



27 March 2014

KITUMBA COPPER PROJECT PREFEASIBILITY STUDY OPTIMISATION UPDATE

Key Points

- **The Kitumba Copper Project PFS Optimisation programme is progressing well, with results expected to be released by the end of April 2014**
- **Work completed to date includes:**
 - **December 2013 Mineral Resource estimate results incorporated**
 - **Mine plan design and production sequencing revised**
 - **Metallurgical testing and Process Flowsheet design completed**
 - **A simple power supply solution has been identified for the project**
- **Work completed to date is showing encouraging results with the aim of providing:**
 - **Improved feed grade**
 - **Improved recovery**
 - **Lower operating costs, and**
 - **Substantially improved economics**

Blackthorn Resources Limited (ASX: BTR) is pleased to provide the following update for the Kitumba Prefeasibility Study Optimisation (PFS Optimisation).

The Kitumba Copper Project PFS Optimisation studies were started following release of preliminary PFS results in September 2013.

The preliminary PFS demonstrated an economic project at Kitumba, and importantly, put the Company in a position to apply for a mining licence at the project. The preliminary PFS also recognised that the project design was not optimised and that further work was required to maximise its development potential.

Perth-based Lycopodium Minerals and Australian Mining Consultants were engaged to complete a series of optimisation studies on the PFS to develop the key areas identified as having the greatest potential to improve the project economics.



Work completed to date is showing encouraging results with the aim of providing improved feed grade, improved recovery, lower costs and substantially improved economics. It should also be noted that a simple power supply solution for the project has been identified by ZESCO (the Zambian state owned power generation and distribution company).

The Kitumba Copper Project has the potential to be of great value to Blackthorn Resources, and the completion of the PFS Optimisation work is the next important step in the development programme for this important asset.

The results of the optimisation study are expected to be released to the market before the end of April 2014.

Chief Executive Officer, Mark Mitchell said:

“Considerable progress has been made on the Kitumba Copper Project PFS Optimisation and we are greatly encouraged by the outcomes to date. Whilst the preliminary PFS results released in September 2013 indicated that the Kitumba Copper Project was economically and technically feasible, the optimisation work is providing further indication of enhanced economics in line with our expectations outlined when the optimisation programme commenced.”

Kitumba Copper Project

Background

The Kitumba Copper Project area is located approximately 200km west of Zambia’s capital, Lusaka (Figure 1). It is currently the main focus of activity within the larger exploration property, Mumbwa, which comprises five exploration licences covering approximately 1,036 sq. km.

The Mumbwa Exploration Project area is underlain by a giant mineralised iron-oxide alteration system extending over 25km along a north-south trending structural corridor, with associated large scale magnetic and gravity anomalies. The Kitumba and Kakozhi areas are the main immediate target areas for exploration, with ongoing exploration work in progress.

Figure 1: Kitumba Project – Regional Location Plan



The Kitumba deposit is located on the western flank of a north-south trending massive haematite replacement breccia system, and is expressed as a broad zone of copper mineralisation, with gold mineralisation spatially associated with the linear breccia system. The currently defined extent of the deposit covers an area of 1,800m along a north-south strike by 700m in width.

Copper mineralisation at Kitumba comprises a primary hypogene disseminated to semi-massive pyrite-chalcopyrite assemblage that has been extensively modified by deep weathering and oxidation resulting in a redistributed supergene assemblage comprising secondary copper minerals in the form of malachite, chalcocite, pseudomalachite and cuprite, as well as native copper.

The deposit shows a grade zonation with a well-developed high-grade zone related to supergene concentration of mainly malachite and chalcocite with accompanying native copper in a zone of structural complexity and deep weathering. The high-grade copper zone (the Kitumba orebody) is located between 150m and 600m vertical depth from surface, and extends along strike for a distance of ~500m and across strike for ~300 meters.

The proposed development area is readily accessible for heavy equipment by road. The land is of little agricultural value and the nearest village is more than 10km away. Blackthorn Resources has made engagement with the surrounding community, businesses and government authorities a priority and will continue to involve the community in the development of the project.

Mineral Resource Estimate

An updated Mineral Resource estimate for the Kitumba deposit was released in December 2013 – reported in accordance with the JORC Code (2012 Edition), refer to ASX Announcement ‘Kitumba Mineral Resources Update’ dated 16 December 2013, a copy which is available on the Company’s website at www.blackthornresources.com.au.

Using a 1% Cu cut-off, the Kitumba deposit contains a total Measured and Indicated Mineral Resource of 34.7 Mt at 2.29% Cu for a total of 795,000 tonnes of copper.

Mineral Resource Estimate by Category, December 2013 – at 1% Cut-off Grade

CATEGORY	TONNES (Mt)	CU GRADE (%)	AU GRADE (g/t)	AG GRADE (g/t)	U GRADE (ppm)
Measured	10.4	2.93	0.04	1.16	23
Indicated	24.2	2.02	0.03	0.89	28
Measured & Indicated	34.7	2.29	0.03	0.97	27
Inferred	4.1	1.37	0.03	0.65	30
Total	38.8	2.19	0.03	0.93	27

ATTRIBUTION

The information in this report which relates to Mineral Resources at the Kitumba Project in Zambia is extracted from the report entitled “Kitumba Mineral Resource Update” released to ASX on 16 December 2013 which is available on the ASX website at www.asx.com.au or the BTR website at www.blackthornresources.com.au. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and, in the case of estimates of Mineral Resources that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement 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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