

ASX announcement

31 October 2014

Exploration Update Lumwana West project in Zambia

Argonaut Resources NL (ASX: ARE) (*Argonaut or the Company*) provides the following update for the 2014 exploration program currently in progress at the Lumwana West copper project in Zambia.

This is the first program under the option agreement between Argonaut and a wholly owned subsidiary of major Chile-based copper producer, Antofagasta plc (*Antofagasta*), dated 28 April 2014. According to this overlying agreement, exploration expenditure of US\$3.9m in the first year will earn Antofagasta a 25% interest in the project.

Highlights

- Argonaut and its partner, Antofagasta, have to date completed 5,220m of diamond core drilling for 22 holes at Argonaut's flagship Lumwana West copper project in Zambia.
- Holes were drilled at five prospect areas plus the Nyungu Deposit (see Figure 2).
- Assays have been received for eight of the 22 drill holes.
 - Results are for holes drilled at the West Mwombezhi and Kavipopo prospects and the Nyungu Deposit.
 - Mineralised intervals received to date for drilling at West Mwombezhi and Kavipopo have explained targeted geochemical and geophysical anomalies but have fallen short of returning economic drill intercepts.
 - Drilling results are summarised in Table 2.
 - Assay results for 14 holes completed to date are pending.
- Argonaut collected 6,750 soil samples from the Lumwana West area since May 2014, predominantly over new, regional targets.
- This soil sampling defined new targets in the Kabikupa and Kamafamba areas and significantly extended the known strike of the Mufuka target (see Figure 2).
- The ongoing drilling program is currently targeting soil geochemistry anomalies at the highly-prospective Mufuka and Kabikupa prospects.

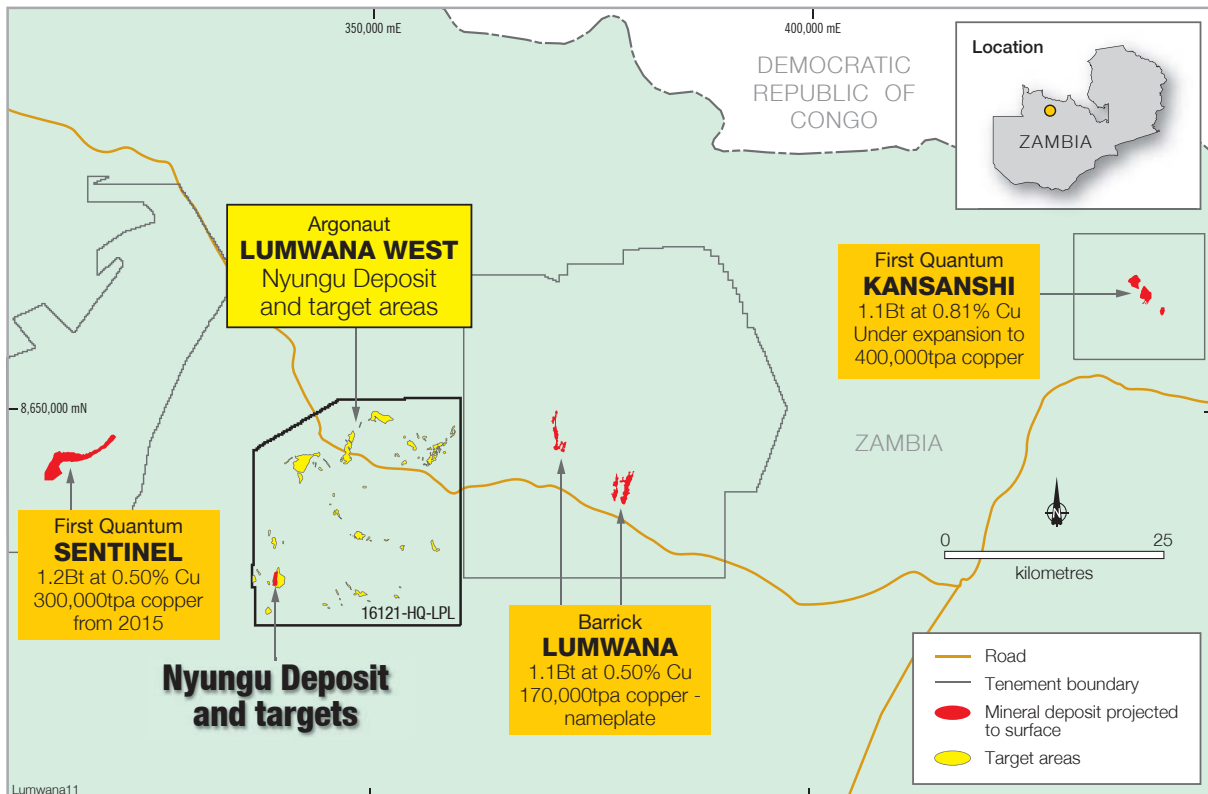


Figure 1: The Domes Region has an international scale copper endowment and is host to the new generation of mines in the Central African Copperbelt.

The current 2014 program was jointly planned by Argonaut and Antofagasta and aims to considerably increase the extent of known copper mineralisation at Lumwana West. The focus is on testing major target areas previously defined by Argonaut as well as new targets being progressively generated by an extensive regional soil sampling program.

The ongoing drilling program, which will comprise approximately 8,500m, is being progressively revised on the basis of results and interpretations by a technical committee formed under the overlying agreement. To date, 5,220m of diamond core drilling for 22 holes has been completed. Holes have been drilled at the West Mwombezhi, Kavipopo, ZNS, LMW and Mufuka prospects and at the Nyungu deposit (Figure 2). Drilling has continued in October at the Mufuka prospect and an exciting new target named the Kapikupa prospect.

Early results from the 2014 program have been disappointing. It is interpreted this is largely due to the targeted mineralised systems being structurally underdeveloped. Put simply, the shearing that hosts copper mineralisation of the style targeted was not as strong or extensive as anticipated, hence assays returned lower than expected copper grades.

A summary of intercepts from results received to date is shown in Table 1. Detailed results are shown in Appendix 1.

Assay results for 14 drill holes completed at Lumwana West in the current field season are pending.

Strongest copper anomaly found to date

The most positive outcomes from current exploration works are from soil sampling programs which have defined excellent new targets at areas in the centre of the tenement known as Kapikupa and Kamafamba (Figure 2).

Soil sampling at the Kabikupa prospect has returned the strongest copper anomaly found within the Lumwana West project area to date. Soil analysis has returned values of up to 0.13% copper in soil which is approximately triple the level of other surface anomalies in the area.

Table 1 Summary of 2014 drilling intercepts.

Target	Hole	From (m)	Interval (m)	Cu (%)
West Mwombezi	WMDD001	58	3	0.36
	and	63	9	0.29
West Mwombezi	WMDD002	123	8	0.17
	WMDD005	77	4	0.42
Kavipopo	KVDD001	50	7	0.23
	and	106	1	0.45
	and	193	9	0.27
Nyungu	NYDD049	160	5	0.48

Drilling at Kabikupa commenced in October with four holes for approximately 1,000m planned for completion by mid-November.

Over 7,800 soil samples have been collected at Lumwana West since May 2014 and analysis by XRF has been completed on 5,000 of these samples. Current soil sampling anomalies are shown in Figure 2.

Argonaut expects the field program will be paused in mid-November 2014 at the start of the Zambian wet season and recommenced in April/May 2015. Ongoing interpretation of drill core, mapping data and surface sampling data will fine-tune 2015 drill targets.

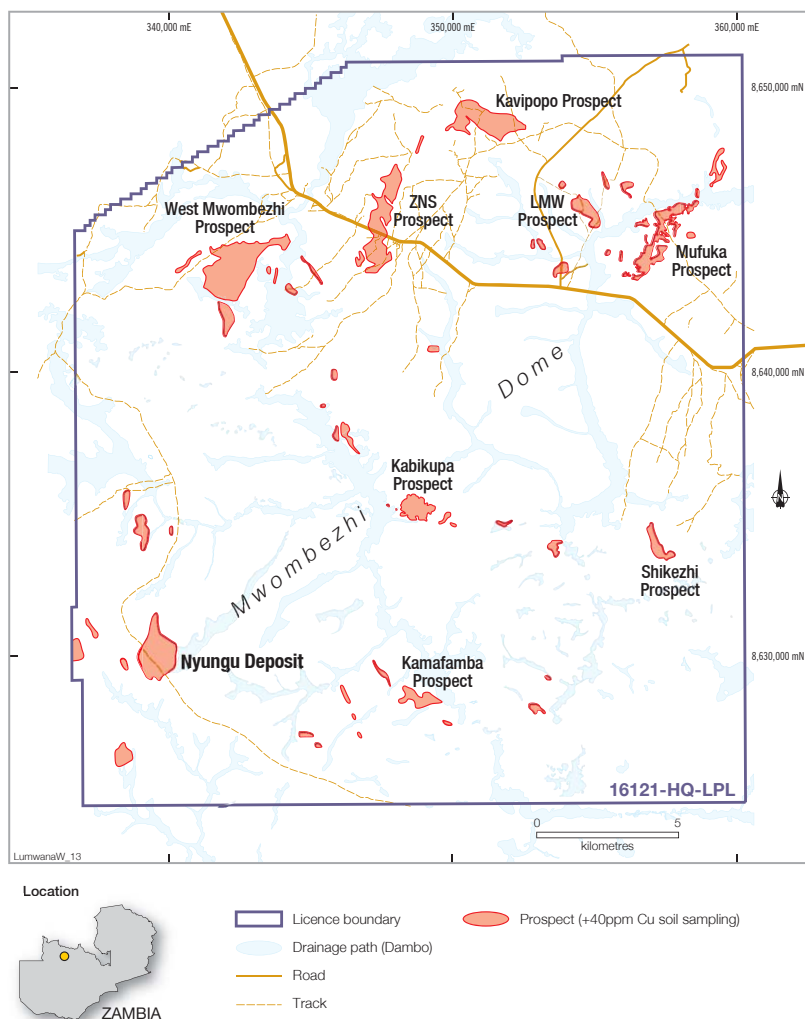


Figure 2: Lumwana West Large-scale Prospecting Licence and prospect locations.

Lumwana West Project (Argonaut 90%)

The Lumwana West project is located in the Central African Copperbelt, North-Western Province, Zambia. The area is prospective for large tonnage, low to medium grade copper deposits. There are several major mines nearby to Lumwana West which are hosted in similar geological settings.

Argonaut, via its 90% held subsidiary, Mwombezhi Resources Ltd, has been successful with broad copper intercepts at the project area's Nyungu deposit and has defined a series of large, prospective targets which are undergoing first pass drill testing.

About Antofagasta

Antofagasta plc is a Chilean-based copper mining company with significant by-product production and interests in transport and water distribution. The company has four operating copper mines; Los Pelambres, Esperanza, El Tesoro and Michilla which produced 721,200 tonnes of copper, 9,000 tonnes of molybdenum and 293,800 ounces of gold in 2013. Antofagasta plc also has exploration and evaluation programmes in North America, Latin America, Europe, Asia, Australia and Africa. The company is listed on the London Stock Exchange and is a constituent of the FTSE-100 Index.

About Argonaut

Argonaut is an Australian Securities Exchange listed mineral exploration and development company focussed on large copper targets with projects in Zambia, South Australia and Queensland. Argonaut's projects are in the advanced exploration and feasibility stages.

The Company is exploring for copper at its flagship Lumwana West project in Zambia and copper (+/- gold and silver) at its Alford and Torrens projects in South Australia. The Company also owns a zinc-copper deposit at Mt Kroombit in Central Queensland and a 70% interest in a gold exploration project in Laos.

Argonaut has a significant investment in Cuesta Coal Ltd which listed on the Australian Securities 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 9 of the Company's 2014 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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Appendix 1

Lumwana West – Initial 2014 drill intercepts

Hole	East	North	RL	Dip	Azimuth	Total depth (m)	From (m)	To (m)	Interval (m)	Cu (%)	Oxidation state	Comment
WMDD001	341940	8643000	1279.05	-60	90	252.00	58.15	61.55	3.40	0.36	fresh	DD
							63.38	71.90	8.52	0.29	fresh	DD
							168.00	170.00	2.00	0.13	fresh	DD
WMDD002	341760	8643000	1281.22	-60	90	302.80	122.80	130.40	7.60	0.17	fresh	DD
WMDD003	341630	8643000	1283.61	-70	90	287.90	152.70	153.70	1.00	0.24	fresh	DD
							159.90	160.90	1.00	0.15	fresh	DD
							166.00	166.90	0.90	0.16	fresh	DD
KVDD001	351260	8649130	1295.98	-60	210	320.80	50.00	57.00	7.00	0.23	fresh	DD
							64.00	68.25	4.25	0.12	fresh	DD
							106.05	107.00	0.95	0.45	fresh	DD
							109.00	111.00	2.00	0.29	fresh	DD
							129.00	130.00	1.00	0.20	fresh	DD
							185.57	187.37	1.80	0.23	fresh	DD
KVDD002	350870	8649245	1285.51	-60	210	350.80	22.39	23.39	1.00	0.14	fresh	DD
							131.54	132.12	0.58	0.18	fresh	DD
							154.96	158.35	3.39	0.10	fresh	DD
							195.19	196.00	0.81	0.10	fresh	DD
							201.59	204.00	2.41	0.18	fresh	DD
							243.04	244.00	0.96	0.45	fresh	DD
						264.00	264.94	0.94	0.10	fresh	DD	
NYDD047												no visual intersect, analysis pending
NYDD048												no visual intersect, analysis pending
NYDD049	339482	8630000	1315	-60	90	254.80	159.60	165.05	5.45	0.48	transition	DD
NYU11RD021	339284	8629832	1318	-70	90	297.89			NSI			DD, extended existing DH
NYDD050	338845	8630800	1341	-70	90	263.90						no visual intersect, analysis pending
WMDD004	342280	8644200	1290	-60	90	239.80	84.00	89.00	5.00	0.16	fresh	DD
WMDD005	342680	8644200	1284	-60	90	198.34	38.00	39.00	1.00	0.11	fresh	DD
							44.00	45.00	1.00	0.14	fresh	DD
							66.00	67.00	1.00	0.11	fresh	DD
							69.61	71.21	1.60	0.22	fresh	DD
							76.74	80.80	4.06	0.42	fresh	DD
							162.68	167.30	4.62	0.11	fresh	DD
						194.00	195.00	1.00	0.13	fresh	DD	
NYDD051	339750	8629900	1306	-60	90	248.80	34.00	35.00	1.00	0.15	oxide	DD

Notes

- 1 Calculated using 0.1% Cu lower cut threshold, no upper cut threshold, maximum 3 metres internal dilution
- 2 Analysis by Intertek Genalysis - Methods 4A/OE, 4A/MS for U, ARU10/SAA for Au
- 3 Coordinate system: WGS84, Zone 35 South
- 4 NSI = No significant intercepts
- 5 DD = Diamond core intercept

JORC Code, 2012 Edition – Table 1

Section 1 Sampling techniques and data – Lumwana West Project

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling. Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information. 	<ul style="list-style-type: none"> The West Mwombezi, Kavipopo and Nyungu were sampled using diamond drill holes. A total of 12 drill holes were drilled for a total of 3120.53 metres. Diamond drillcore only was sampled. Drillcore was logged for lithology, weathering, alteration, mineralisation and structure. Sampling was conducted as half core (NQ and HQ) or quarter core (PQ) for visibly mineralised intervals with an appropriate buffer into the unmineralised country rock. Sampling followed ARE protocols and industry best practice QA/QC procedures. Drillcore sampled on nominal 1 metre intervals which varied with respect to lithological and geological boundaries in mineralised zones. A 2 metre maximum sample length outside mineralized zones, also varied with respect to lithological and geological boundaries. Samples were dried, crushed (~5mm), split up to 1.2kg, pulverised and pulp taken for four acid digest followed by ICP-OES (multi-element), ICP-MS (U) or Aqua Regia/AAS (Au) finish.
Drilling techniques	<ul style="list-style-type: none"> Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc). 	<ul style="list-style-type: none"> Diamond core only, NQ3 with PQ3 or HQ3 collars. HQ and NQ drillcore was oriented using an Ezy Mark orientation tool.
Drill sample recovery	<ul style="list-style-type: none"> Method of recording and assessing core and chip sample recoveries and results assessed. Measures taken to maximise sample recovery and ensure representative nature of the samples. Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material. 	<ul style="list-style-type: none"> Drillcore recoveries are logged per drilling run, overall core recoveries greater than 95%. Drillcore reconstructed on angle iron for run length measurement against driller's blocks, orientation lines and recording of driller's breaks. Diamond drillcore has high recoveries with negligible core loss recorded.
Logging	<ul style="list-style-type: none"> Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. The total length and percentage of the relevant intersections logged. 	<ul style="list-style-type: none"> Drillcore has been logged for geological (lithology, mineralisation, alteration) and geotechnical (alpha/beta angles, RQD, recovery) information, all data is stored in a database and or spreadsheets. All holes are logged and photographed.
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> If core, whether cut or sawn and whether quarter, half or all core taken. If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry. For all sample types, the nature, quality and appropriateness of the sample preparation technique. Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples. Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling. Whether sample sizes are appropriate to the grain size of the material being sampled. 	<ul style="list-style-type: none"> All drillcore was cut in half using core saws at AMC Kitwe, and half core (HQ and NQ size) collected for sampling, ensuring the same side (RHS looking downhole) of the drillcore was consistently sampled. Field duplicates (pulp and crush checks) were submitted routinely to monitor QC of sample preparation and laboratory analysis. Samples were prepared at and crushed to 85% <5mm with a 1.2kg subsample split (rotary and riffle) for pulverising to 85% <75µm. Regular sizing checks were undertaken and reported. Sample sizes are appropriate to the grain size of the material being sampled.

Criteria	JORC Code explanation	Commentary
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> • <i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i> • <i>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</i> • <i>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</i> 	<ul style="list-style-type: none"> • Samples were submitted to a four acid digest (sulphuric, nitric, perchloric and hydrofluoric) and Inductively Coupled Plasma (ICP) finish. • QAQC procedures include a chain of custody protocol, systematic submittal of 10 to 20% QA/QC samples including field duplicates, field blanks and externally sourced certified reference samples into the flow of samples submitted to the laboratory.
Verification of sampling and assaying	<ul style="list-style-type: none"> • <i>The verification of significant intersections by either independent or alternative company personnel.</i> • <i>The use of twinned holes.</i> • <i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i> • <i>Discuss any adjustment to assay data.</i> 	<ul style="list-style-type: none"> • Significant intersections are reported by ARE and checked by AMSA. • No drillholes have been twinned. • Data entry and verification is undertaken by AMC following an established protocol into Reflex Logger software, all data is stored in a digital database (Reflex Hub) and regularly backed-up. • No statistical adjustments to data have been applied.
Location of data points	<ul style="list-style-type: none"> • <i>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</i> • <i>Specification of the grid system used.</i> • <i>Quality and adequacy of topographic control.</i> 	<ul style="list-style-type: none"> • Drillhole locations have been surveyed by averaged Garmin GPS measurements, down hole surveys were collected every 50 metres using a Reflex EZ-TRAC instrument. • Appropriate QC procedures were applied to verify down hole surveys. • The grid system for the Lumwana West Project is UTM WGS84, zone 35 South. • All GPS collar locations corrected to UTS 2010 survey DTM.
Data spacing and distribution	<ul style="list-style-type: none"> • <i>Data spacing for reporting of Exploration Results.</i> • <i>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</i> • <i>Whether sample compositing has been applied.</i> 	<ul style="list-style-type: none"> • Wide spaced exploration drilling. • No resources or reserves reported.
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> • <i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i> • <i>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</i> 	<ul style="list-style-type: none"> • Mapping undertaken at prospect scale to refine local structural fabric and thus to drill perpendicular to the interpreted structural orientation. • No orientation based bias had been identified in the data to this point.
Sample security	<ul style="list-style-type: none"> • <i>The measures taken to ensure sample security.</i> 	<ul style="list-style-type: none"> • The chain of custody for sample dispatch was implemented and is as follows: <ul style="list-style-type: none"> → Polywoven bags containing samples, labelled, sealed with cable ties and weighed. → Sample despatch shipments were delivered to the sample preparation laboratory and the sample dispatch form signed and returned with a confirmation of the cable tie seals in place and the delivery of all samples within each batch.
Audits or reviews	<ul style="list-style-type: none"> • <i>The results of any audits or reviews of sampling techniques and data.</i> 	<ul style="list-style-type: none"> • Visits and review of the sample preparation laboratory at Intertek Genalysis in Chingola and of the Intertek Genalysis laboratory in Adelaide were conducted by the senior personnel.

Section 2 Reporting of exploration results – Lumwana West Project

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<p>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</p> <p>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</p>	<p>Large Scale Prospecting Licence, 16121-HQ-LPL, Lumwana West, approximately 100 km west of Solwezi, Zambia. Licence renewed for further 2 year period. Current expiry date is 20/07/2015. Prior to expiry an application for extension of term will be submitted to the Geological Survey of Zambia. Mwombezhi Resources holds 100% of the licence, Lumwana West Resources (100% subsidiary of Argonaut Resources NL) is party to an earn-in joint venture and currently has a 90% interest. Portions of the licence area are forest reserves requiring permission to access which has been granted.</p> <p>No known impediments.</p>
Exploration done by other parties	<p>Acknowledgment and appraisal of exploration by other parties.</p>	<p>Roan Selection Trust (1960s – 1970s) Regional soil sampling, augering, wagon drilling and diamond drilling. Drilling at Nyungu (Drillholes MM295 and MM296).</p> <p>AGIP – COGEMA JV (1982 – 1987) Systematic regional radiometric traversing, soil and stream sediment sampling, geological mapping, pitting and trenching between 1982 and 1987. No drilling.</p> <p>Phelps Dodge (1990s) Soil sampling and drilling. Drilling at Nyungu and Kavipopo (Drillholes NYU1 and 2, KAV 1 and 2).</p> <p>Zamanglo (2000 – 2003) Regional and infill soil sampling. Geological mapping, IP/CR/CSAMT geophysical surveys. Three phases of RC drilling, at Nyungu (MBD00RC001-011 and MBD01RC001-009) and regional program (MBD02RC001-012) including one drillhole at West Mwombezhi and four drillholes at Kavipopo.</p> <p>Equinox (2003 – 2008) Limited information but some unreported drill collars found on the licence are presumed to be from this phase.</p>
Geology	<p>Deposit type, geological setting and style of mineralisation.</p>	<p>Style of mineralisation targeted is Lumwana style, structurally controlled, shear hosted, Cu +/- Co (+/- U and Au).</p>
Drill hole Information	<ul style="list-style-type: none"> • A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: <ul style="list-style-type: none"> – easting and northing of the drill hole collar – elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar – dip and azimuth of the hole – down hole length and interception depth – hole length. • If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case. 	<p>See Appendix 1</p>

Criteria	JORC Code explanation	Commentary
Data aggregation methods	<ul style="list-style-type: none"> <i>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</i> <i>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</i> <i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i> 	<ul style="list-style-type: none"> Length-weighted average grades reported. No upper limit has been applied to copper grades in these exploration results. A cut-off grade of 0.1% Cu and a maximum internal dilution of 3m (downhole width) are used as a guideline when delineating the drilled thickness intervals of mineralisation. All metal grades reported are single element.
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> <i>These relationships are particularly important in the reporting of Exploration Results.</i> <i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i> <i>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').</i> 	<ul style="list-style-type: none"> Down hole length, true width not known.
Diagrams	<ul style="list-style-type: none"> <i>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</i> 	<ul style="list-style-type: none"> Refer to figures within report.
Balanced reporting	<ul style="list-style-type: none"> <i>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</i> 	<ul style="list-style-type: none"> All results reported.
Other substantive exploration data	<ul style="list-style-type: none"> <i>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</i> 	<ul style="list-style-type: none"> There is no outstanding exploration data considered material that has not been previously reported or is not contained within this report.
Further work	<ul style="list-style-type: none"> <i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i> <i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i> 	<ul style="list-style-type: none"> Further geological interpretation and structural analysis to be completed on these prospects. Target testing contingent on positive interpretation. All future exploration work is commercially sensitive and will not be released to the market until results are available.

