows:
  - Mining costs of \$6.00/t (real), for mining of the open pit by a contractor;
  - LGS Mining for 24/hr operations at \$2.48/t;
  - LGS Mining for 12/hr operations at \$1.69/t;
- Mine closure and ancillary equipment at \$0.20/t;
- Dry processing costs of \$2.00/t (real) based on estimates provided as detailed in Section 14;
- Ore sorting costs of A\$1.30/t to ore sorters (real) based on estimates provided as detailed in Section 14;
- Gravity processing plant costs of \$12.15/t of feed (real) based on estimates provided in Section 14 with \$0.34/t for tailings management;
- Other costs of \$1.67/t (real) based on internal estimates, lease vehicles, grade control, sampling, drilling and lab testing, contractor mobilisation to site, maintenance facility cost and contractor demobilisation;
- Logistics and marketing costs are for the CRONIMET account and are reflected in the APT payable received for concentrates sold from the Project.

## 17.5. Sensitivity Analysis

### 17.5.1. NPV Sensitivity

The base case NPV is \$209.5m.

The figure below illustrates the Project's NPV is most sensitive to the FX rate, and the tungsten price

The results were as follows:

- The AUD / USD exchange rate has the most positive effect on the NPV, producing the highest NPV on the graph below of \$383 million, when it is decreased by 20% (i.e. a weak AUD increases the AUD revenue). The weighted average FX rate across LOM = 0.68, and a 20% decrease = 0.55.
- The AUD/ USD also had the highest negative effect as well, with the NPV decreasing to \$115m, from a 20% increase in the AUD/USD exchange rate.

Changes in capex have the least effect on the IRR, which is logical as capex is small at circa \$16M (remaining to be spent), versus Revenue of \$596M, thus percentage changes in assumptions that affect revenue will have a higher effect.

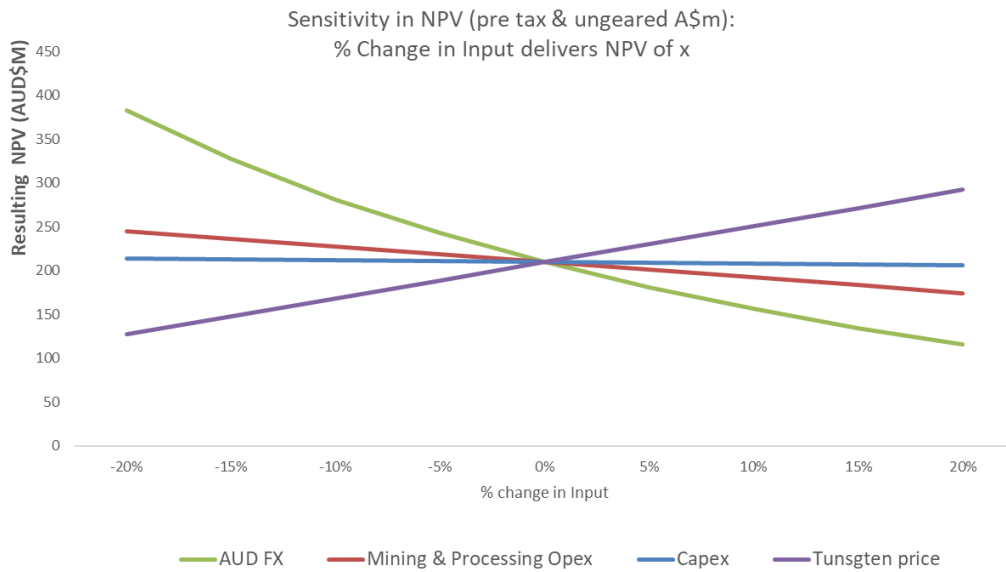


Figure 33: Sensitivity of the NPV to Changes in Key Assumptions

### 17.5.2. IRR Sensitivity

The base case IRR is 397%.

Changes in the NPV sensitivity inputs, had the same effect on the IRR, in that changes in the AUD/ USD have the most effect on IRR, and changes in the four inputs to revenue, all have equal second highest effect.

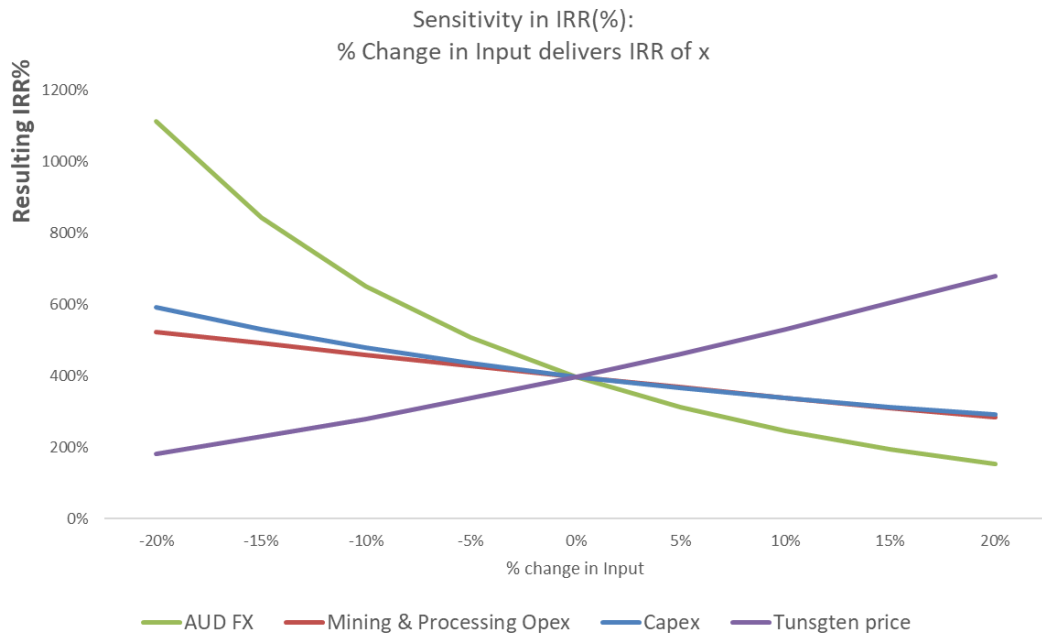


Figure 34: Sensitivity of the IRR to Changes in Key Assumptions

### 17.5.3. Breakeven Analysis

The model has been tested to determine the change required in key inputs to reach a “breakeven” level, by flexing / changing one input at a time.

A breakeven level can be defined numerous ways but for the purpose of this analysis, it’s defined as an IRR of 0% return.

In this testing, the four revenue inputs would require the least change to deliver an IRR of zero thereafter, the AUD / USD would require the least change to reduce the IRR to zero.

The findings of the breakeven analysis were:

- The AUD would have to increase by 74% across all years. This would mean the AUD increasing from base case (average LOM) level of 0.68 to 1.14 (a level that has not been seen in 30 years);
- Conversely, the capex would have to increase by 1469% (capex is a small contributor to cashflow thus can withstand much larger increases before the revenue could not “cover” it).

The breakeven analysis is summarised in Table 40.

Table 40: Breakeven Analysis

Assumption	Change Required to reach IRR of Zero
Capex	1469%
Mining & Processing Opex	126%
AUD	74%
<b>Tungsten Price</b>	<b>-52%</b>

## 18. List of Abbreviations

Abbreviation	Description
ADT	Articulated dump truck
ALARP	As low as reasonably practicable
APT	Ammonium paratungstate
AUD	Australian dollar
Capex	Capital expenditure
CEO	Chief Executive Officer
CMOC	China Molybdenum Co Ltd
CPI	Consumer Price Index
CRONIMET	CRONIMET Australia Pty Ltd
CSEP	Community and Stakeholder Engagement Plan
E&I	Electrical and instrumentation
EMRS	Environmental Monitoring and Reporting System
EOW	End of waste
EP	Environmental Program
EPC	Engineer, procure, construct
EQR	EQ Resources Limited
ESG	Environment, Social Governance
FCA	Free carrier
FEL	Front end loader
FX	Foreign exchange
GHG	Greenhouse gas
GST	Goods and services tax
HGZ	High-grade ore zone
IMS	Integrated Management System
IMSM	Integrated Management System Manual
IRR	Internal rate of return
JORC	Joint Ore Reserves Committee
JT	JukesTodd
JV	Joint venture
LGS	Low grade ore stockpiles
LMB	London Metal Bulletin



Abbreviation	Description
LOM	Life of mine
ML	Mining Lease
MTCRM	Mt Carbine Retreatment Management Pty Ltd
MTU	Metric tonne unit - one mtu equates to 10kg. The term is used as the pricing basis for APT
OC	Open pit
Opex	Operating expenditure
RL	Relative level
Rock	Rock Financial Advisory
ROM	Run of mine
SCADA	Supervisory control and data acquisition
SDG	Sustainable Development Goals
SHMS	Safety and health management system
SMP	Structural, mechanical, piping
SSE	Site Senior Executive
W	Tungsten
XRT	X-ray transmission

**REGISTERED OFFICE:**

Office 06-110, Level 6 25 King Street, Bowen Hills Queensland 4006

**ABN:** 77 115 009 106 (ASX: EQR)

**T:** (07) 4094 3072

**F:** (07) 4094 3036

**W:** [eqresources.com.au](http://eqresources.com.au)

