

12 April 2018

# Cobalt-Copper-Manganese Mineralisation Confirmed in South Australian ELA's

#### Highlights

- High grade cobalt confirmed at Muttabee with rock chip grades of up to 0.86% cobalt.
- High grade manganese up to 58.1% Mn and 49.8% Mn are confirmed at Prouts and Muttabee prospects, respectively.
- Exploration to develop further drill targets to commence on granting of the licences.

Pacifico Minerals Ltd is pleased to report it has completed a preliminary literature-based evaluation of the potential for economic concentration of cobalt, copper and manganese on ELA's recently secured in South Australia.

ELA's 2018/0053 and 2018/0054 lie in the central part of the Adelaide Geosyncline of South Australia.

Previous exploration on both ELA's has focused mainly on the discovery of economic deposits of copper and diamonds with very little consideration of the cobalt potential. A preliminary review has confirmed the documented presence of highly anomalous cobalt, as well as copper and zinc concentrations, in a sediment-hosted geologic setting. This includes up to 0.86% Co, 0.35% Cu and 0.21% Zn in rock chip samples taken at the historical Muttabee manganese mine on ELA 2018/0054<sup>1</sup>.

Cobalt, copper, zinc and manganese occurrences at these locations occur as structural and unconformity related replacement mineralisation, as well as stratabound sediment-hosted copper-cobalt mineralisation, similar to the world-class deposits in the Katangan Copperbelt of central Africa.

High grade manganese deposits are also present on ELA 2018/0053 and ELA 2018/0054. At the historical Muttabee manganese mine on ELA 2018/0054, grab samples record manganese grades up to 58.1% Mn<sup>1</sup> while the Prouts mine on ELA 2018/0053 contains up to 49.8% Mn<sup>1</sup>.

# ASX Code: PMY ABN 43 107 159 713

#### CORPORATE DIRECTORY

### Managing Director Simon Noon

# Directors

Richard Monti (Chairman) Peter Harold (Non-exec.) Andrew Parker (Non-exec.)

# **Company Secretary**

Patrick Holywell

#### Registered office

Level 10, 553 Hay St Perth WA 6000

#### Telephone:

+61 8 6266 8642

#### Facsimile:

+61 8 9421 1008

#### Email:

info@pacificominerals.com.au



<sup>&</sup>lt;sup>1</sup> Research thesis by Christopher Gregory at: <a href="https://digital.library.adelaide.edu.au/dspace/handle/2440/105734">https://digital.library.adelaide.edu.au/dspace/handle/2440/105734</a> See table 1 for further information.



Assembly of a comprehensive database of previous exploration including geologic mapping, stream sediment, soil and rock chip geochemistry, as well as numerous geophysical surveys conducted across the target areas, is in progress. The results of this work are expected to be completed by the end of May and a further update provided at that time.

Once granted, Pacifico plans to start exploration on both EL's with reconnaissance rock chip sampling and mapping around areas of known Co-Cu-Mn mineralisation. This information will be integrated with available geophysical data to identify targets for follow-up drill testing.

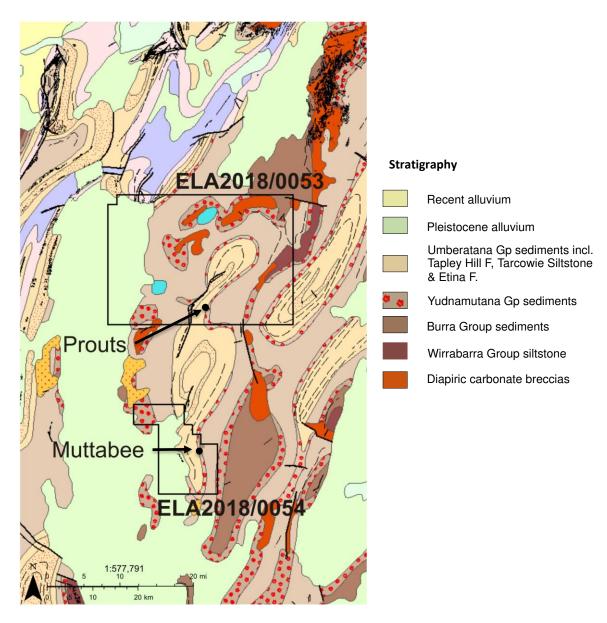


Figure 1 – Pacifico's EL Applications, Geology Map and Sample Locations



Prospect	Sample ID	Latitude	Longitude	% Mn	% Co	% Cu	% Zn
Prouts	895-W5	-32.2723	138.414	49.8	0.0113	0.1503	0.0222
Muttabee	895-113	-32.5022	138.4044	53.5	0.8626	0.3539	0.2134
Muttabee	895-161	-32.5022	138.4044	58.1	0.0074	0.012	0.0098

Table 1 – Sample locations and grades recorded

#### **Cautionary Statement:**

- The Exploration Results have not been reported in accordance with the JORC Code 2012;
- A Competent Person has not done sufficient work to disclose the Exploration Results in accordance with the JORC Code 2012; and
- It is possible that following further evaluation and/or exploration work, that the confidence in the prior reported Exploration Results may be reduced when reported under the JORC Code 2012.

Pacifico Minerals has recently been informed that a third ELA, 2018/0055, has been refused, due to an administrative oversight by the South Australian Department of State Development.

## For further information or to be added to our electronic mailing list please contact:

Simon Noon (Managing Director)

Phone: +61 (0)8 6266 8642

Email: info@pacificominerals.com.au

# About Pacifico Minerals Ltd

Pacifico Minerals Ltd ("Pacifico") (ASX: PMY) is a Western Australian based exploration company with interests Australia, Mexico and Colombia. In Australia the company is focussed on advancing the Borroloola West project in the Northern Territory. The Borroloola West Project covers an outstanding package of ground north-west of the McArthur River Mine (the world's largest producing zinc – lead mine) with high potential for the discovery of world class base metal deposits, and also for shallow mineable and leachable copper mineralisation. In Mexico Pacifico has recently acquired the Violin project which has high prospectivity for the development of a major gold-copper deposit. In Colombia the company is focussed on advancing its Berrio Gold Project. Berrio is situated in the southern part of the prolific Segovia Gold Belt and is characterised by a number of operational, artisanal-scale adits.

#### Competent Person Statement

The information in this announcement that relates to the South Australian exploration licence applications is based on information compiled by Mr Barrie Bolton, who is a Member of the Australian Institute of Mining and Metallurgy. Mr Bolton has sufficient experience which 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 Bolton consents to the inclusion in this announcement of the matters based on information in the form and context in which it appears.

#### **Forward Looking Statements**

Certain statements in this document are or maybe "forward-looking statements" and represent Pacifico's intentions, projections, expectations or beliefs concerning among other things, future exploration activities. The projections, estimates and beliefs contained in such forward-looking statements necessarily involve known and unknown risks, uncertainties and other factors, many of which are beyond the control of Pacifico, and which may cause Pacifico's actual performance in future periods to differ materially from any express or implied estimates or projections. Nothing in this document is a promise or representation as to the future. Statements or assumptions in this document as to future matters may prove to be incorrect and differences may be material. Pacifico does not make any representation or warranty as to the accuracy of such statements or assumptions.



# JORC Code, 2012 Edition – Table 1 Report

# **Section 1 Sampling Techniques and Data**

Criteria	JORC Code Explanation	Commentary
Sampling techniques	<ul> <li>Nature and quality of sampling (e.g. 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.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (e.g. '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 (e.g. submarine nodules) may warrant disclosure of detailed information.</li> </ul>	• At Muttabee and Prouts, selective grab samples were collected by Christopher Gregory, as part of an Honours research project at the University of Adelaide (Gregory, 1988). These are selected grab samples and may not be representative. Other samples collected as part of this research project are not considered relevant at this time and therefore not reported here.
Drilling techniques	<ul> <li>Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. 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).</li> </ul>	No drilling reported
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>	No drilling reported
Logging	<ul> <li>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.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul> <li>Samples were described for geological purposes</li> <li>No drilling reported</li> </ul>
Sub-sampling techniques and	<ul> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> </ul>	<ul> <li>For the Muttabee and Prouts samples they were dried and cleaned prior to analysis to ensure they were free of weathered material. No field duplicate</li> </ul>



Criteria	JORC Code Explanation	Commentary
sample preparation	<ul> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all subsampling stages to maximise representivity of samples.</li> <li>Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate/secondhalf sampling.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	was taken. Samples were then crushed in a jaw crusher and finished in a Siebtechnik tungsten-carbide mill. Powders were then riffle split for analysis. Sample size was appropriate for the material sampled.
Quality of assay data and laboratory tests	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>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.</li> <li>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</li> </ul>	<ul> <li>For the Muttabee and Prouts samples the laboratory methods were appropriate. The technique was considered total. Samples were analysed by XRF and AAS at the University of Adelaide Geology Department laboratories. Trace element results were calibrated using a USGS rock standard.</li> </ul>
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul> <li>No verification of sampling.</li> <li>Data is exploratory in nature and exists as excel spread sheets.</li> <li>No data adjustment.</li> <li>No drilling reported</li> </ul>
Location of data points	<ul> <li>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.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul> <li>For Muttabee and Prouts samples locations were determined using 1:40,000 scale aerial photographs and published topographic and geologic maps.</li> <li>Quality and adequacy is appropriate for this level of exploration</li> </ul>
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>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.</li> <li>Whether sample compositing has been applied.</li> </ul>	No drilling reported
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>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.</li> </ul>	No drilling reported



Criteria	JORC Code Explanation	Commentary
Sample security	The measures taken to ensure sample security.	<ul> <li>Samples taken at Muttabee and Prouts were under the control of the collector throughout the preparation and analysis.</li> </ul>
Audits or reviews	<ul> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul> <li>For samples collected at Muttabee and Prouts, the methods used, and results were reviewed by thesis examiners and project supervisors.</li> </ul>



# **Section 2 Reporting of Exploration Results**

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

Criteria	JORC Code Explanation	Commentary
Mineral tenement and land tenure status	<ul> <li>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.</li> <li>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.</li> </ul>	<ul> <li>The announcement refers to ELA's 2018/0053 and 0054 in South Australia</li> <li>Surface ownership and any Native Title implications will be researched before carrying out significant work.</li> </ul>
Exploration done by other parties	<ul> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul> <li>Various companies have explored the area now covered by the ELA's. This information is yet to be thoroughly researched.</li> </ul>
Geology	<ul> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	The ELA's are considered prospective for structural and unconformity related replacement mineralisation and stratiform 'sedex' copper-cobalt/ zinc-lead mineralisation
Drill hole Information	<ul> <li>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> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>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.</li> </ul>	No drilling reported
Data aggregation methods	<ul> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>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.</li> <li>The assumptions used for reporting of metal equivalent values should be clearly stated.</li> </ul>	No drilling reported
Relationship between mineralisation	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect</li> </ul>	No drilling reported



Criteria	JORC Code Explanation	Commentary
widths and intercept lengths	<ul> <li>to the drill hole angle is known, its nature should be reported.</li> <li>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').</li> </ul>	
Diagrams	<ul> <li>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.</li> </ul>	<ul> <li>Map provided (figure 1)</li> </ul>
Balanced reporting	<ul> <li>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.</li> </ul>	<ul> <li>No exploration results are reported</li> </ul>
Other substantive exploration data	<ul> <li>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.</li> </ul>	<ul> <li>No additional information reported</li> <li>All previous exploration information within the ELA's is to be intensively researched</li> </ul>
Further work	<ul> <li>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided</li> </ul>	<ul> <li>Research of land ownership</li> <li>Research of previous exploration data</li> <li>Plan of exploration</li> </ul>