



CARBINE RESOURCES
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ASX / MEDIA ANNOUNCEMENT

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**MOUNT MORGAN GOLD PROJECT TAKES
ANOTHER KEY STEP TOWARDS PRODUCTION
WITH OUTSTANDING RESULTS FROM
DEMONSTRATION PLANT**

Watch the video of the demonstration plant work at www.carbineresources.com.au

Carbine Resources Limited (ASX:CRB) is pleased to announce outstanding results from the Demonstration Plant test work conducted as part of its plan to bring the Mount Morgan Gold Project in Queensland into production.

The results confirming the proposed process flow sheet will deliver the technical and economic outcomes outlined in the feasibility study (ASX: 8 December 2016 & 9 May 2017).

The results, along with the new pyrite offtake arrangements, updated commodity prices and exchange rate forecasts, will be included in a new economic model on the Project. This revised economic model will form a key part of Carbine's discussions with potential financiers.

Carbine Managing Director, Tony James, said the highly successful results of the demonstration plant marked another key milestone in the Company's plan to bring Mount Morgan into production.

"The test work validated the process flow sheet designed for Mount Morgan on a repetitive basis." Mr. James said "It has also de-risked some aspects of the proposed plant and presented several improvement opportunities that will be considered as the project progresses. This work allows us to translate the continuity cycle tests into the final design criteria and front end engineering and design which we will then feed into a revised economical model that will underpin our discussions with financiers".

The Demonstration Plant work has taken five months to complete and a short video showing the work completed and an overview discussion by the Managing Director has been recorded by the Sophisticated Investor. The video can be viewed on the Carbine Resources website – www.carbineresources.com.au

Key results

The Mount Morgan process flow sheet consists of five steps within in the circuit being,

1. Ore preparation and handling using representative sample of the tailings to be mined and processed
2. Resin in pulp (RIP) recovery of acid soluble copper
3. Pyrite flotation and recovery
4. Gold extraction by cyanide leaching and recovery
5. RIP recovery of cyanide and copper from tailings stream for copper recovery and cyanide reuse

A high level results comparison between the feasibility study and the Demonstration Plant are summarized in the table below. The Demonstration Plant ore feed represents the blend that was determined in the feasibility study for processing over the first three years of the Project.



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Description	Feasibility Study (2016)	Demonstration Plant (2017)	Comment
ORE FEED BLEND	Years 1-3 ¹	50% No 2 mill, 40% Mundic & 10% Red Oxide	Sample representative of 1 st 3 years of ore blend
Gold (g/t)	1.66 ²	1.76	
Copper (%)	0.15 ²	0.16	
Pyrite Eq(wt%)	21.3 ²	23.6	
COPPER RIP			
Copper solution grade before RIP (mg/L)	662	547	
Copper solution grade after resin loading (mg/L)	0.0	3.8	No indication of higher than normal resin degradation
PYRITE FLOTATION			
Flotation concentrate pyrite grade (%)	93	92	
Pyrite concentrate sulphur grade (%)	50	50	
Pyrite concentrate iron grade (%)	43	43	
GOLD CIL			
Gold solution grade before CIL (ppm)	1.06	1.04	
Gold solution grade after carbon loading (ppm)	0.02	0.08	
Gold residue grade before CIL (ppm)	0.2	0.3	
Gold residue grade after carbon loading (ppm)	0.2	0.3	
CYANIDE RIP			
Cyanide solution grade in gold tailings (ppm)	471	600	
Cyanide solution grade after resin loading(ppm)	28	20	No indication of higher than normal resin degradation
Copper solution grade in gold tailings (ppm)	254	189	
Copper solution grade after resin loading (ppm)	0.25	15	No indication of higher than normal resin degradation

Table Notes: 1 – Table 10 Mount Morgan FS processing physicals (ASX: 8 December 2016), 2 – Weighted average of years 1-3 table 10 Mount Morgan FS processing physicals (ASX: 8 December 2016)

The Demonstration Plant work was designed to confirm the individual parts of the flow sheet and the continuity of the process from section to section in a repetitive process. The demonstration validates the previous feasibility study work and confirms that in a continuous and repetitive basis no unexpected chemical or metallurgical reactions compromise the flowsheet design and objectives.

The demonstration plant work is being carried out as part of the Front End Engineering and Design (FEED) work and was conducted at the ALS laboratory in Balcatta, Perth, Western Australia (ASX: 9 May 2017). New composite ore feed samples were collected from Mount Morgan (500kg tailings sample) along with 2,000L of



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open pit water (intended process water) and transported to Perth for the work. The ore feed sample was sourced from RC chip samples collected in the Company's 2015 and 2016 drilling campaigns.

The Demonstration Plant test work was separated into 5 different work streams which culminated in a semi-continuous demonstration of the flow sheet. Each work stream is outlined as follows.

1. Receive composite sample from site and prepare for test work and carry out baseline assays. Conduct initial batch CIP, RIP and Detox tests for the various minerals.
2. Complete batch test work including, grinding, bulk flotation, thickening, open vat leaching, sealed bottle rolls and sealed reactor tests.
3. Batch testing associated with CIP, A500 & A100 resin RIP, Detox, multiple contact resin loading tests and resin strength and integrity tests.
4. Ore feed test work including screening, grindability and mineralogy. Final establishment and set up of demonstration plant. Commence demonstration plant including copper RIP, pyrite flotation and gold CIL.
5. Demonstration plant continuation for Cyanide/Copper RIP recovery and recycle analysis.

The Company is currently waiting for all the test work results to be finalized and then, in conjunction with GRES, will revise the project design criteria (PDC) and metallurgical balances. This will allow GRES to confirm both the plant capital and operating costs prior to the Company updating the economic model for the Project.

During the Demonstration Plant work, Carbine and GRES technical officers were able to visit a successfully operating resin plant being used for the extraction of cyanide as planned for the Mount Morgan Project. The plant is located at the Mirah Gold mine in Indonesia where Green Gold Engineering has installed the resin circuit.



Figure 1 – Mirah Gold Mine cyanide recovery resin circuit.



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