

## San Sebastian High Grade Copper and Gold Results

ASX ANNOUNCEMENT

1 October 2014

---

### Highlights

- **Bonanza copper and gold results from the San Sebastian exploration tunnel including face sampling:**
  - 1.55m @ 18.35% Cu,
  - 1.50m @ 11.65% Cu,
  - 0.80m @ 16.32% Cu and 6.37g/t Au
  - 0.90m @ 7.05% Cu and 3.75 g/t Au
- **Sorted high grade stockpiled material from the exploration tunnel grading 22.50% Cu and 2.37g/t Au**
- **Continuous mineralisation along full 25 metre length of the tunnel, averaging 5.88% Cu**
- **Mining permit documentation submitted for San Sebastian**

Perth-based copper developer Metallum Ltd (ASX: MNE) is pleased to announce that the exploration tunnel it is installing at the San Sebastian mine has encountered wide, high-grade copper and gold mineralisation. San Sebastian is part of the El Roble Copper Project in Chile, where the Company has mapped more than 60 kilometres of mineralised veins. The Company has begun work installing an exploration tunnel along the length of the San Sebastian vein, with initial assays returning very high grades at good widths.

Metallum entered an option to acquire the San Sebastian concession in August 2014 (ASX announcement 27 August 2014), adding to its portfolio at El Roble (Figure 1). It is currently mining and trucking material from the Panga Mine and awaiting a permit to commence similar operations at the nearby Paraguay Mine.

San Sebastian covers a major mineralised structure within the El Roble vein system. The option agreement gives Metallum exclusive access to conduct exploration and assessment work prior to exercising the option. As part of the assessment program, the Company has commenced an exploration tunnel from the existing 1040 level footwall drive to intersect the interpreted position of the high grade copper vein mapped and sampled in the upper 1090 level (Figure 2). Previous sampling from the vein in the 1090 level returned copper grades of up to 5.79% over 2.20m and individual samples from remnant pillars up to 14.25% Cu (ASX announcement 27 August 2014).

Metallum Managing Director Zeff Reeves said:

“What we’ve encountered at San Sebastian is a high-grade vein between 0.50m and 3.00m in width along the total tunnel length of 25m to date. The results also reported some excellent gold grades, and this work justifies our decision to acquire the concession and work towards establishing an underground mining

operation there as soon as possible. We're stockpiling the material from the tunnel and the high grade stockpile has assayed 22.50% copper.

"Obviously we are pleased with how San Sebastian is looking, and we are targeting the wider portions of the vein beneath the historic workings which we are yet to reach. We've also submitted an application to operate there so we can commence mining and delivering material to the mill as soon as possible," he said.

### **San Sebastian Exploration**

Metallum's activities at San Sebastian have included the installation of an exploration tunnel at the 1040 level within the mineralised vein, approximately 50m below where the vein has been mined historically along a length of approximately 300m and a depth of 50m (Figure 2).

The exploration tunnel has nominal dimensions of 2.20m wide by 2.20m high and has encountered high-grade copper and gold mineralisation along 25m of exposed vein; vein width varies from 0.50m to 3.00m and averages 1.60m (Figure 3). One series of samples from the tunnel was sent to ALS Laboratories in Santiago and a second series was sent to a local laboratory in Copiapo (CEMSEC), which Metallum is using as a grade control laboratory due to its ability to deliver 24-hour turnaround of results. The CEMSEC laboratory only provides assay for copper and does not have the capability to assay for gold. To date, Metallum has only received results from ALS for two channels of 11 sampled, and will report further results when received. The mapped vein in Figure 3 shows the high grade core of the vein for which results have been received from CEMSEC and results for the entire drive width remain outstanding. Full assay results are presented in Appendix 1.

Material removed from the installation of the exploration tunnel is being sorted and stockpiled into "low grade" and "high grade" categories. High-grade material is targeting a copper grade higher than 8% copper. Initial sampling from the high-grade stockpile has returned a result of 22.50% Cu and 2.37g/t Au; however it should be noted that this may not be representative of the material that is ultimately delivered to the treatment plant. Further assays from both stockpiles remain outstanding.

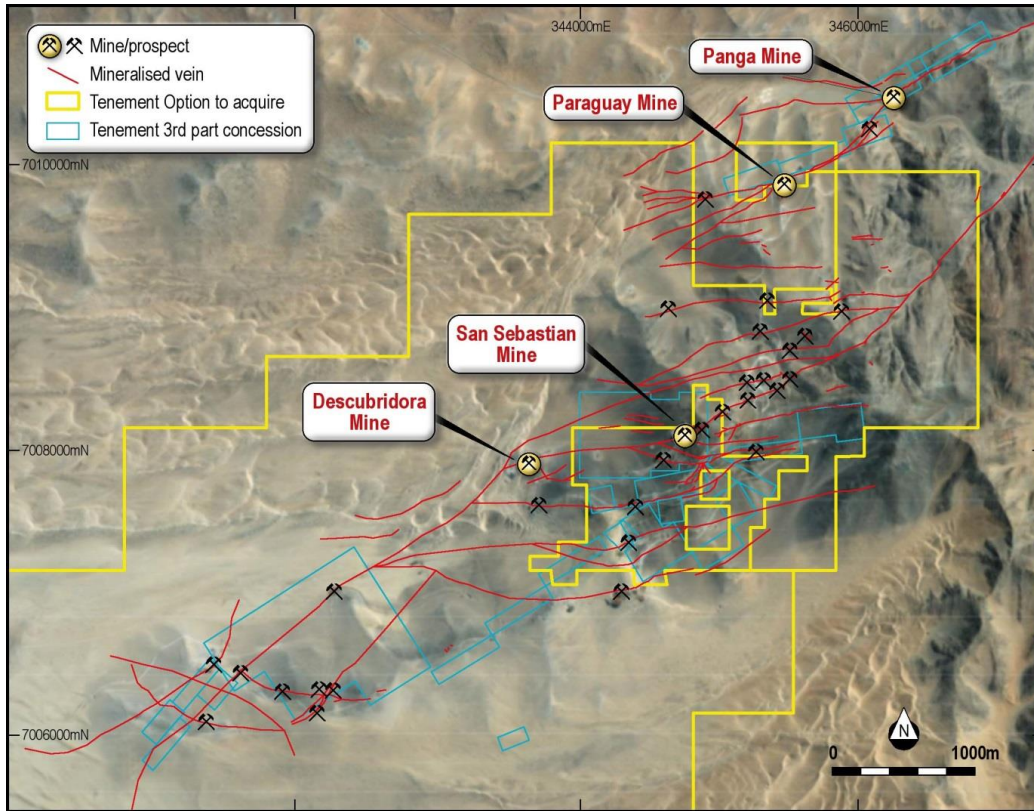
Metallum plans to continue the tunnel to the north along the vein underneath the historic mine area, which is expected to be encountered in approximately 25m. Once this tunnel has been installed, it is envisaged that it will provide immediate access to vertical stoping areas to be mined up to the 1090 level, as soon as a mining permit is granted.

### **San Sebastian Mine Permit Application**

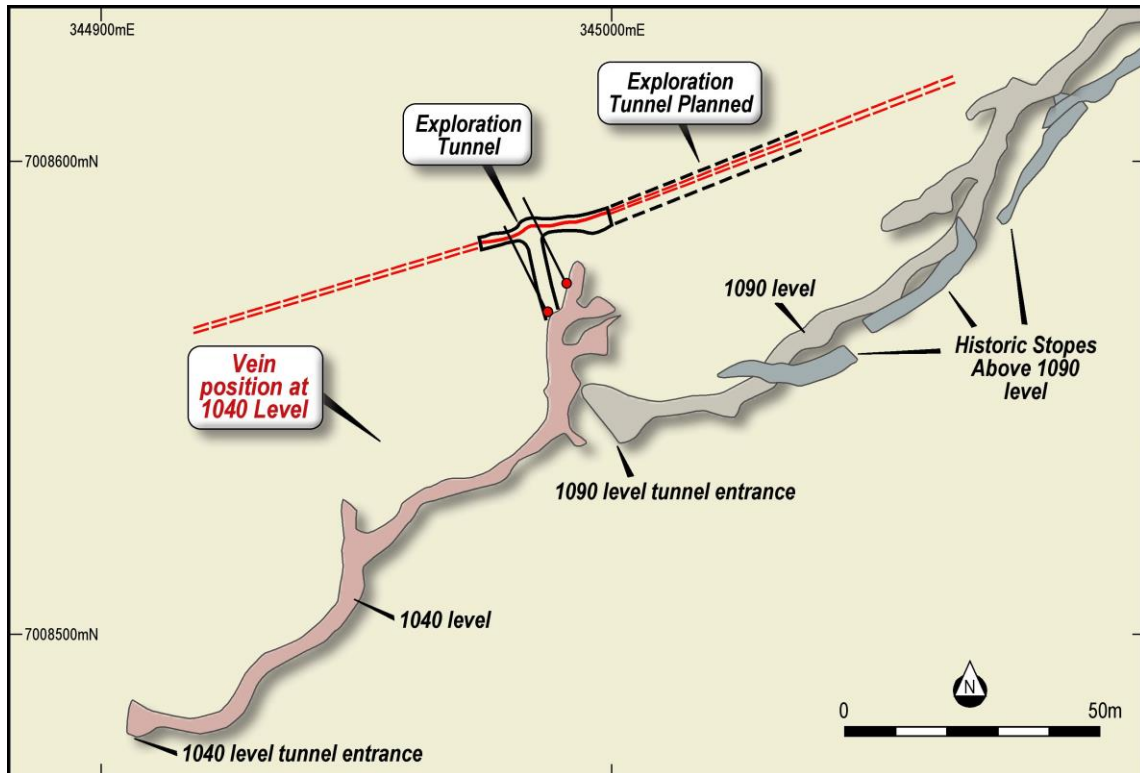
Metallum has completed mine planning and permitting work for the San Sebastian mine. This includes a full geotechnical assessment, detailed planning, scheduling and budgeting in order to commence underground mining activities as soon as possible. All permitting documentation has been submitted to Chilean authorities to obtain an operating permit to extract up to 5000 tonnes of copper bearing material per month<sup>1</sup>.

---

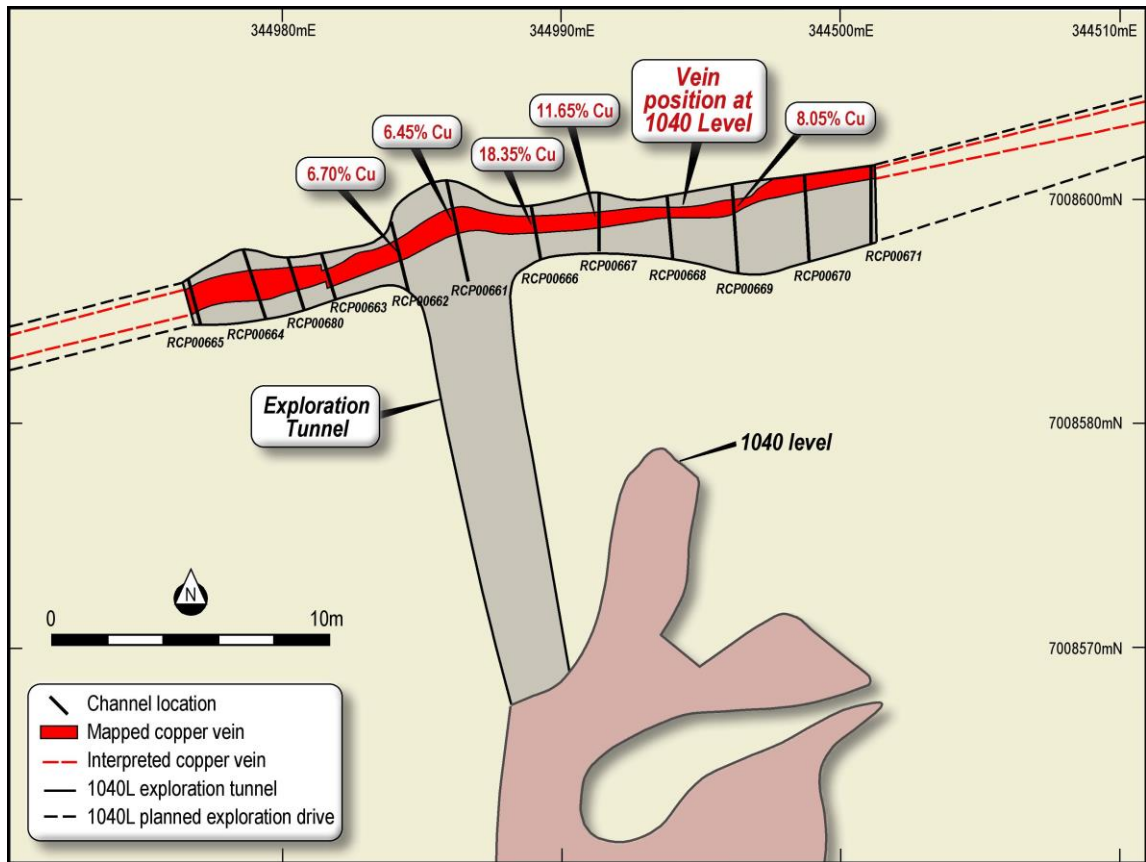
<sup>1</sup> It should be noted that an operating permit to extract up to 5,000 tonnes of copper bearing material is not a production target.



**Figure 1 – Map of the north east sector of the El Roble project showing the location of the San Sebastian mine within a strike continuous mineralised corridor where Metallum has mapped over 60km of prospective veins**



**Figure 2 – Plan view of the San Sebastian mine showing existing footwall drive (1040 level) and newly installed exploration tunnel in relation to the historic mine workings approximately 50m above. Historic workings have been mapped for over 300m along strike. Dashed line shows planned position of the exploration tunnel along the vein on the 1040 level.**



**Figure 3– Plan view of San Sebastian 1040 Level exploration tunnel and high grade copper result.**



**Figure 4 – San Sebastian mine and vein looking north. Note favorable topography for access, vertical distance between the 1040 level and 1090 level entrances is approximately 50m.**

Metallum is focused on achieving growth and shareholder value through the development of near-term, small-scale mining operations at El Roble to enable self-funded growth.



For more information visit the Metallum website at [www.metallum.com.au](http://www.metallum.com.au) or contact:

Zeffron Reeves  
Managing Director  
Metallum Limited  
[zreeves@metallum.com.au](mailto:zreeves@metallum.com.au)  
P: + 61 8 9322 4328

Robert Gundelach  
Investor Relations  
NWR Communications  
[robert@nwrcommunications.com.au](mailto:robert@nwrcommunications.com.au)  
P: +614 51 896 420

#### **About Metallum Limited**

Metallum Limited (ASX: MNE) is an Australian-based company that acquires and develops copper and gold projects around the world with a focus on Chile. The Company has an interest in the highly prospective, high grade El Roble Copper Project in Region III of Chile, targeting IOCG-style copper and gold mineralisation. The Company is focused on achieving growth and shareholder value through the development of near-term, small-scale mining operations at El Roble which will enable self-funded growth into the future. El Roble is ideally located 25km from the port of Caldera and within 80km of two copper toll treatment plants within the world class Atacama IOCG region, which has a history of high-grade copper production. The Company has commenced trucking copper-bearing material from the Panga mine at El Roble for processing at a nearby plant.

Metallum Limited also has an interest in the Comval Copper Project in the Philippines, and its Australian-based project, Teutonic, is prospective for gold and base metals.

Metallum Limited has a strong Board and management team with considerable technical, commercial and corporate experience in the resources sector.

For more information visit the Metallum Limited website at [www.metallum.com.au](http://www.metallum.com.au)

#### **Competent Person's Statement**

The information in this report that relates to Exploration Results is based on information compiled by Mr Zeffron Reeves (B App Sc (Hons) (Applied Geology) MBA, MAIG), a member of the Australian Institute of Geoscientists. Mr Reeves has sufficient experience that is relevant to the style of mineralisation and type 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 Reeves is a full time employee and Managing Director of Metallum Limited. Mr Reeves consents to the inclusion in this report of the matters based on this information in the form and context in which it appears. The Company confirms that the form and context in which previously released Exploration Results information is presented has not been materially modified and it is not aware of any new information or data that materially affects the information included in the relevant market announcements, as detailed in the body of this announcement.

## Appendix 1 Sampling Data

### 1) Location Data

HoleID	HoleType	Northing	Easting	RL	depth	dip	azimuth
RCPCH00680	CH_UGR	7008583.50	344980.50	1031.91	1.9	30	340
RCPCH00661	CH_UGR	7008584.50	344984.00	1031.91	1.8	0	0
RCPCH00662	CH_UGR	7008584.00	344981.00	1031.91	1.75	0	0
RCPCH00663	CH_UGR	7008583.50	344979.50	1031.91	1.4	0	0
RCPCH00664	CH_UGR	7008583.00	344976.50	1031.91	1.25	0	0
RCPCH00665	CH_UGR	7008583.00	344789.00	1031.91	2.2	0	0
RCPCH00666	CH_UGR	7008585.00	344991.00	1031.91	1.55	0	0
RCPCH00667	CH_UGR	7008585.00	344994.00	1031.91	1.5	0	0
RCPCH00668	CH_UGR	7008585.00	344996.00	1031.91	1.4	0	0
RCPCH00669	CH_UGR	7008579.00	344999.00	1031.91	1.6	0	0
RCPCH00670	CH_UGR	7008579.00	345001.00	1031.91	1.6	0	0
RCPCH00671	CH_UGR	7008586.00	344987.20	1031.90	1.5	0	0
MGC04885	RKCHP	7008586.80	344987.20	1031.90			
MGC04887	RKCHP	7008586.50	344985.70	1031.90			
MGC04889	RKCHP	7008585.50	344984.00	1031.90			

### 2) Assays

HoleID	SAMPLE	depth_from	depth_to	Interval	Cu %	Au ppm	TYPE	Lab
	MGC04885				7.05	3.75	RKCHP	ALS
	MGC04887				16.32	6.37	RKCHP	ALS
	MGC04889				3.22	4	RKCHP	ALS
	MGC04904				22.5	2.37	STOCK	ALS
RCPCH00680	MGC04901	0	0.35	0.35	0.514	0.061	CH	ALS
RCPCH00680	MGC04902	0.35	1.3	0.95	9.46	4.03	CH	ALS
RCPCH00680	MGC04903	1.3	1.9	0.6	1.36	0.471	CH	ALS
RCPCH00661	MGC4959	0	1.8	1.8	6.45		CH	CEMSEC
RCPCH00662	MGC4960	0	1.75	1.75	6.70		CH	CEMSEC
RCPCH00663	MGC4961	0	1.6	1.6	1.30		CH	CEMSEC
RCPCH00664	MGC4962	0	0.2	0.2	1.75		CH	CEMSEC
RCPCH00664	MGC4963	0.2	1.15	0.95	2.95		CH	CEMSEC
RCPCH00664	MGC4964	1.15	1.4	0.25	0.70		CH	CEMSEC
RCPCH00665	MGC4965	0	2.2	2.2	4.55		CH	CEMSEC
RCPCH00666	MGC4966	0	1.55	1.55	18.35		CH	CEMSEC
RCPCH00667	MGC4967	0	1.5	1.5	11.65		CH	CEMSEC
RCPCH00668	MGC4968	0	1.4	1.4	2.70		CH	CEMSEC
RCPCH00669	MGC4969	0	1.6	1.6	8.05		CH	CEMSEC
RCPCH00670	MGC4970	0	1.6	1.6	4.80		CH	CEMSEC
RCPCH00671	MGC4971	0	1.5	1.5	2.35		CH	CEMSEC

**APPENDIX 2: JORC Table 1, Section 1 Sampling Techniques and Data**

Criteria	Explanation
Sampling techniques	<ul style="list-style-type: none"> <li>• Minimum sample interval was 0.25m and maximum of 1.00m are collected from core, sampled to geological boundaries.</li> <li>• Rock chip samples collected are of a minimum 2kg weight.</li> <li>• Minimum sample interval was 0.50m and maximum of 2.00m were collected along installed channels.</li> <li>• Samples sent to ALS Laboratories, Copiapo, Chile and to Cesmec laboratory, Copiapo Chile</li> <li>• Samples submitted to ALS were pulverised to obtain a 30g charge for fire assay for gold</li> <li>• ALS samples used a 0.5g charge was digested by four acid near total digest and analyses using ICP-OES for multi-element analysis, including copper</li> <li>• ALS Ore grade copper samples over 10,000ppm (10%) are re-assayed using AAS</li> <li>• High grade gold samples over 10 g/t are re-assayed using a fire assay fusion and gravimetric finish.</li> <li>• Samples submitted to Cesmec Laboratory used a 0.5g charge, aqua regia digest and ICPMS finish</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <li>• NA - No drill results are presented in this announcement</li> </ul>
Drill sample recovery	<ul style="list-style-type: none"> <li>• NA - No drill results are presented in this announcement</li> </ul>
Logging	<ul style="list-style-type: none"> <li>• All drill holes and rock samples are geologically logged by qualified geologists.</li> <li>• Geological data is recorded in the Company's geological database.</li> <li>• Logging is qualitative in nature and describes lithology, alteration, structure and mineralisation visually observed by the logging geologist.</li> <li>• Total length of each sample interval has been logged.</li> </ul>
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> <li>• The sample collection and preparation technique is deemed suitable and industry standard for drill core and rock sampling.</li> <li>• Samples are coarse crushed to 70% passing 2mm and then split produce a 30g sample for gold assay and 0.5g sample for multi-element assay. Sub samples are then pulverised to 85% passing 75 microns prior to assay.</li> <li>• No duplicate samples have been carried out.</li> <li>• Sample size is deemed appropriate.</li> <li>• Samples may be subject to nonuniform grade distribution and nugget effect in relation to copper grade due to geological and mineralogical characteristics.</li> </ul>
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> <li>• Assay techniques are deemed suitable and accurate for the elements being tested.</li> <li>• Standard reference materials have been submitted in each sample run every 20 samples.</li> <li>• Blank reference materials are submitted in each sample run every 50 samples.</li> </ul>
Verification of sampling and assaying	<ul style="list-style-type: none"> <li>• All significant intersections have been calculated using weighted averaging to sample length.</li> <li>• All significant intersections have been checked by alternative company geological personnel.</li> <li>• No duplicate sampling or twinned holes have been completed</li> <li>• All data collected is done so in accordance with the Company's written data collection procedures and is kept within the Company's electronic database. Original sample logs and written data collection forms are also retained in the Company's data library.</li> <li>• No adjustment to data has been done.</li> </ul>
Locations of data points	<ul style="list-style-type: none"> <li>• All drill holes and channels have been surveyed using a measurement from known survey points in underground areas with appropriate control points used and referenced to ensure accuracy of survey information.</li> <li>• Collar locations for channels RCPCH00375-RCPCH00381 have not been surveyed and have been located using measurements from known survey points. No elevation data is available until survey has been completed.</li> <li>• Co-ordinates have an error of +/-10cm.</li> <li>• Co-ordinates are recorded in WGS84 co-ordinate system</li> </ul>
Data spacing and distribution	<ul style="list-style-type: none"> <li>• The current drill and channel spacing is deemed appropriate for the current early stage of exploration</li> </ul>
Orientation of data in relation to	<ul style="list-style-type: none"> <li>• Wherever possible drill holes and channels have been planned to intersect mineralised structures perpendicular to the structure.</li> </ul>

geological structure	<ul style="list-style-type: none"> <li>• Drill Hole intercepts are downhole widths and do not indicate true widths of any mineralised structure.</li> </ul>
Sample security	<ul style="list-style-type: none"> <li>• All sampling was conducted under the supervision of the companies project manager who supervised sample collection and the chain of custody from the drill to the sample preparation and logging facility is continually monitored by the project manager. Samples are shipped to the lab by qualified couriers or Company personnel under locked bags.</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li>• No audit or review has been conducted due to the early stage exploration nature of the work.</li> </ul>



## JORC Table 7: Section 2 Reporting of Exploration Results

Criteria	Explanation
Mineral tenement and land tenure status	<ul style="list-style-type: none"> <li>Metallum does not own any of the properties sampled or mapped and sampling and mapping completed was done so as part of a due diligence process in order to assess the properties.</li> <li>Metallum has entered into an option to acquire the San Sebastian concessions (refer to ASX announcement 27<sup>th</sup> August 2014)</li> <li></li> </ul>
Exploration by other parties	<ul style="list-style-type: none"> <li>No information has been used in this report from exploration by other parties.</li> </ul>
Drill hole information	<ul style="list-style-type: none"> <li>Details of channel, drill holes, depth and intercept depths are contained within this announcement (Appendix 1).</li> </ul>
Geology	<ul style="list-style-type: none"> <li>The El Roble Project and San Sebastian mine area consists of quartz and iron oxide veins, containing copper and gold mineralisation. The veins are hosted within intrusive dioritic and andesitic volcanic rocks of the Chilean Cretaceous Belt.</li> </ul>
Data aggregation methods	<ul style="list-style-type: none"> <li>Intercept widths are along channel widths, intercept calculated by length weighted average for all samples and no internal dilution was used, where length is the along channel length for each sample interval</li> <li>Intercepts comprise of aggregated length weighted average for all samples taken in each channel. Length weighted averages have been calculated using the following formula assuming 3 samples were taken from the channel, where: A=sample interval, B=sample assay value <ol style="list-style-type: none"> <li><math>A1 \times B1 = C1, A2 \times B2 = C2, A3 \times B3 = C3</math></li> <li><math>A1 + A2 + B2 = \text{total interval}</math></li> <li><math>(C1 + C2 + C3) / \text{total interval} = \text{length weighted grade average}</math></li> </ol> </li> <li>No metal equivalent values have been used.</li> </ul>
Relationship between mineralization widths and intercept lengths	<ul style="list-style-type: none"> <li>Channels were designed to be installed perpendicular to the interpreted strike of the mineralized structures unless stated.</li> <li>Intercept widths are along downhole widths and are not true geological widths.</li> </ul>
Diagrams	<ul style="list-style-type: none"> <li>Pertinent maps, plans and sections are within this announcement</li> </ul>
Balanced Reporting	<ul style="list-style-type: none"> <li>Full results of all samples taken are presented in Appendix 1 of this announcement.</li> </ul>
Other substantive exploration data	<ul style="list-style-type: none"> <li>No other data other than that presented has been used or relied upon.</li> </ul>
Further work	<ul style="list-style-type: none"> <li>Further exploration work including mapping, sampling and drilling is required, on areas throughout the property.</li> <li>These areas will be identified in the future through further analysis and interpretation of results.</li> <li>Diagrams cannot be provided until areas for future exploration have been identified, other than what is presented within this notice.</li> </ul>