



# CARBINE RESOURCES LIMITED

ASX / MEDIA ANNOUNCEMENT

12 January 2016

## CARBINE SECURES BINDING COPPER SULPHATE OFFTAKE AGREEMENT

### Highlights

- ◆ Up to A\$8 Million per annum copper sulphate offtake contract
- ◆ Binding commitment for initial 1,200tpa from near term water treatment operations
- ◆ Potential for expansion up to 5,000tpa from future tailings reprocessing operations
- ◆ Significant copper and pyrite revenue now secured:
  - Copper offtake only: 27% reduction in C1 Cash Costs (US\$680/oz to US\$494/oz)
  - Copper & Pyrite: 89% total reduction in C1 Cash Costs (US\$680/oz to US\$75/oz)
- ◆ US\$234/oz All-in Sustaining Costs for life-of-mine

Carbine Resources Limited (ASX: CRB) is pleased to announce the execution of a binding Principal Offtake Agreement with chemical and mineral distributor Swancorp Pty Ltd for the sales of copper sulphate produced at the Mount Morgan Gold & Copper Project.

Annual revenue from the agreement is projected at up to A\$8 Million per annum, which is anticipated to reduce the C1 Cash Costs for the operations by 27% from US\$680/oz to US\$494/oz. Combining the expected earnings generated from both copper sulphate and the recently announced pyrite offtake, the C1 Cash Costs for the operations are reduced by 89% from US\$680/oz to US\$75/oz. The projected All-in Sustaining Costs for the Project remain at US\$234/oz.

The copper sulphate offtake contract therefore provides an additional significant by-product revenue stream for the proposed operations, which is in addition the Project's major revenue source from gold sales.

The agreement follows on from extensive of due diligence, off site trial production, end-user testing and pricing negotiations. Under the terms of the contract, Carbine and Swancorp have agreed:

- A three year exclusivity for mine gate sales of up to 1,200tpa of Mount Morgan copper sulphate, providing a mechanism for near term sales of production from water treatment operations at Mount Morgan;
- Potential extension of the contract to up to 5,000tpa by mutual agreement, providing a mechanism for future sales from tailings reprocessing; and
- Pricing at a fixed formula relative to the LME copper cathode price, representing a significant premium on the LME copper price.



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The offtake agreement provides a pathway for Carbine to potentially develop near term cash flow via copper processing at Mount Morgan.

Substantial dissolved copper exists in acidic water contained within the historical open pit. This copper can be extracted via the use of simple ion exchange water treatment.

The development of a facility for copper extraction via pit water processing would also serve as a demonstration scale use of ion exchange technology for copper recovery from the larger tailings retreatment facility.

Carbine will update the market on material developments associated with the near term sales from water treatment operations as they develop.

### For further information, please contact:

**Patrick Walta** – Executive Director (08) 6142 0986

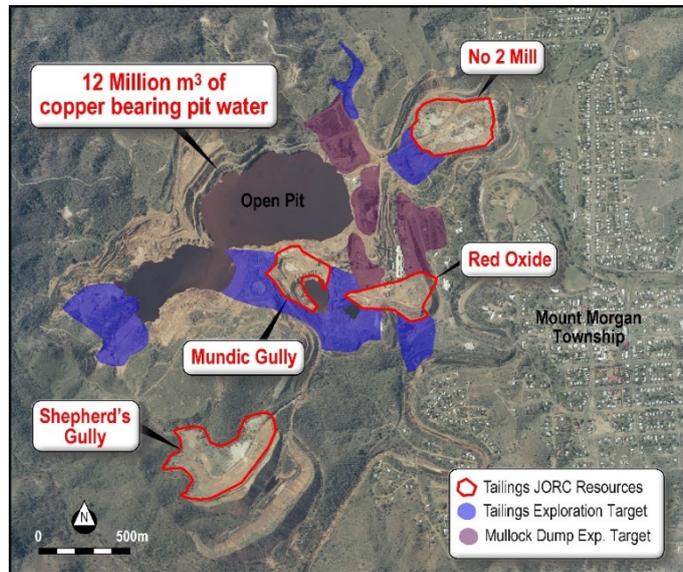
### Swancorp Pty Ltd Overview

Swancorp Pty Ltd was established in Brisbane in 1987 to supply specialty fertiliser products to a broad customer base in the agriculture, horticulture, turf, stock feed, mining and drilling industries in both Australia and New Zealand.

Swancorp markets a full range of sulphur based stock feed additives and fertiliser products including ammonium sulphate, calcium nitrate, gypsum, copper sulphate, ferrous sulphate, magnesium sulphate, MAP, MKP, potassium chloride, potassium sulphate, and zinc sulphate.

Swancorp works closely with suppliers to ensure product quality. Their branded sulphur, soluble nutrient and soil conditioner ranges have reputations for quality and reliability in the market place.

In addition, the Company maintains operating stocks in warehouses in Brisbane, Sydney, Melbourne, Perth and Adelaide.



**Figure 1: Mount Morgan mine & historical open pit containing elevated dissolved copper levels**



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## Copper Sulphate Overview

Approximately 275,000 tonnes of copper sulphate is consumed globally each year. It is primarily used in the agriculture and mining industries however it has many applications in various other industries including building, pharmaceuticals, printing and paint manufacture.

### Agriculture:

Copper sulphate is highly soluble which is ideal for stock feed as the mineral can be easily absorbed by the animal. This solubility is also highly beneficial for fertilisers, allowing copper sulphate to be readily absorbed by crops and plants.

The main agricultural uses of copper sulphate are:

- As a micronutrient in animal feeds and fertilisers for correction of copper deficiency;
- As a fungicide and algacide to control diseases of fruit and vine trees as well as algal bloom prevention; and
- As a disinfectant against storage rots and for the control and prevention of certain animal diseases.

Recently the sale of feed grade copper sulphate derived from scrap copper metal (containing toxins) was banned by several countries, reducing supply by over 50% worldwide.

### Mining:

The mining industry employs copper sulphate as a flotation reagent in the concentration of ores. The major ore that uses this technique is zinc, and it is used to a lesser extent in lead, cobalt and gold. The majority of Australia's zinc production stems from Queensland, contributing 65% to national zinc production in 2014.