

# ASX announcement

24 October 2013

## 2.5km Strike length copper target defined at West Mwombezi, Lumwana West, Zambia

### Highlights

1. Over 2.5 kilometre strike length of coincident IP chargeability and copper in soil anomaly – the exploration signature for the targeted mineralisation.
2. Strongest and largest geochemical and geophysical target defined to date.
3. West Mwombezi is now the highest priority drill target at Lumwana West.
4. Building on an inventory of copper deposits and large, high-priority drill targets at the Lumwana West Project.
5. Results will contribute significantly to an expanded Exploration Target for the Lumwana West Project.

Argonaut Resources NL (ASX: ARE) ('Argonaut' or the 'Company') is pleased to announce that exploration over the West Mwombezi target at the Lumwana West Project in Zambia has returned the strongest and largest geochemical and geophysical target defined on the tenement to date.

The copper target measures over 2.5 kilometres (km) striking north-northeast as defined by Induced Polarisation (IP chargeability) geophysical survey and copper in soil sampling.

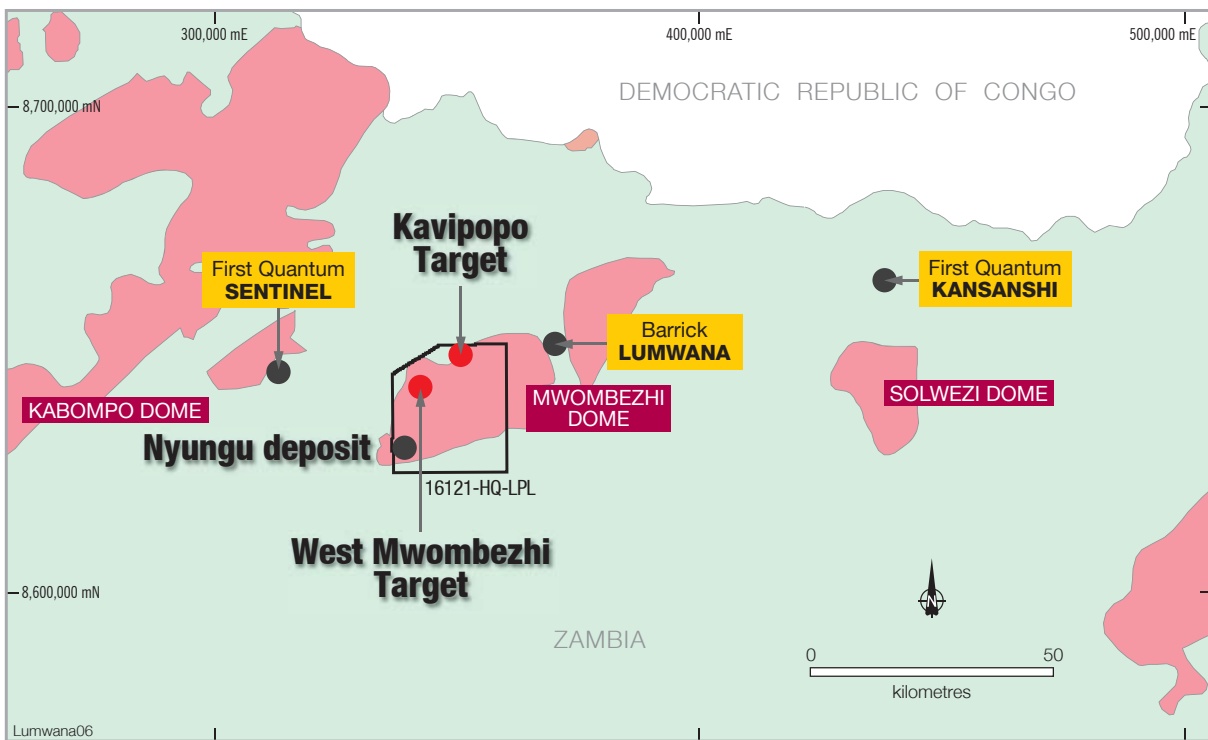
Argonaut has selected two primary exploration methods for the spatial definition of drill targets at Lumwana West:

1. Geochemical soil sampling in areas where soils are not prone to secondary chemical concentrating effects or major transportation from the soil's source; and
2. IP chargeability anomalism at subsurface depths with reasonable potential for open-pit access to mineralisation.

When soil geochemistry and IP chargeability anomalies are coincident (occur together) and geologists can interpret from 3-dimensional IP models the basic geometric properties of the targeted mineralisation, then an effective drilling program can be planned and implemented.

The West Mwombezhi exploration program was extended twice during the 2013 field season. The five initial 3,000m, east-west oriented IP sections all returned chargeability anomalies within the target zone, however the peak anomaly from this initial survey was on the southern-most IP section, indicating a need to extend the grid.

Additional soil sampling was undertaken to the south and on confirmation of a southerly geochemistry extension, additional IP traverses were planned and the IP data acquired.

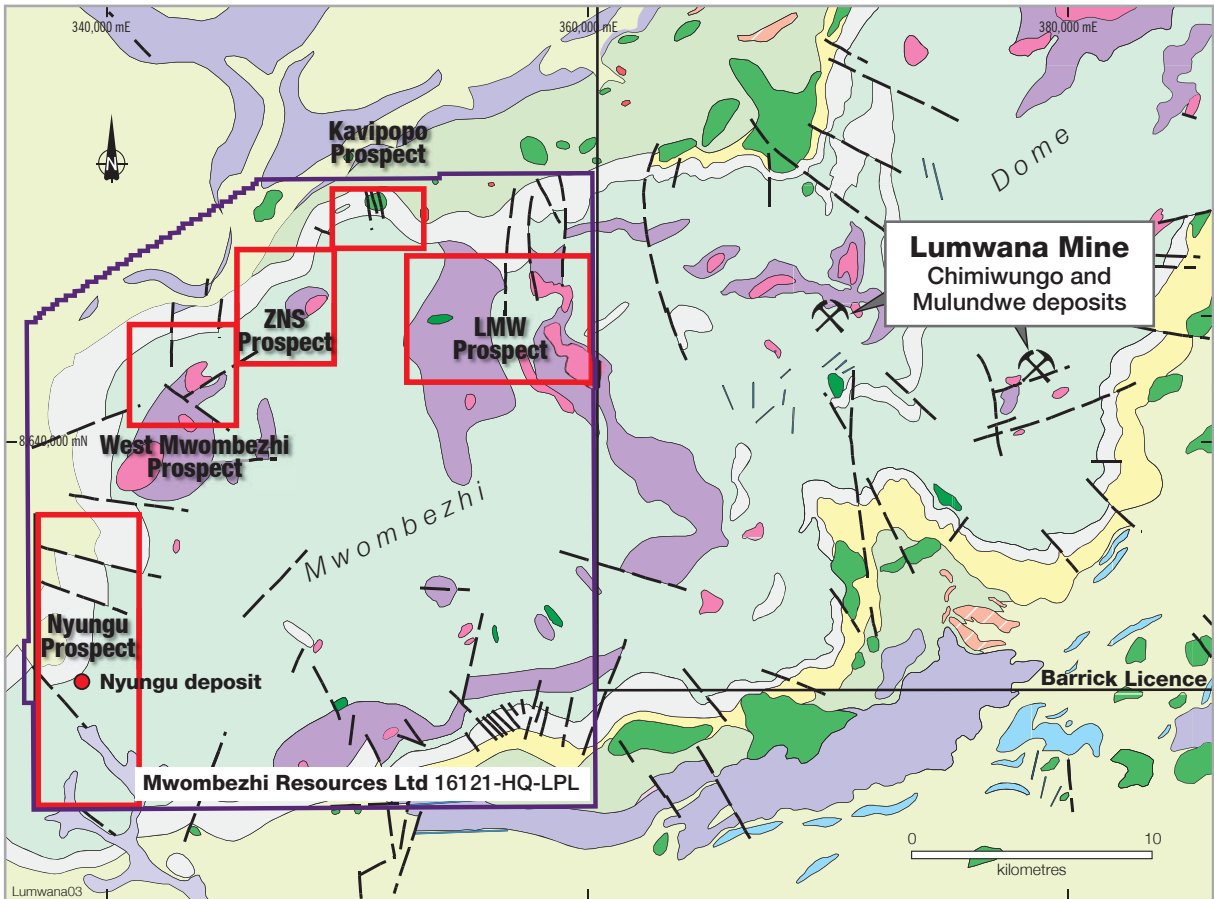


**Location**



- Katanga (conglomerate, quartzite, argillite, arkose, shale, greywacke, dolomite, banded iron fm, mixitite, limestone & schist)
- Pre-Katanga (schist, gneiss & granulite) & Basement Complex (granite, gneiss, migmatite, & granite)
- Licence boundary

**Figure 1** The Domes Region.



**Figure 2** Lumwana West Project showing priority exploration targets and major deposits.

The IP chargeability anomaly extends over 2.5km, plunges gently to the north and appears to be interrupted in the south by a fault, coincident with a surface drainage path (creek). The package is interpreted to have a shallow dip to the west, hence the geochemical peak is east of the main chargeability body, shown at a depth of -200m on Figure 3.

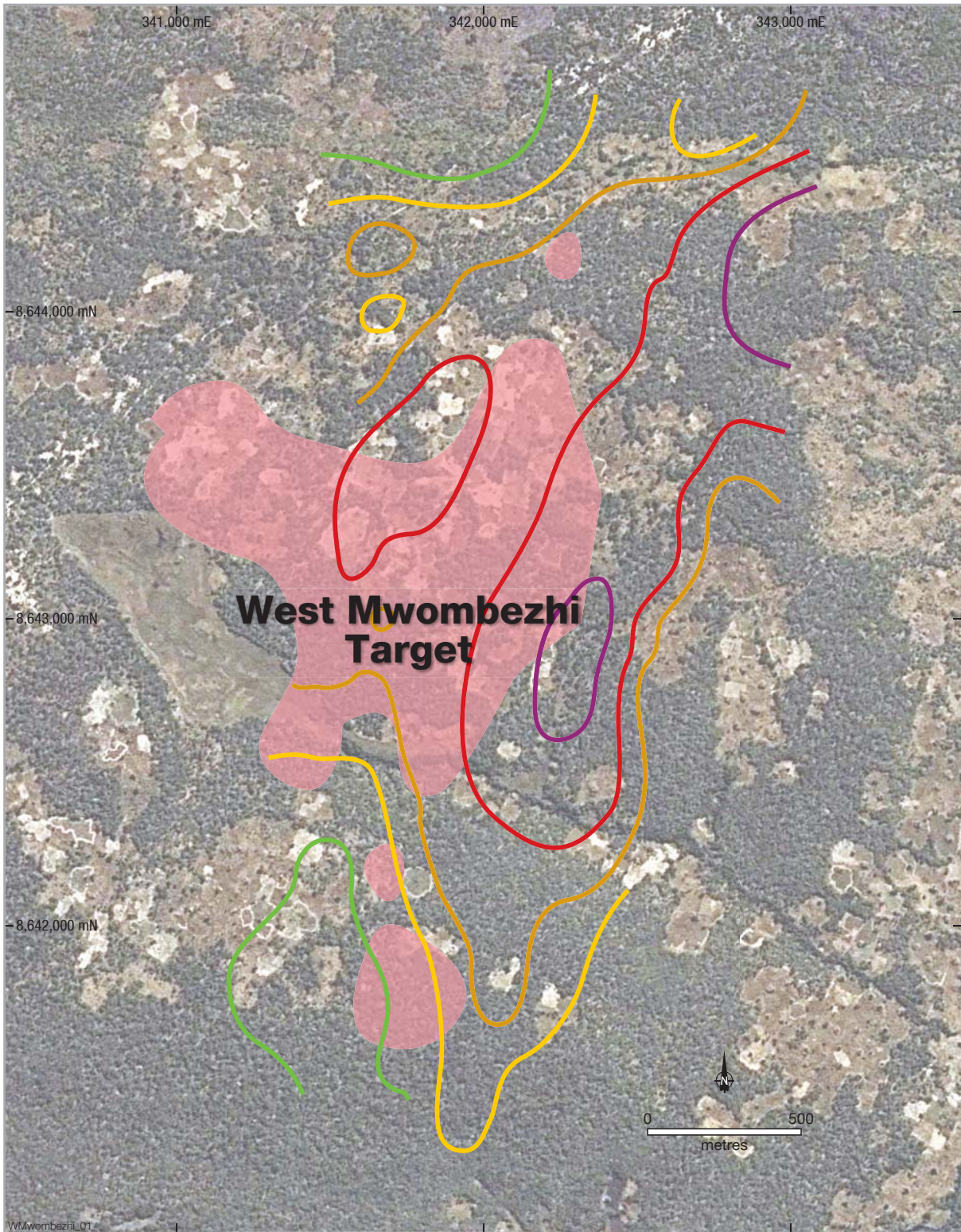
Soil samples were analysed by handheld XRF analyser. The soil anomaly is in two north-northeast trending lobes (Figure 3). Argonaut geologists are mindful these parallel lobes could be indicative of tight folding of a single mineralised unit, having the effect of repeating the mineralised package at accessible depths. The peak copper in soil value is 430ppm.

The targeted mineralisation style at West Mwombezhi is Lumwana-style, shear-hosted, copper (+/- cobalt and gold) mineralisation in biotite-kyanite schists. The anomaly is in the vicinity of a decollement (detaching fault) which separates the basement terrain (which hosts the targeted mineralisation) from the overlying, sedimentary Roan Group.

The West Mwombezhi IP target is along strike (to the north-northeast) from the Nyungu Deposit.

Given the compelling prospectivity of the West Mwombezhi target, the Argonaut board has decided to estimate an Exploration Target under the 2012 JORC Code for the West Mwombezhi area, adding to the existing Exploration Targets for the Lumwana West Project announced on 9 April 2013 for the Nyungu Deposit and Kavipopo Target.

This estimate, as well as supplementary information for the Kavipopo Exploration Target, will be estimated and released on the refinement and finalisation of 3D modelling of 2013 IP data.



Location



Soil geochemistry Cu (XRF)

- 200 ppm
- 100 ppm
- 60 ppm
- 40 ppm
- 20 ppm

IP chargeability

- >20ms at -200mRL



ZAMBIA  
LUMWANA WEST

**WEST MWOMBEZI PROSPECT**

Soil geochemistry Cu contours,  
IP chargeability and Google Earth image

**Figure 3** West Mwombezi target showing copper in soil contours and IP chargeability depth slice at -200mRL over a Google Earth image.

Between May and October 2013, the Company also undertook soil geochemistry surveys at Kavipopo, ZNS and LMW prospects and IP surveys at ZNS and LMW prospects (Figure 2). The results of these surveys will be released on completion of data modelling and interpretation.

A program of reverse circulation and diamond drilling is planned, subject to board approval, for 2014. The planned drilling at West Mwombezhi involves ten holes for 2,500m in two rounds. The initial round would test the anomaly on three 400m spaced traverses with drill holes spaced at 160m along traverses. The second round would seek to extend along strike and infill along traverses in the areas of copper mineralisation.

Given the size of the anomalies at West Mwombezhi, considerable extensional drilling could be contemplated on confirmation of mineralisation.

Additional soil sampling to the north, east and south of the current West Mwombezhi target has also been proposed for the 2014 season. Contingent IP surveys would follow-up on surface geochemical anomalies as required.

Argonaut director, Lindsay Owler, commented: “The results of the West Mwombezhi program have exceeded our expectations. The extent and strength of this target is truly exciting.”

“At Lumwana West we are generating very large targets in a terrain with an international-scale copper endowment. The combined production of three surrounding mines will soon exceed a million tonnes of copper per annum.”

“West Mwombezhi is now the Company’s highest priority drilling target and planning for the 2014 drill program is well underway.”

### **About the Lumwana West Project, Zambia**

The Lumwana West Joint Venture involves large scale prospecting licence 16121-HQ-LPL. Under the newly varied terms of the joint venture, Argonaut’s 100% held subsidiary, Lumwana West Resources Ltd, can earn up to 90% of Mwombezhi Resources Ltd which holds 16121HQ-LPL.

The Joint Venture is now in two phases.

In earning an initial 51%, LWR paid a US\$300,000 signing fee and funded US\$1.8 million in exploration works prior to 31 December 2012. The Company paid US\$600,000 to the initial shareholders on the first allotment of shares.

To earn a further 39%, for a total of 90%, LWR must spend an additional US\$2.4 million on exploration and make a final cash payment of US\$1.1 million to the initial shareholders prior to 31 December 2014.

The Mwombezhi Dome is located in the western extension of the Lufilian Arc which is host to the Central African Copperbelt. The Mwombezhi Dome is comprised of two northeast-southwest trending basement inliers, and is one of several domes in an area of the Copperbelt known as the ‘Domes Region’. The Domes Region is host to the new generation of Zambian Copperbelt mines including Barrick’s Lumwana Mine on the eastern lobe of the Mwombezhi Dome as well as First Quantum’s Kansanshi Mine and Sentinel Project (Figure 1).

On 9 April 2013, Argonaut announced that RungePincocKMinarco Limited (RPM) had been contracted to carry out an estimate of the Exploration Target for the Nyungu Copper-Cobalt (Cu-Co) deposit.

RPM estimated the Nyungu Exploration Target has the potential to host between 130 to 180Mt at a grade range of 0.45 to 0.65% copper. The Exploration Target estimate complies with recommendations in the Australasian Code for Reporting of Mineral Resources and Ore Reserves (2012) by the Joint Ore Reserves Committee (JORC). The potential quantity and grade is conceptual in nature. There has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource.

## About Argonaut

Argonaut is an Australian Securities Exchange listed mineral exploration and development Company with projects in South Australia, Queensland, Laos and Zambia. Argonaut's projects are in the advanced exploration and feasibility stages.

The Company is exploring for gold and copper at its Alford and Torrens projects in South Australia, zinc-copper at Mt Kroombit in Central Queensland, gold at its Century project in Laos and copper at the flagship Lumwana West project in Zambia.

Argonaut has a significant investment in Cuesta Coal Ltd which listed on the Australian Stock Exchange in May 2012.

*Sections of information contained in this report that relate to Exploration Results were compiled or supervised by Mr Lindsay Owler BSc, MAusIMM who is a Member of the Australasian Institute of Mining and Metallurgy and is a full time employee of Argonaut Resources NL. Mr Owler holds shares and options in Argonaut Resources NL, as described on page 10 of the Company's 2013 Annual Report. Mr Owler has sufficient experience which is relevant to the style of mineral deposits under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 edition of the "Australasian Code for Reporting of Mineral Resources and Ore Reserves". Mr Owler consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.*

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