



CARBINE RESOURCES
LIMITED

Mount Morgan Gold & Copper Project

*Restarting Mount Morgan Operations:
A case study in innovative technology application*

Austmine 2015 Conference
20th May 2015

Austmine 2015
Mining Innovator
of the Year

Disclaimer



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Mineral Resources

The Indicated and Inferred Resources referred to above were presented by Norton Gold Fields Limited at the Mining 2009 Resource Convention (Brisbane). The presentation was released to the ASX on 28 October 2009 and is available for viewing on the Norton Gold Fields website (www.nortongoldfields.com.au). The resources were stated to have been prepared in accordance with the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' ("JORC Code") by Competent Person Troy Lowien, Resource Geologist, of consultants Coffey Mining Pty Ltd.

Exploration Targets

Carbine has identified an Exploration Target at the site comprising low grade mullock dumps, slag dumps and retreated tailings from previous operations. In the Table above a range of approximate tonnage and grade has been compiled from extensive review of historic reports and studies by previous owners. Carbine has not yet completed any exploration activity on the Exploration Target. The potential quantity and grade of the Exploration Target is conceptual in nature, there has been insufficient exploration to estimate a Mineral Resource, and it is uncertain if further exploration will result in the estimation of a Mineral Resource. The basis for the estimates of tonnage and grade include historic production records, various topographic and volume surveys, drilling by various methods, grab and channel sampling and small scale bulk sampling. Carbine proposes to further evaluate the Exploration Target during the next year by drilling and possible bulk testing to provide material for additional metallurgical test work and to verify tonnage and grade.

Competent Person Statements

The information in this report that relates to the recently completed exploration results is based on and fairly represents information compiled by Dr Marat Abzalov, who is a geological consultant to Carbine Resources Limited. Dr Abzalov is a Fellow of The Australasian Institute of Mining and Metallurgy (FAusIMM) and he has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and the activity he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Dr Abzalov consents to the inclusion in the report of the matters based on information in the form and context in which it appears. Previous results were released to the ASX on 16 March and 20 April 2015 and have not materially changed since last reported.

The information in this report that relates to the Exploration Target is based on information compiled by Lance Govey, a Competent Person who is a Member of The Australasian Institute of Mining and Metallurgy. Lance Govey is an independent geological consultant and has no association with Carbine Resources Limited other than being engaged for services in relation to the preparation of parts of this report. Lance Govey 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'. Lance Govey consents to the inclusion in the report of the matters based on his information in the form and context in which it appears. This was initially release to the ASX on 13 November 2014 and has not materially changed since it was last reported.

The information in this report that relates to the Mineral Resources of the Mount Morgan Mine project was prepared in accordance with the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' ("JORC Code") by Troy Lowien, Resource Geologist, of consultants Coffey Mining Pty Ltd, who is a Member of The Australasian Institute of Mining and Metallurgy ("AusIMM") and has a minimum of five years of experience in the estimation, assessment and evaluation of Mineral Resources of this style and is the Competent Person as defined in the JORC Code. Troy Lowien conducted the geological modelling, statistical analysis, variography, grade estimation, and report preparation. This report accurately summarises and fairly reports his estimations and he has consented to the resource report in the form and context in which it appears. This information was prepared and first disclosed under the JORC Code 2004. It has not been updated to comply with the JORC Code 2012 on the basis that the information has not materially changed since last reported on 28 October 2009.

The Mount Morgan Opportunity

Utilising technology innovation to unlock significant metal value left behind after 100+ years of operations



Carbine Resources Snapshot

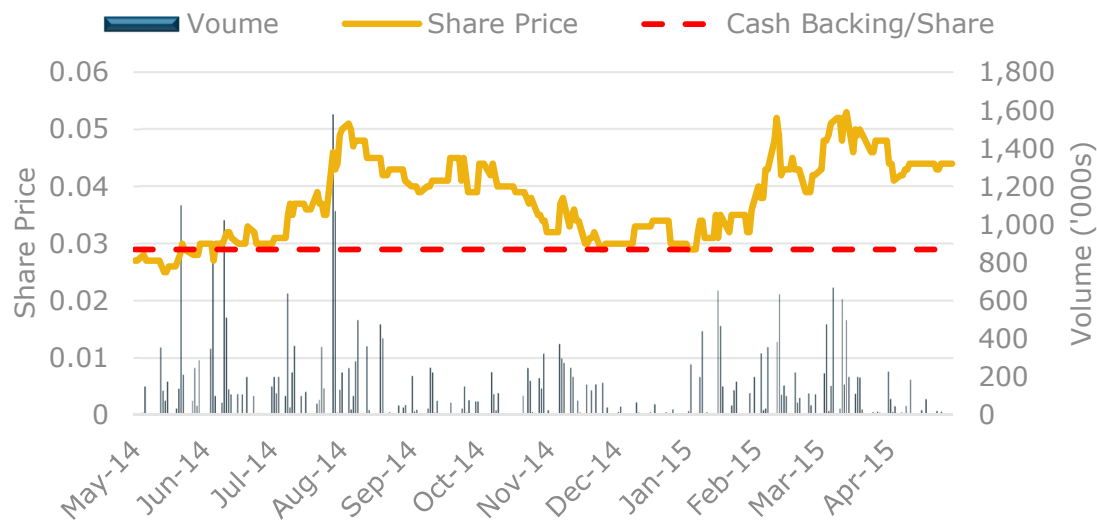
Capital Structure

Shares (ASX: CRB)	140 million
Unlisted Options (\$0.05 - \$0.20)	28 million
Market Capitalisation (@ \$0.044/share)	\$6.2M
Cash & Deposits (31 Mar 2014)	\$3.9M
Enterprise Value	\$2.3M

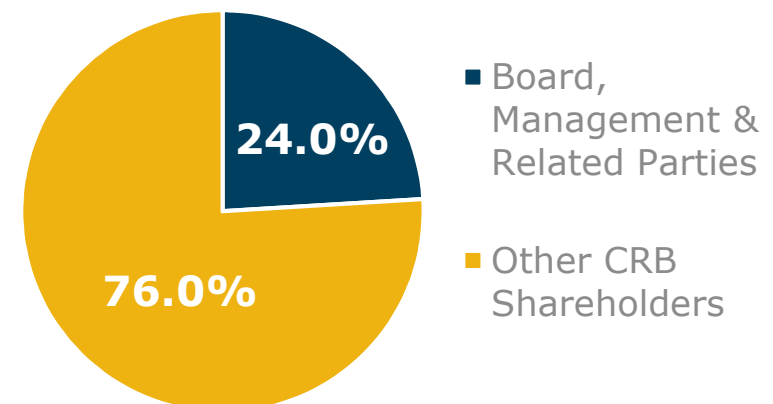
Board & Management

Patrick Walta	Executive Director
Evan Cranston	Non-Exec Director
Tom Bahen	Non-Exec Director
Rod Smith	Chief Metallurgist
Russell Dann	Project Specialist

Share Price History



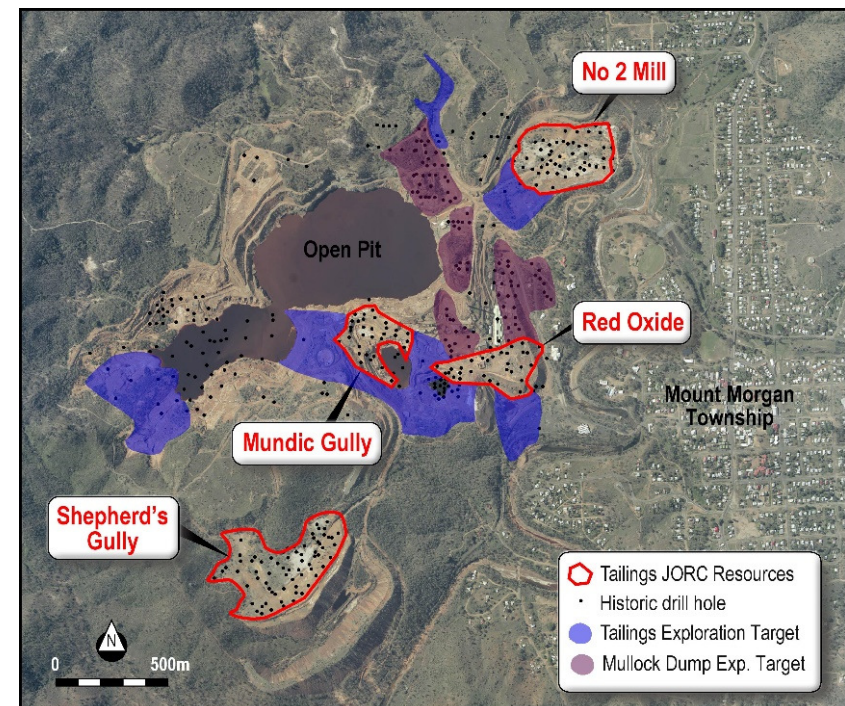
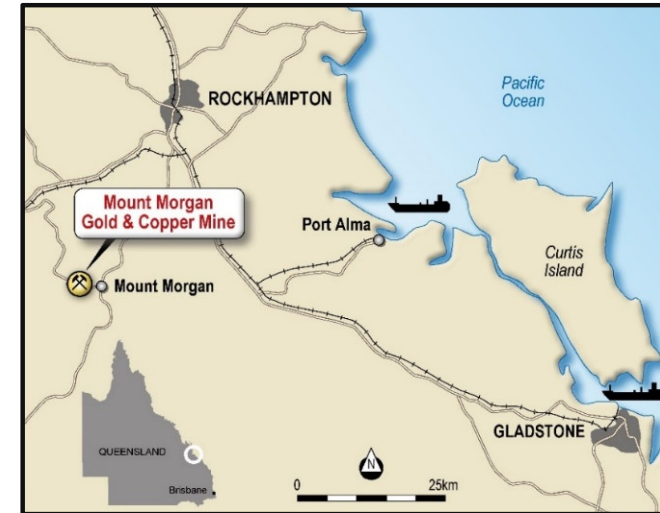
Significant Shareholders



Mount Morgan Mine Overview

Location & Historical Activity

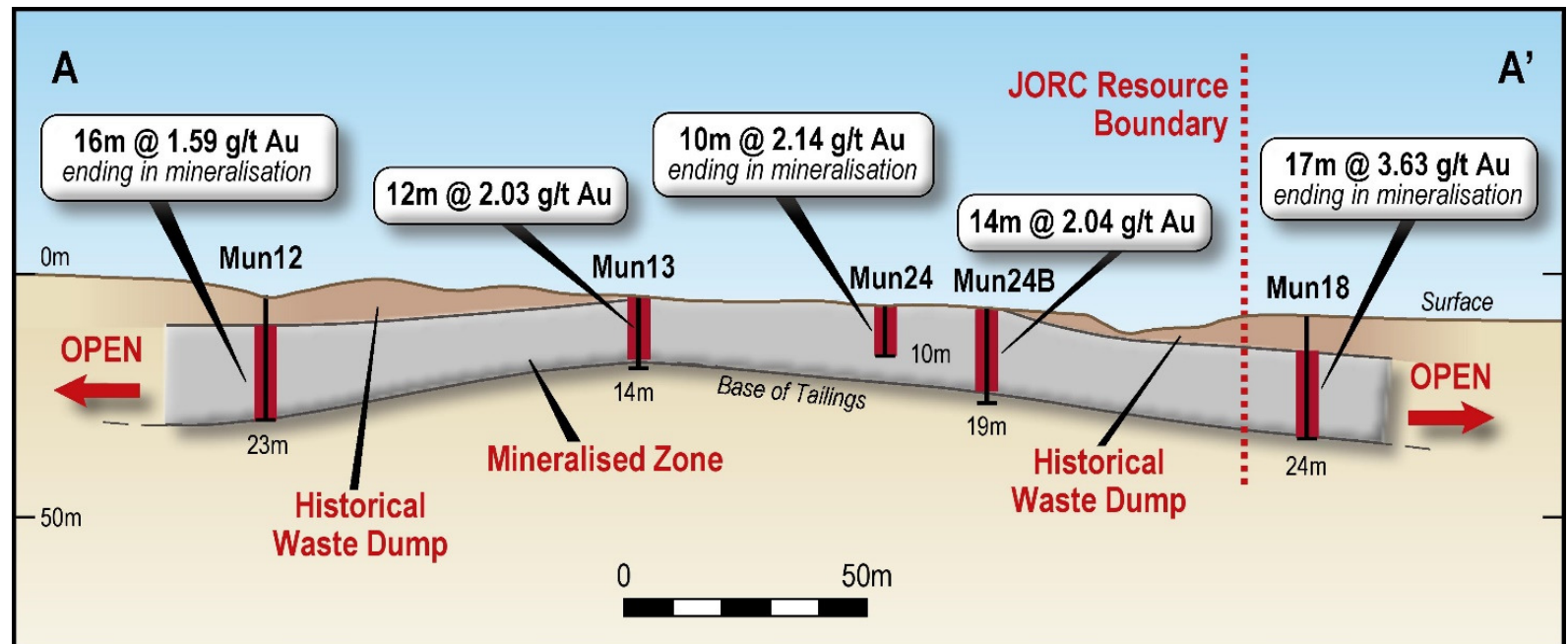
- Significant historical gold mine
- Close proximity to cities, ports & rail
- Deposit mined for ~100 years
- Production 8.4Moz Au, 400kt Cu, 1.2Moz Ag
- ~40Mt tailings deposited on site
- Environmental legacy owned by QLD gov



1Moz+ Au Remaining in Tailings

Resources	Tonnes		Au (g/t)		Cu (%)		Au (oz)		Cu (t)	
Indicated	2.49 Mt		1.59		0.16%		127,000		3,900	
Inferred	5.86 Mt		1.07		0.14%		202,000		8,400	
TOTAL JORC	8.35 Mt		1.23		0.15%		329,000oz		12,300t	
TOTAL EXP. TARGET*	<i>Low</i>	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>	<i>High</i>
	31.8 Mt	39.8 Mt	0.67	0.79	0.11%	0.19%	690,000oz	1,015,000oz	36,500t	76,500t

***2015 Drilling Results:
Opportunity to high grade early operations***



* The potential quantity and quality in these exploration targets are conceptual in nature, there has been insufficient exploration to define a Mineral Resource and it is uncertain if further exploration will result in the determination of a Mineral Resource



Identified Need for Innovation

Primary Ore Mining Operations (1882-1980)

Historical Tailings Operations (1981-1991)

- 28Mt tailings reprocessed via 3Mtpa CIL plant
- Excess cyanide consumption caused by soluble copper
- Operations ceased due to increased copper and falling gold price (<US\$350/oz)

Norton Gold Fields Tailings Feasibility Study (2010)

- Gold CIL flowsheet – taking advantage of higher gold prices
- Additional pyrite concentrate recovery (secondary revenue stream)
- GFC, financial issues & focus on WA assets hampered progress
- Soluble copper remained a central issue to project viability

Site dormant for 25 yrs.

**Mineral content &
enviro. legacy remain**



Unlocking the Value...

Carbine's Process Solution: Reverse Leach IX – CIL

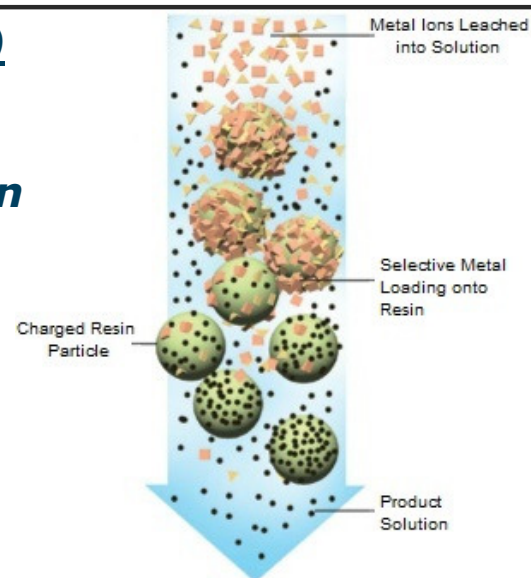
- Application of ion exchange technology to solve soluble copper issue
- IX technology provides:
 - Selective removal of copper prior to gold CIL extraction
 - Decreased cyanide consumption in gold circuit
 - Additional revenue stream from copper production
 - Increased gold recoveries (reduced Cu competition)



Operating 4,500m³/hr
IX facility in Kazakhstan
(Kazatomprom JSC)

ION EXCHANGE (IX)

- *Developed in the Former Soviet Union*
- *60+ years of operating history*
- *30+ full scale IX operations globally*



Testwork Results

Tailings Testwork

- **80% reduction in cyanide consumption** via upfront copper removal

Testwork	Leach Mechanism	Cyanide Consumption
As Received	Cyanide CIL	5.54 kg/t
75um Grind	Cyanide CIL	5.25 kg/t
75um Grind	Acid IX & Cyanide CIL	1.00 kg/t

- **91% recovery of pyrite** to a saleable high grade concentrate
- **Significant increase in gold extraction** compared with previous operations
- Successful copper recovery for additional by-product revenue

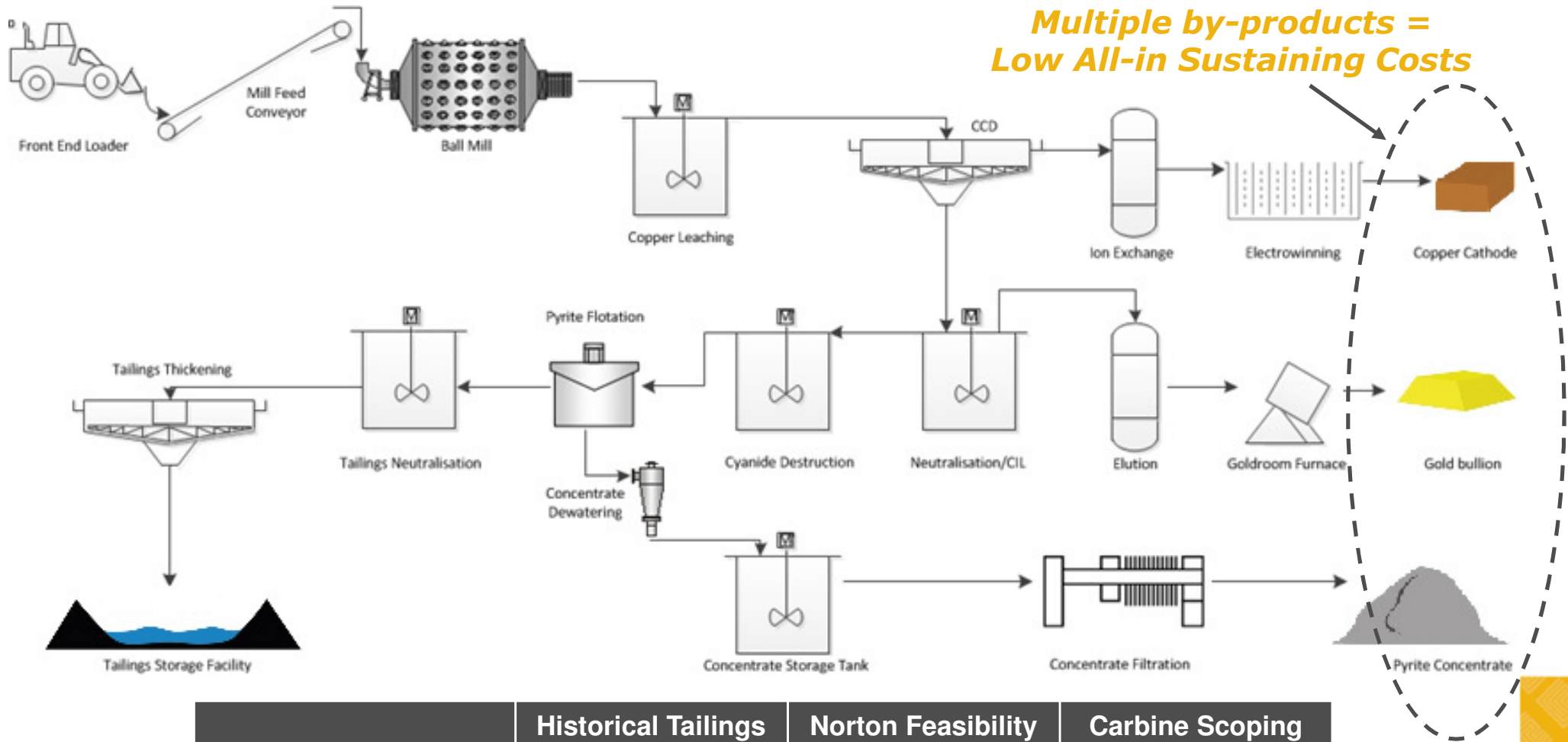
Pit Water Testwork

- Low pH: Sufficient acid resource for IX process on tailings
- Contains elevated levels of dissolved copper in solution
- Pit water treatment: 99.9% copper extraction via single pass IX
- Opportunity for near term cash flow via water treatment

Carbine's Flowsheet



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Metal Extraction	Historical Tailings Reprocessing (1981 – 1991)	Norton Feasibility Study (2010)	Carbine Scoping Study (2014)
Gold	50 - 55%	65%	78%
Pyrite	-	86%	91%
Copper	-	-	56%

Scoping Study Results

Parameters

Parameter	Value	Notes
Mine Life	8 years	JORC resources only
Annual Throughput	1,000,000 t/yr	Based on available JORC resources
Production		High grade resources targeted during initial years of operations
<i>Gold</i>	36,000 oz/yr	
<i>Copper</i>	850 tpa	
<i>Pyrite</i>	230,000 tpa	

Results

Parameter	Value	Notes
Capital Costs	A\$ 81.9M	Assumed new plant construction
Operating Costs	A\$ 32.2/t	
All-in Sustaining Costs	US\$ 393/oz	Life of mine

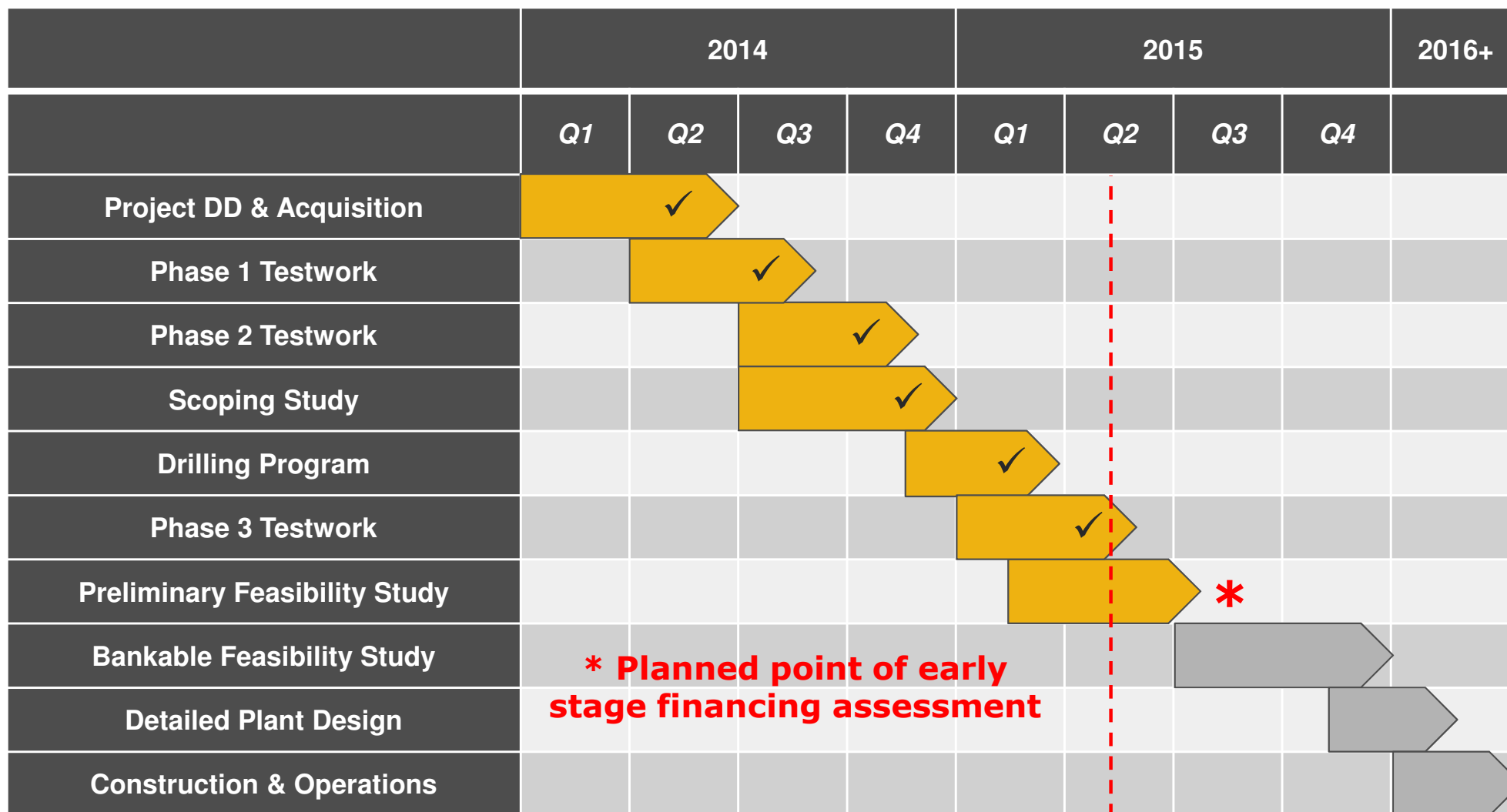
* Note: Metal Prices: gold US\$1,250/oz, copper US\$7,000/t, pyrite US\$86/t. Ex. Rate \$0.85

The application of ion exchange technology has provided a mechanism to unlock the remaining metal value at Mount Morgan

Achieving Project Milestones



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- All key milestones achieved within prescribed timeframes
- Continuing to aggressively pursue development milestones

Further Innovation Upside

Additional plans for innovation at Mount Morgan:

- **Assessment of the use of copper Resin-in-Leach (RIL) over CCD-IX**
 - Likely capex reduction & improvement in copper extraction
- **Production of copper sulphate over copper cathode**
 - Capex reduction via removal of electrowinning circuit
 - Increased revenue from higher value products
- **Upfront flotation of pyrite concentrate**
 - Potential lowering of capex by reducing ore throughput
 - Further improvements in overall gold recovery
- **Assessment of gold RIL over gold CIL**
 - Potential additional recovery of copper and lower reagent consumption

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