

# AZURE MINERALS LTD

## *Australia's Leading Explorer in Mexico*

ASX: AZS

14 May 2014

## **PREMIUM COPPER CONCENTRATE**

Azure Minerals Limited (ASX: AZS) ("Azure" or "the Company") is pleased to announce that it has received very positive results from the metallurgical testwork program on copper sulphide mineralisation from the Company's 100%-owned Cascada deposit, part of the Promontorio Project, located in the Mexican state of Chihuahua.

### **Highlights**

- **Premium quality copper concentrate produced**
- **Concentrate grades:**
  - **33-37% Copper with >93% recoveries**
  - **12-15g/t Gold with >75% recoveries**
  - **400-470g/t Silver with >83% recoveries**
- **Low levels of impurities in concentrate**
- **Principal copper mineral is chalcocite**
- **Optimum processing route is via conventional flotation to produce a clean, high grade copper-gold-silver concentrate**

**Managing Director, Mr Tony Rovira,** stated: *"We're very pleased with these initial metallurgical results from the Cascada copper deposit. They confirm our belief that Cascada can produce a high quality copper concentrate with strong gold and silver credits, which could be sold at the premium end of the market. Additional testwork to further refine the final concentrate is likely to continue improving the attractiveness of this product."*

*Following these strong results Azure is continuing to progress Cascada and the overall Promontorio Project through additional exploration and development studies. We intend to start drilling again after the Company has received the required environmental approvals, expected within the next month.*

*Meanwhile the Company is also continuing its discussions with major mining companies regarding farm-in and joint venture opportunities on the porphyry copper potential at Promontorio."*

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### Details of Metallurgical Program

A 100-kg composite sample of copper sulphide mineralisation from the Cascada deposit was submitted to SGS Minerals Services ("SGS") in Lakefield, Canada for metallurgical testing. The program was conducted under the supervision of metallurgist Mr Andrew Holloway, P.Eng., CEng, of AGP Mining Consultants ("AGP"), based in Toronto, Canada.

The metallurgical testwork program comprised:

- chemical analysis and mineralogical characterisation of the composite sample
- multiple open circuit bench scale tests consisting of two stage, sulphide flotation processing
- two bench scale Locked Cycle Tests
- chemical analysis of final flotation concentrates

Results throughout the testwork process repeatedly returned cleaner concentrate grades of >30% copper. The concentrate also contains high grades of gold and silver while arsenic values were kept below the commercially important 0.5% threshold.

Metal recoveries are excellent with all tests demonstrating that >90% of the copper, and most of the gold and silver, report to the sulphide concentrate. A small proportion of the gold and silver is associated with pyrite which is rejected at the cleaner flotation stage.

Grade and recovery details for the two Locked Cycle Tests are shown in Table 1 and Locked Cycle Test concentrate recoveries for copper, gold, silver, arsenic and iron are shown in Figure 1.

**TABLE 1: FINAL METALLURGICAL TESTWORK RESULTS**

	<b>Composite Head Grade</b>	<b>Cleaner Concentrate</b>	<b>Locked Cycle Test #1</b>	<b>Locked Cycle Test #2</b>
<b>Mass</b>	<b>100%</b>	<b>Recovery (%)</b>	<b>7.7</b>	<b>6.8</b>
<b>Copper</b>	<b>2.72%</b>	<b>Grade (%)</b>	<b>32.8</b>	<b>37.7</b>
		<b>Recovery (%)</b>	<b>93.7</b>	<b>93.2</b>
<b>Gold</b>	<b>1.24ppm</b>	<b>Grade (ppm)</b>	<b>12.5</b>	<b>15.2</b>
		<b>Recovery (%)</b>	<b>75.8</b>	<b>75.1</b>
<b>Silver</b>	<b>35.8ppm</b>	<b>Grade (ppm)</b>	<b>398</b>	<b>470</b>
		<b>Recovery (%)</b>	<b>83.4</b>	<b>82.8</b>
<b>Arsenic</b>	<b>0.04%</b>	<b>Grade (%)</b>	<b>0.44</b>	<b>0.49</b>
		<b>Recovery (%)</b>	<b>89.3</b>	<b>89.7</b>

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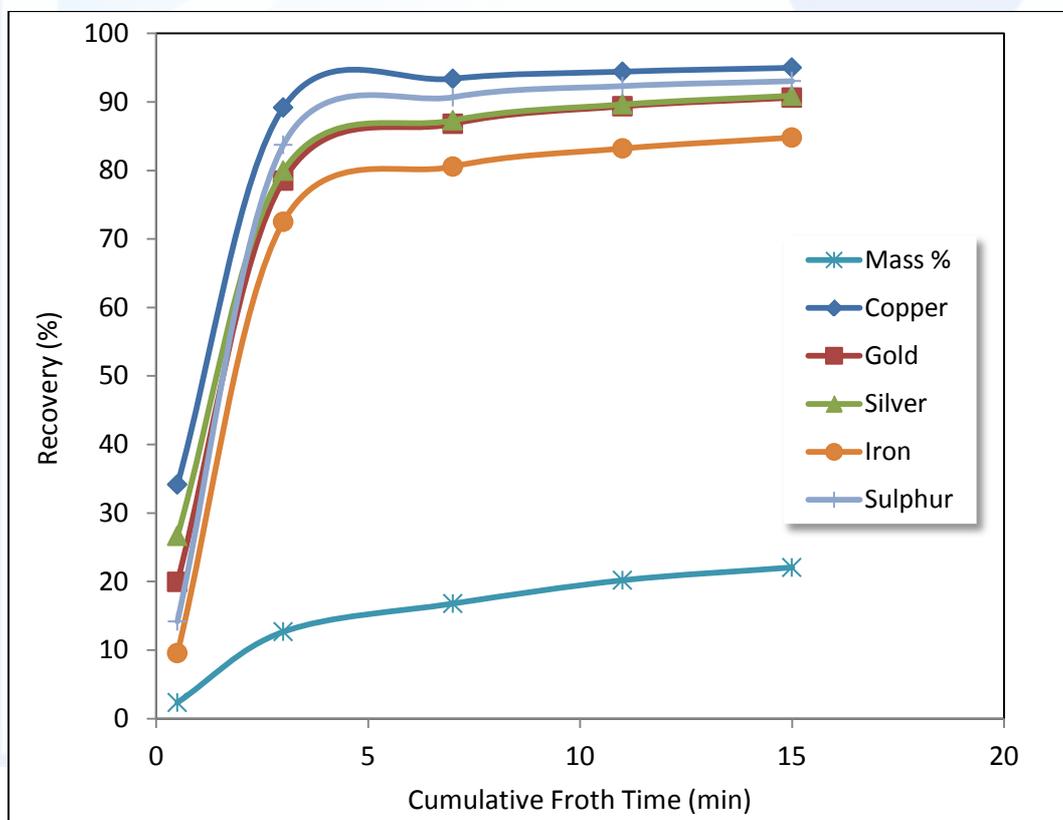
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To identify the component minerals of the Cascada ore and their relative abundance, SGS completed a QEM-ARMS (Automated Rapid Mineral Scan) mineralogical analysis of the flotation feed composite sample material. Sulphide minerals comprised pyrite (9.3%), chalcocite (2.9%), bornite (0.7%), chalcopyrite (0.2%) and enargite (0.1%). This confirms Azure's own analysis that the dominant copper sulphide mineral forming the Cascada deposit is chalcocite.

Overall, results from this metallurgical testwork program confirm the Company's view that a high quality copper concentrate with high metal recoveries is achievable through the conventional, well proven mineral processing technology of sulphide flotation. AGP has made recommendations for future metallurgical testwork to further refine and improve the flotation process, as well as to include some variability samples.

Importantly, the arsenic grades of <0.5% in the Cascada concentrate are considerably lower than for the Promontorio concentrate (9-10%). This indicates that a readily saleable product could be produced from Cascada alone or possibly a Cascada-Promontorio blend.

**Figure 1: Metal Recovery Vs Time Curves**



**-ENDS-**

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**Competent Person Statement**

Information in this report that relates to Exploration Results is based on information compiled by Mr Tony Rovira, who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Rovira is a full-time employee and Managing Director of Azure Minerals Limited. Mr Rovira has sufficient experience which is relevant to the styles of mineralisation and types of deposit 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 Exploration Results, Mineral Resources and Ore Reserves". Mr Rovira consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

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### JORC Code, 2012 Edition – Table 1

#### Section 1: Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	<p><i>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.</i></p> <p><i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i></p> <p><i>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.</i></p>	<p>Cascada was sampled by diamond core drilling. Drill core was sampled at 0.15m to 1.0m intervals guided by changes in geology.</p> <p>Drill hole collar locations were determined by hand-held GPS.</p> <p>All drill holes were surveyed for down-hole deviation, with surveys undertaken at 30m intervals and at bottom of hole.</p> <p>Drill core was saw cut longitudinally and ½ core samples were collected and sent for assay.</p> <p>Samples were prepared at ALS-Chemex in Hermosillo, Mexico. Samples were weighed, assigned a unique bar code and logged into the ALS-Chemex tracking system. The sample was dried and the entire sample was fine crushed to &gt;70% passing a 2 mm screen. A 250g split was pulverised using a ring and puck system to &gt;85% passing 75 micron screen.</p> <p>Envelopes containing the 250g sample pulps were sent via courier to the ALS-Chemex laboratory in Vancouver for analysis. Samples were dissolved by four-acid digest and analytical methods used were ICP61 and OG62 (for silver and base metals) and Fire Assay methods AA-23 and GRA-21 for gold.</p>
Drilling techniques	<p><i>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).</i></p>	<p>Drilling technique for all holes was diamond drilling with HQ-size (63.5mm diameter) core.</p> <p>Drill core was not orientated.</p>
Drill sample recovery	<p><i>Method of recording and assessing core and chip sample recoveries and results assessed.</i></p> <p><i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i></p> <p><i>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.</i></p>	<p>All samples came from diamond core drilling. Core was reconstructed into continuous runs. Depths were measured from the core barrel and checked against marked depths on the core blocks. Core recoveries were logged and recorded in the database.</p> <p>Sample recoveries were high with &gt;85% of the drill core having recoveries of &gt;90%.</p> <p>There is no discernable relationship between recovery and grade, and no sample bias.</p>

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<p>Logging</p>	<p><i>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.</i></p> <p><i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i></p> <p><i>The total length and percentage of the relevant intersections logged.</i></p>	<p>Detailed core logging was carried out with recording of weathering, lithology, alteration, veining, mineralisation, structure, mineralogy, RQD and core recovery.</p> <p>Drill core was photographed, wet and without flash, in core trays prior to sampling. Each photograph includes an annotated board detailing hole number and depth interval.</p> <p>All holes were logged in full.</p>
<p>Sub-sampling techniques and sample preparation</p>	<p><i>If core, whether cut or sawn and whether quarter, half or all core taken.</i></p> <p><i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i></p> <p><i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i></p> <p><i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i></p> <p><i>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.</i></p> <p><i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i></p>	<p>Drill core was sawn in half using a core saw. All samples were half core and were collected from the same side of the core. No non-core samples were collected.</p> <p>The sample preparation followed industry best practice. Samples were prepared at ALS-Chemex in Hermosillo, Mexico. Samples were weighed, assigned a unique bar code and logged into the ALS-Chemex tracking system. The sample was dried and the entire sample was fine crushed to &gt;70% passing a 2 mm screen. A 250g split was pulverised using a ring and puck system to &gt;85% passing 75 micron screen. Envelopes containing the 250g pulps were sent via courier to the ALS-Chemex laboratory in Vancouver.</p> <p>Certified Reference Standards and blank check samples were routinely inserted at 20m intervals and also immediately following visually identified mineralised intercepts to provide assay quality checks. Review of the standards and blanks are within acceptable limits.</p> <p>Pulp duplicate samples are randomly selected and submitted for analysis.</p> <p>The sample sizes are considered appropriate to the grain size of the material being sampled.</p>
<p>Quality of assay data and laboratory tests</p>	<p><i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i></p> <p><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></p> <p><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></p>	<p>The analytical techniques for all elements (other than gold) involved a four-acid digest followed by multi-element ICP-MS analysis. This technique is considered a total digest for all relevant minerals.</p> <p>No geophysical or portable analysis tools were used to determine assay values.</p> <p>Internal laboratory control procedures comprised duplicate sampling of randomly selected assay pulps, as well as internal laboratory standards and blanks.</p>

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<p>Verification of sampling and assaying</p>	<p><i>The verification of significant intersections by either independent or alternative company personnel.</i></p> <p><i>The use of twinned holes.</i></p> <p><i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></p> <p><i>Discuss any adjustment to assay data.</i></p>	<p>Senior technical personnel from the Company (Project Geologist, Exploration Manager &amp; Managing Director) have all inspected the drill core.</p> <p>No drill holes were twinned as this was deemed unnecessary at this stage of exploration.</p> <p>Primary data was collected by employees of the Company at the project site. All measurements and observations were recorded onto hard copy templates and later transcribed into the Company's digital database. Digital data storage, verification and validation are managed by an independent data management company.</p> <p>No adjustments or calibrations have been made to any assay data.</p>
<p>Location of data points</p>	<p><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></p> <p><i>Specification of the grid system used.</i></p> <p><i>Quality and adequacy of topographic control.</i></p>	<p>Drill hole collar locations were determined by hand-held GPS.</p> <p>All drill holes were surveyed for down-hole deviation. Surveys were undertaken at 30m intervals and at bottom of hole.</p> <p>The grid system used is NAD27 Mexico UTM Zone 12 for easting, northing and RL.</p> <p>A photogrammetric company collected high resolution stereo aerial photos over the project area in June 2011 to create a 2m interval contour map and a colour orthophoto with 20 cm pixels. Both the contour map and orthophoto provided a base for geologic mapping that was completed at 1:2000 over the project. The geology of selected areas was later mapped at a scale of 1:1000.</p>
<p>Data spacing and distribution</p>	<p><i>Data spacing for reporting of Exploration Results.</i></p> <p><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></p> <p><i>Whether sample compositing has been applied.</i></p>	<p>Overall intersection density of mineralisation by the diamond drilling was approximately 20-30m spacing.</p> <p>Mineralisation and geology showed good continuity from hole to hole.</p> <p>No sample compositing has been applied.</p>
<p>Orientation of data in relation to geological structure</p>	<p><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></p> <p><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></p>	<p>Geological controls and orientations of the mineralised zone are unknown at this time and therefore all mineralised intersections are reported as "intercept length" and may not reflect true width.</p> <p>No sampling bias is believed to have been introduced.</p>

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Sample security	<i>The measures taken to ensure sample security.</i>	Assay samples were placed in poly sample bags, each with a uniquely numbered ticket stub from a sample ticket book. Sample bags were marked with the same sample number and sealed with a plastic cable tie. Samples were placed in woven poly bags and a numbered tamper-proof plastic cable tie was used to close each bag. The bags were delivered by company personnel directly to the ALS-Chemex laboratory for sample preparation. The numbers on the seals were recorded for each shipment. ALS-Chemex audited the arriving samples and reported any discrepancies back to the Company. No such discrepancies occurred.
Audits or reviews	<i>The results of any audits or reviews of sampling techniques and data.</i>	All digital data is subject to audit by the independent data manager.

### Section 2: Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<p><i>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.</i></p> <p><i>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.</i></p>	<p>The Promontorio Project comprises three (3) mineral concessions: T-235269 (Promontorio), T-235270 (Hidalgo) and T-218881 (Magistral). Azure Minerals owns Promontorio 100%, and has Options to Purchase the other two tenements which are held by local Mexican syndicates. Upon exercise of the Options, Azure will have 100% ownership of the tenements. No royalties are payable to the vendors.</p> <p>The tenements are secure and are in good standing. There are no known impediments to obtaining a licence to operate in the area.</p>
Exploration done by other parties	<i>Acknowledgment and appraisal of exploration by other parties.</i>	<p>The project area has a history of artisanal mining dating back to the 19th century. Between 1993 and 2008 the property was explored by several companies.</p> <p>1993 to 1994 - Empresa Minera CanMex conducted exploration and RC drilling.</p> <p>1995 to 1997 - Sierra Nevada Gold drilled 63 diamond core holes, mapped and sampled old underground mine workings, carried out metallurgical test work and produced a Mineral Resource estimate.</p> <p>2004 to 2005 - Dia Bras Exploration undertook geological mapping, diamond drilling, geophysics, and prepared a NI43-101 compliant technical report.</p> <p>Azure Minerals acquired the rights to the project in April 2008 through its fully owned Mexican subsidiary company</p>

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		Minera Piedra Azul SA de CV.
Geology	<i>Deposit type, geological setting and style of mineralisation.</i>	Deposit types are high-sulphidation epithermal, hydrothermal breccia and porphyry copper. Style of mineralisation comprises massive, semi-massive and disseminated copper sulphides hosted in vuggy silica and silicified host rocks.
Drill hole information	<p><i>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:</i></p> <ul style="list-style-type: none"> <li>• <i>easting and northing of the drill hole collar</i></li> <li>• <i>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</i></li> <li>• <i>dip and azimuth of the hole</i></li> <li>• <i>down hole length and interception depth</i></li> <li>• <i>hole length.</i></li> </ul> <p><i>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.</i></p>	Data was previously reported. No drilling data is being reported herein.
Data aggregation methods	<p><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></p> <p><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></p> <p><i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i></p>	Data was previously reported. No drilling data is being reported herein.
Relationship between mineralisation widths and intercept lengths	<i>These relationships are particularly important in the reporting of Exploration Results. If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').</i>	Data was previously reported. No drilling data is being reported herein.
Diagrams	<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>	Data was previously reported. No drilling data is being reported herein.
Balanced reporting	<i>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high</i>	Data was previously reported. No

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	<i>grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</i>	exploration data is being reported herein.
Other substantive exploration data	<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>	Metallurgical testwork was carried out by SGS Mineral Services of Lakefield, Canada under the supervision of metallurgist Mr Andrew Holloway, CEng, of AGP Mining Consultants (“AGP”), based in Toronto, Canada.  Testwork included bench-scale flotation to prepare a sulphide concentrate and QEMSCAN and XRD analysis to characterise the nature and distribution of the minerals.  The conditions for this work were industry standard for material of this type.
Further work	<i>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling). 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>	Further work will include additional diamond drilling.

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