



## December 2016 Quarterly Report

### KEY POINTS

- ◆ **Completion of the Mount Morgan Feasibility Study (FS) (ASX: 8 December 2016) delivers low operating costs, a rapid payback period and a long mine life. The FS Base Case key results include:**
  - ◆ **1.1mtpa throughput rate**
  - ◆ **9.5 year mine life**
  - ◆ **Forecast payback period of just two years**
  - ◆ **All-in sustaining costs after by-product credits of A\$549/oz**
  - ◆ **Estimated preproduction capital cost of A\$85 million**
  - ◆ **Average annual production of 30,000oz gold, 3,800t copper sulphate and 214,000t premium unroasted iron pyrite**
- ◆ **Declaration of a Maiden Ore Reserve estimation of 9.9 million tonnes at 1.19g/t gold, 0.16% copper and 21.1% pyrite from four of the historical tailings dumps at Mount Morgan**
- ◆ **Commencement of due diligence activities and ongoing discussions with potential project financiers**
- ◆ **Progression of required project approvals including:**
  - ◆ **Submission of the Resource Development Application in a Priority Living Area (PLA) by Carbine on 19 January 2017**
  - ◆ **Provision of FS background information to DNRM for submission of the Heritage Application which is expected to be reviewed in Q1 2017**
  - ◆ **Provision of FS detail for completion of the Environmental Authority Amendment Application for submission by Carbine in Q1 2017**
- ◆ **Detailed presentations and update on FS were provided to stakeholders at the annual DNRM meeting and the Town Hall Community Meeting in Mount Morgan (ASX: 14 December 2016)**





## Feasibility Study

Completion of the Feasibility Study (FS) delivers a strong base case for the development of a long-life project at Mount Morgan (ASX: 8 December 2016).

The Project will enjoy low operating costs, a rapid payback period and a long mine life. The estimated preproduction capital cost would be A\$85 million and the all-in sustaining costs after by-product credits would be A\$549/oz. The Project's economics enable a forecast payback period of just two years.

The Feasibility Study Base Case (**FS Base Case**) was based on a 1.1mtpa throughput rate achieving a 9.5 year mine life. The estimated Ore Reserve is associated with just four of the historical tailings dumps at Mount Morgan delivering gold, copper sulphate and premium unroasted iron pyrite concentrate to market.

From a Carbine Resources perspective, the Project can provide a steady cash flow for many years enabling a strong growth platform for the Company.

From an environmental perspective, the Project has the potential to make some significant in-roads into the environmental legacy associated with acid mine drainage at Mount Morgan with the processing and removal of pyrite from the dumps.

From a community perspective, the Project delivers a new project into central Queensland with a significant mine life. The community of Mount Morgan can become an active mining centre once again.

In light of the study's strong technical and financial outcomes, advancement of project finance options, offtake arrangements for the premium unroasted iron pyrite market, regulatory approvals, and consolidation of project ownership is being undertaken.

**Table 1: Key results of FS Base Case**

	Description	FS Base Case
<b>Mining</b>	<b>Ore Reserve (Mt)</b>	9.9
	<b>Gold Grade (g/t)</b>	1.19
	<b>Contained Gold (ozs)</b>	380,000
	<b>Copper Grade (%)</b>	0.16
	<b>Contained Copper (t)</b>	16,000
	<b>Pyrite Grade (Wt %)<sup>4</sup></b>	21
	<b>Contained Pyrite (t)</b>	2,300,000
<b>Processing</b>	<b>Ore Processed (Mt)</b>	9.5
	<b>Polymetallic AuEq (g/t)<sup>1</sup></b>	1.8
	<b>Gold Grade (g/t)</b>	1.23
	<b>Copper Grade (%)</b>	0.17
	<b>Pyrite Grade (Wt %)</b>	22
	<b>Average Annual Gold Production (ozpa)</b>	30,000
	<b>Average Annual Copper Sulphate Production (tpa)</b>	3,800
<b>Average Annual Pyrite Concentrate Production (tpa)</b>	214,000	
<b>Project Economics</b>	<b>Mine life (years)</b>	9.5
	<b>Payback (years)<sup>3</sup></b>	2
	<b>C1 (A\$/Au oz)<sup>4</sup></b>	395
	<b>AISC (A\$/Au oz)<sup>5</sup></b>	549
	<b>Pre-production Capital (A\$M)</b>	85.1



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Table Notes:

1. AuEq ozs have been determined using the AuEq grade as outlined in Table 1 above. The AuEq calculation has been done with respect to the commodity prices shown in point 3 below and suitable metal recovery factors. Please refer to the back of this report for detailed description of calculation of Metal Equivalents used.
2. Project economics shown above includes the capital payment of A\$2 million to Norton Gold Fields Limited at the commencement of the project to obtain ownership rights and includes deferred payment of A\$13 million from future profits.
3. Payback was determined using a AUD/USD FX 0.75, and with commodity prices of US\$1,200/oz gold, US\$60/t unroasted iron pyrite for years 1 & 2 then US\$80/t for the remaining years, US\$5,800/t copper. Copper sulphate revenue is based on copper LME price for approximately 25% copper grade plus A\$500/t premium for copper sulphate.
4. C1 is defined as the direct cash operating costs produced, net of by-product credits, divided by the amount of payable gold produced. Direct cash costs include all mining and processing costs, general and administration costs, and transport and port costs net of revenue credits from the sale of by-products (pyrite and copper sulphate).
5. AISC is the "All in sustaining cost" includes C1 costs, plus royalties and sustaining capital and are presented net of by-product credits, divided by the amount of payable gold produced.

As an extension to the FS, Carbine has also completed an assessment of a 20 year mine life case (Expanded Case) which is an expansion of the FS Base Case at the same production rate. Significant historical production data and reconciliation of that data enables the Company to consider this case with reasonable confidence. However, the Company cautions that the Expanded Case study is currently partly based on low-level technical and preliminary economic assessments, and is insufficient to support the estimation of additional Ore Reserves. Further evaluation work and appropriate studies are required before the Company will be in a position to estimate any additional Ore Reserves, or provide certainty that the results from the Expanded Case will be realized.

## Ore Reserve

As part of the Feasibility Study, a maiden Ore Reserve have been estimated for four of the historical tailings dumps in Mundic Gully, Red Oxide, No 2 Mill and Shepherds. The conversion of Indicated Mineral Resources to Ore Reserve (Table 2 below) has involved the detailed design and mine planning associated with each deposit.

**Table 2: Mount Morgan Project Ore Reserve Estimate 2016<sup>1</sup>**

Location	Reserve Category	Quantity (Mt)	AuEq (g/t) <sup>2</sup>	AuEq (koz) <sup>2</sup>	Au (g/t)	Cu (%)	S (%)	Pyrite (wt%) <sup>3</sup>
Mundic	Proven							
	Probable	1.52	2.57	126	2.04	0.17	10.1	18.9
Red Oxide	Proven							
	Probable	0.73	2.48	58	2.11	0.30	0.4	-
No 2 Mill	Proven							
	Probable	2.82	1.73	156	1.10	0.11	13.1	24.4
Shepherds	Proven							
	Probable	4.83	1.49	232	0.84	0.17	12.4	23.1
<b>Total</b>	<b>Proven</b>							
	<b>Probable</b>	<b>9.90</b>	<b>1.80</b>	<b>573</b>	<b>1.19</b>	<b>0.16</b>	<b>11.3</b>	<b>21.1</b>

Table Notes:

1. Please refer to Competent Persons statements at the back of this report; this estimate has been prepared in accordance with JORC Code (2012) guidelines. Further details for the estimate can be found in Carbine Resources Limited ASX Announcement 8 December 2016.
2. AuEq (g/t) refers to the calculated Au equivalent grade formula for which is stated in the back of this report.
3. PyriteEq (wt %) refers to the calculated pyrite equivalent grade formula using the stoichiometry of the pyrite from Sulphur (S, wt%) grade
4. Some discrepancies in total may occur due to the rounding of numbers.



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### ***Regulatory Approvals***

The three significant approvals required for the development of the Mount Morgan Project are the Development by the State Application under section 71 of the Queensland Heritage Act 1992, Environmental Authority Amendment and Resource Development Application in a Priority Living Area.

The background FS information required for the application for the “The Development by the State Application under section 71 of the Queensland Heritage Act 1992” has been provided to the Department of Natural Resources and Mines (DNRM) for submission. Advice from the DNRM is that the submission will be made in Q1 2017. Carbine remains of the view that the Heritage application will be granted although certain conditions may apply. The granting of the application is subject to approval by the Minister of the Department of Environment and Heritage Protection (DEHP).

The background FS detail required for the Environmental Authority Amendment application has been completed and the application can now proceed. The application for the EA amendment will be submitted by Carbine in Q1 2017. The Environmental Authority was previously approved for the project in 2010.

The Resource Development Application in a Priority Living Area (PLA) approval under the Regional Planning Interests Act 2014 has been submitted by Carbine on 19 January 2017. When the Act was passed in 2014 the Mount Morgan Mine site was designated as a priority living area in the Central Queensland regional plan in 2013. The Company is of the view that the PLA approval will be achieved subsequent to the Heritage and Environmental Authority Amendment Approval.

### ***Water Treatment Plant***

During the quarter, the Company continued to work with DNRM on operational improvements to the Mount Morgan Water Treatment Plant. The plant ceased treatment of water in late August 2016 primarily due to the lack of fresh water required for lime slaking. The water used for lime slaking was being sourced from nearby Dam 8. The Company is currently considering engineering options to generate fresh water by alternative means and plans to implement one of those options following adequate review and ongoing discussions/approval from DNRM.

### ***Other Site Activities***

During the quarter, other limited work on site included baseline environmental monitoring and various site visits for consultants/contractors and specialists working on the FS and Water Treatment plant.

## **Corporate Activities**

### ***Raging Bull Metals, Norton Goldfields and Carbine.***

Section 2.2 of the FS (ASX: 8 December 2016) outlines the various contractual arrangements which will ultimately transfer full legal ownership of the Morgan tenements to Carbine from Norton Goldfields via Raging Bull Metals. The Company continues discussions with Raging Bull Mining in regards to the Share Holder and Project Funding agreement that exists between Carbine and Raging Bull Mining. At the date of signing the





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agreement (April 2014), Carbine acquired 75% of Raging Bull Metals and an option exists to acquire the remaining 25% now the FS has been completed.

The Company has also continued discussions with Norton Goldfields in regards to the Mining Property sale Agreement it has with Raging Bull Metals. Carbine will require title transfer to fund and develop the project.

### ***Project Financing***

Discussions have commenced with several financiers who have expressed interest in providing financial support for the project development. A successful financing outcome is dependent on obtaining all project approvals, moving to 100% project ownership and entering into long term pyrite offtake agreements.

### ***Performance Rights***

The successful completion of the FS signifies the completion of Tranche 1 of the Performance Rights approved by shareholders at the AGM on 31 May 2016 (Schedule 5). The Carbine Board of Directors has resolved that the FS completion outlined in Tranche 1 milestone date of September 2016 was not fully achieved due to time delays in completing the FS. The reasons for the time delays were spelt out in the September Quarterly report (ASX: 31 October 2016) and the Mount Morgan Feasibility Study Update (ASX: 26 September 2016). The Board is of the view that several of the reasons for the extension of time for the completion of the FS were outside the direct control of management and were classified as unforeseen events. As a result of this, the Board has used its discretion under the Terms and Conditions of the Performance Rights Plan to alter the outcome of Tranche 1. The Board has resolved to award zero performance rights to Eligible Directors Fitzgerald, Brock and Cranston. The Board has resolved to award 75% of Tranche 1 Performance Rights to the remaining eligible parties including Managing Director Mr. Anthony James.

As a consequence of the delay in the FS timing all the remaining Milestone Dates will be effected. To ensure eligible participants are not further penalised and subject to satisfactory completion of the remaining milestones the Board may use its' discretion allowed under the Terms and Conditions of the Performance Rights Plan to extend milestone dates associated with Tranches 2, 3 and 4.

### **For further information, please contact:**

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**Competent Person Statements**

**Ore Reserves**

The information in this report that relates to Mineral Reserves for Mount Morgan is based on, and fairly represents, information and supporting documentation prepared by Mr. A James, who is a Competent Person according to the JORC 2012 Code. Mr. A James is a fulltime employee of Carbine Resources as the Managing Director of the Company and he holds shares in the Company. He is a Fellow of the Australasian Institute of Mining and Metallurgy. He has sufficient experience that is relevant to the style of mineralization and the 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 Exploration Results, Mineral Resources and Ore Reserves'. The information is extracted from the ASX report entitled 'Feasibility Study Delivers 2 Year Payback – AISC \$549/oz' created on 8<sup>th</sup> December 2016, and is available to view on the Carbine Resources website. 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 Reserves, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

**Exploration Targets, Exploration Results, Mineral Resources**

The information in this report that relates to Exploration Targets, Exploration Results and the Inferred Mineral Resources for Mount Morgan In-Pit and Sandstone Gully is based on, and fairly represents, information and supporting documentation prepared by Mr. C Newman, who is a Competent Person according to the JORC 2012 Code. Mr. C Newman is a fulltime employee of Carbine Resources and a Fellow of the Australasian Institute of Mining and Metallurgy. He has sufficient experience that is relevant to the style of mineralization and the 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 Exploration Results, Mineral Resources and Ore Reserves'. The information in this report is extracted from previous company releases 'ASX: 16 August 2016 and 30 August 2016', and is available to view on the Carbine Resources website. 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, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

The information in this report that relates to the Mineral Resources for Mundic Gully, Shepherds Gully, No 2 Mill and Red Oxide is based on information compiled by Dr M. Abzalov, who is a Competent Person according to the JORC 2012 Code. Dr M. Abzalov is a Fellow of the Australasian Institute of Mining and Metallurgy. He has sufficient experience in estimation of resources of gold mineralisation, and has a strong expertise in the all aspects of the data collection, interpretation and geostatistical analysis to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves'. Dr M. Abzalov is independent consultant, contracted to Carbine Resources for providing the technical guidelines for resource definition drilling at the Mount Morgan tailings project and in estimating the Mineral Resources. The information in this report is extracted from previous company releases 'ASX: 18 July 2016, 27 July 2016, 1 August 2016 and 9 August 2016, and is available to view on the Carbine Resources website. 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, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.





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**Metal Equivalents**

*AuEq was calculated for each ore source based on the different metallurgical recoveries associated with those ore sources established from detailed metallurgical test work (refer to Section 6 for further details). A combined total AuEq was also determined for representation of the combined effect of the four different ore sources. The following formulas show the various calculations for the AuEq values seen in this announcement. The AuEq value is determined by multiplying the recovered metal by the metal prices and dividing by the gold price to determine the equivalent gold grade. Consideration is also given to the fact that the end product for copper is copper sulphate and for pyrite is pyrite concentrate. The total AuEq is determined by taking a weighted average of the four separate AuEq grades.*

$$\text{Mundic Gully AuEq} = \text{Au (g/t)} + \text{Cu (\%)} * 172.11 + \text{PyriteEq (wt\%)} * 1.30$$

$$\text{No 2 Mill AuEq} = \text{Au (g/t)} + \text{Cu (\%)} * 172.76 + \text{PyriteEq (wt\%)} * 1.73$$

$$\text{Red Oxide AuEq} = \text{Au (g/t)} + \text{Cu (\%)} * 122.83$$

$$\text{Shepherds AuEq} = \text{Au (g/t)} + \text{Cu (\%)} * 138.83 + \text{PyriteEq (wt\%)} * 1.79$$

*Metal prices used in this calculation are US\$1,200/oz gold, US\$60/t unroasted iron pyrite for years 1 and 2 and US\$80/t thereafter, A\$5,800/t copper. Copper sulphate revenue is based on copper LME price for approximately 25% copper grade plus A\$500/t premium for copper sulphate. Metal recoveries are provided in ASX Announcement: 8 December 2016 'Feasibility Study Delivers 2 Year Payback – AISC \$549/oz'. It is Carbine's view that all the metals included within this formula are expected to be recovered and sold.*





## Appendix 1: Carbine's Tenement Interest

The following information is provided pursuant to Listing Rule 5.3.3 for the quarter ended 31 December 2016:

<b>Mount Morgan, Queensland</b>	<b>Tenement Reference</b>	<b>Interest</b>
	ML5628	Option to Acquire 100%
	ML5613	Option to Acquire 100%
	ML5616	Option to Acquire 100%
	ML5660	Option to Acquire 100%
	ML5608	Option to Acquire 100%
	ML5617	Option to Acquire 100%
	ML5609	Option to Acquire 100%
	ML5619	Option to Acquire 100%
	ML5602	Option to Acquire 100%
	ML5618	Option to Acquire 100%
	ML5658	Option to Acquire 100%
	ML5635	Option to Acquire 100%
	ML5622	Option to Acquire 100%
	ML5620	Option to Acquire 100%
	ML5623	Option to Acquire 100%
	ML5627	Option to Acquire 100%
	ML5615	Option to Acquire 100%
	ML5589	Option to Acquire 100%
	ML5659	Option to Acquire 100%
	ML5634	Option to Acquire 100%
	ML5626	Option to Acquire 100%
	ML5633	Option to Acquire 100%
	ML5621	Option to Acquire 100%
	ML5624	Option to Acquire 100%
	ML5625	Option to Acquire 100%
	ML6692	Option to Acquire 100%
	ML5612	Option to Acquire 100%
	ML5649	Option to Acquire 100%
	ML5614	Option to Acquire 100%
	ML5648	Option to Acquire 100%
<b>Many Peaks, Queensland</b>		
	ML3640	Option to Acquire 100%
	ML3641	Option to Acquire 100%
	MDL30	Option to Acquire 100%

Exploration tenement EPM14918 at Many Peaks was surrendered during the quarter. No other interests were acquired during the quarter.