

**ASX / MEDIA ANNOUNCEMENT** 

14 May 2015

# OFFTAKE FROM MOUNT MORGAN

# **Highlights**

- Letter of Intent signed for copper product sales from Mount Morgan
- Targeting mine gate offtake of high value copper sulphate
- Copper sulphate sold at a premium to the LME copper cathode price
- Potential for near term production & cash flow via copper extraction from pit water

**Carbine Resources Limited (ASX: CRB)** is pleased to announce the execution of a Letter of Intent (LOI) with chemical and mineral supplier Swancorp Pty Ltd for the offtake of copper produced at the Mount Morgan Gold & Copper Project. The LOI allows for mine gate sales of copper in the form of copper sulphate pentahydrate.

Offtake of copper sulphate has a number of economic benefits over copper cathode, namely:

- Premium product value compared to copper cathode on a contained tonnage basis;
- Flowsheet simplification and capex reduction via the removal of copper electrowinning; and
- Reduction in transportation costs through mine gate sales and regional distribution.

The LOI also 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.

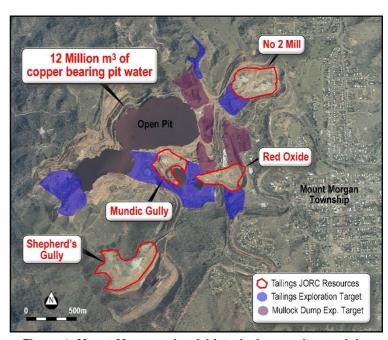


Figure 1: Mount Morgan mine & historical open pit containing elevated dissolved copper levels



Under the terms of the LOI, the parties have agreed to negotiate and finalise offtake pricing and quantities on completion of Swancorp's due diligence and confirmatory analysis of Carbine's copper sulphate product. The terms remain non-binding but are to be based on the following:

- Mine gate sales of copper in the form of copper sulphate pentahydrate;
- Offtake tonnage of initially 1,200t per annum of copper sulphate, with the parties to discuss potential for up to 5,000t per annum;
- Offtake pricing mechanism will be based on the London Metal Exchange (LME) copper cathode price plus an agreed manufacturing cost; and
- The initial term of the offtake agreement will be three years.

The LOI allows for the potential sale of the second by-product from the proposed gold operations (in addition to high grade pyrite sales, see ASX announcements 28/01/15 & 09/03/15). By-product sales are projected to assist the overall value proposition of Mount Morgan operations by increasing revenues and lowering all-in sustaining costs.

### **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.

#### **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.

## <u>Agriculture:</u>

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 algaecide 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.

## For further information, please contact:

Patrick Walta - Executive Director (08) 6142 0986