Carnaby

SCOPING STUDY RESULTS
GREATER DUCHESS PROJECT

Carnaby Resources Limited (ASX: CNB) (**Carnaby** or the **Company**) is pleased to announce the compelling results from a Scoping Study into the potential commercialisation of the Greater Duchess Copper Gold Project in Mt Isa, Queensland.

Cautionary Statement

*The Scoping Study referred to in this ASX release has been undertaken for the purpose of initial evaluation of a potential development of the Greater Copper Gold Project near Mount Isa in Queensland, Australia (**Greater Duchess Project**). It is a preliminary technical and economic study of the potential viability of the Greater Duchess Project. The Scoping Study outcomes, production target and projected financial information referred to in the release are based on low level technical and economic assessments that are insufficient to support estimation of Ore Reserves. Further exploration and evaluation work and appropriate studies are required before Carnaby will be in a position to estimate any ore reserves or to provide any assurance of an economic development case. The Scoping Study is presented in Australian dollars to an accuracy level of +/- 30%.*

While each of the modifying factors was considered and applied, there is no certainty of eventual conversion to Ore Reserves or that the production target itself will be realised. Further exploration and evaluation and appropriate studies are required before Carnaby will be able to estimate any Ore Reserves or to provide any assurance of any economic development case. Given the uncertainties involved, investors should not make any investment decisions based solely on the results of the Scoping Study.

The Company concludes it has reasonable grounds for disclosing a production target which includes an amount of Inferred Mineral Resources. There is a low level of geological confidence associated with Inferred Mineral Resources and there is no certainty that further exploration work will result in the determination of Indicated Mineral Resources or that the production target itself will be realised. Over the planned 9 year life of the Project Indicated Resources account for 79% of the total tonnes mined. Inferred Mineral Resources comprise only 21% of the production schedule. In particular, during the first 3 years of planned mining in the Scoping Study production plan, approximately 80% of the material to be mined is classified as Indicated which comfortably recovers projected capital start-up costs. The viability of the development scenario envisaged in the Scoping Study does not depend on the inclusion of Inferred Mineral Resources.

The Mineral Resources underpinning the production target in the Scoping Study have been prepared by a competent person in accordance with the requirements of the JORC Code (2012). For full details on the Mineral Resource estimate, please refer to the ASX announcement dated 27 October 2023. Other than as presented in those announcements, Carnaby confirms that it is not aware of any new information or data that materially affects the information included and that all material assumptions and technical parameters underpinning the estimate continue to apply and have not been changed.

The Scoping Study is based on the material assumptions outlined in this announcement and which are also detailed in the Appendices. These include assumptions about the availability of funding. While Carnaby considers that all the material assumptions are based on reasonable grounds, there is no certainty that they will prove to be correct or that the range of outcomes indicated by the Scoping Study will be achieved.

To achieve the range of outcomes indicated in the Scoping Study, funding in the order of A$47 million will likely be required. Investors should note that that there is no certainty that Carnaby will be able to raise that amount of funding when needed. It is also likely that such funding may only be available on terms that may be dilutive to or otherwise affect the value of Carnaby's existing shares. It is also possible that Carnaby could pursue other value realisation strategies such as a sale or partial sale of its interest in the Greater Duchess Project.

This announcement contains forward-looking statements. Carnaby has concluded that it has a reasonable basis for providing these forward-looking statements and believes it has a reasonable basis to expect it will be able to fund development of the Greater Duchess Project. However, several factors could cause actual results or expectations to differ materially from the results expressed or implied in the forward-looking statements. Given the uncertainties involved, investors should not make any investment decisions based solely of the results of this study.

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ASX Announcement

30 May 2024

Fast Facts

Shares on Issue 171.9M

Market Cap (@ 75.5 cents) $130M

Cash $16.6M[1]

[1]*As at 31 March 2024*

Directors

Peter Bowler, Non-Exec Chairman

Rob Watkins, Managing Director

Greg Barrett, Non-Exec Director & Joint Company Secretary

Paul Payne, Non-Exec Director

Company Highlights

- Proven and highly credentialed management team.
- Tight capital structure and strong cash position.
- Greater Duchess Copper Gold Project, numerous camp scale IOCG deposits over 1,921 km^2 of tenure.
- Maiden interim Mineral Resource Estimate at Greater Duchess: 21.8Mt @ 1.4% CuEq for 315kt CuEq.[1]
- Mount Hope, Nil Desperandum and Lady Fanny Iron Oxide Copper Gold discoveries within the Greater Duchess Copper Gold Project, Mt Isa inlier, Queensland.
- Projects near to De Grey's Hemi gold discovery on 442 km^2 of highly prospective tenure.

[1]Refer to ASX release dated 27 October 2023.

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The Company's Managing Director, Rob Watkins commented:

The release of the Greater Duchess Scoping Study is a major milestone for Carnaby and its shareholders and is the culmination of extensive work completed by Carnaby and Independent consultants over the course of the last two years since the first discovery at Nil Desperandum in late 2021. The Scoping Study results highlight a robust new mine development project located close to existing infrastructure and processing facilities in the Mount Isa region. We are confident the Greater Duchess Copper Gold project has a clear pathway to a low capex (A$35M) near term mining operation (forecast first production H2 CY26) that will capitalise on rapidly rising copper and gold prices. We expect the Mineral Resource and Production targets will continue to grow over the course of the next few years given the extensions of the mineralisation that have been intersected outside of the current mineral resource, such as 87m @ 2.3% Cu, 0.5g/t Au at Mount Hope Central and the broader exploration upside that exists on our tenements in the region.

SCOPING STUDY HIGHLIGHTS

The Scoping Study results indicate that the Third Party Processing option delivers a compelling outcome assuming competitive processing and offtake agreements can be reached with a Third Party processor in the region. Carnaby is focussed on a low Capex rail haulage and Third Party processing path to development which forms a majority of the Scoping Study results presented and discussed below. Stand-alone development also represents a viable future alternative and will continue to be advanced and assessed in parallel. A summary of the results and a comparison of the two scenarios is presented in Table 1. The results in this announcement have been presented on a 100% project value basis.

Carnaby is currently completing a Pre-Feasibility Study (PFS) level metallurgical test work program with the help of the team at Glencore International AG's (Glencore) Mount Isa copper mill and concentrator, to assess the amenability of potential ore from Greater Duchess. This test work will be completed and reported shortly however preliminary results are strongly positive for amenability to process the ore through the Mount Isa copper mill and concentrator. Carnaby and Glencore have agreed to commence discussions and negotiations to try and reach commercial Third Party processing and offtake agreements. There are no guarantees that a commercial agreement will be reached.

Carnaby

Table 1: Scoping Study results summary.

Financial Outcomes	Units	Third Party Processing	Stand-alone Processing
Undiscounted Net Cash Flow (post tax)	**$M**	**491**	**546**
Undiscounted Net Cash Flow (pre-tax)	**$M**	**715**	**824**
$NPV_{7\%}$ (post tax)	**$M**	**294**	**272**
IRR (post tax)	**%**	**105**	**34**
Payback Period	**Years**	**2.4**	**3.9**
Pre-production Capital	**$M**	**35**	**174**

Commodity Price Assumptions	Units	Optimisation and Design	Financial Model
Copper Price	A$/lb	5.44	6.80
Copper Price	A$/tonne	12,000	15,000
Gold Price	A$/oz	2,950	3,500

Physicals and Costs	Units	Third Party Processing	Stand-alone Processing
Mining Physicals			
Ore Tonnage	Mt	7.5	10.3
Grade Copper	%	1.71	1.52
Grade Gold	g/t	0.27	0.24
Grade CuEq	%	1.88	1.68
Contained CuEq Metal	kt	140	174
Life of Mine	Years	9	12
Run-of-Mine Production Target	ktpa	823	862
Strip Ratio (Open Pit)	Waste:ore	12.1	11.3
Total Underground Development Metres	metres	20,402	28,825
Process Recoveries			
Copper	%	95.4	95.5
Gold	%	80.7	81.3
Metal Production			
Copper (Payable)	kt	117	145
Gold (Payable)	koz	46	59
Costs			
Total Operating (C1 costs)	$/t ore	140	115

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Open pit and underground optimisations and designs were completed using A$12,000/t copper and A$2,950/oz gold price assumptions as they were appropriate at the time the initial work commenced. These conservative price assumptions have been used to fix the cut off grades and fix production target tonnages for both open pit and underground for the scoping study. With spot prices, as at 28 May 2024, approximately 31% and 21% higher for copper and gold respectively, this represents an area of significant potential future upside for lowering cut off grades and increasing production target tonnages from the optimised and designed open pits and underground development.

Financial analysis of the fixed optimised open pit and underground production target tonnages was run at A$15,000/t (approx. US$4.56/lb) copper and A$3,500/oz gold (approx. US$2,345/oz) which generated a NPV7 (post tax) of A$294M and IRR (post tax) of 105% for the Third Party processing scenario. A pre-production Capex of A$35M is forecast and environmental bonds are estimated to be approximately $12M.

A production target for the Third Party processing scenario encompasses a 9 year mine life processing 7.5Mt @ 1.71% Cu, 0.27g/t Au, (1.88% CuEq) totalling a contained 128,000t copper and 64,000oz gold (140,000t CuEq). Forecast recovered and payable metal is 117,000t of refined copper and 46,000oz of gold. The production profile consists of an initial three years of predominantly open pit mining producing an average of 1.1Mt @ 1.65% CuEq for 19,000t CuEq per annum followed by six years of underground mining.

A production target for a Stand Alone development scenario processes 10.3Mt @ 1.52%Cu, 0.24g/t Au (1.68% CuEq), totalling a contained 158,000t copper and 81,000oz gold (174,000t CuEq). Forecast recovered and payable metal is 145,000t of refined copper and 59,000oz of gold. The production profile consists of an initial three years of predominantly open pit mining producing an average of 1.2Mt @ 1.41% CuEq for 17,000t CuEq per annum followed by nine years of underground mining.

It should be noted that the production target for the Stand Alone development scenario is a good proxy for what the Third Party processing production target would be if cut off grades were to be adjusted to match the financial analysis price assumptions of A$15,000/t Cu and A$3,500/oz Au. For example, the cut-off grade for Lady Fanny open pit is 0.71% CuEq for Third Party processing and 0.5% CuEq for Stand Alone. At the above pricing assumptions, the Third Party processing cut off for Lady Fanny is 0.5% CuEq. This difference in production target tonnage between Third Party processing and Stand Alone across all the deposits is 2.8Mt of additional production target tonnage. None of the benefit of lower cut-off grade material is accounted for in either the production targets or financial analysis for the Third Party processing or Stand Alone scenarios and represents significant upside for the project.

The total production target for the Scoping Study comprises 79% Indicated Mineral Resource and 21% Inferred Mineral Resource. The first three years of production are almost exclusively

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from open pit mining which is 80% Indicated Mineral Resource and 20% Inferred Mineral Resource.

OVERVIEW

The Greater Duchess Copper Gold Project Scoping Study contemplates open pit and underground mining of three deposits - Nil Desperandum, Lady Fanny and Mount Hope, each of which have been discovered by Carnaby over the last two years.

The Scoping Study was designed to economically evaluate two alternate scenarios which are;

1. Low Capex Third Party Processing through rail or road haulage to a nearby existing processing facility or;
2. Construction and operation of a new stand-alone mine and processing plant development.

The results indicate that Third Party Processing through rail haulage offers the best outcome and is the selected base case for the Scoping Study results outlined below.

Location, Ownership & Infrastructure

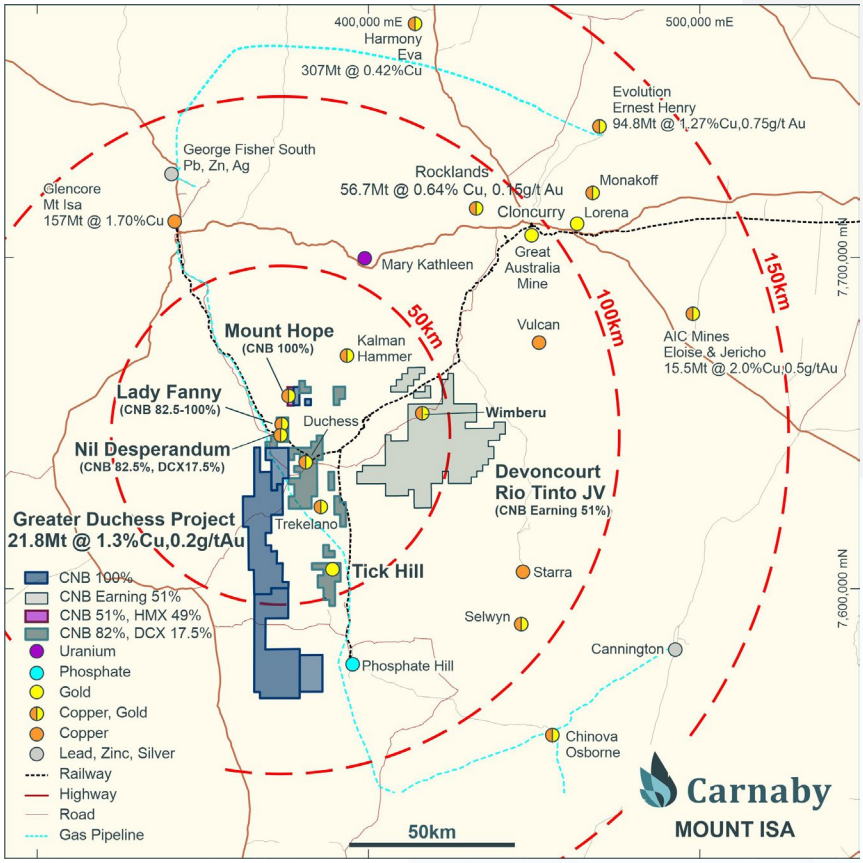

Figure 1: Greater Duchess Copper Gold Project Location Plan

The Greater Duchess Copper Gold Project is located approximately 70km southeast of Mt Isa in Queensland. Carnaby has made three significant discoveries over the course of the last two

years at Nil Desperandum, Lady Fanny and Mount Hope which form the basis of the Scoping Study. All three discoveries remain strongly open down plunge and will continue to grow with ongoing drilling which is in progress.

The Mount Hope deposit is located on granted mining lease ML 90240 and is 100% owned by Carnaby. The Nil Desperandum deposit is located on EPM 14366 in which the Company holds an 82.5% interest, with DiscovEx Resources Limited (ASX: DCX) (**DiscovEx**) retaining a 17.5% free carried interest in the tenement through to a decision to mine. The Lady Fanny Prospect area encompassed by historical expired mining leases have been amalgamated into EPM 14366 and is 100% owned by Carnaby. The Scoping Study results presented in this announcement have been reported on a 100% project value basis.

The Project area is accessible primarily via public unsealed roads from Mount Isa with private local access tracks providing access to each of the three main proposed production areas. The Project area is also traversed by key regional operational infrastructure in the Mount Isa railway line, owned and operated by state statutory body Queensland Rail Limited (**QR**), and the Carpentaria Gas Pipeline (**CGP**), owned and operated by APA Group (**APA**). The Company is confident it will be able to utilise the railway as the project's primary haulage option, indicated by its use in the Scoping Study's base case Third Party development scenario. Preliminary investigations indicate that Project access to the CGP is feasible, however further confirmatory work is required which will be conducted during the upcoming Pre-Feasibility Study (**PFS**).

Geology

Copper Gold mineralisation at Greater Duchess can be broadly classified as a variant of the Iron Oxide Copper Gold (IOCG) style group of mineral deposits. Mineralisation at Greater Duchess appears to be more characteristic of structurally controlled Iron Sulphide Copper Gold (ISCG) in origin and similar in style to deposits such at Osborne and Eloise. Magnetite and K Feldspar alteration halos are commonly seen in the Greater Duchess deposits.

The total Mineral Resource Estimate (**MRE**) for the Greater Duchess Project is 21.8Mt @ 1.3% Cu, 0.2g/t Au, 1.4% CuEq for contained 283,000t Cu, 148,000koz Au and 315,000kt CuEq.

The Indicated Mineral Resource of 11.9Mt @ 1.5% Cu, 0.2g/t Au, 1.6% CuEq for contained 174kt Cu, 88,000oz Au and 194,000t CuEq represent 62% of the total resource by CuEq tonnes. A summary of the MRE underpinning the production target is presented below in Table 2. Refer to the ASX release dated 27 October 2023 for full details of the MRE.

Table 2: Greater Duchess Copper Gold Project Mineral Resource Inventory

0.5% CuEq[1] Cut-off for Pit Potential, 1.0% CuEq[1] for Underground Potential

Deposit	Class	Tonnes Mt	Cu %	Au g/t	CuEq %	Cu Tonnes	Au Ounces	CuEq Tonnes
Mount Hope	Indicated	6.9	1.6	0.2	1.8	111,400	53,900	123,200
	Inferred	3.3	1.3	0.2	1.5	44,600	24,200	49,800
	Sub-total	**10.3**	**1.5**	**0.2**	**1.7**	**156,000**	**78,100**	**173,000**

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Deposit	Class	Tonnes Mt	Cu %	Au g/t	CuEq %	Cu Tonnes	Au Ounces	CuEq Tonnes
Nil Desperandum	Indicated	3.3	1.2	0.2	1.4	39,800	22,000	44,600
	Inferred	1.0	1.4	0.4	1.7	13,900	11,400	16,300
	Sub-total	**4.3**	**1.3**	**0.2**	**1.4**	**53,700**	**33,400**	**60,900**
Lady Fanny	Indicated	1.7	1.4	0.2	1.5	23,300	11,500	25,800
	Inferred	1.4	1.2	0.3	1.4	17,500	11,600	20,100
	Sub-total	**3.1**	**1.3**	**0.2**	**1.5**	**40,800**	**23,200**	**45,800**
Mt Birnie	Indicated							
	Inferred	0.4	1.4	0.2	1.5	6,300	2,300	6,800
	Sub-total	**0.4**	**1.4**	**0.2**	**1.5**	**6,300**	**2,300**	**6,800**
Duchess	Indicated							
	Inferred	3.7	0.7	0.1	0.8	26,300	11,300	28,800
	Sub-total	**3.7**	**0.7**	**0.1**	**0.8**	**26,300**	**11,300**	**28,800**
Greater Duchess Total Inventory	Indicated	11.9	1.5	0.2	1.6	174,500	87,500	193,600
	Inferred	9.8	1.1	0.2	1.2	108,600	60,700	121,800
	Total	**21.8**	**1.3**	**0.2**	**1.4**	**283,100**	**148,200**	**315,400**

Note – Rounding discrepancies may occur.

Note – Mount Hope is 100% CNB, Nil Desperandum, Mount Birnie and Duchess are 82.5% CNB, Lady Fanny is 82.5-100% CNB

Reference 1: The CuEq calculation for the MRE is CuEq=Cu% + (Au_ppm * 0.7) and is based on September 2023 spot prices of US$8,500/t for copper and US$1,950/oz for gold, exchange rate of 0.67 and recovery of 95% copper and 90% gold as demonstrated in preliminary metallurgical test work carried out in 2023.

Metallurgy

Scoping Study level metallurgical studies were completed by Carnaby using Australian Minmet Metallurgical Laboratories (AMML) (See ASX release 28 June 2023, 7 November 2022). A summary of the results is presented in Table 3.

Table 3: Summary of Metallurgical Test Work Results.

	MINERALISATION TYPE	FRESH CHALCOPYRITE	TRANSITIONAL CHALCOPYRITE	TRANSITIONAL CHALCOCITE
Mount Hope	COPPER RECOVERIES	97.5% to 99.3%	97.4% to 99.2%	91.6% to 93.8%
	GOLD RECOVERIES	82.3% to 91.2%	82.1% to 94.6%	86.5% to 88.9%
	DELETERIOUS ELEMENTS	None Detected	None Detected	None Detected
	RECLEANER CONCENTRATE	25.0% Cu at 98.7% recovery	27.8% Cu at 98.7% recovery	30.2% Cu at 91.6% recovery

Nil Desperandum	COPPER RECOVERIES	97.7% to 99.1%	Lady Fanny	99.0% to 99.4%
	GOLD RECOVERIES	80.1% to 87.2%		82.9% to 88.7%
	KINETICS (75 µM & 150µM)	>90% flotation of Cu in 2 minutes		>95% flotation of Cu in 2 minutes
	DELETERIOUS ELEMENTS	None Detected		None Detected
	RECLEANER CONCENTRATE	23.2% Cu at 98% recovery		23.2% Cu at 98% recovery

BHM Process Consultants were engaged to review the metallurgical study results for the Scoping Study and concluded "The metallurgical recoveries from the test work are excellent and the materials tested demonstrate a high degree of hydrophobicity and responds to the chemical regime employed." BHM recommended the following recoveries be applied to the Scoping Study.

Table 4: Recommended Metal Recoveries for Scoping Study Inputs

	Copper Recovery (%)	Gold Recovery (%)
Lady Fanny	97.5	70.0
Nil Desperandum	97.5	80.0
Mt Hope	96.0	85.0
Mt Hope High Grade (> 5 % in-situ blocks)	90.0	85.0

Geotechnical

WK Geotechnical was engaged by Carnaby to undertake scoping level assessment of the geotechnical conditions and design parameters for the purpose of preliminary mine planning studies. The general findings are that pit walls are anticipated to be mined largely within the country rock where moderate to high weathering is limited to less than 10m below surface and slight weathering extends to 30m to 40m below surface. Geotechnical conditions for each of the deposits are suitable for underground mining by long-hole open stoping methods. Details of the geotechnical study and parameters used are presented in the Executive summary in Appendix 1.

SCOPING STUDY BASE CASE - THIRD PARTY PROCESSING SCENARIO

Mining

Xenith Consulting Pty Ltd (Xenith) was commissioned by Carnaby to provide concept level mining and civil engineering and high level conceptual development studies for the Scoping Study which included civil engineering of general site layout, alternative haulage infrastructure options assessment and design, mining engineering optimisation, design and scheduling for open pit and underground ore sources, cash flow modelling. The Xenith Executive summary of the results is presented in Appendix 1.

Open Pit Mining

Five open cut pit deposits were identified as an output of the Pseudoflow optimisation process as follows:

- Mount Hope – two open cut deposits (Mount Hope Central and Mount Hope North);
- Lady Fanny – two open cut deposits (Lady Fanny and Burke & Wills); and
- Nil Desperandum – a single open cut deposit.

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Open cut production targets for each deposit within Project is summarised in Table 5 below:

Table 5: Open Cut Production Target

Deposit	COG (CuEq) (%)	Ore Tonnes (Mt)	Cu Grade (%)	Au Grade (g/t)	CuEq Grade (%)	Strip Ratio (t:t)
Mount Hope North	0.65	0.31	1.30	0.16	1.40	15.9
Mount Hope Central	0.65	1.39	1.59	0.16	1.70	12.6
Mount Hope Total	**0.65**	**1.69**	**1.54**	**0.16**	**1.64**	**13.3**
Lady Fanny	0.71	1.15	1.32	0.26	1.46	7.3
Burke & Wills	0.72	0.24	2.35	0.27	2.50	21.6
Lady Fanny Total	**0.71**	**1.39**	**1.50**	**0.26**	**1.64**	**9.8**
Nil Desperandum Total	**0.63**	**0.31**	**1.00**	**0.19**	**1.12**	**16.4**
Total Open Cut		**3.39**	**1.47**	**0.20**	**1.59**	**12.1**

Underground Mining

Underground production targets for each deposit within the Project are shown in Table 6 below:

Table 6: Underground Production Target

Deposit	CoG (CuEq)	Ore Tonnes (Mt)	Cu Grade (%)	Au Grade (g/t)	Ore CuEq (%)	Development Metres	
						Horizontal	Vertical
Mount Hope Central	1.41	3.29	1.74	0.29	1.94	11,850	1,090
Nil Desperandum	1.53	0.79	2.60	0.42	2.86	6,709	753
Total Underground		**4.08**	**1.91**	**0.32**	**2.12**	**18,650**	**1,843**

The Project MRE and geological models identified two deposits that would likely be amenable to underground mining operations. Mount Hope and Nil Desperandum were identified as having mineralisation at depth that may be suited to an underground mining method of exploitation.

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Both deposits have been modelled as Long-hole Open Stoping with cemented backfill support as the preferred variation of Sublevel Stoping for this study as, at this stage, there is a lack of geotechnical information to provide guidance on pillar sizes and overall mine stability.

Assumptions for underground include an 80m crown pillar and 5m wide by 6m high decline with 5m x 5m level access and ore drives.

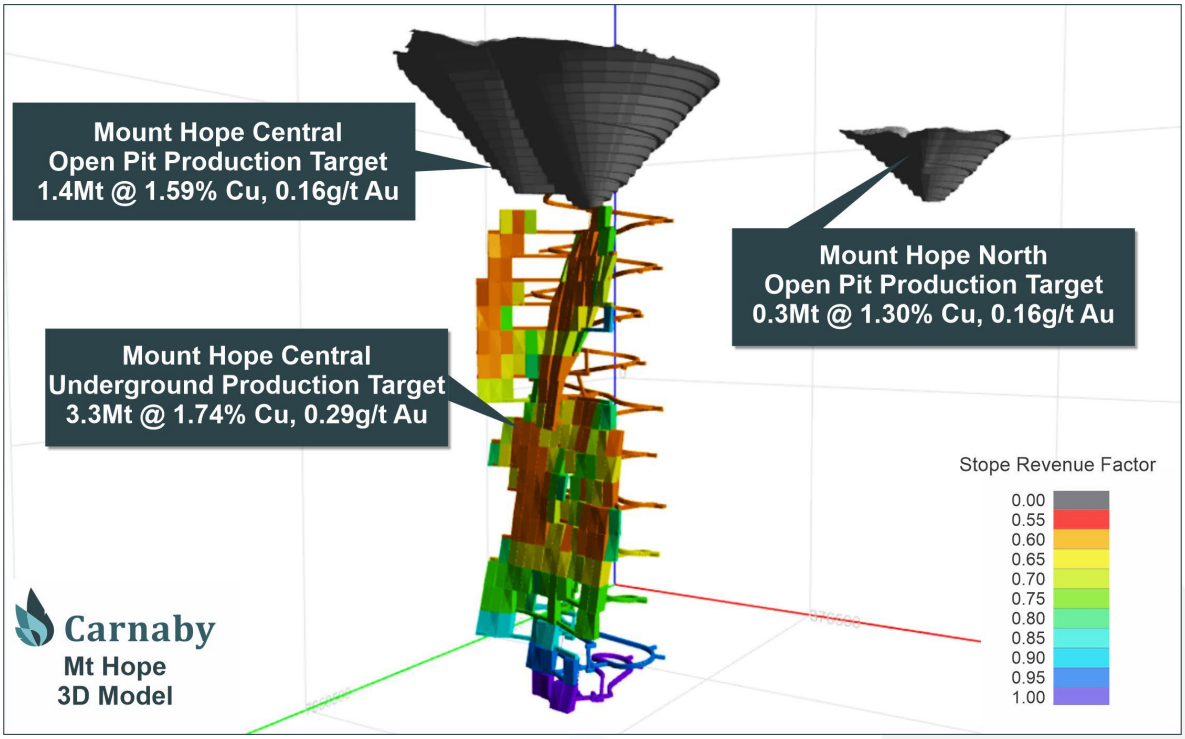

Figure 2: Mount Hope Production Target 3D Model

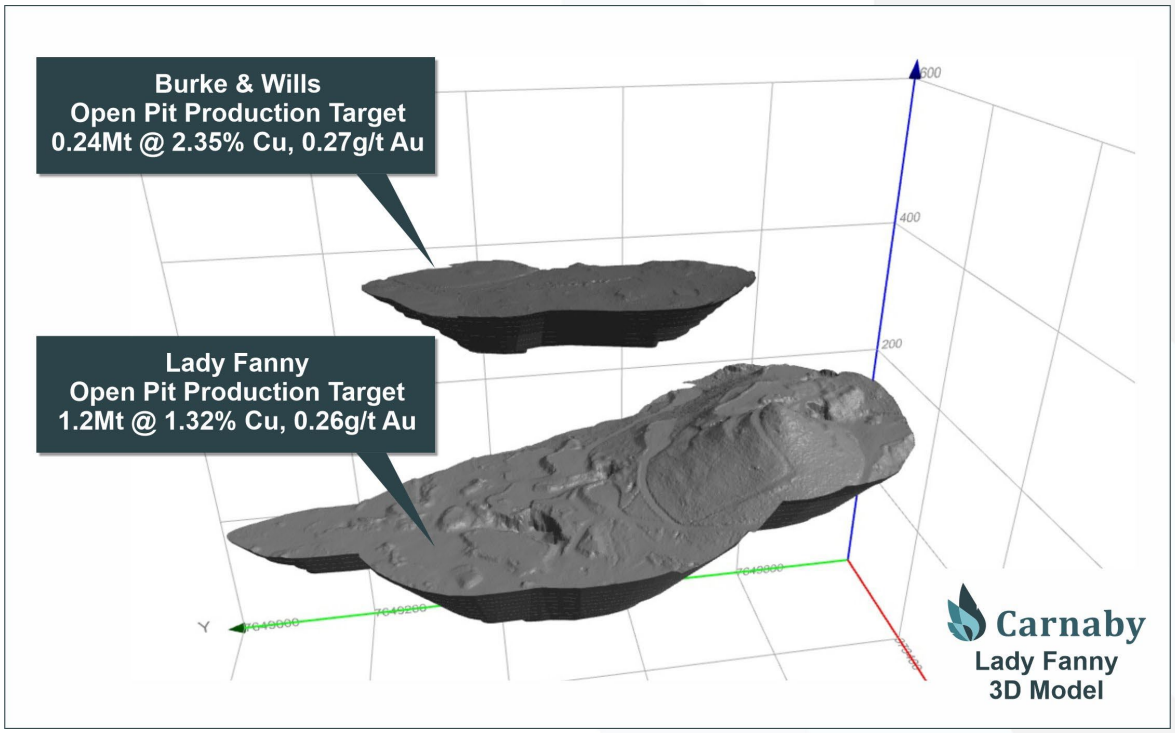

Figure 3: Lady Fanny Production Target 3D Model

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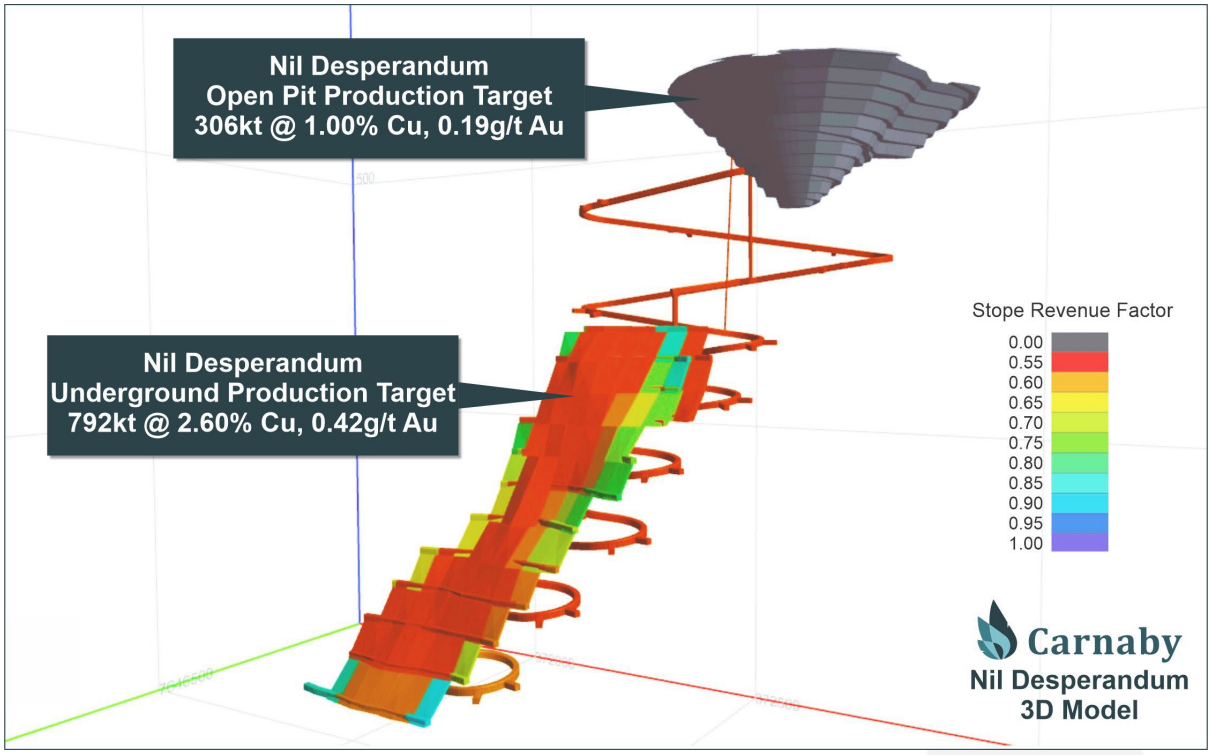

Figure 4: Nil Desperandum Production Target 3D Model

Mine Production Schedule

The combined mine production schedule highlights the following:

- A 9 year operational mine life processing 7.5Mt @ 1.88% CuEq for 140,000t CuEq (Figure 5).
- A 3 year initial open pit focussed start up with an average 1.1Mt @ 1.65% CuEq for 19,000t per annum.
- Years 4 to 9 of predominantly underground mining with an average of 0.7Mt @ 2.07% CuEq for 14,000t per annum

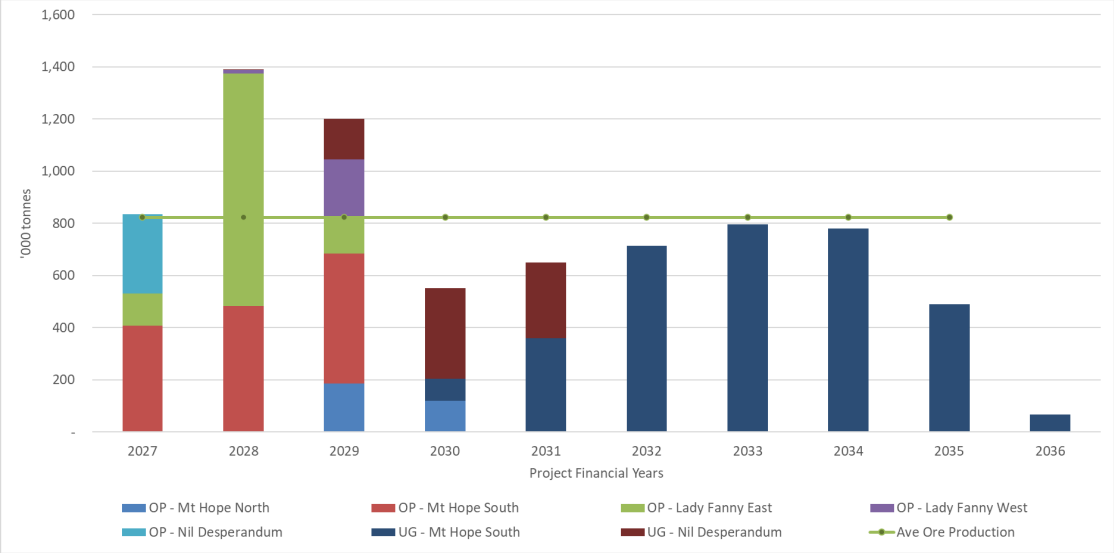

Figure 5: Project Production Target Schedule

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Processing

The Greater Duchess Project mineralisation is highly amenable to conventional sulphide floatation to produce a high grade copper gold concentrate. Copper gold concentrates in excess of 20% Cu are estimated with overall recoveries of 95% for Cu and 81% for Au. Total project metal recovered into concentrate of 122,000t Cu metal and 52,000oz Au is forecast (Figure 6).

Potential Third Party processing options in the Mount Isa district include but are not limited to Glencore's Mount Isa Copper Mill and concentrator located 70km northwest of the project.

Ore for Third Party processing could be transported, either by road transport (trucking) or through rail infrastructure which traverses the Greater Duchess Project and currently services the main Mount Isa to Townsville rail network used by Glencore and Phosphate Hill owned by Incitec Pivot Ltd. Rail haulage would require the upgrading of a rail siding and mine haul road infrastructure. Road transportation would require road infrastructure upgrades due to the road being unsealed between Greater Duchess and Mount Isa. Greater Duchess to Cloncurry via road is predominantly sealed.

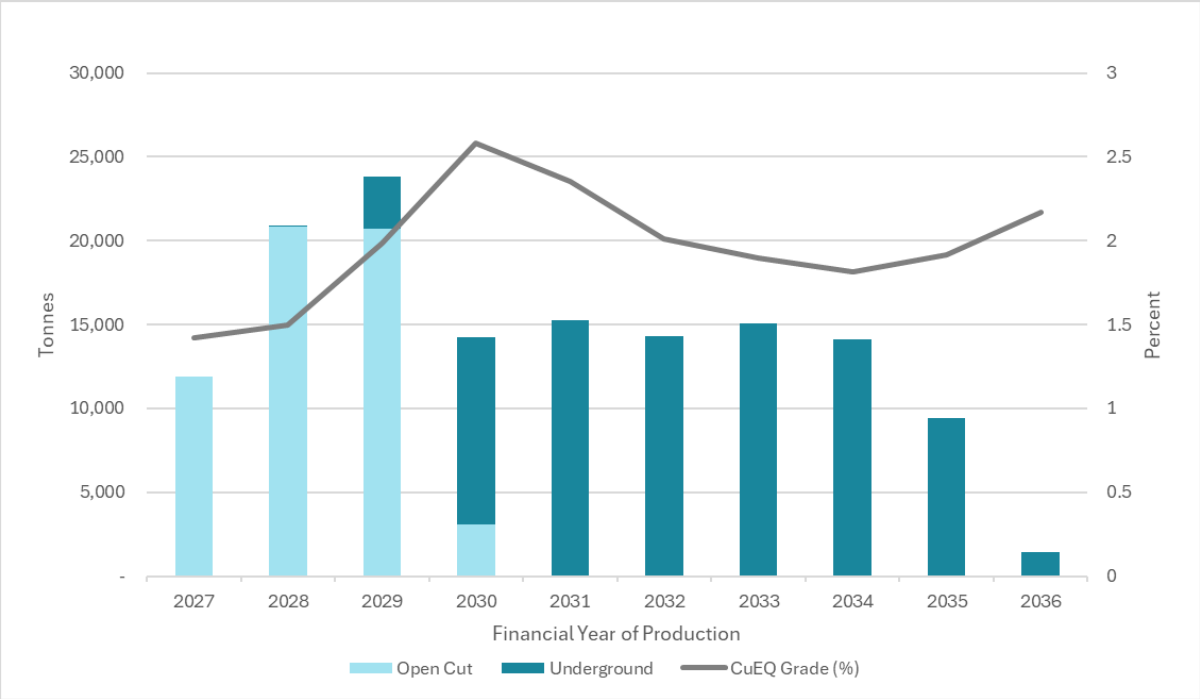

Figure 6: Annual Mining Production of CuEq Metal by Mining Source

As shown in Figure 7, the Scoping Study contemplates upgrading of the existing Myubee rail siding, historically used for cattle rail transport, to a crusher, stockpile and rail loadout facility. The Nil Desperandum and Lady Fanny deposits are closely located 1km and 2km respectively from the Myubee siding, with Mount Hope approximately 10km away.

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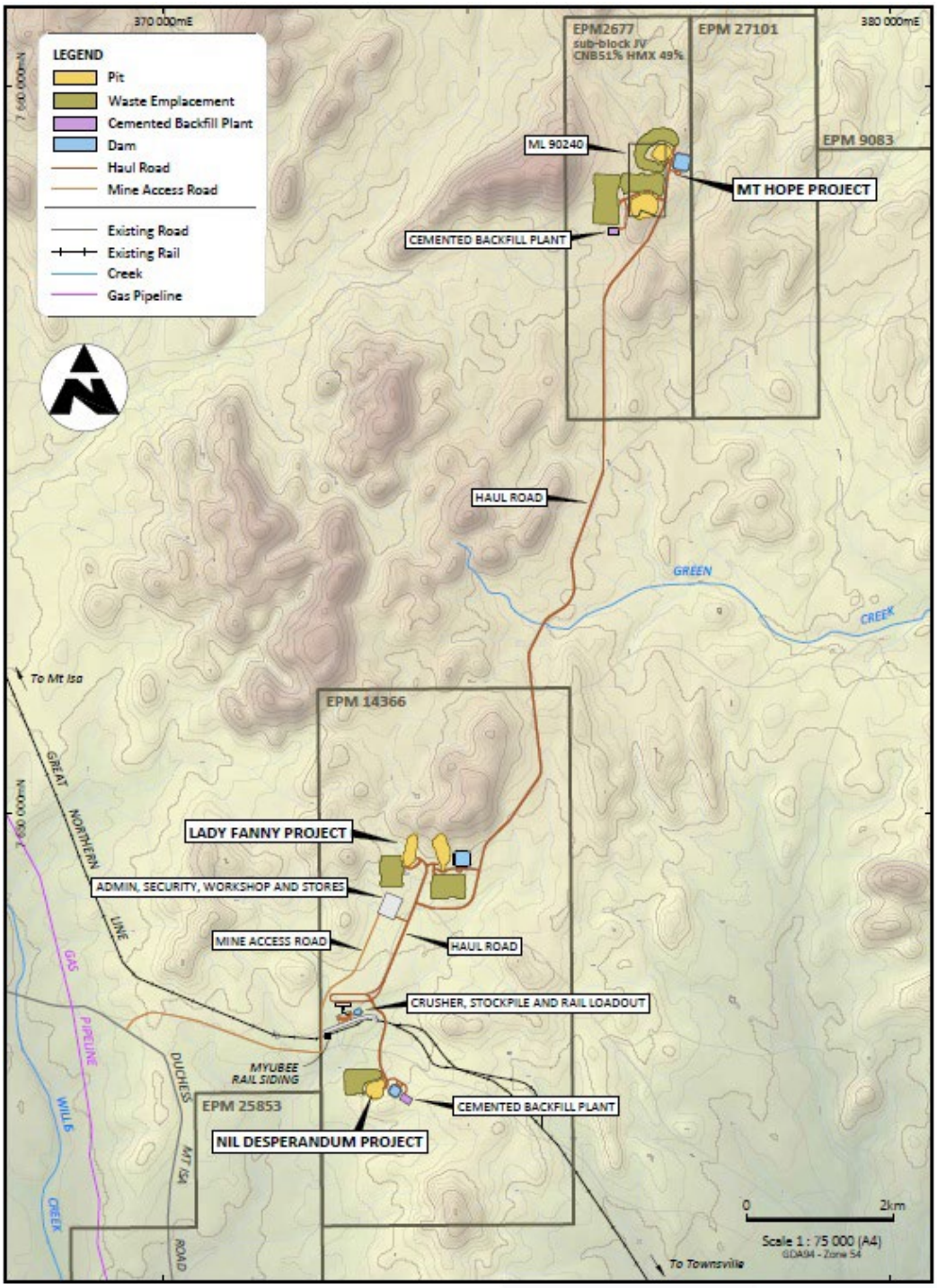

Figure 7: Conceptual Layout of Project Infrastructure

Capital Cost Estimates

Pre-production capital costs are estimated at A$35M reflecting a lower capex open pit start up followed by underground development. Maximum negative cashflow is estimated at A$45M occurring in the Project's first year of operation. Start-up Project infrastructure costs include an ore crusher loadout facility, rail siding and road works (A$15M), camp and administration, workshops and mine infrastructure areas (A$13M) and 25% contingencies (A$7M). The capex costs assume rail haulage with no allowance for upgrading Third Party road

haulage routes other than haulage to the rail siding. Any infrastructure upgrade requirements for rail offloading of ore at Third Party processing facilities is under studies by third parties and is assumed to be the responsibility of the Third Party.

In production years two to five, capital programs for the commencement of underground operations include underground infrastructure and underground mine development capital programs which average A$27M per annum including contingencies over the four year period.

Cash backed environmental bonds for open pit and underground are estimated at $12M for the entire project.

Ongoing sustaining open pit and underground costs total an estimated $A4M.

Operating Cost Estimates

Contract open pit and underground mining are assumed in the Scoping Study. Open pit mining cost estimates average A$4.70/t (A$62/t ore). Underground mining cost estimates average approximately $A86/t ore. Haulage costs are assumed to be A$12/t which are the estimated Third Party rail haulage costs. Potential rail haulage costs savings including backloading will be explored in the PFS. A breakdown of estimated operating costs for the entire project, including open pit and underground is shown below;

Open Pit Mining Costs	A$62/t ore
Mount Hope Underground Mining Costs	A$83/t ore
Nil Desperandum Underground Mining Costs	A$100/t ore
Rail Haulage	A$12/t ore
Processing	A$30/t ore
G&A	A$6/t ore
T & C	A$4/t ore
Royalties	A$13/t ore
Total Opex (C1)	A$140/t ore

Cumulative operating costs for the Scoping Study are reflected in Figure 8 below.

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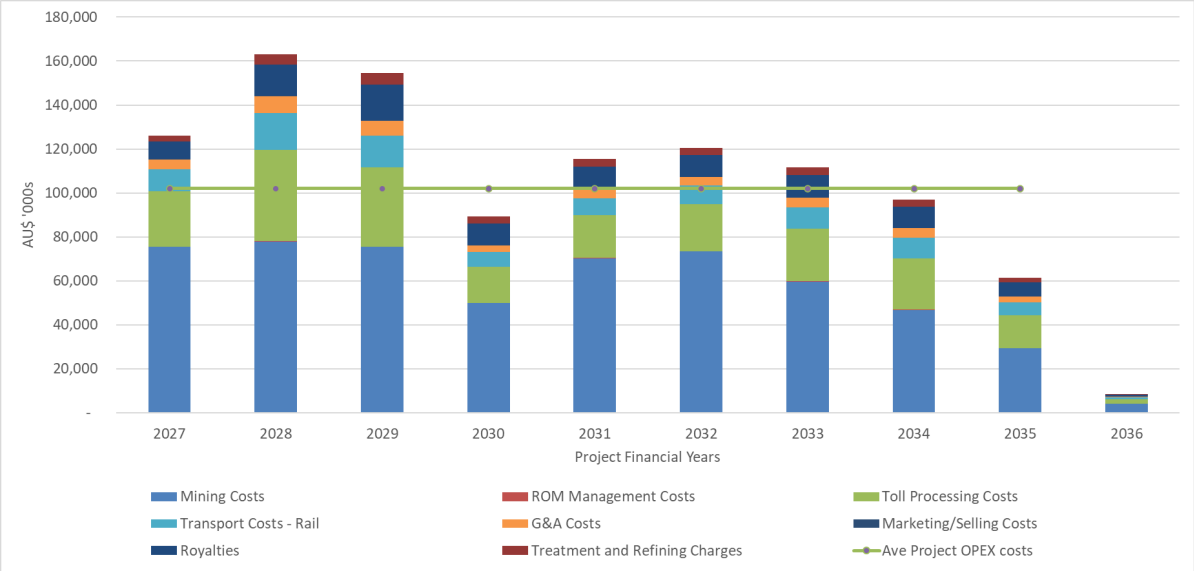

Figure 8: Project Operating Costs

Financial Analysis

Over the 9 year total production profile for the project, total gross revenue is forecast to be approximately $A1.9 billion and total undiscounted cash flow of A$491M post tax (A$715M pre-tax) is estimated.

Net Smelter Return revenues are forecast to average A$257 per tonne of ore over the life of the project.

On a discounted cash flow basis the net present value at NPV7 is A$294M post tax (A$437M pre-tax) with an IRR of 105% (141% pre-tax) and a 2 year payback period from first production.

Free cash flow from FY2028 onwards averages an undiscounted A$65M after tax (A$93M pre-tax) per annum for 8 years.

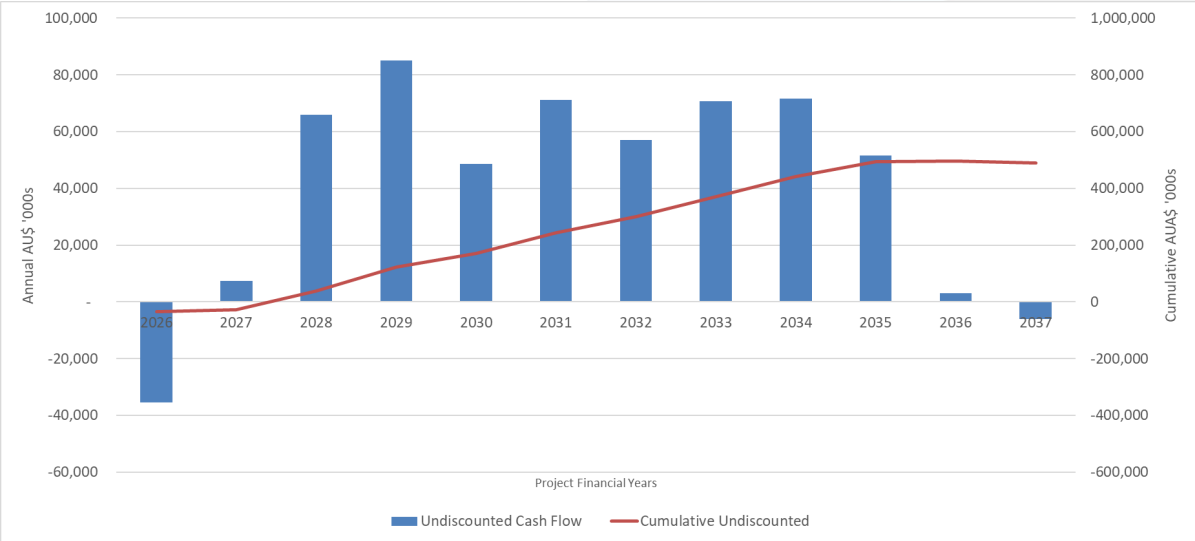

Figure 9: Project Undiscounted Cashflow Post Tax

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Sensitivity Analysis

Project sensitivity analysis has been completed on the following variables:

- Copper Price
- Gold Price
- Operating Costs
  - Underground Mining
  - Opencut Mining
  - ROM management
  - Processing
  - Ore transportation
  - G&A
- Capital Costs

Results of sensitivity analysis, at 10% increments to ±30%, are as shown in Figure 10. This illustrates that the project is most sensitive to fluctuations in the assumed copper price, with a significant margin in sensitivity to Underground Mining costs which is the next most prominent input.

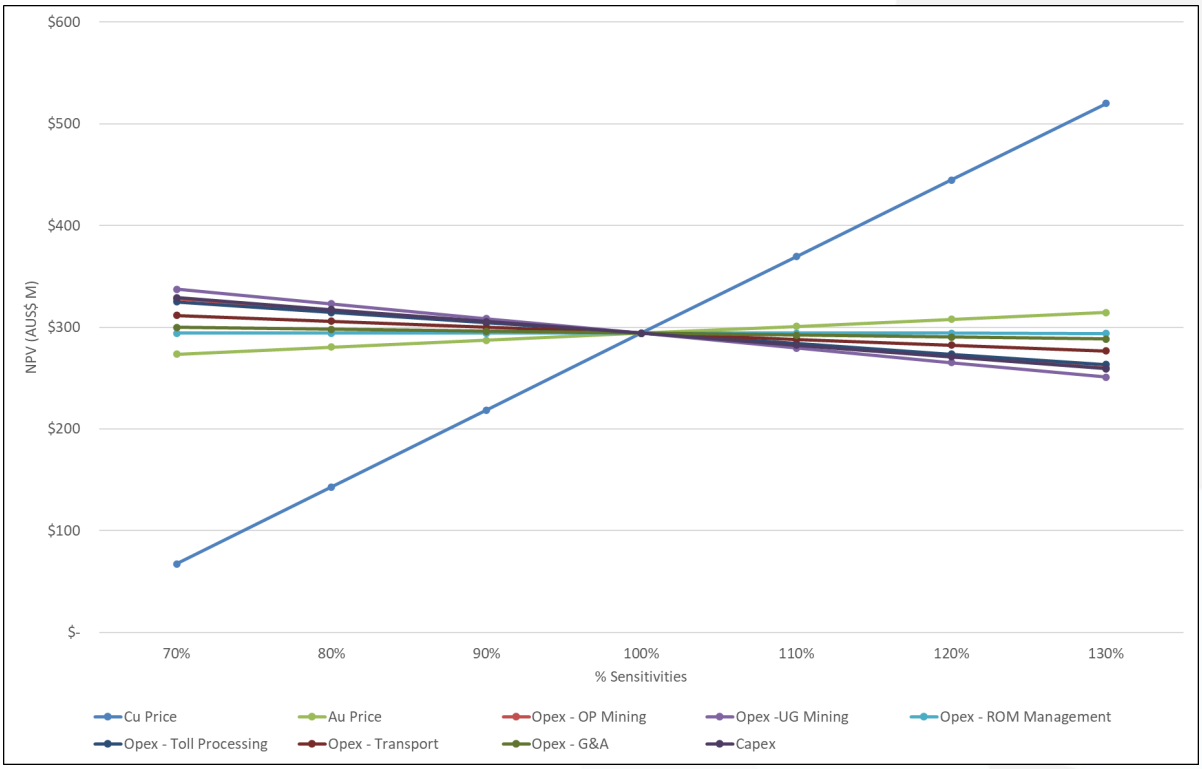

Figure 10: Sensitivity Analysis Spider Chart Post Tax

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FORWARD WORK PLANS

Exploration

The company continues to advance exploration in the Greater Duchess Region which has high potential for additional discoveries. Consolidation of the highly prospective Mount Hope area (see ASX release 2 April 2024) has resulted in access to several new high priority targets surrounding Mount Hope which are being actively pursued. The company currently has a diamond drill rig in operation at the Wimberu Prospect (Rio Tinto JV) and has re-started exploration drilling at Mount Hope targeting extensions to the Mineral Resource Estimate (**MRE**).

The Greater Duchess MRE remains strongly open at all three deposits discovered in the last two years at Mount Hope, Lady Fanny and Nil Desperandum and will continue to be expanded with ongoing drilling. Particularly at Mount Hope, where the most recent drilling completed at the end of 2023, intersected **87m @ 2.3% Cu, 0.5g/t Au, 71m @ 1.6% Cu, 0.5g/t Au and 55m @ 1.0%Cu, 0.4g/t Au** which remain completely open down plunge, are outside of the existing MRE and not yet incorporated into any mining studies (Figure 11) (see ASX releases dated 17 November 2023 & 2 February 2024).

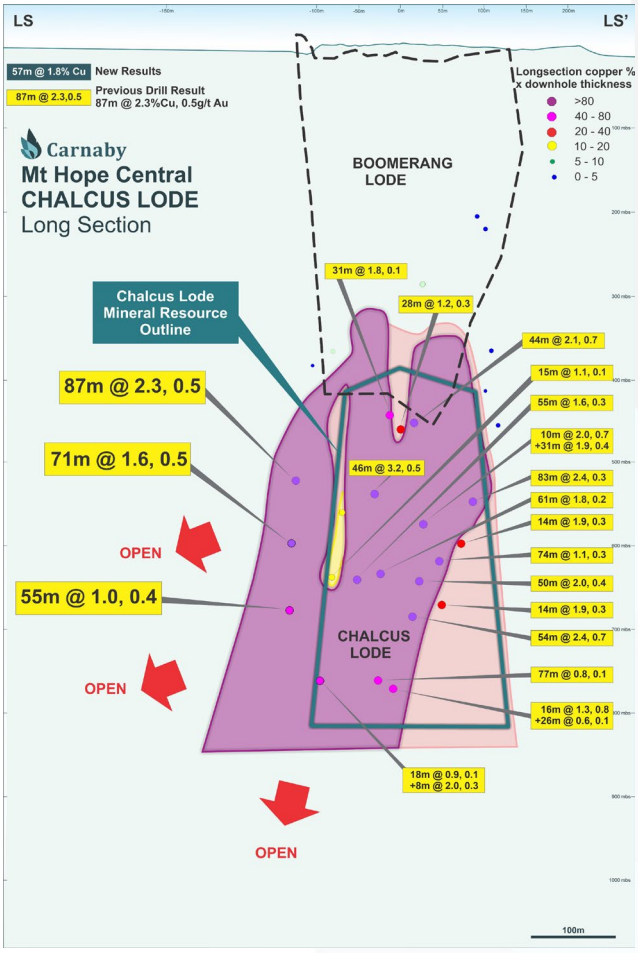

Figure 11: Mount Hope Central Long Section showing recent drill results outside of the MRE and not yet included in any Production Targets.

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Pre-Feasibility Study (PFS)

The company has commenced a PFS with planned completion in H2 FY25. The PFS will focus on a Third Party processing low capex start up, however will in tandem progress facets of stand-alone development requirements. PFS work items include;

- MRE extension drilling which is currently in progress at Mount Hope.
- MRE upgrade drilling is planned to commence shortly, aiming to convert Inferred Mineral Resources to Indicated. Currently only 21% of Production Target tonnages are Inferred Mineral Resource.
- Metallurgy - An extensive PFS level metallurgical study is well underway with Glencore and is expected to be completed this quarter.
- Geotechnical – hole planning for geotechnical drilling of open pit and shallow areas of proposed underground development areas have been designed and drilling will commence shortly.
- Environmental – Collection of baseline environmental data commenced in 2023 and continues to be collected, with installation of water monitoring bores having already been conducted at Mount Hope and Lady Fanny.
- Permitting – preparation of Mining Lease applications has commenced for areas not covered by existing Mining Leases.
- PFS for mining and civil engineering studies will be tendered soon.

Funding

The company believes it has a clear pathway to a low capex start-up in which pre-production Capex requirements are forecast to be in the order of A$35M. A requirement for cash backed environmental bonds in the order of A$12M are also estimated.

Given the modest pre-production funding requirement compared to the high discounted value of the project (NPV7 A$294M), it is anticipated that a significant portion of debt financing will be achievable assuming commodity pricing remains strong.

Carnaby also considers the significant potential for state or federal government infrastructure assistance as it believes the development of the Greater Duchess Project is critical for the NW mineral province in Queensland to ensure copper mineral processing remains a strong part of the minerals industry in the state and the Mount Isa region.

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Forward Plan and Timeline

The company's current forecast forward plan is presented below in Figure 12 below.

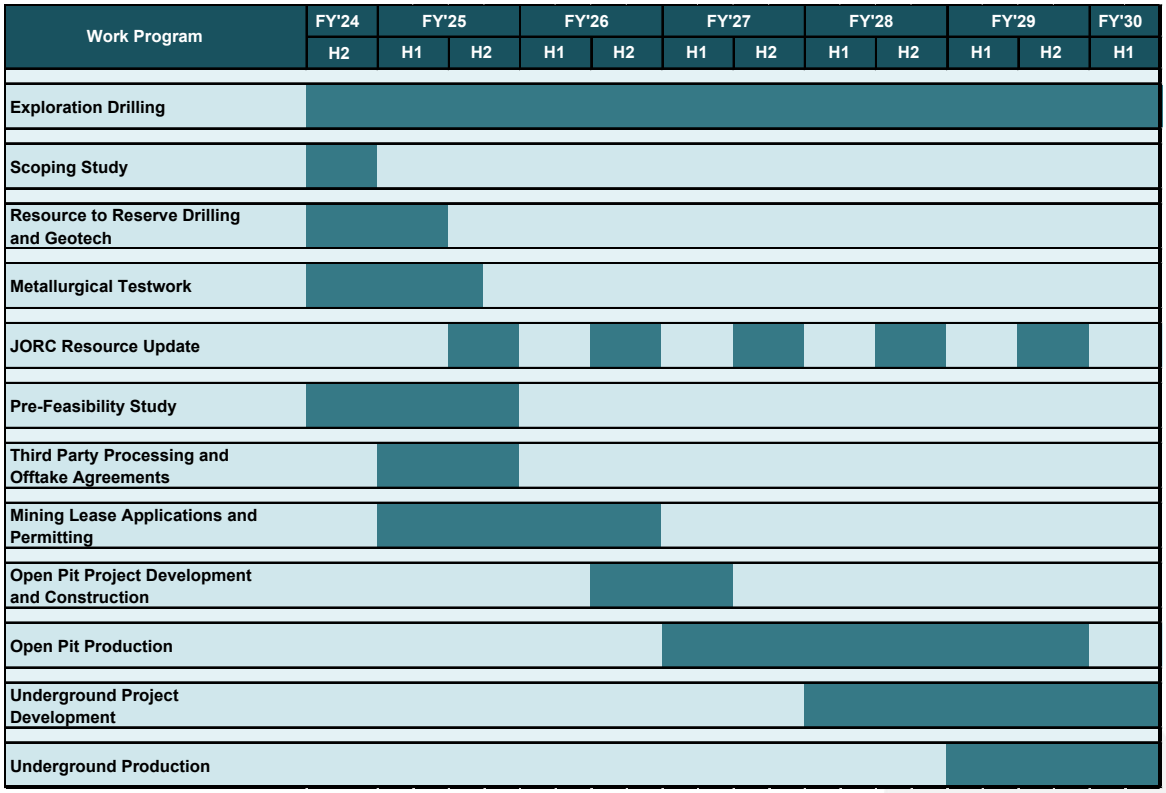

Figure 12: Project Timeline

This announcement has been authorised for release by the Board of Directors.

Further information regarding the Company can be found on the Company's website:

www.carnabyresources.com.au

For additional information please contact:
Robert Watkins, Managing Director
+61 8 6500 3236

Competent Person Statement

The information in this document that relates to exploration results of the Scoping Study is based upon information compiled by Mr Robert Watkins. Mr Watkins is a Director and shareholder of the Company and a Member of the AUSIMM. Mr Watkins consents to the inclusion in the report of the matters based upon the information in the form and context in which it appears. Mr Watkins has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which is undertaken to qualify as a Competent Person as defined in the December 2012 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" (JORC Code).

The Information in this report that relates to Mineral Resources is based on information compiled by Mr Paul Payne, a Competent Person who is a Fellow of the Australasian Institute of Mining and Metallurgy. Mr Payne is a full-time employee of Payne Geological Services (**PayneGeo**) and is a director and shareholder of Carnaby Resources Limited. Mr Payne has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration

Results, Mineral Resources and Ore Reserves". Mr Payne consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Disclaimer

References may have been made in this announcement to certain ASX announcements, including references regarding exploration results, mineral resources and ore reserves. For full details, refer to said announcement on said date. The Company is not aware of any new information or data that materially affects this information. Other than as specified in this announcement and the mentioned announcements, the Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and, in the case of estimates of Mineral Resources, Exploration Target(s) or Ore Reserves that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

Forward Looking Statements

Some statements in this document regarding estimates or future events are forward looking statements. They include indications of, and guidance on, future earnings, cash flow, costs and financial performance. Forward looking statements include, but are not limited to, statements preceded by words such as "planned"," expected"," projected"," estimated"," may"," scheduled"," intends"," anticipates"," believes"," potential"," could"," nominal"," and similar expressions. Forward looking statements, opinions and estimates included in this document are based on assumptions and contingencies which are subject to change without notice, as are statements about market and industry trends, which are based on interpretations of current market conditions. Forward looking statements are provided as a general guide only and should not be relied on as a guarantee of future performance. Forward looking statements may be affected by a range of variables that could cause actual results to differ from estimated results, and may cause the Company's actual performance and financial results in future periods to materially differ from any projections of future performance or results expressed or implied by such forward looking statements.

These risks and uncertainties include but are not limited to liabilities inherent in mine development and production, geological, mining and processing technical problems, the inability to obtain any additional mine licenses, permits and other regulatory approvals required in connection with mining and third party processing operations, competition for among other things, capital, acquisition of reserves, undeveloped lands and skilled personnel, incorrect assessments of the value of acquisitions, changes in commodity prices and exchange rate, currency and interest fluctuations, various events which could disrupt operations and/or the transportation of mineral products, including labour stoppages and severe weather conditions, the demand for and availability of transportation services, the ability to secure adequate financing and management's ability to anticipate and manage the foregoing factors and risks. There can be no assurance that forward looking statements will prove to be correct. The Board has no intention to update or revise forward-looking statements, or to publish prospective financial information in the future, regardless of whether new information, future events or any other factors affect the information contained in this Presentation, except where required by law or the ASX listing rules.

The Company has concluded it has a reasonable basis for providing the forward-looking statements included in this document, including with respect to any production targets and financial estimates, based on the information contained in this document.

This document does not constitute investment advice and has been prepared without considering the recipients investment objectives, financial circumstances or particular needs and the opinions and recommendations in this document are not intended to represent recommendations of particular investments to particular persons. Recipients should seek professional advice when deciding if an investment is appropriate. All securities transactions involve risks, which include (among others) the risk of adverse or unanticipated market, financial or political developments. To the fullest extent of the law, the Company, its officers, employees, agents and advisors do not make any representation or warranty, express or implied, as to the currency, accuracy, reliability or completeness of any information, statements, opinion, estimates, forecasts or other representations contained in this document No responsibility for any errors or omissions from the document arising out of negligence or otherwise is accepted.

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Recently released ASX Material References that may relate to this announcement include:

Mount Hope Sub-Blocks and Tick Hill Transactions Complete, 21 May 2024

Queensland Resources Minister Visits Greater Duchess, 13 May 2024

Exploration Update - Drilling Recommences, 26 April 2024

Mount Hope Development And Exploration Footprint Expands, 2 April 2024

High Grade Discovery 4m @ 7.0% Cu - Exploration Update, 2 February 2024

Mount Hope Results 38m @ 3.0% Cu, 5 December 2023

Greater Duchess Project Scoping Study Update, 4 December 2023

Greater Duchess Chalcus Lode Extension 87m @ 2.3% Cu, 17 November 2023

Greater Duchess Maiden Mineral Resource, 27 October 2023

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Appendix 1: Greater Duchess Project Concept Study

Scoping Level Engineering Study
Carnaby Resources Limited
May 2024

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Document issue approval			
Title	Appendix 1: Greater Duchess Project Concept Study		
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Status	Final	**Project/document no.**	2863CARN
Date	May 2024	**Revision no.**	01

Approvals				
	Name	**Position**	**Signature**	**Date**
Prepared by	Chris Campbell	Principal Advisor		29/05/2024
Reviewed by	Andrew Knuckey	General Manager		29/05/2024
Approved by	Andrew Knuckey	General Manager		29/05/2024

Distributions				
Organisation	**Attention**	**Hard copies**	**Electric copies**	**Actioned**
Carnaby Resources	Rob Watkins	0	1	CC

To be initialled and dated by the person who actions the issue of the documents.

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Any operating or capital cost estimation is current as at the date of estimation only.

The estimation assessed herein may change significantly and unexpectedly over a relatively short period (including as a result of general market movements and factors specific to the particular mine, project or deposit).

We do not accept responsibility or liability for losses arising from such subsequent changes in cost.

Without limiting the generality of the above comment, we do not assume responsibility or accept liability where the costing is relied upon after the expiration of 60 days from the date of the estimation or such earlier date if you become aware of any factors that affect the estimation.

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1. Executive Summary

1.1 Overview

1.1.1 Introduction

Carnaby Resources Limited (Carnaby) is developing the Greater Duchess copper project near Mount Isa, Queensland (the Project). The Project currently consists of five mineral deposits named Mount Hope, Nil Desperandum, Lady Fanny, Mount Birnie and Duchess (collectively the Deposits). Carnaby published a maiden interim Mineral Resource Estimate (MRE) for the Project in October 2023 of 21.8Mt at 1.3% copper (Cu) and 0.2g/t of gold (Au) for contained metal of 283.1kt Cu and 148.2koz Au, or on a Cu equivalent basis 1.4% CuEq for contained CuEq of 315kt[1] (Project MRE).

Xenith Consulting Pty Ltd (Xenith) has been commissioned by Carnaby to provide concept level mining and civil engineering and high-level conceptual development studies, on three of the Deposits (Concept Study), namely Mount Hope, Nil Desperandum and Lady Fanny.

The Concept Study is intended be incorporated with separate geology, processing and compliance studies undertaken by Carnaby as part of Carnaby's "scoping study" evaluation (as defined by the JORC Code[2]) of the initial economic viability of the Project to demonstrate at the time of reporting that progress to a Pre-Feasibility Study can be reasonably justified (Carnaby Scoping Study).

1.1.2 Concept Study scope and reliance

The Concept Study includes the following "concept level" (as defined by the AusIMM Cost Estimation Handbook[3]) technical activities to support the Carnaby Scoping Study:

- Civil Engineering general site layout, and alternative haulage infrastructure options, investigation assessment and design;
- Mine Engineering design and scheduling including for open cut and underground ore sources;
- Cash flow modelling in respect to the Concept Study elements; and
- Provision of this Concept Study report (Report).

Xenith has relied upon various reports and technical information provided by Carnaby in respect to the Project including:

- The MRE and geological (block) models;
- Opencut Resource Geotechnical information and assumptions, included here for convenience in Section 1.2.1 below;
- Metallurgical information and assumptions, included here for convenience in Section 1.3.2 below;
- Third Party assumed ore processing assumptions; and
- Certain financial model assumptions including macro commodity and foreign exchange prices.

The Concept Study considered two alternative approaches to processing the Project's ore production as follows:

[1] Carnaby Resources Limited, ASX Announcement, Greater Duchess Project Maiden Interim Mineral Resource, 27 October 2023
[2] Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, The JORC Code, Clause 38, 2012
[3] AusIMM and The Minerals Institute, Cost Estimation Handbook, Second Edition, Monograph 27, Table 1.1, 2012

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1. Third Party Processing. Transportation of ROM ore to the processing facility was assessed for both rail and road transportation alternatives.
2. Processing ore at a Carnaby constructed ore processing facility within the Project boundaries to produce a concentrate product for transportation. Transportation of the concentrate was assessed for both rail and road transportation alternatives.

The Concept Study results set out in this Report represent the outcomes of Scenario 1 above, utilising rail haulage capital cost modelling and rail haulage operating cost. Scenario 1 was selected as the preferred base case since it provides for the low capital requirement, allows for associated rail haulage operating cost needs and targets a readily available processing capability. Further detail in respect to Scenario 1 is included at Section 1.3 below.

1.1.3 Cautionary statement

As required by the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, 2012 Edition (the JORC Code)[4], Xenith emphasise the Concept Study referred to in this Report is based on low-level technical and economic assessments, and is insufficient to support estimation of Ore Reserves or to provide assurance of an economic development case at this stage, or to provide certainty that the conclusions of the Concept Study or, to the extent that it relies upon this Concept Study, that the Carnaby Scoping Study will be realised.

1.1.4 Concept Study summary results

Table 1 below provides a summary of the Concept Study's results.

Table 1 – Concept Study results summary

Physicals and Costs	Units	Value
Mining Physicals		
Waste Volume (Opencut)	Mbcm	14.9
Ore Tonnage	Mt	7.471
Grade Copper	%	1.71
Grade Gold	g/t	0.27
Life of Mine	Years	9
Metal Production		
Copper (Payable)	Kt	117
Gold (Payable)	Oz	46,398
Net Cash Flow (undiscounted, post tax)	**$M**	**490.52**
$NPV_{7\%}$ (post tax)	**$M**	**294.08**
IRR (post tax)	**$M**	**105.1**

[4] Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, The JORC Code, Clause 38, 2012

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Physicals and Costs	Units	Value
Payback Period	**Years**	**2.4**

1.1.5 Project Description

As noted in Section 1.1.1 above, the Concept Study is focused on three of the Project's Iron Oxide Copper Gold (IOCG) Deposits, Mount Hope, Nil Desperandum and Lady Fanny included in the Project MRE (the Mineral Assets).

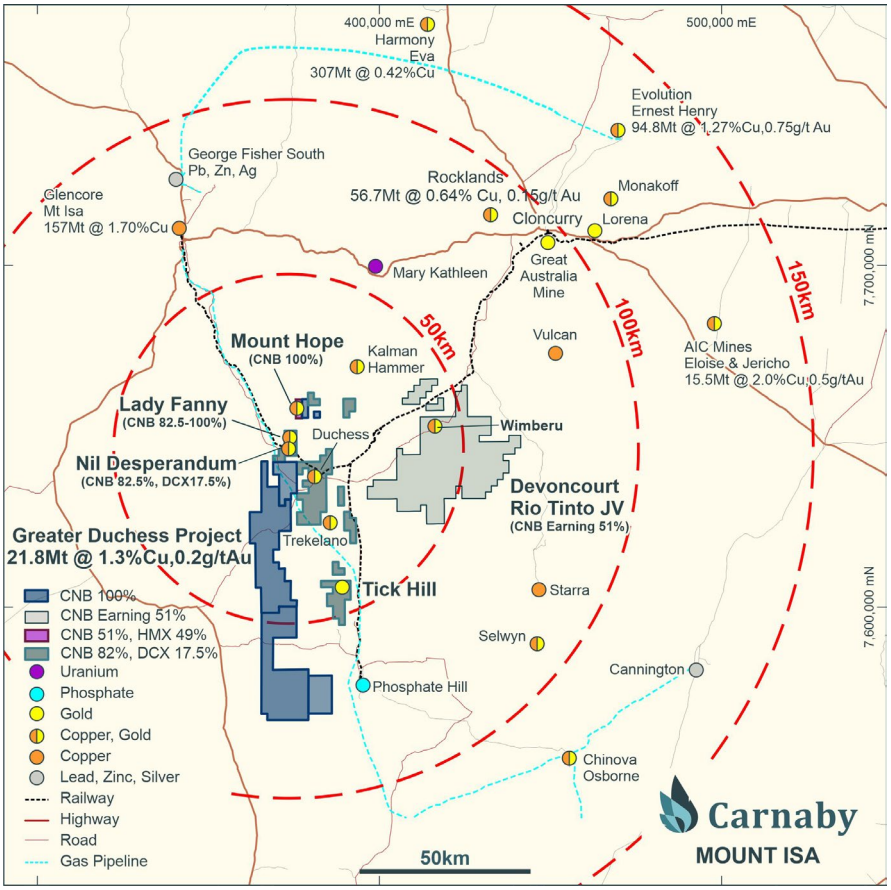
The Project MRE declares the Mineral Assets have maiden interim Mineral Resource Estimates of:

- Mount Hope – 10.3Mt at 1.5% Cu and 0.2g/t Au (contained metal of 156kt Cu and 78.1koz Au), or 1.7% CuEq for 173kt CuEq;
- Nil Desperandum – 4.3Mt at 1.3% Cu and 0.2g/t Au (contained metal of 53.7kt Cu and 33.4koz Au), or 1.4% CuEq for 60.9kt CuEq; and
- Lady Fanny – 3.1Mt at 1.3% Cu and 0.2g/t Au (contained metal of 40.8kt Cu and 23.2koz Au), or 1.5% CuEq for 45.8kt CuEq.

The Mineral Assets are located approximately 70km south of Mount Isa in Western Queensland, Australia, within the Project's tenement holding of 1922km^2 and which includes other IOCG deposits at Mt Birnie and Duchess.

Figure 1 below illustrates the Project and the Mineral Assets location in respect to Mount Isa and other regional projects.

Figure 1 – Project Asset location plan



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Access to the Project is via sealed and unsealed roads from Mount Isa. The project also has nearby rail infrastructure that traverses across the Project's tenement holding.

Excerpts from the Project MRE identifies the following characteristics in relation to each of the Mineral Assets[5].

1.1.5.1 Mount Hope

The Mount Hope deposit is an iron oxide copper gold (IOCG) type deposit. Two distinct deposit areas have been identified at the project – Mount Hope Central and Mount Hope North. Both had minor historic open pit mining in the outcrop positions. Primary mineralisation is characterised by semi-massive and disseminated chalcopyrite-pyrite-pyrrhotite sulphides within multiple sub-parallel lenses largely confined to well defined quartz vein horizons within the regionally extensive biotite schist country rock. The largest of these have strike lengths of 200m to 300m, are 20m to 30m thick and defined over dip lengths exceeding 500m.

Weathering at the deposit is limited to narrow zones of oxide and transitional material restricted within the mineralised zones. While limited in strike length, the weathering extends up to 400m in depth and is characterised by mixed primary and secondary sulphides in the transitional zone. The oxide and transitional mineralisation were defined and interpreted by Carnaby using drill hole logs. These were used to define oxide, transitional and fresh material types in the deposit.

The Mineral Resource Estimate is reported at 0.5% copper equivalent (CuEq) cut-off above 250mRL (220m vertical depth) and 1.0% CuEq below 250mRL to reflect the potential for open pit mining in the upper part of the deposit and the potential for underground mining in the deeper portion.

1.1.5.2 Lady Fanny

The Lady Fanny deposit is an iron oxide copper gold (IOCG) type deposit. Mineralisation is localised in a series of sub-parallel, anastomosing and steeply dipping shear zones and is characterised by stringer and disseminated chalcopyrite-pyrite sulphides. Tabular mineralised zones vary from 2m to 30m in thickness with strike lengths of the individual lodes varying from 200m to 500m.

Two discrete clusters of mineralised zones occur at the project. The main zones are centred around the historic Lady Fanny workings and strike at 340° to 0° and vary from steeply east to steeply west dipping. The Burke and Wills lodes are approximately 400m to the west of the Lady Fanny workings and strike at approximately 020° and dip steeply to the east.

Weathering at the deposit is limited to a zone of partial oxidation typically 5-20m in depth. The Mineral Resource Estimate is reported at a 0.5% CuEq cut-off grade and above 200mRL (220m-260m vertical depth) to reflect the potential for open pit mining in the upper part of the deposit.

1.1.5.3 Nil Desperandum

The Nil Desperandum deposit is an iron oxide copper gold (IOCG) type deposit. Mineralisation is characterised by semi-massive and disseminated chalcopyrite-pyrite-pyrrhotite sulphides within an elongate pipe shaped breccia extending down plunge for at least 1000m. The structure has a known dip length of 250m to 350m, is up to 40m thick and is open at depth. A distinct sulphide breccia zone characterised by semi-massive sulphides and elevated gold grade occurs as an internal shoot in the central area of the deposit which has a down plunge extent of 420m.

Weathering at the deposit is limited to a zone of partial oxidation typically 15-20m in depth. The Mineral Resource Estimate is reported at 0.5% copper equivalent ("CuEq") cut-off above 180mRL (220m vertical

[5] Carnaby Resources Limited, ASX Announcement, Greater Duchess Project Maiden Interim Mineral Resource, 27 October 2023

depth) and 1.0% CuEq below 180mRL to reflect the potential for open pit mining in the upper part of the deposit and the potential for underground mining in the deeper portion.

1.2 Mining

Xenith highlight the cautionary statement made at section 1.1.3 above and emphasise that no Ore Reserves, as defined by the JORC Code, have been estimated or are implied as part of the Concept Study or by this Report. The mining studies undertaken as part of the Scoping Study have been underpinned by the Project MRE, with any estimated production tonnages referred to as "production target" for the purpose of this Report.

1.2.1 JORC Resource distribution

As noted at Section 1.1.2 above, Xenith has relied upon various reports and technical information provided by Carnaby. This includes any geological modelling in respect to the Project, presented here in summary form.

The Concept Study forecasts a potential 9-year life of the Project. Over this period, 79% of the total production target tonnes forecast to be mined are of the higher confidence Indicated Mineral Resource category. The remaining 21% of tonnes forecast to be mined are of the Inferred Mineral Resource category. During the first 3 years of planned mining, which includes the capital payback period, the proportion of Indicated Mineral Resource is a slightly higher 80%. The inclusion of Inferred Mineral Resource in the production target reflects the natural sequence of mining. In Xenith's opinion the viability of the development scenario envisaged in the Scoping Study does not rely on the inclusion of Inferred Mineral Resources.

1.2.2 Geotechnical

As noted at Section 1.1.2 above, Xenith has relied upon various reports and technical information provided by Carnaby. This includes any geotechnical parameters in respect to the Project, presented here in summary form. Accordingly, Xenith emphasise that the geotechnical information presented has not been compiled, or managed, by Xenith and are included in this Report for convenience. Xenith has not reviewed nor provided input into any geotechnical study and does not make any representation as to their findings.

Geotechnical conditions for the Mineral Assets were assessed by reviewing photographs of selected drill core for each Asset. Geotechnical characteristics were assessed and classified using CSIR rock mass classification developed by Bieniawski and others[6]. This data has been converted into Rock Mass Ratings (RMR). RMR are shown in Table 2 below.

Table 2 – Rock Mass Ratings and Classes

Mineral Asset	Domain	RMR (Length Weighted Average)	Rock Mass Class
Mount Hope	All	71.9	Good
	Ore	66.5	Good
	Country Rock - Fresh	77.2	Good
	Moderately – Highly Weathered	49.8	Fair
	Slightly Weathered	68.4	Good
Lady Fanny	All	82.6	Very Good

[6] Bieniawski, Z.T 1989 Engineering rock mass classifications. New York Wiley

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Mineral Asset	Domain	RMR (Length Weighted Average)	Rock Mass Class
Nil Desperandum	All	80.9	Very Good

Opencut pit walls will be formed within very competent country rock. Underground country rock will have high to very high strength with low fracture frequency providing for stable hanging and footwall conditions.

1.2.3 Opencut

Mine Engineering technical modelling for the developed opencut mine designs and associated Mineral Asset production target utilised Deswik Mine Planning software and adopts Deswik Pseudoflow (Pseudoflow) pit optimisation techniques. Pseudoflow pit optimisation incorporates various mine lease extents, geotechnical, ore processing, mine design, cost and revenue parameters to establish optimised opencut pit extents.

Five opencut deposits (Assets) were identified in the Mineral Assets as an output of the Pseudoflow optimisation process as follows:

- Mount Hope – two opencut deposits (Mount Hope Central and Mount Hope North);
- Lady Fanny – two opencut deposits (Lady Fanny East and Burke & Wills); and
- Nil Desperandum – a single opencut deposit.

The mine designs are based on a small-scale mining approach, commensurate with the production target generated from the Pseudoflow modelling and the Carnaby nominated Third Party ore processing capacity. The mobile mining fleet was nominated to be sized at 120 tonne excavator and 40 tonne articulated truck scale. Ramp access, bench design and final pit floor extents befit this small-scale fleet. Final mine design production targets were optimised for subsequent mine schedule modelling.

Relevant opencut pit optimisation and mine design parameters are as shown in **Table 3** below.

Table 3 – Pit optimisation and mine design parameters

Parameter [NB]	Deposit	Value	Comment
IRA≤10m	All	40°	Client source
IRA >10m≤40m	All	45°	Client source
IRA >40m≤400m	All	50°	Client source
Wall Angle≤10m	All	35°	Xenith source
Wall Angle >10m≤40m	All	40°	Xenith source
Wall Angle >40m≤400m	All	45°	Xenith source
Bench Height ≤10m	All	10m	Xenith source
Bench Height >10m≤40m	All	15m	Xenith source
Bench Height >40m≤400m	All	20m	Xenith source
Berm ≤10m	All	5m	Xenith source
Berm >10m≤40m	All	6m	Xenith source

Berm >40m≤400m	All	7.5m	Xenith source
Face Angle ≤10m	All	55°	Client source
Face Angle >10m≤40m	All	60°	Client source
Face Angle >40m≤400m	All	65°	Client source

NB: IRA refers to Inter Ramp Angle. Wall angle includes accommodating approximate locations of ramp access.

1.2.3.1 Mining loss and dilution

Mining loss and dilution parameters have been applied to modelling as per **Table 4** below.

Table 4 – Loss and dilution

Dilution or Loss	Mineral Asset	Value
Dilution	Mount Hope	5.0%
	Lady Fanny	10.0%
	Nil Desperandum	5.0%
Loss	Mount Hope	5.0%
	Lady Fanny	5.0%
	Nil Desperandum	5.0%

1.2.3.2 Cut off grade

Initial Pseudoflow cut-off grades were assumed for the opencut to be aligned to the MRE at 0.5% CuEq. Given the nature of the Mineral Assets (IOCG), which generates two metal relevant revenues, along with a need to consider higher cost Third Party processing a review of the Pseudoflow results referencing Net Smelter Return (NSR) values instead of a CuEq was undertaken.

This NSR value review identified small quantities of ore within the Mineral Assets that should be reclassified as waste given an increase in cut-off value (grade). Opencut production target that was subsequently scheduled incorporated this reclassified material as waste.

Cut-off grade for the various opencut Assets is identified in **Table 5** below:

Table 5 – Opencut cut-off grade

Asset	Cu Eq Value (%)	Comment
All	0.50	Aligned to MRE. Initial parameter.
Mount Hope North	0.65	Reflects higher cost Third Party processing
Mount Hope Central	0.65	Reflects higher cost Third Party processing
Lady Fanny East	0.71	Reflects higher cost Third Party processing

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Burke & Wills	0.72	Reflects higher cost Third Party processing
Nil Desperandum	0.63	Reflects higher cost Third Party processing

1.2.3.3 Opencut production target

Opencut production target for each open cut within the Mineral Assets is summarised in **Table 6** below.

Table 6 – Opencut production target

Asset	CoG (CuEq)	Ore Tonnes (Mt)	Ore Cu Pct	Ore Au Pct	Ore CuEq Pct	Waste Tonnes (Mt)	Total Tonnes (Mt)	Strip Ratio (t/t)
Mount Hope North	0.65	0.31	1.30	0.16	1.40	4.93	5.23	15.9
Mount Hope Central	0.65	1.39	1.59	0.16	1.70	17.53	18.88	12.6
Mount Hope Total	**0.65**	**1.69**	**1.54**	**0.16**	**1.64**	**22.46**	**24.12**	**13.3**
Lady Fanny East	0.71	1.15	1.32	0.26	1.46	8.43	9.53	7.3
Burke & Wills	0.72	0.24	2.35	0.27	2.50	5.18	5.40	21.6
Lady Fanny Total	**0.71**	**1.39**	**1.50**	**0.26**	**1.64**	**13.61**	**14.94**	**9.8**
Nil Desperandum Total	**0.63**	**0.31**	**1.00**	**0.19**	**1.12**	**5.08**	**5.38**	**16.4**
Total Opencut		**3.39**	**1.47**	**0.20**	**1.59**	**41.15**	**44.44**	**12.1**

1.2.4 Underground

The Project MRE and geological models identified two deposits within the Mineral Assets that would likely be amenable to underground mining operations. Mount Hope and Nil Desperandum were identified as having mineralisation at depth that may be suited to an underground mining method of exploitation. Within these areas, Mt Hope had two regions of mineralisation that were amenable to exploitation, whilst Nil Desperandum had a single region (Assets).

Limited underground geotechnical information was available to inform underground operations, accordingly a qualitative methodology for selecting underground mining methods was adopted as referred to below.

The Nicholas/UBC modified methodology[7] indicated that Sublevel Stoping is the most suitable method for the Mt Hope Assets as they have suitable geometry, especially ore thickness and plunge. The Nil Desperandum Asset was modelled as a Sublevel Stoping operation due to a higher production ratio at lower costs.

[7] UBC Mining Method selection, Miller-Tait, Pakalnis, Poulin, 1995

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Both deposits have been modelled as Longhole Open Stoping with Pastefill support as the preferred variation of Sublevel Stoping for this study as, at this stage, there is a lack of geotechnical information to provide guidance on pillar sizes and overall mine stability.

Mine Engineering technical activity for the developed underground mine design and associated Asset production target used Deswik Mine Planning software adopting Deswik Stope Optimiser (SO) pit optimisation techniques. SO pit optimisation incorporated various ore processing, stope design, cost and revenue parameters to establish optimised underground stope extents. Using the Carnaby supplied geological block models, stope shapes that maximise recovery and value of the orebody based upon the selected mining method and the SO parameters have been determined.

Further underground designs, incorporating decline and ore drive access infrastructure along with refinement of stope designs, were completed using Deswik.CAD underground design software. Following the completion of this stage of underground design and incorporation of modifying factors, Deswik Pseudoflow was applied to the refined stope designs to identify ore stopes that are of negative economic value.

This final stage of underground mine design identified non profitable stope ore, primarily due to the amount of development required to access stopes. The final mine design production target was optimised for subsequent mine schedule modelling. Non-profitable stopes are excluded from the scheduling activities.

Relevant underground design parameters are as shown in **Table 7** below.

Table 7 – Underground mine design parameters

Parameter	Deposit	Value	Comments
Crown pillar	All	80m	Xenith source
Ramp standoff from ore	All	30 – 50 m	Xenith source
Stope height	Mount Hope	30m	Xenith stope size assessment
Stope height	Nil Desperandum	25m	Xenith stope size assessment
Stope length	Mount Hope	15m	Xenith stope size assessment
Stope length	Nil Desperandum	15m	Xenith stope size assessment
Rib Pillar	All	-	No rib pillars have been defined
Sill Pillar	All	-	No sill pillars have been defined
Pillar between drives	All	10m	
Development			
Decline	All	5.0 MW X 6.0 MH	Arch profile. Drill & blast
Level Access	All	5.0 MW X 5.0 MH	Arch profile. Drill & blast
Ore Drive	All	5.0 MW X 5.0 MH	Arch profile. Drill & blast
Return Air Drive	All	5.0 MW X 5.5 MH	Arch profile. Drill & blast
Stockpile	All	5.0 MW X 5.0 MH	Arch profile. Drill & blast
Escapeway Cuddy	All	5.0 MW X 5.0 MH	Arch profile. Drill & blast

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Sump	All	5.0 MW X 5.0 MH	Arch profile. Drill & blast
Return Air Rise between levels	All	4.0 MW X 4.0 MH	Square profile. Drill & blast
Return Air Rise to surface	All	4.0 MD	Circle. Raise Bore
Escapeway Rise between levels	All	1.0 MD	Circle. Raise Bore
Escapeway Rise to surface	All	1.8 MD	Circle. Raise Bore
Decline:			
Shape	All	Figure 8	this shape allows for better operational safety
Turn radius	All	25m	Xenith source
Gradient	All	1/7	Xenith source
Sump spacing	All	200m	Xenith source
Stockpile spacing	All	200m	Xenith source
Pit portal location	All	third bench	from pit bottom or where most suitable

Cut off grade

As per the opencut Mineral Assets, NSR values were used to run SO. Pseudoflow also used NSR to refine design stopes after incorporating infrastructure design and modifying factors.

Cutoff grades for the various underground assets are identified in **Table 8** below:

Table 8 – Underground cut-off grade

Deposit	Cu Eq Value (%)	Comment
Mount Hope North	1.41	Reflects higher cost Third Party processing
Mount Hope Central	1.41	Reflects higher cost Third Party processing
Nil Desperandum	1.53	Reflects higher cost Third Party processing

1.2.4.1 Underground production target

The underground production target for each Asset within the Mineral Assets is shown in **Table 9** below:

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Table 9 – Underground production target

Deposit	CoG (CuEq)	Ore Tonnes (Mt)	Ore Cu Pct	Ore Au Pct	Ore CuEq Pct	Development Metres	
						Horizontal	Vertical
Mount Hope North [NB]	1.41	0	0	0	0	0	0
Mount Hope Central	1.41	3.29	1.74	0.29	1.94	11,850	1,090
Mount Hope Total	**1.41**	**3.29**	**1.74**	**0.29**	**1.95**	**11,850**	**1,090**
Nil Desperandum	1.53	0.79	2.60	0.42	2.86	6,709	753
Total Underground	**1.43**	**4.08**	**1.91**	**0.32**	**2.12**	**18,650**	**1,843**

[NB:] Mount Hope North production target is zero reflecting results of Pseudoflow modelling post development requirements design.

1.2.5 Production Schedule

Production scheduling for the Assets has been undertaken using MicroMine Spry (Opencut) and Deswik Blend/CPLex (Underground). The production schedule has been developed based on the following approach:

- Targeting 2Mtpa of ore production where feasible without destabilising future annual production profiles. 2Mtpa maximum capacity determined by Third Party processing capacity availability.
- Maximising opencut ore production in the initial stages through development of a smaller pit within the Mount Hope Central deposit. Then progressing the large Mount Hope deposit.
- Opencut production is limited by the number of mobile equipment fleet (four) and the assumed production rate of each fleet. It is also limited by the 'bench sink rate' assumed for the opencut activities.
- Development tasks, stoping tasks, and derived tasks grouped together to form the logical mining sequence. Manual dependencies were added to restrict development until certain stopes were filled or prevent adjacent stopes in different mining areas being open at the same time.
- Before underground scheduling, the Pseudoflow algorithm is applied to underground tasks to evaluate the economic viability of the proposed design and to define priority areas to guide the production schedule. Pseudoflow identified some stopes as non-economical and therefore they are not scheduled.
- The general approach to underground production scheduling adopts a longitudinal bottom-up retreating mining sequence as allowing a significant reduction in development requirements. Each sublevel mining will retreat from the far end of the ore drive to the level access intersection and must be paste filled before the next available stope can be released for mining.
- Development and stope production rates have been determined from Xenith experience and applied to scheduling activities to generate the production profile.

The combined opencut and underground production schedule, required for the financial model, has been based on the following approach:

- Opencut Assets which lead to the development of underground Assets are to finalise operations prior to underground development commencing. This is due to the underground deposit design having portals placed within the opencut highwall.

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- Opencut Assets are scheduled in a sequence that reflects the high-level profitability of each deposit. This high-level profitability was determined at the mine design stage using production target generated from each Asset and pit optimisation process parameters.

The combined schedule highlights the following:

- A 9-year operational life for the Assets
- An average of 823kt of ore production per annum, peaking at 1,389kt in year 2028 (refer **Figure 2** below)
- An average of 28,400 pounds of copper in copper concentrate per annum, peaking at 44,500 pounds in year 2029 (refer **Figure 3** below)
- An average of 5,114 ounces of gold in copper concentrate per annum, peaking at 6,380 ounces in year 2028 (refer **Figure 4** below)
- Ore production from the smaller Mount Hope Central Asset provides a rapid amount of ore to offset initial expense of development
- Opencut production target is exhausted in the first three years of operation. Life of the Assets is extended through continued operations in the underground Assets with Mount Hope Central providing longevity.

Figure 2 – Ore production profile

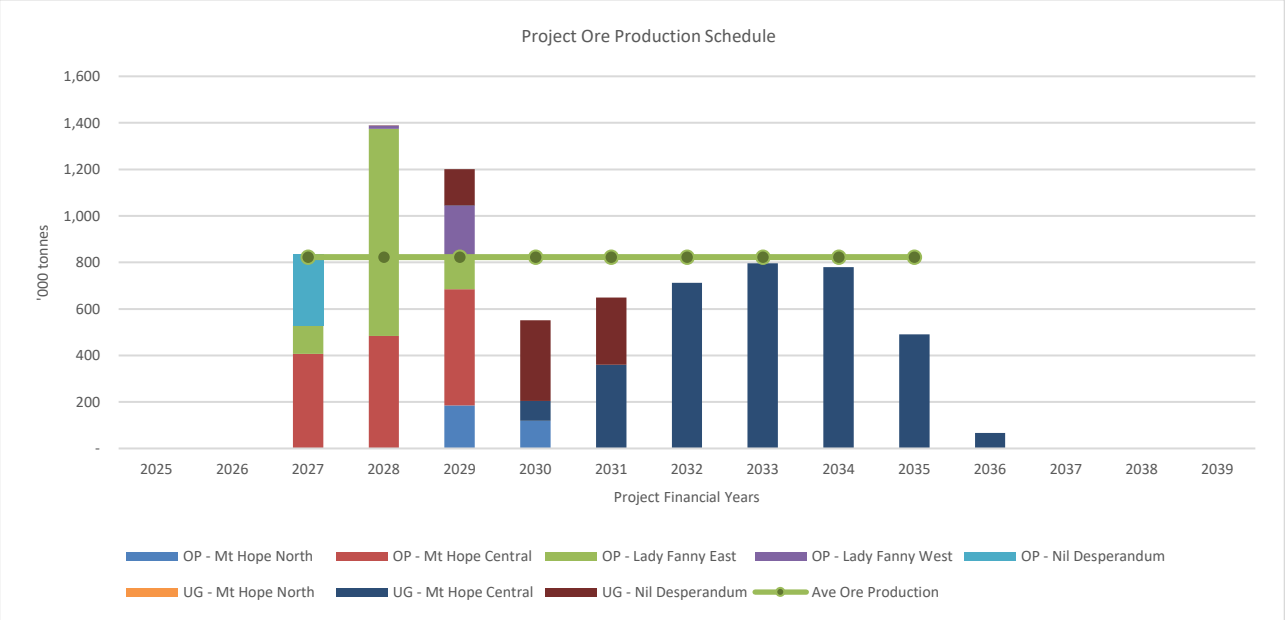

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Figure 3 – Cu in Cu Concentrate production profile

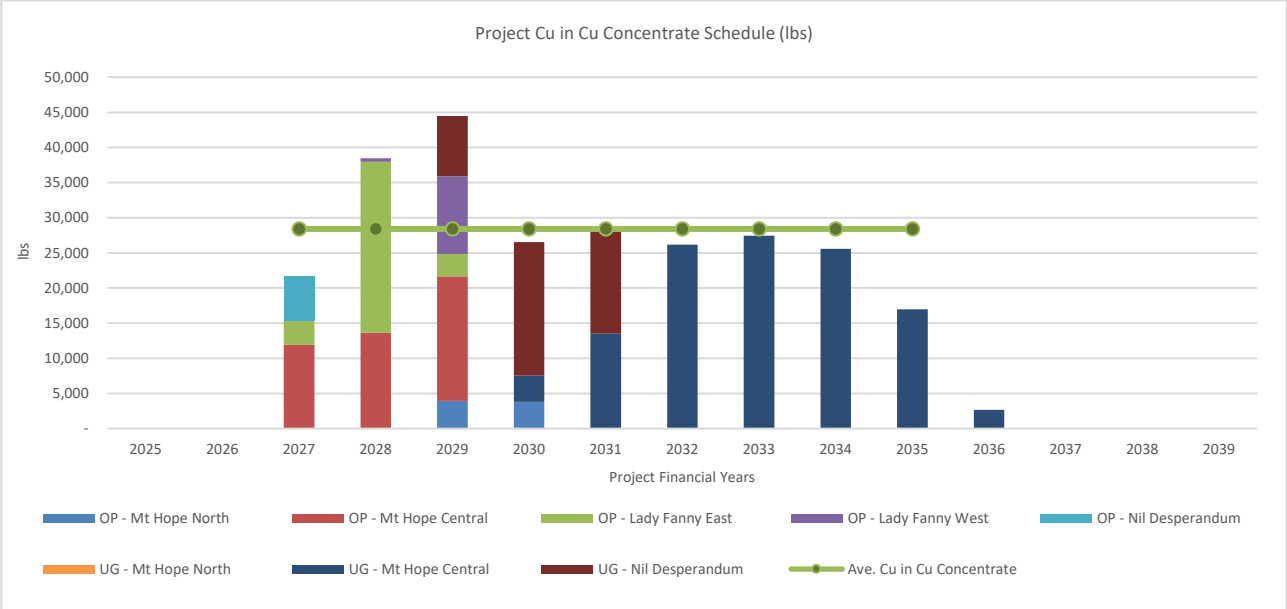
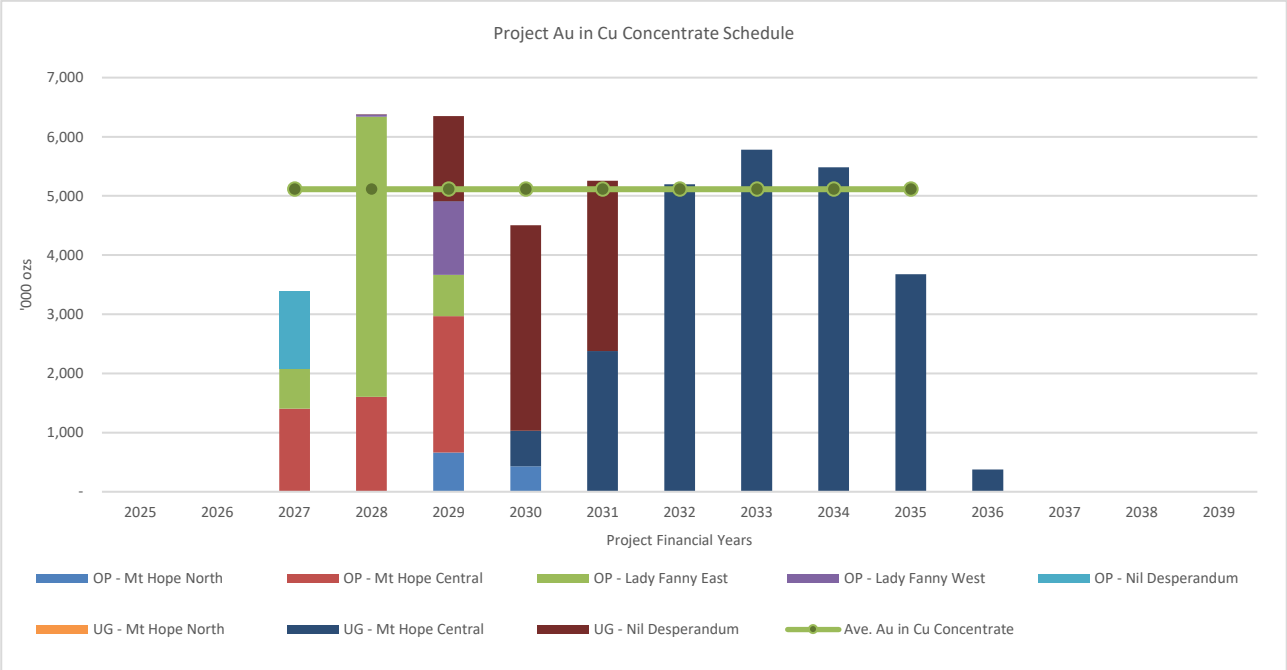


Figure 4 – Au in Cu concentrate profile



1.3 Processing

1.3.1 Processing approach

As set out at Section 1.1.2, Scenario 1 considered processing the Project Ore at facilities operated by a Third Party.

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Third Party processing ore could be transported, either by road transport (trucking) or through rail infrastructure, that is in close proximity to the Mineral Assets, that currently services a nearby Phosphate Operation (Phosphate Hill owned by Incitec Pivot Ltd). Rail would require upgrading a rail siding and road infrastructure.

Road transportation from a constructed ore processing facility would require road infrastructure upgrades.

1.3.2 Metallurgy

As noted at Section 1.1.2 above, Xenith has relied upon various reports and technical information provided by Carnaby. This includes any metallurgical parameters in respect to the Project, presented here in summary form. Accordingly, Xenith emphasises that the metallurgical information presented has not been compiled, or managed, by Xenith and is included in this Report for convenience. Xenith has not reviewed nor provided input into any metallurgical study and does not make any representation as to their findings.

Australian Minmet Metallurgical Laboratories (AMML) was contracted by Carnaby to complete the first pass flotation study on the Mount Hope ores. Three composites were selected from diamond core. Samples provided represented chalcopyrite dominant transitional and fresh along with chalcocite dominant transitional.

Chalcopyrite fresh rock ore generates a recleaner concentrate of 25.0% Copper at 98.7% recovery. Chalcopyrite transitional ore generates a recleaner concentrate of 27.8% Copper at 98.7% recovery. Chalcocite transitional ore generates a recleaner concentrate at 30.2% Copper at 91.6% recovery.

Metal recovery from different material types (ie: oxidised, transitional and fresh) for each of the Assets were provided by Carnaby (refer **Table 10** and **Table 11** below)

Table 10 – Gold recovery

Parameter	Deposit	Value (%)	Comment
Au Recoveries			
Oxidised	Lady Fanny	60.00	Client source
Transitional	Lady Fanny	70.00	Client source
Fresh	Lady Fanny	70.00	Client source
Oxidised	Mount Hope	60.00	Client source
Transitional	Mount Hope	85.00	Client source
Fresh	Mount Hope	85.00	Client source
Oxidised	Nil Desperandum	60.00	Client source
Transitional	Nil Desperandum	80.00	Client source
Fresh	Nil Desperandum	80.00	Client source

Table 11 – Copper recoveries

Parameter	Deposit	Value (%)	Comment
Cu Recoveries			
Oxidised	Lady Fanny	80.00	Client source

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Parameter	Deposit	Value (%)	Comment
Transitional	Lady Fanny	90.00	Client source
Fresh	Lady Fanny	97.50	Client source
Oxidised	Mount Hope	80.00	Client source
Transitional	Mount Hope	90.00	Client source
Fresh	Mount Hope	96.00	Client source
Oxidised	Nil Desperandum	80.00	Client source
Transitional	Nil Desperandum	90.00	Client source
Fresh	Nil Desperandum	97.50	Client source

1.4 Infrastructure

Infrastructure requirements consist of two major groups, surface and underground. Surface infrastructure requirements depend on the ore processing scenario considered.

Infrastructure costs have been established from various sources. Surface infrastructure has been predominantly sourced from a third-party civil engineering consultant. Fraser Lever Consulting Engineers (Fraser Lever) provided technical advice on the likely locations and requirements for upgrading road and rail support infrastructure. Advice was also provided on likely requirements for administration, service and support facilities. Conceptual level costing was provided by Fraser Lever. Underground infrastructure has been sourced from the Xenith internal cost database.

1.4.1 Rail & Road Infrastructure

The Phosphate Hill branch is a 66-kilometre length of line from the Flynn junction. Flynn junction is 98-kilometre length of line from Mount Isa (refer **Figure 5**).

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Figure 5 – Phosphate Hill to Mount Isa Rail Link

Rail capacity exists for the Mineral Assets ore production levels identified in the Concept Study. A rail siding, historically used for cattle transportation, presents an opportunity for loading ore on to the rail system within close proximity to the Assets. The siding has an already established hard stand.

Existing roads in and around the Mineral Assets are unsealed. The shortest route to Mount Isa from the Mineral Assets is via the Mount Isa to Duchess Road (unsealed) at approximately 79 kilometres to the Lady Fanny deposit. Significant road upgrades would be required before road transport ore haulage could be considered.

1.4.2 Underground Infrastructure

Underground infrastructure requirements are for ventilation, portal development, paste plant and services (electrical, water and air supply).

1.4.3 Other Infrastructure

Other infrastructure required for the project consists of administration and maintenance facilities, personnel accommodation and, should a processing facility be constructed, a gas fired electrical power plant.

Figure 6 below outlines a conceptual general arrangement plan for infrastructure.

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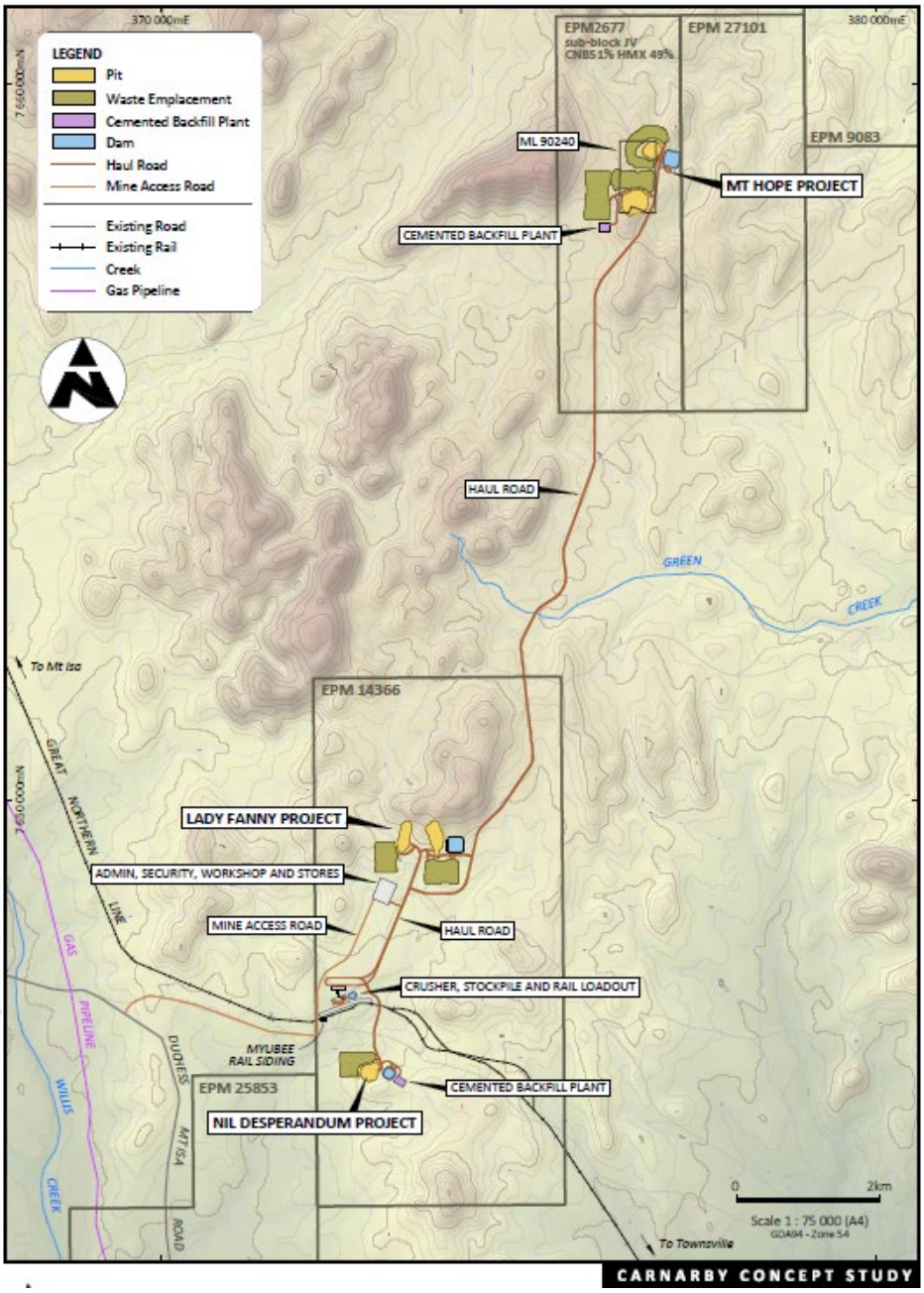
Figure 6 – Surface Infrastructure Conceptual General Arrangement



1.5 Economics

1.5.1 Revenue

Revenue assumptions were provided by Carnaby. The revenue assumptions used in the Concept Study are as shown in **Table 12** below**.**

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Table 12 – Revenue Assumptions

Parameter	Value		Comments
Study Step	Optimisation and Design	Financial Model	
USD:AUD	0.63	0.67	Client source
USD/lb	3.43	4.56	Client source
AUD/lb	5.44	6.80	Client source
USD/tonne	7,560	10,050	Client source
AUD/tonne	12,000	15,000	Client source
USD/oz	1,858.50	2,345.00	Client source
AUD/oz	2,950.00	3,500.00	Client source

1.5.2 OPEX

Operating costs have been established from various industry sources. Operating costs are as shown in **Table 13** and **Table 14** below.

Table 13 – Opencut Operating Cost Assumptions

Item	Value (AUD)		Unit	Comments
Study Step	Optimisation	Financial Model		
Clear and Grub	0.06	0.06	$/ROM bcm	Xenith source
Ancillary	0.00	1.00	$/ROM bcm	Xenith source
Geology and Grade Control	2.00	2.00	$/ROM bcm	Xenith source
Drill and Blast (Waste)	2.16 to 2.65	2.65	$/bcm	Xenith source
Drill and Blast (Ore)[NB1]	2.53 to 3.02	3.02	$/ROM bcm	Xenith source
Load and Haul (Waste)	8.00	10.00	$/bcm	Client/Xenith source
Load and Haul (Ore)	8.00	10.00	$/ROM bcm	Client/Xenith source
Haulage Depth Factor	0.01	N/A	$/bcm/m depth	Xenith source
ROM Management	0.39	0.39	$/ROM bcm	Xenith source
Third Party Processing	30.00	30.00	$/ROM t	Client source
Haulage (Rail)				
All Assets	12.00	12.00	ROM t/conc t	Client source

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Item	Value (AUD)		Unit	Comments
Haulage (Road)				
Mt Hope Nth	18.00	18.00	ROM t/conc t	Client source. Base for other deposit calculations.
Mt Hope Central	18.00	18.00	ROM t/conc t	Client source. Base for other deposit calculations.
Burke & Wills	20.25	20.25	ROM t/conc t	Calculated.
Lady Fanny East	20.25	20.25	ROM t/conc t	Calculated.
Nil Desperandum	21.38	21.38	ROM t/conc t	Calculated.
Overheads[NB2]	5.54	5.54	$/ROM t	Xenith source
Marketing/Selling	3.00	3.00	$/product Cu t	Xenith source

[NB1:] Drill and Blast (Ore) includes Ore production, presplit and probe drilling costs

[NB2:] Overheads includes Administration/Accommodation/FIFO costs

Table 14 – Underground Operating Cost Assumptions

Item	Value (AUD)		Unit	Comments
Study Step	Optimisation	Financial Model		
Geology and Grade Control	2.00	0.00	$/ROM bcm	Xenith source. Financial model assume cost within mining cost
Underground Production Mining Costs	86.30	60.00	$/ROM t	Mt Hope. Xenith source. Financial model shows development costs separately
Underground Production Mining Costs	100.60	60.00	$/ROM t	Nil Desperandum. Xenith source. Financial model shows development costs separately
Development (Horizontal)	N/A	10,000	$/metre	Xenith source
Development (Vertical)	N/A	10,000	$/metre	Xenith source
Depth Factor				
Mt Hope	0.315	N/A	$/ROM t	Centroid of orebody to Carnaby Ore Processing plant
Nil Desperandum	1.65	N/A	$/ROM t	Centroid of orebody to Carnaby Ore Processing plant
ROM Management	0.39	0.39	$/ROM t	Xenith source

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Item	Value (AUD)		Unit	Comments
Third Party Processing	30.00	30.00	$/ROM t	Client source
Haulage (Rail)				
All Assets	12.00	12.00	ROM t/conc t	Client source
Haulage (Road)				
Mt Hope Nth	18.00	18.00	ROM t/conc t	Client source. Base for other deposit calculations.
Mt Hope Central	18.00	18.00	ROM t/conc t	Client source. Base for other deposit calculations.
Nil Desperandum	21.38	21.38	ROM t/conc t	Calculated.
Overheads[NB2]	5.54	5.54	$/ROM t	Xenith source
Marketing/Selling	3.00	3.00	$/product Cu t	Xenith source

[NB:] Overheads includes Administration/Accommodation/FIFO costs

1.5.3 CAPEX

Capital costs have been established from various sources. Capital costs are as shown in **Table 15** below.

Table 15 – Project Capital Cost Assumptions

Item	Value ($M)	Comments
Crushing Plant	4.0	Conceptual level estimate – 3rd party consultant
Paste Plant	17.0	Xenith source
Closure	12.3	Client source. Range reflects a Third Party processing approach.
Portals & Ventilation	10.1	Xenith source. 3 UG operations.
Surface Infrastructure	10.7	Client and Xenith source
Rail Siding Upgrade	10.8	Fraser Lever
Road Upgrade	5.8	Fraser Lever

1.5.4 Economic Model Results

The economic model has been developed in Microsoft Excel. It utilises the Discounted Cash Flow approach to establish the Net Present Value for the Concept Study. The economic model has assessed the following scenarios:

- Scenario 1: Road haulage to Third Party Processing facility
- Scenario 2: Rail haulage to Third Party Processing facility

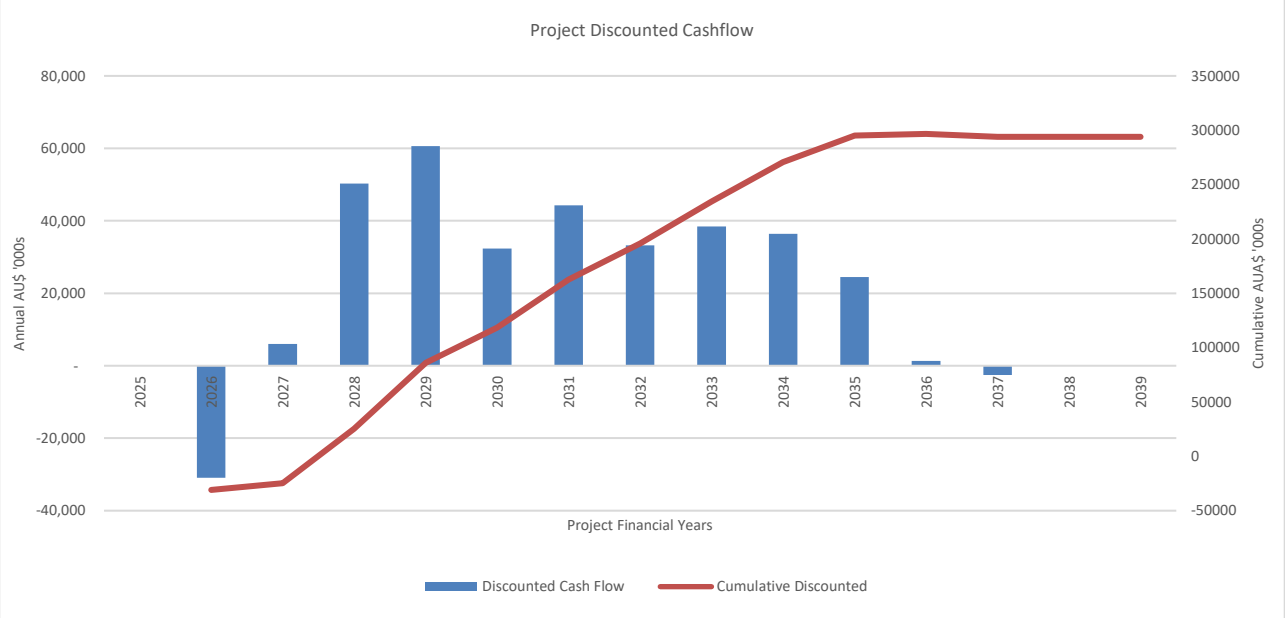
- Scenario 3: Road haulage from Carnaby Processing facility
- Scenario 4: Rail haulage from Carnaby Processing facility

As described in Section 1.12 in this report, economic results described below illustrate Scenario 1 (with a capital allocation reflecting a rail infrastructure upgrade). This Scenario is selected as it has lowest capital requirements and targets a readily available Third Party processing capability.

1.5.4.1 Discounted Cash Flow (DCF)

The DCF modelling (refer **Figure 7** below) indicates that initial capital expenditure required for the project in year 1 results in a negative cashflow of approximately $36M (undiscounted). Continued capital expenditure during ensuing years and project returns results in a Project Payback period of approximately 2.4 years. Positive cashflow occurs from Year 2.

Figure 7 – Discounted Cash Flow



1.5.4.2 Revenue

Revenue arising for the sale of Copper and Gold in Copper concentrates to a third party for subsequent refining activities is reflected for in **Figure 8** and **Figure 9** and **Figure 10** correspondingly. The average revenue per annum is $211M with a projected peak revenue of $325M in Year 2029 as shown in **Figure 8** below.

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Figure 8 – Total Project Revenue

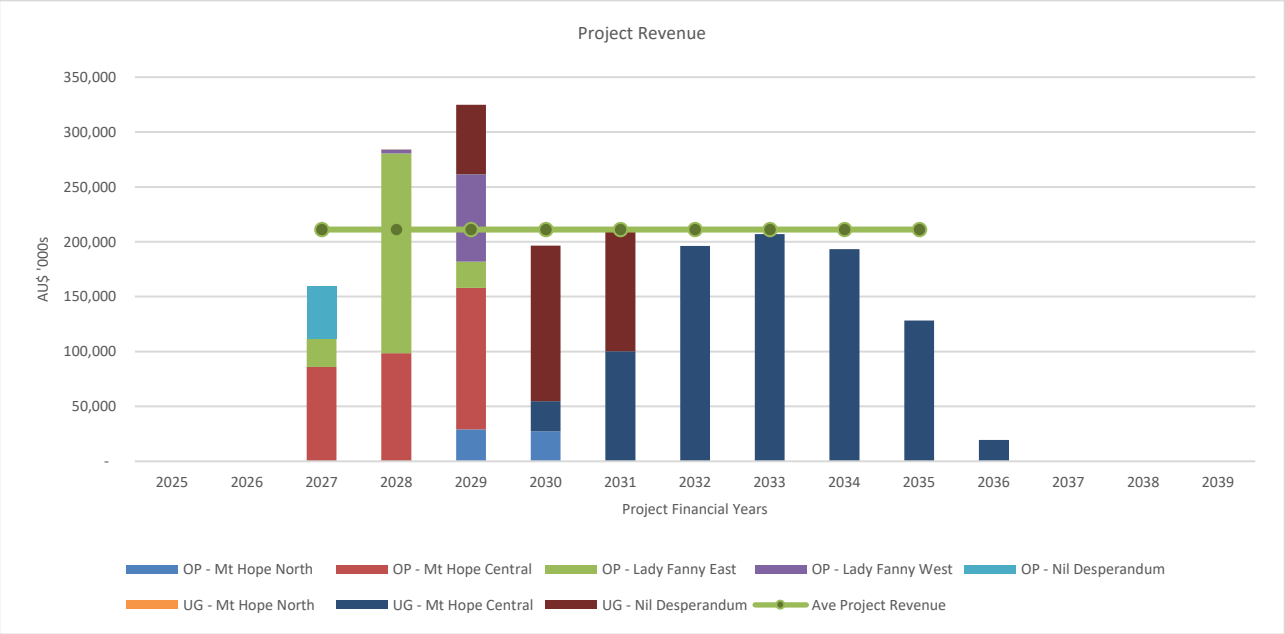

Figure 9 – Cu in Cu Concentrate Revenue

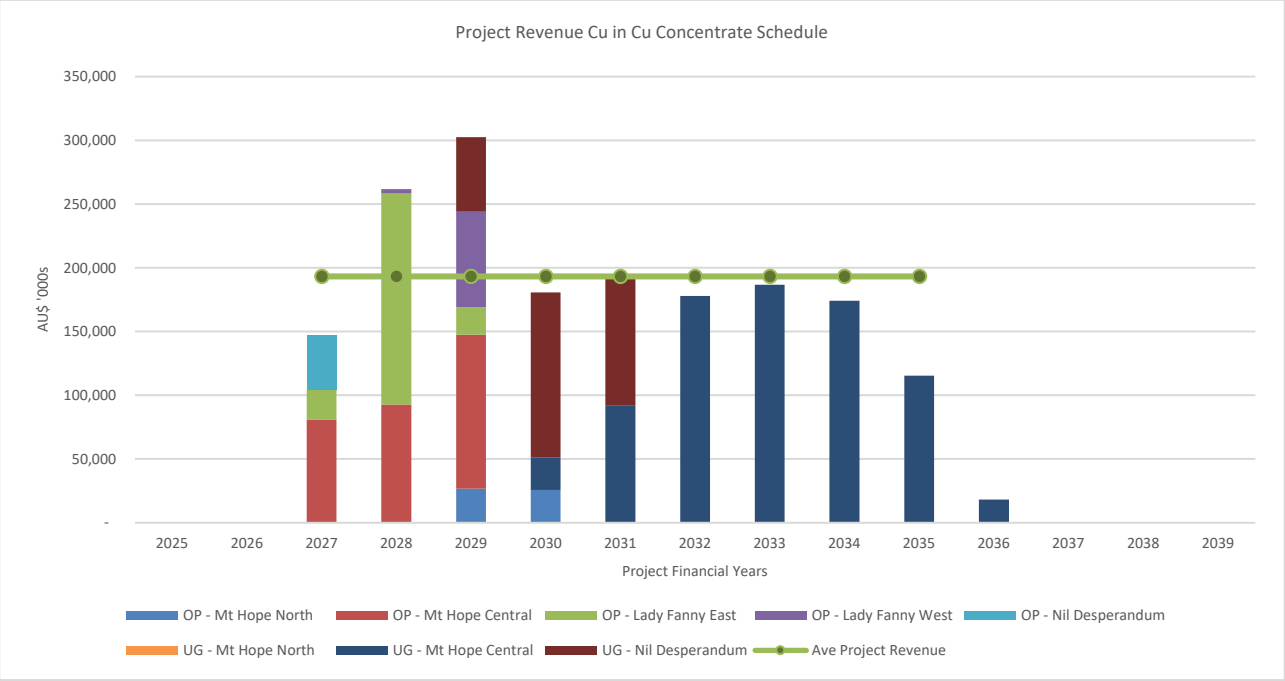

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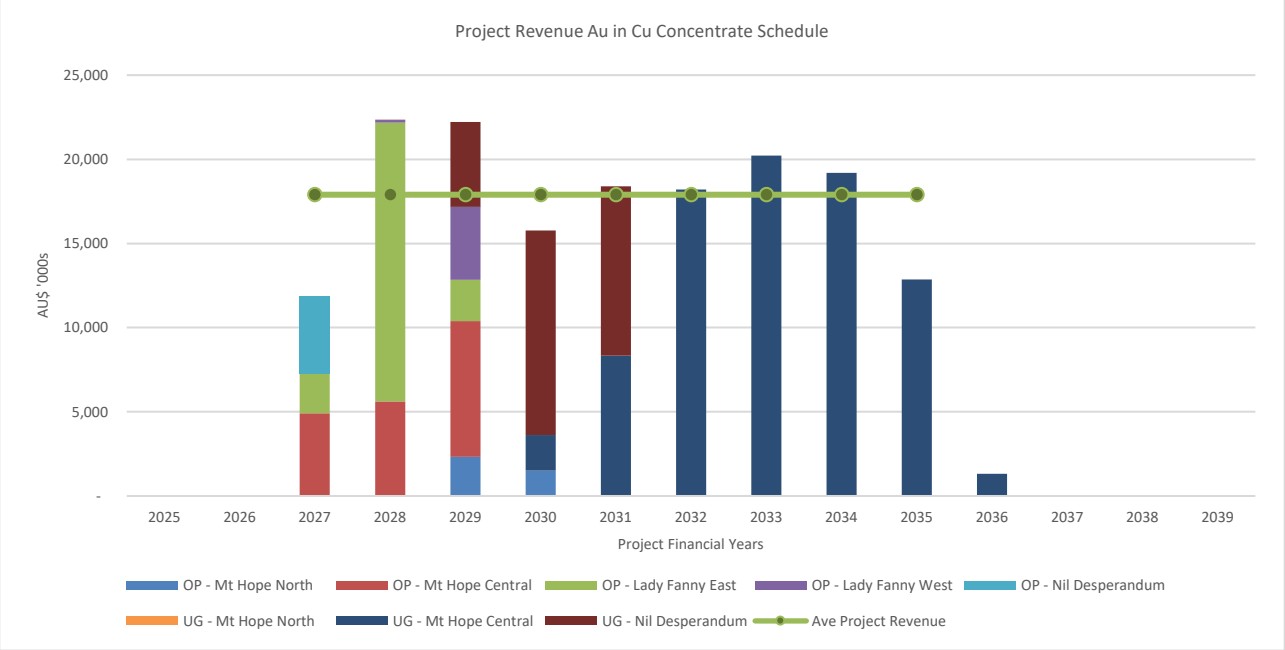
Figure 10 – Au in Cu Concentrate Revenue



1.5.4.3 Operating Costs

Operating costs for the Concept Study are reflected in **Figure 11** and **Figure 12** correspondingly. The average operating cost per annum is $102M with a projected peak operating cost of $163M in Year 2028 as shown in **Figure 11** below.

Figure 11 – Project Operating Costs

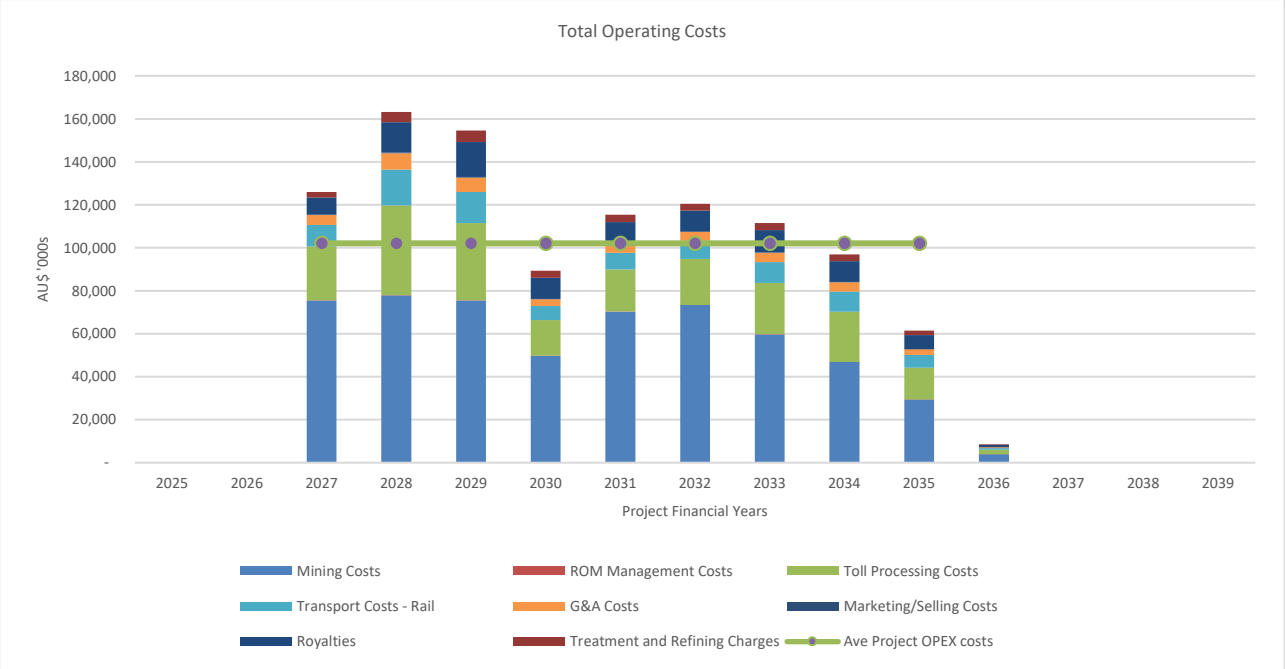


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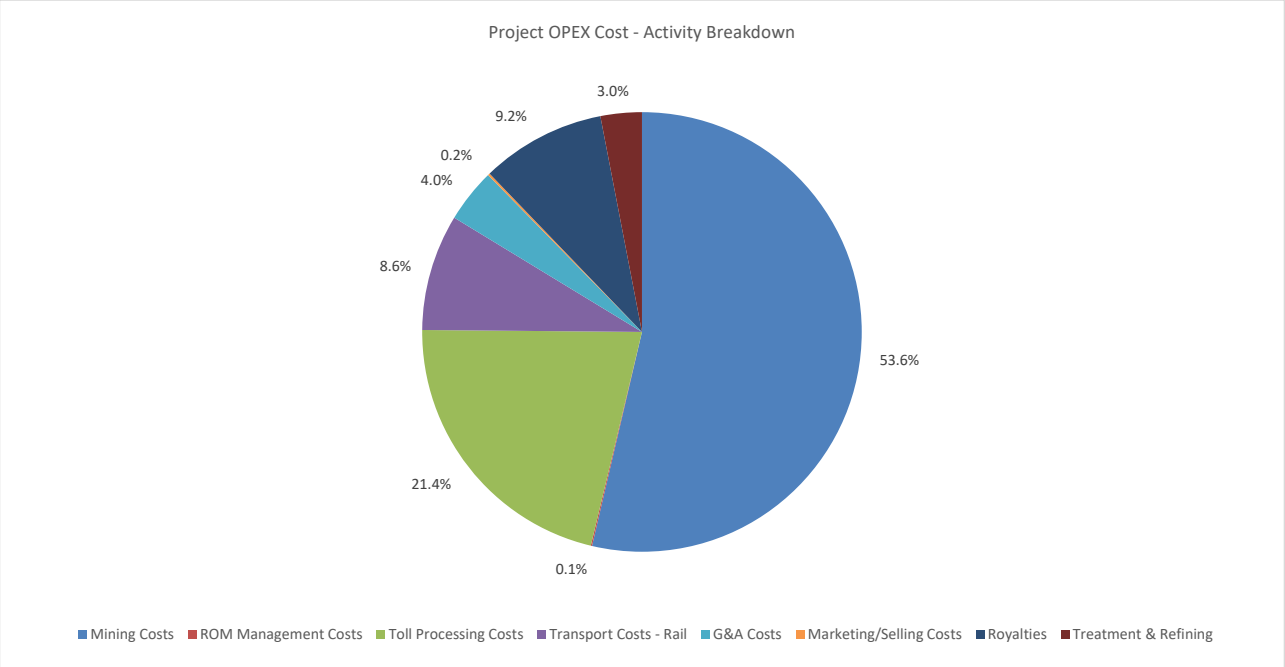
Figure 12 below highlights the major operating costs for the project being; Mining Costs (53.6% or $562M), Processing Costs (21.4% or $224M) and Transportation (Rail) Costs (8.6% or $90M).

Figure 12 – Activity OPEX Cost



1.5.4.4 Capital Costs

Capital costs for the Concept Study are reflected in **Figure 13** and **Figure 14** correspondingly. A projected peak capital cost of $35M in Year 2026 as shown in **Figure 13** below.

Figure 13 – Project Capital Costs

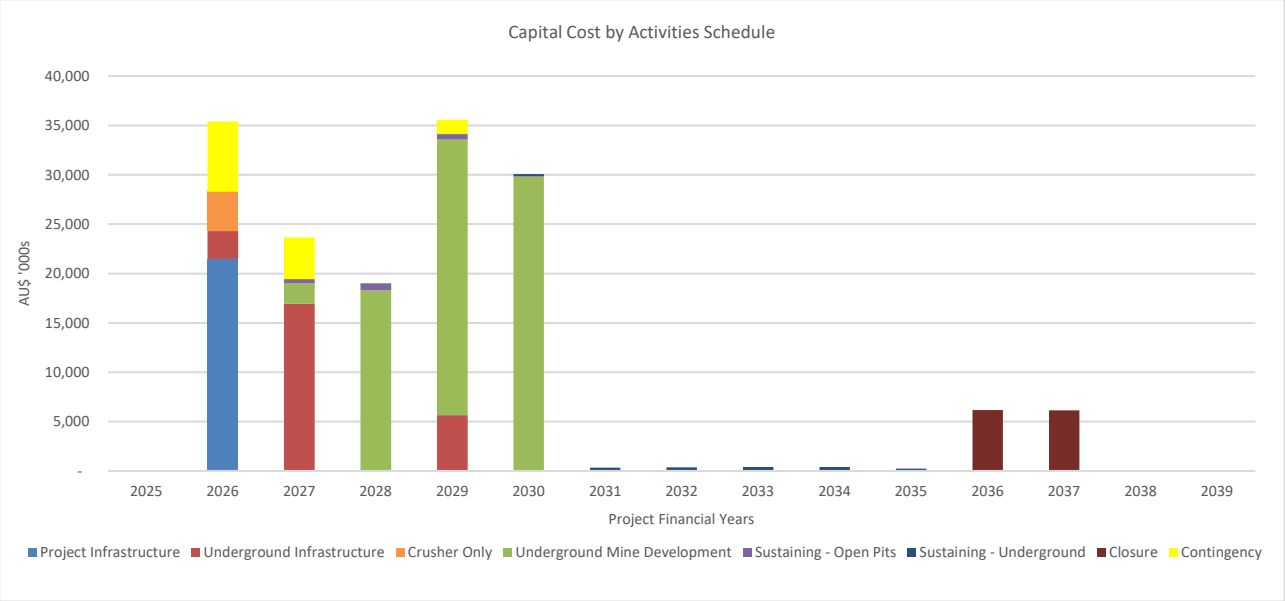


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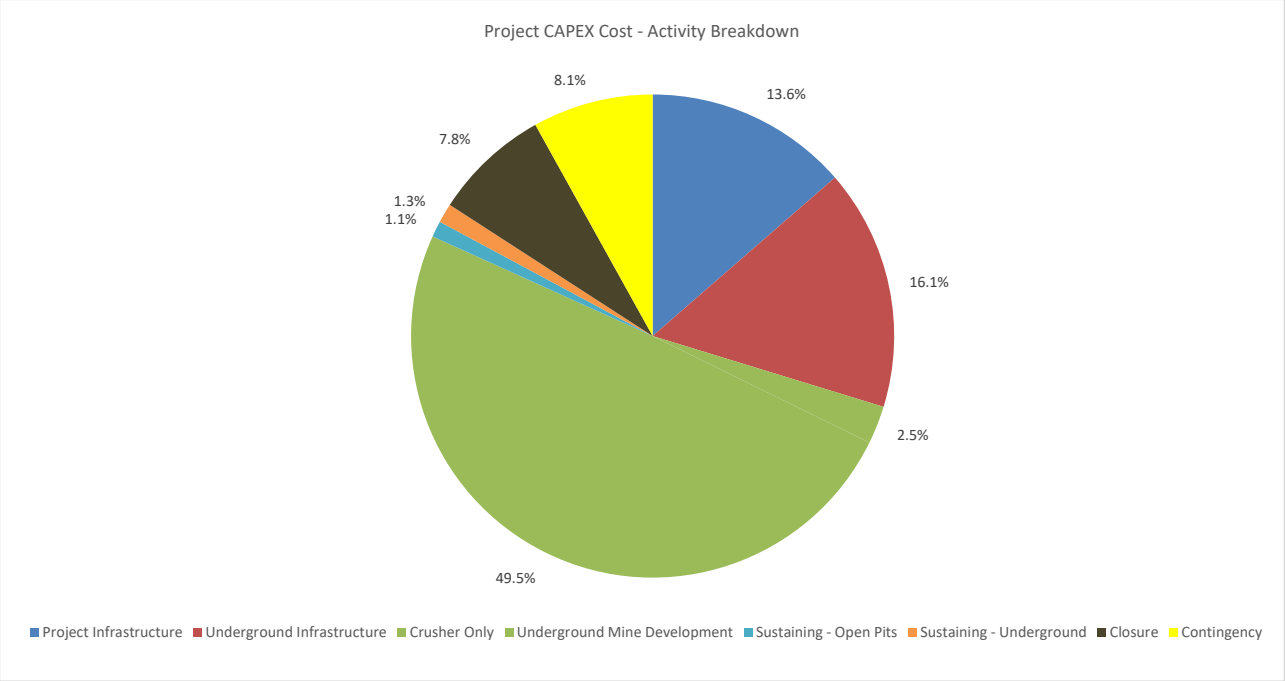
Figure 14 below highlights the major capital costs for the project being; Underground Mine Development (49.5% or $78.1M), Underground Infrastructure (16.1% or $25M) and Project Infrastructure (13.6% or $21.5M).

Figure 14 – Activity CAPEX costs



1.5.5 Sensitivity Analysis

Project sensitivity has been completed on the following variables:

- Copper Price
- Gold Price
- Operating Costs
  - Underground Mining
  - Opencut Mining
  - ROM management
  - Processing
  - Ore transportation
  - G&A
- Capital Costs

Results of sensitivities, at 10% increments, are as shown in **Figure 15** and **Figure 16**. The most significant influence on the project is Copper price.

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Figure 15 – Project Sensitivities (Spider Chart)

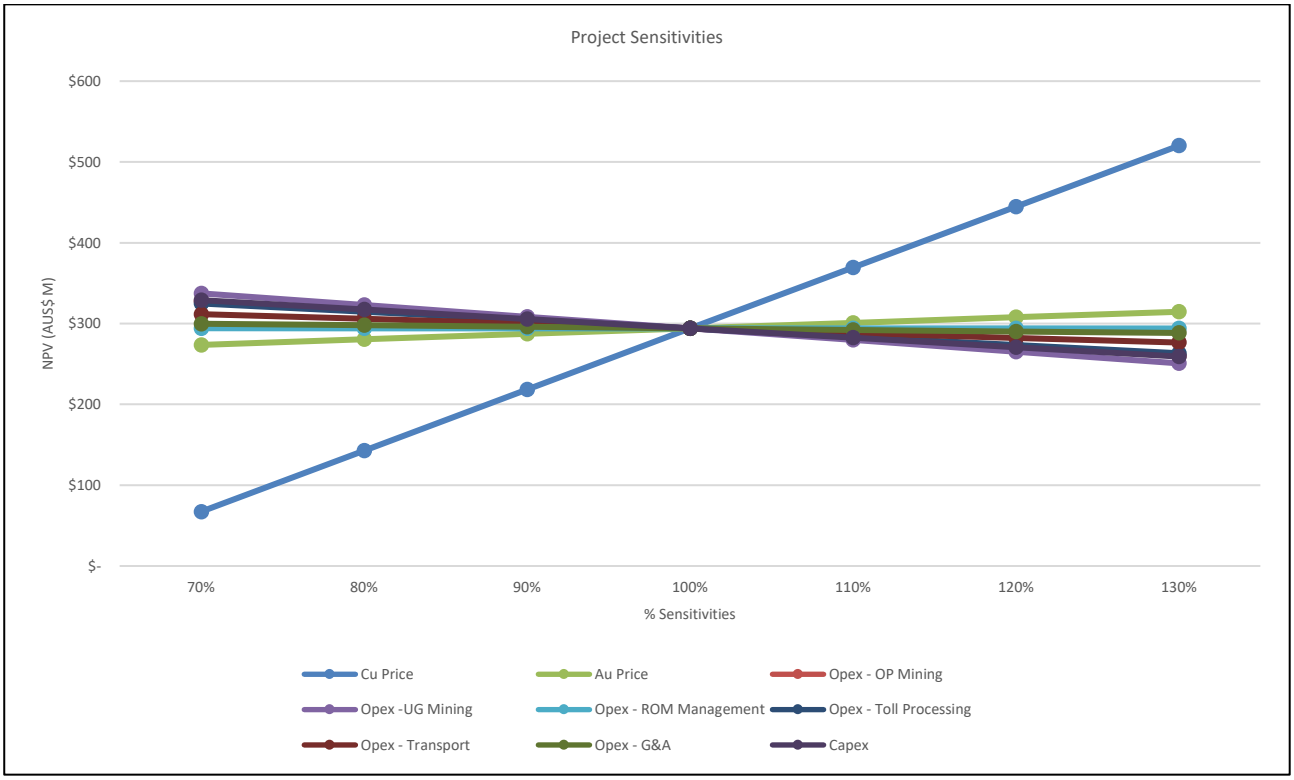
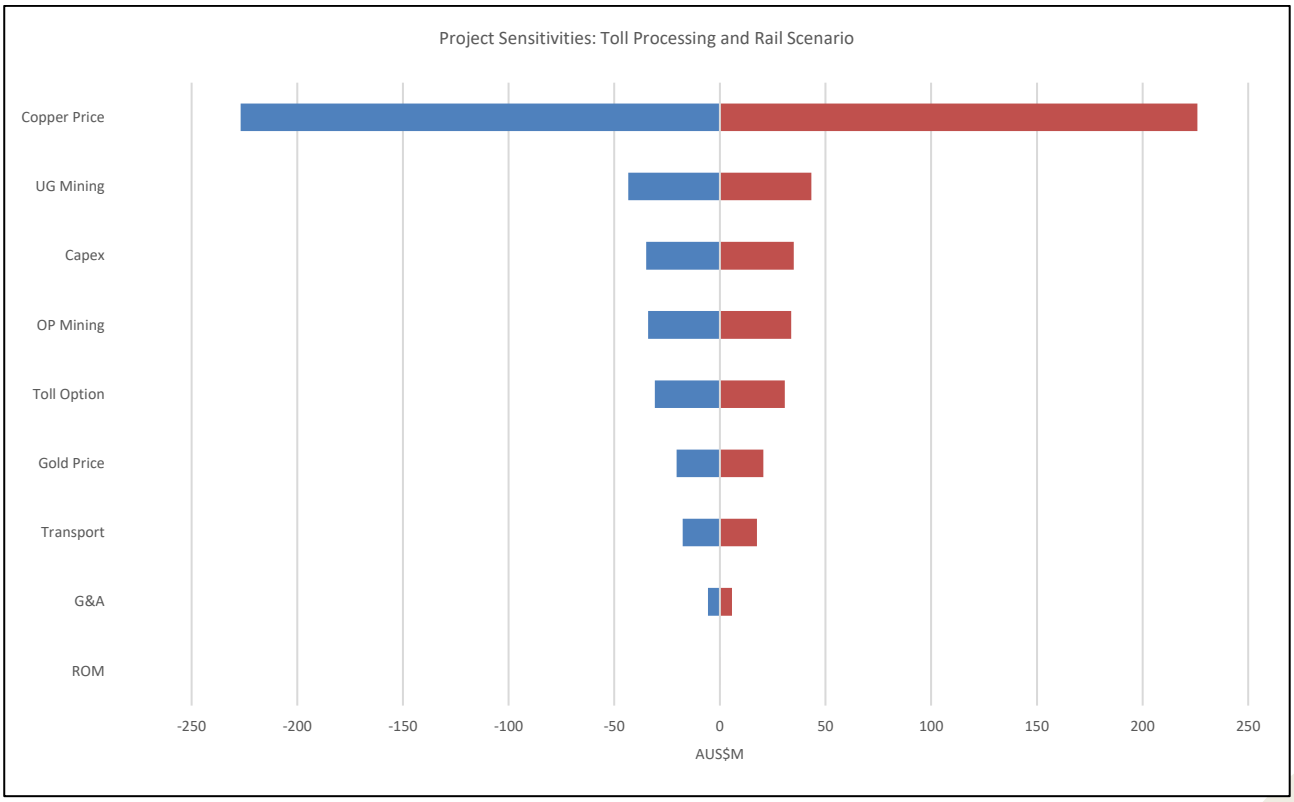


Figure 16 – Project Sensitivities (Tornado Chart)



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1.5.6 Project Summary

A Project Summary of the results of the Concept Study are shown below in **Table 16**

Table 16 – Project Concept Study economic summary

Physicals and Costs	Units	Value
Mining Physicals		
Waste Volume (Opencut)	Mbcm	14.9
Ore Tonnage	Mt	7.471
Grade Copper	%	1.71
Grade Gold	g/t	0.27
Contained Copper Metal	Kt	127.8
Contained Gold	Oz	63,837
Life of Mine	Years	9
Run-of-Mine Ore	Ktpa	823
Total Development Metres	metres	20,402
Strip Ratio (average)	Waste (t):ore (t)	12.1:1
Process Recoveries		
Copper	%	95.41
Gold	%	80.70
Metal Production		
Copper (Payable)	Kt	117
Gold (Payable)	Oz	46,398
Costs		
Upfront Capital (incl. contingency)	$M	35.38
Operating - Mining	$/t ore	75.22
Operating - Processing	$/t ore	30.00
Operating – Transportation (Rail)	$/t ore	12.00
Operating - Other	$/t ore	22.99
Total Operating	$/t ore	$140.21
Economics and Key Assumptions		

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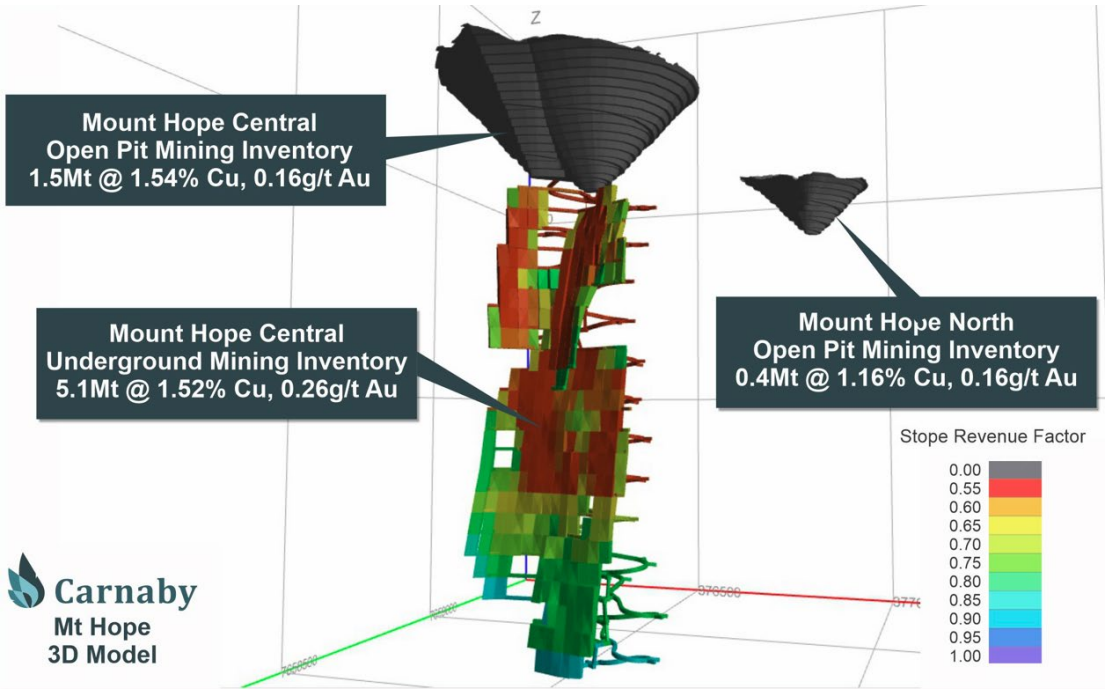
Physicals and Costs	Units	Value
Copper Price	AUD/lb	6.80
Copper Price	AUD/t	15,000
Gold Price	AUD/oz	3,500
Exchange Rate	AUD:USD	0.67
Net Cash Flow (undiscounted, post tax)	**$M**	**490.52**
$NPV_{7\%}$ (post tax)	**$M**	**294.08**
IRR (post tax)	**%**	**105.1**
Payback Period	**Years**	**2.4**

1.6 Carnaby Standalone Processing Facility

As noted in section 1.1.2 above the Concept Study considered the option of processing ore at a Carnaby constructed ore processing facility within the Project boundaries to produce a concentrate product for transportation. Transportation of the concentrate was assessed for both rail and road transportation alternatives with **Table 17** below summarising the results for the rail haulage option. **Figure 17** below shows key Mount Hope Asset physicals as tabulated.

Figure 17 – Mount Hope asset standalone processing



For the purposes of the Concept Study processing infrastructure requirements are scaled to a capacity of 1 to 2 Mtpa. Conceptual level capital estimates are based upon a 3-stage crushing, ball mill grind with flotation separation circuits and a tailings management facility.

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Table 17 - Project Concept Study economic summary (Carnaby Standalone Processing Facility)

Physicals and Costs	Units	Value
Mining Physicals		
Ore Tonnage	Mt	10.344
Grade Copper	%	1.52
Grade Gold	g/t	0.24
Contained Copper Metal	Kt	157.5
Contained Gold	Oz	80,673
Life of Mine	Years	12
Metal Production		
Copper (Payable)	Kt	144.5
Gold (Payable)	Oz	59,069
Costs		
Upfront Capital	$M	173.69
Net Cash Flow (undiscounted, post tax)	**$M**	**545.60**
$NPV_{7\%}$ (post tax)	**$M**	**271.46**
IRR (post tax)	**%**	**34.4**
Payback Period	**Years**	**3.9**

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1.7 Declaration

This Concept Study Report is prepared by Xenith Consulting Pty Ltd. for the purposes set out in the Executive Summary. Xenith Consulting Pty Ltd are ultimately responsible for the opinions expressed and content in the Concept Study.

Mr Chris Campbell, Principal Advisor has been responsible for the study team in the compilation of the Concept Study.

Mr Campbell has over 30 years' mining and natural resource industry experience.

Mr Campbell's qualifications include:

- Master of Business and Technology
- Bachelor Engineering (Mining)

Mr Andrew Knuckey, General Manager Advisory has reviewed and approved the Concept Study Report.

Mr Knuckey has over 30 years' mining and natural resource industry experience, including over 13 years in the valuation of mining companies and mineral assets.

Mr Knuckey's qualifications include:

- Master of Business Administration (Financial Management)
- Graduate Diploma in Management
- Associate Diploma in Mining and Mineral Technology
- Affiliate Australian Institute of Company Directors
- Fellow of the Australasian Institute of Mining and Metallurgy.

Signed:

Xenith Consulting Pty Ltd	Xenith Consulting Pty Ltd
Chris Campbell	Andrew Knuckey
Principal Advisor	General Manager Advisory

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APPENDIX TWO: REASONABLE BASIS FOR FORWARD LOOKING STATEMENTS

No Ore Reserve has been declared. This ASX release has been prepared in compliance with the current JORC Code (2012) and the ASX Listing Rules. All material assumptions on which the Scoping Study production target and projected financial information are based have been included in this announcement and disclosed in the table below.

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

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	• Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve. • Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	No Ore Reserve has been declared as part of the scoping study. The Greater Duchess Interim Mineral Resource Estimate (**MRE**) on which the scoping study is based was separately and previously announced on 27 October 2023.
Site visits	• Comment on any site visits undertaken by the Competent Person and the outcome of those visits. • If no site visits have been undertaken indicate why this is the case.	Internal audits including a site visit were conducted at the Greater Duchess Project by PayneGeo which verified the methodology, parameters, and results of the 2023 Maiden Interim Mineral Resource Estimate (MRE). During October 2023, a site visit was undertaken by Fraser Lever Consulting Engineers (Fraser Lever) to review site layout and existing infrastructure. Findings from the visit were used to provide technical advice on the likely locations and requirements for upgrading road and rail support infrastructure. Advice was also provided on likely requirements for administration, service and support facilities.
Study status	• The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves. • The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.	The study presented is a scoping study and accordingly, no Ore Reserve has been declared.
Cut-off parameters	• The basis of the cut-off grade(s) or quality parameters applied.	Cut-off grade parameters have been adjusted from the MRE to consider project processing costs. A summary of the cut-off grade establishment methodology is presented in section 1.2 (Mining) of Appendix 1.
Mining factors or assumptions	• The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design). • The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc. • The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling. • The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate). • The mining dilution factors used. • The mining recovery factors used.	No Ore Reserve has been declared. Refer to section 1.2 (Mining) of Appendix 1. Refer to section 1.2 (Mining) of Appendix 1. Refer to section 1.2 (Mining) of Appendix 1. Refer to section 1.2 (Mining) of Appendix 1. Refer to section 1.2 (Mining) of Appendix 1.

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Criteria	JORC Code explanation	Commentary
	• Any minimum mining widths used. • The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion. • The infrastructure requirements of the selected mining methods.	Refer to section 1.2 (Mining) of Appendix 1. Refer to section 1.4 (Infrastructure) of Appendix 1.
Metallurgical factors or assumptions	• The metallurgical process proposed and the appropriateness of that process to the style of mineralisation. • Whether the metallurgical process is well-tested technology or novel in nature. • The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied. • Any assumptions or allowances made for deleterious elements. • The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole. • For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?	Refer to section 1.3 (Processing) of Appendix 1. Refer to section 1.3 (Processing) of Appendix 1. Refer to section 1.3 (Processing) of Appendix 1. Refer to section 1.3 (Processing) of Appendix 1. Larger scale metallurgical test work is currently underway for inclusion in a future PFS. No Ore Reserve has been declared.
Environmental	• The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	Insufficient work has been completed on reportable environmental impacts for the scoping study. No approvals have been applied for. Detailed environmental assessments will occur at PFS level.
Infrastructure	• The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.	Refer to section 1.4 (Infrastructure) of Appendix 1.
Costs	• The derivation of, or assumptions made, regarding projected capital costs in the study. • The methodology used to estimate operating costs. • Allowances made for the content of deleterious elements. • The source of exchange rates used in the study. • Derivation of transportation charges. • The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc. • The allowances made for royalties payable, both Government and private.	Refer to section 1.5 (Economics) of Appendix 1. Refer to section 1.5 (Economics) of Appendix 1. Metallurgical test work has not identified any deleterious elements. Refer to section 1.3 (Processing) of Appendix 1. Refer to section 1.5 (Economics) of Appendix 1. Refer to section 1.5 (Economics) of Appendix 1. Refer to section 1.5 (Economics) of Appendix 1. Refer to section 1.5 (Economics) of Appendix 1.
Revenue factors	• The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc. • The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	Refer to section 1.5 (Economics) of Appendix 1. The CuEq calculations contained in the Scoping Study are based on the financial model commodity pricing assumptions of A$15,000/t for copper and A$3,500/oz for gold, and relevant metal recoveries for each deposit detailed in Table 4 as demonstrated in preliminary metallurgical test work carried out in 2023. Refer to section 1.5 (Economics) of Appendix 1.
Market assessment	• The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future. • A customer and competitor analysis along with	No formal assessment of the market has been completed however, market sentiment is strong for copper particularly in the medium to long term with decarbonization and electrification acceleration.

Criteria	JORC Code explanation	Commentary
	the identification of likely market windows for the product. • Price and volume forecasts and the basis for these forecasts. • For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	
Economic	• The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc. • NPV ranges and sensitivity to variations in the significant assumptions and inputs.	Refer to section 1.5 (Economics) of Appendix 1. Refer to section 1.5 (Economics) of Appendix 1.
Social	• The status of agreements with key stakeholders and matters leading to social licence to operate.	Given the Project's location in an active and favourable mining jurisdiction near Mt Isa in Queensland, Australia, the Company does not expect any issues regarding forming agreements with key stakeholders as required to complete the works as planned.
Other	• To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves: • Any identified material naturally occurring risks. • The status of material legal agreements and marketing arrangements. • The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.	No Ore Reserve has been declared. No material naturally occurring risks have been identified. Discovex Resources Limited holds a 17.5% interest in the Nil Desperandum and Burke & Wills deposits and are free carried through to a decision to mine. The Lady Fanny Prospect area encompassed by historical expired mining leases have been amalgamated into EPM14366 and is 100% owned by Carnaby. Discovex Resources Limited (Discovex, ASX: DCX) are in dispute with Carnaby and claim that Lady Fanny is part of the Joint Venture area (see ASX release 18 September 2023). There are no marketing agreements in place. There are currently no governmental agreements in place. The Mount Hope Deposits are on a granted mining lease (ML 90240) with the Lady Fanny, Burke & Wills and Nil Desperandum deposits on an exploration tenement (EPM 14366). There are reasonable grounds from the initial assessments conducted to date to expect that all necessary Government approvals will be received within the timeframes anticipated however further investigations will be conducted during a future PFS.
Classification	• The basis for the classification of the Ore Reserves into varying confidence categories. • Whether the result appropriately reflects the Competent Person's view of the deposit. • The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).	No Ore Reserve has been declared. No Ore Reserve has been declared. No Ore Reserve has been declared.
Audits or reviews	• The results of any audits or reviews of Ore Reserve estimates.	No Ore Reserve has been declared.
Discussion of relative accuracy/ confidence	• Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate. • The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.	No Ore Reserve has been declared.

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Criteria	JORC Code explanation	Commentary
	• Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage. • It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	

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