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# **ASX Announcement**

23 July 2013

# **Chinalco Yunnan Copper Resources Ltd (ASX:CYU)**

#### **JUNE 2013 QUARTERLY ACTIVITIES REPORT**

#### **Projects**

- Completion of successful initial Blue Caesar exploration program, highlighted by:
  - Broad zones of near surface primary sulphide mineralisation, grading 25m @ 1.62% copper from 28 metres, highlighted by a high grade intersection of 8m @ 3.63% copper from 29 metres including 1m @ 17.3% copper from 30 metres intersected in hole MKBC002.
  - Near surface primary sulphide mineralisation intersected in MKBC003 highlighted by 10m @ 1.13% copper from 36 metres including 2m @ 3.23% copper from 38 metres.
  - 135m of mineralisation strike extent defined between MKBC002 and MKBC003.
- Phase 2 exploration program at Blue Caesar commenced.
- Metallurgical test work completed on samples from Elaine copper-gold resource program – very good copper flotation results were achieved from the Elaine project composite sample.
- Withdrawal from Chile farm-in agreements Candelabro and Caramasa projects.
- Geophysical survey work completed at Sulfato project in Chile, drilling planned later in 2013.
- Geophysical survey commenced at the Palmani project in Chile.
- Northern Laos interests of San Mu Mining to be sold.

#### Corporate

- Project acquisition opportunities are continuing to be assessed and pursued.
- Continued focus on project activities that are most likely to maximise shareholder value.

The Board of Chinalco Yunnan Copper Resources Limited (CYU) provides this activities update for the three months to 30 June 2013.

## <u>Summary – North-west Queensland</u>

Regional field programs undertaken have targeted the Mary Kathleen Shear Zone, identifying further copper-gold mineralised prospects similar in style to the Elaine

exploration model. A 650m in three (MKBC001-MKBC003) diamond hole drill program was undertaken at the Blue Caesar prospect in April-May 2013. The drilling targeted coincidental geochemical, geophysical and surface mineralisation similar in style to the Elaine copper-gold resource situated 400m to the southeast along strike of the Mary Kathleen Shear Zone.

CYU continued to advance its projects in north-west Queensland with metallurgical scoping test work undertaken at its Elaine copper-gold resource. The Elaine JORC Inferred Resource of 27.7million tonnes with a contained metal content of 147,000 tonnes of copper and 75,000 ounces of gold was defined in 2012.

# 1. <u>Mount Frosty Joint Venture (CYU/Goldsearch earning in, Xstrata Mt Isa 100%)</u>

Final analytical results have been returned for each of the three holes – see Tables 1 and 2 set out in Annexure A to this announcement. CYU has previously announced to the market the more significant results for this program. Now that all assays have been obtained, the highlights of the program were:

- MKBC002: 25m @ 1.62% copper from 28 metres down hole depth at a 0.5% copper cutoff including a massive copper sulphide intersection of 1m @ 17.3% copper from 30 metres down hole depth. This mineralisation is enveloped in a broader zone of visual mineralisation grading 79m @ 0.68% copper from ~20m vertical depth. Further significant mineralisation included 2m @ 2.79% copper and 0.53 g/t gold from 94m down hole depth at a 1% copper cutoff including 1m @ 4.37% copper and 1.01g/t gold from 95m down hole depth.
- MKBC003: 10m @ 1.13% copper from 36m down hole depth at a 0.5% copper cutoff including 2m @ 3.44% copper from 38m down hole depth at a 1% copper cutoff. This mineralisation is also enveloped in a broader zone of visual mineralisation grading 54m @ 0.40% copper from ~30m vertical depth.
- Further significant mineralisation included 7m @ 0.53% copper from 57m down hole depth. The mineralisation intersected in MKBC002 and MKBC003 defines a 135m strike extent that is characterised by very near surface disseminated, predominately copper sulphide mineralisation. In particular, Hole MKBC002 intersected multiple zones of mainly stringer and disseminated copper sulphide mineralisation with pods of semi-massive to massive copper sulphide mineralisation occurring from 27m down hole depth (~20m vertical depth from surface).

This first pass drilling program at the Blue Caesar prospect has successfully tested the current exploration model developed from the work undertaken at the Elaine resource. This model is being used to assist in identifying additional potential trap sites along the 12km long Mary Kathleen Shear Zone that hosts the 27.7Mt Elaine copper-gold JORC inferred resource and the historic Mary Kathleen Uranium Mine.

Having now completed the initial evaluation of the Blue Caesar prospect, a follow up 1,000 metre drill program targeting a 400m x 100m surface area commenced in early July. This program will seek to further define the geometry of the Blue Caesar mineralised body and evaluate the 400m previously untested strike south-east to the

Elaine prospect. The Phase 2 drill program is designed at a nominal 100m drill line spacing stepping out from MKBC002 and will also be targeting the depth extension at 50m spacing. Recent geological mapping has identified a series of copper stained gossan outcrops situated along this trend.

Another feature of the exploration program currently being conducted by CYU is an EH4 geophysical survey targeting the Mary Kathleen Shear Zone north of the Blue Caesar prospect. The EH4 technology produces high-resolution 2D images of geological structures by detecting and mapping variations in subsurface conductivity/resistivity to depths of up to 1.2kms below the land surface. Yunnan Copper Mineral Resources Exploration and Development Co. Ltd. (YEX) utilises the EH4 technology extensively in China, but has recently been engaged by CYU to conduct surveys as part of the Elaine/Blue Caesar exploration program. It is intended that this survey will better enable CYU to establish future drillhole target locations along the Mary Kathleen Shear Zone.

## 2. Mary Kathleen Joint Venture (CYU 70%, Goldsearch 30%)

CYU have previously announced the undertaking of metallurgical scoping test work studies on drill core from MKED036 to measure copper and gold recovery rates within the previously announced 27.7mt Elaine copper-gold JORC inferred resource (Elaine Inferred Resource). A zone of high grade gold and copper mineralisation was also selected from MKED023. The location of the two drillholes is shown in Table 3 below.

Table 3: Mary Kathleen Joint Venture Project Q4 2012 Drillhole location

Hole_ID	East *	North *	RL (m)	Azi (º)	Dip (º)	Depth (m)
MKED023	398,225	7,699,571	449	328	-70	891.70
MKED036	398,095	7,699,705	385	N/A	-90	896.98

<sup>\*</sup> Datum: UTM - MGA94 Zone 54.

CYU undertook the preliminary Elaine metallurgical scoping test work on limited drill core. The scoping test work was designed to provide a preliminary indication of the characteristics and the amenability of the mineralisation to conventional copper flotation techniques. The test work comprised:

- 1. Sample preparation and chemical characterisation:
  - Head assay.
  - Mineralogy.
- 2. Comminution tests:
  - Bond rod mill work index determination.
  - Bond ball mill work index determination (106 µm closing screen size).
  - Bond abrasion index determination.
- 3. Preliminary flotation testwork:
  - Sighter flotation tests.
  - Grind sensitivity.
  - Reagent screening.
  - Regrind sensitivity.
  - Two stage cleaner flotation.

- Concentrate analyses.
- Size by size analysis.

Three zones of typical mineralisation were selected by CYU from MKED036 characterised by high grade copper mineralisation and low-moderate grade mineralisation. Check assaying of zones sampled confirmed the significant sulphide mineralisation zone identified and targeted for test work sampling.

Each zone comprised a composite sample varying in width from 6-8 metres. Intervals and length weighted average for each zone is outlined in Table 4 below.

Table 4: Metallurgical sample zones MKED023 & MKED036

Hole_ID	mFrom	mTo	Width	Au (g/t)	Cu (%)	Comment
MKED023	462	470	8.0	1.07	1.26	LWA
MKED036	234.6	243	8.4	0.18	1.25	LWA
MKED036	492	498	6.0	0.06	0.24	LWA
MKED036	638	644	6.0	0.05	0.42	LWA
				0.34	0.79	

Final results were returned from ALS Metallurgy lab (Adelaide) at the end of March 2013 and were then reviewed by consulting firm GR Engineering Services Limited (ASX:GNG) (GRES).

Head assays for the scoping test work composite sample are summarised below in Table 5. The detailed head assay analysis aims to identify all trace elements, both metallic and non-metallic, within the Elaine Inferred Resource to better understand the characteristics of the mineralisation. The key elements of interest include copper, gold, sulphur, iron and any deleterious elements such as arsenic, antimony, mercury, bismuth, fluorine, chlorine and other base metals (lead, nickel and zinc).

Table 5: Detailed Head Assay Results for Scoping Test Work Sample

Element	Unit	Assay	Element	Unit	Assay
Cu	%	0.81	Ni	ppm	660
Au	g/t	0.28	Р	ppm	3,250
S <sub>TOTAL</sub>	%	10.7	Pb	ppm	60
As	ppm	90	Sb	ppm	0.4
Bi	ppm	50	Sc	ppm	8
CI	ppm	Not Determined	Si	%	13.5
Со	ppm	400	Th	ppm	162
F	ppm	1,640	U	ppm	41.7
Fe	%	22.5	V	ppm	45
Mg	%	2.60	W	ppm	130
Мо	ppm	40	Zn	ppm	45

The composite Head Assay returned a significant amount of copper and gold contained in the sample. It was noted that the head assays were higher than the average resource grades of 0.53% copper and 0.08 g/t gold. The cyanide and acid soluble copper levels indicate the copper is present mainly as chalcopyrite. There was essentially no secondary or oxide copper minerals in the sample.

CYU engaged GRES to assist in the preliminary metallurgical evaluation of the project. GRES have submitted their report and its conclusions/recommendations included the following:

- The limited metallurgical testing carried out indicates that very good copper flotation results are achievable from scoping study composite.
- The composite sample produced a concentrate grading up to 29% copper with a copper recovery of 92% and gold recovery into the copper concentrate of approximately 31% from a feed grade of 0.81% copper and 0.28 g/t gold.
- These results should be considered indicative only. Further definitive test work will need to be carried out on more representative samples to confirm the amenability of the mineralisation to conventional flotation and identify the variability with depth and across the resource.
- Concentrate analyses determined for the final concentrate produced from the
  composite sample indicated no penalty elements of significance, however
  relatively high levels of the deleterious element fluorine were detected in the
  composite sample. Further sampling and test work will need to be carried out
  to clarify the likelihood of this affecting the quality of concentrate produced. The
  concentrate analyses indicated the potential for some payable gold content.
- The gold recovery to the rougher concentrate was modest. There was a significant gold loss in the cleaning stage where, for the feed grade of 0.28 g/t gold, the gold recovery is 54% for the rougher stage and 31% after cleaning to a copper concentrate grade of 29% copper. Based on the deportment of gold assays in flotation test work and the amount of gold reporting into first cleaner tailing, it is presumed that a reasonable proportion of the gold recovered in rougher flotation is locked with iron (pyrite). Further work is required to define gold deportment and its mineral associations.
- Further testing of the Elaine Inferred Resource is required to optimise flotation conditions, particularly primary grind size and concentrate regrind size.
- The copper grades of all concentrate size fractions produced from the composite sample were high indicating high degrees of liberation of chalcopyrite were achieved.
- There were difficulties in copper flotation when the lower grade sample represented by the zone 3 composite was tested separately because of free flotation of silicate mineral. Sighter flotation tests on this lower grade sample produced a concentrate grading 22% copper with a copper recovery of 77% from a feed grade of 0.42% copper. It may be possible to significantly improve upon results obtained in this test programme after further sample characterisation and flotation testing including the use of silicate depressants.

The scoping test work studies referred to in this announcement are based on low-level technical assessments, and are insufficient to support estimation of ore reserves or to provide assurance of an economic development case at this stage, or to provide certainty that the conclusions from the scoping test work studies will be realised.

#### 3. Cloncurry North Project (CYU 100%, YEX earning in)

In 2011 CYU farmed-out the Cloncurry North projects to the Yunnan Copper Mineral Resources Exploration and Development Co. Ltd. (YEX). Under the farmin agreement YEX could earn up to a 55% interest in the Cloncurry North project.

No field activities were undertaken during the quarter and YEX issued a notice to CYU formally withdrawing from this agreement and electing to retain the 10% interest in the Cloncurry North Project which it had earned up to the time of withdrawal.

## 4. Mt Isa East Project (CYU 100%, YEX earning in)

During the quarter, CYU farmed out the Mt Isa East Project (comprising EPM 15248) to YEX. Under this farm-in agreement YEX can earn up to a 45% interest in the Mt Isa East project by incurring a total of \$800,000 of exploration expenditure.

YEX has mobilised its field crew to site during July to commence field activities following geophysical anomalies generated last season and on additional regional targets in the project. YEX will be focusing activities on the Mount Colin West prospect with drill targets already defined targeting the extension of the Mount Colin open-cut mine.

#### **Summary – Chile**

All exploration in Chile is focused on large scale porphyry copper exploration. 3D IP/MT geophysical surveys have been completed at the Humito and Sulfato prospects. Final processed results are pending for drill targeting. A geophysical survey was commenced late in the June 2013 guarter at the Palmani prospect.

#### 1. Humito (CYU 100%)

The Humito project is located 10km south of PanAust's and Codelco's Inca de Oro project in the Chanaral Province, Atacama Region (Region III), Chile.

During the quarter detailed mapping and a deep penetrating 3D IP/MT geophysical survey were completed. Zonge Ingeniería y Geofísica (Chile) S.A. (Zonge) conducted the geophysical survey on behalf of CYU. These programs targeted the potential of a deep-seated porphyry body for drill testing. When used in conjunction with the previous ground magnetics survey, CYU has now defined coincidental anomalies of low magnetics and high chargeability, which could indicate a mineralised porphyry core being overprinted by a later stage alteration assemblage. Final processed images have been received, with drill targeting being finalised.

CYU does not intend to carry out any significant further activities on this project until such time as financial resources enable this.

#### 2. Candelabro (CYU earning in, Rio Tinto 100%)

No field activities were undertaken on this project during the quarter, and Rio Tinto was formally advised by CYU in June of its intention to withdraw from this farm-in agreement.

#### 3. Caramasa (CYU earning in, Rio Tinto 100%)

No field activities were undertaken on this project during the quarter, and Rio Tinto was also formally advised by CYU in June of its intention to withdraw from this farmin agreement.

#### 4. Palmani (CYU earning in, Rio Tinto 100%)

The Palmani project is located in the porphyry copper belt of northern Chile in the Arica Province, Arica-Parinacota Region (Region XV) approximately 56km northeast from the regional centre Arica.

At the end of the quarter Zonge commenced an IP/MT geophysical survey with the aim of identifying any anomalous zones associated with a porphyry body. The survey will utilise Zonge's new gDas24 system. The survey is expected to take over 30 days to complete due to the rugged mountainous terrain.

#### 5. Sulfato (CYU earning in, Codelco 100%)

The Sulfato project is located in the porphyry copper belt of northern Chile, near the 5+ billion tonne copper Collahuasi deposit in the El Tamarugal Province, Tarapaca Region (Region I), 151km southeast from the main regional centre, Iquique.

During the quarter Zonge conducted an IP/MT geophysical survey, with the aim of identifying any anomalous zones associated with a porphyry body. The survey utilised Zonge's new gDas24 system, which is used to measure both IP and MT data.

The survey totalled 7 line kilometres – as a primary 6.2km line along the main quebrada and a secondary 0.8km line in the NE of the survey. In addition, a small reconnaissance Vector-IP (VIP) survey was undertaken in the southern area of the prospect.

Preliminary conductivity and resistivity images have been received with the final processed images and report from Zonge still pending. Drill location targeting will be finalised, prior to commencement of a drilling program later this year.

#### San Mu Mining

Yunnan Copper San Mu Mining Co. Ltd (San Mu), a China incorporated entity, is now 51% owned by CYU with 49% ownership by Yunnan Copper Industry (Group) Co., Ltd (YCI). San Mu holds a 100% interest in four projects in northern Laos.

Limited fieldwork was undertaken during the quarter other than geological mapping and track clearing. Data compilation and analysis was undertaken reviewing base and precious metals anomalies defined by electrical geophysics, trenches, underground adit sampling and diamond drilling with the aim of seeking a buyer for the projects. The board of San Mu has resolved to dispose of the northern Laos projects and appointed the firm The Beijing Axis to act as agent for the purpose of identifying potential buyers and assisting to complete a sale transaction.

Representatives of San Mu are continuing to identify and assess other project opportunities in the region – with targets in Cambodia and mainland China being reviewed and pursued.

#### **Corporate**

In accordance with CYU's stated corporate aim of being in production within three years, CYU's management team also dedicated significant time and resources to review project acquisition opportunities. These activities will continue during the third quarter of 2013.

#### **Board Composition**

Mr Zhihua Yao, Chairman Mr Paul Williams, Managing Director Mr Robert Yang, Executive Director Mr Richard Hatcher, Executive Director Mr Paul Marshall, Company Secretary

#### Share Information

- Issued share capital of 247,994,183 shares and 2.8 million unlisted options
- Quarter high traded price of \$0.079 (June 2012—\$0.190) and low of \$0.036 (June 2012—\$0.100)
- Market capitalization high \$19.6M, low \$8.9M
- Average daily volume of shares traded 105,261 shares
- Top 10 shareholders as at 30 June 2013 were:

Rank	Name	Number of Shares	%
1	China Yunnan Copper (Australia) Investment	106,183,175	42.82
	and Development Co Ltd		
2	Mr Norman Zillman	10,200,000	4.11
3	Elliott Nominees Pty Ltd (Elliott Exploration Co S/F)	7,150,000	2.88
4	Premar Capital Nominees Pty Ltd	3,633,333	1.47
5	UBS Wealth Management Nominees P/L	2,708,514	1.09
7	Bannerblock Pty Ltd Super Fund	2,500,000	1.01
6	JP Morgan Nominees Australia Ltd (Cash Income A/C)	2,415,021	0.97
8	Yunnan & Hong Kong Metal Co Ltd	2,400,000	0.97
9	Kimbriki Nominees Pty Ltd	2,100,000	0.85
10	CR Investments Pty Ltd	2,083,333	0.84
TOTAL		141,373,376	57.00

#### Other Details

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#### Competent Person's Statement

The information regarding Exploration Activities in this report that relates to all exploration projects and to the Inferred Resource at the Elaine Project is based on information compiled by Mr. Richard Hatcher, who is a Member of the Australian Institute of Geologists and is Executive Director of Chinalco Yunnan Copper Resources Limited. Mr. Hatcher has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the "Australasian Code for Reporting of Exploration Results and Mineral Resources". Mr. Hatcher consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information regarding the Metallurgical Scoping Testwork Studies in this report that relates to Inferred Resource at the Elaine Project is based on information compiled by Mr. Brendan Mulvihill, who is member of the Australasian Institute of Mining and Metallurgy and is Senior Process Engineer of GR Engineering Services Limited. Mr. Mulvihill has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the "Australasian Code for Reporting of Exploration Results and Mineral Resources". Mr. Mulvihill consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

#### On behalf of the Board

Paul Williams
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#### **About CYU**

Chinalco Yunnan Copper Resources Ltd ("CYU" or "Company") is a resource exploration and development company with project interests in the Mt Isa region of north Queensland, Chile and northern Laos.

CYU's largest shareholder is China Yunnan Copper (Australia) Investment and Development Co Ltd ("CYC"), owning 43% of the total issued shares in CYU. CYC is a wholly-owned subsidiary of Kunming-based Yunnan Copper Industry (Group) Co Ltd, which is the third largest producer of smelted copper product in China. In turn, Yunnan Copper Group is a subsidiary of Aluminium Corporation of China (Chinalco) which is the largest producer of aluminium product in China and the second largest world-wide.

CYU has offices in Brisbane and in Santiago. The Company is listed on the ASX under the symbol "CYU".

## Appendix A

## (Tables 1 and 2 – Blue Caesar Details)

Table 1: Drillhole location - Blue Caesar.

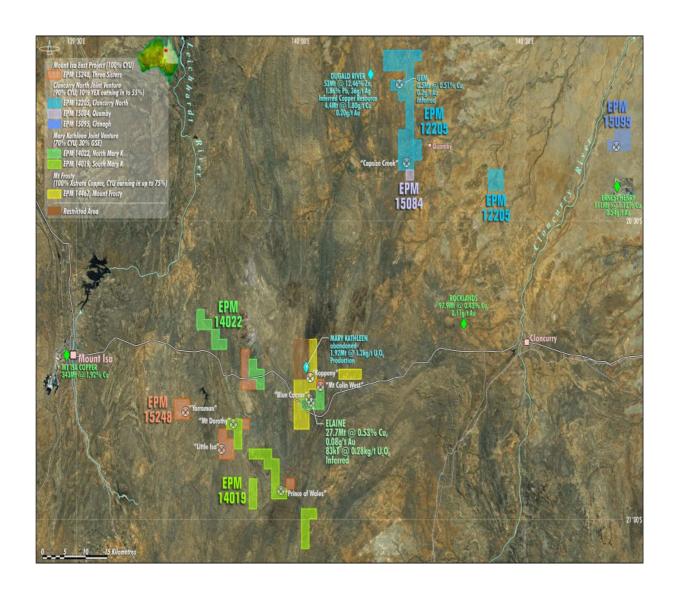
Hole_ID	East *	North *	RL (m)	Azi (°)	Dip (°)	Planned Depth (m)
MKBC001	397,696	7,700,002	398	221	-60°	216.36
MKBC002	397,644	7,700,97	394	216	-60°	234.34
MKBC003	397,761	7,700,015	397	79	-60°	200.29
* Datum : UTM – MGA94 Zone 54.						

Table 2: Significant intersections at a 0.25% copper cut-off with max 3m internal dilution – Blue Caesar.

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Hole_ID	From	То	Width (m)	Au (g/t)	Cu (%)	Co (ppm)	Comment
MKBC001	7	8	1	0.02	0.45	249	
MKBC001	58	59	1	0.02	0.55	506	0.5% Cu cutoff
MKBC001	125	127	2	0.02	0.43	922	
including	126	127	1	0.02	0.43	1,510	
MKBC001	142	143	1	0.01	0.33	71	
MKBC001	149	150	1	0.07	0.29	1,415	
MKBC001	170	172	2	0.01	0.37	264	
MKBC001	184	186	2	0.01	0.46	286	
including	185	186	1	0.01	0.59	403	0.5% Cu cutoff
MKBC002	10	11	1	-0.01	0.28	291	
MKBC002	27	57	30	0.05	1.39	420	
including	28	53	25	0.06	1.62	472	0.5% Cu cutoff
including	29	37	8	0.08	3.23	548	1% Cu cutoff
including	30	31	1	0.07	17.30	353	
including	51	53	2	0.07	2.94	311	1% Cu cutoff
MKBC002	66	75	9	0.01	0.31	143	
including	66	68	2	0.02	0.61	440	0.5% Cu cutoff
MKBC002	85	89	4	0.01	0.47	347	
including	85	87	2	0.02	0.57	259	0.5% Cu cutoff
MKBC002	94	96	2	0.53	2.79	642	
including	95	96	1	1.01	4.37	1,255	
MKBC002	105	106	1	0.01	0.62	631	
MKBC002	136	137	1	0.02	0.33	285	
MKBC002	177	178	1	0.01	0.36	44	
MKBC003	34	48	14	0.03	0.88	226	
including	36	46	10	0.03	1.13	199	0.5% Cu cutoff
including	38	40	2	0.06	3.44	134	1% Cu cutoff
including	44	45	1	0.03	1.36	101	1% Cu cutoff
MKBC003	52	54	2	0.03	0.51	44	
MKBC003	57	64	7	0.01	0.53	151	
including	58	61	3	0.01	0.84	195	0.5% Cu cutoff
including	60	61	1	0.02	1.69	266	1% Cu cutoff
MKBC003	69	70	1	0.01	0.53	109	
MKBC003	79	81	2	0.01	0.50	190	
MKBC003	86	87	1	0.01	0.30	134	
MKBC003	105	106	1	0.01	0.27	367	

## Appendix B

## (Northwest Queensland Tenement Holdings)



# Appendix C

# (Location of Chile Projects)

