

## US HPA Marketing Samples Assayed at 5N Purity

### Highlights

- ✓ **5kg HPA US marketing sample has returned an assay of 5N (99.999%) purity from internationally recognised materials testing company Eurofins EAG Laboratories.**
- ✓ **This is an excellent result given that the Lava Blue demonstration plant only included a single stage of purification/crystallisation whilst QPM's commercial plant design has two stages.**
- ✓ **With independent assays completed, marketing samples are now ready for distribution to potential offtakers in the US.**

Queensland Pacific Metals Ltd (**ASX:QPM**) ("**QPM**" or "**the Company**") is pleased to present an update on its high purity alumina ("**HPA**") marketing initiatives.

### 5N HPA Assays

As previously announced, QPM and Lava Blue produced six ~10kg blends in the first campaign of the Lava Blue HPA Demonstration Plant. Previous analysis of these samples undertaken at Lava Blue's Predictive Research into Speciality Materials ("**PRISM**") facility return results trending towards 5N purity.

For transport purposes, each of the six blends were split into two ~5kg batches and a composite sample taken. Once arriving in the United States, internationally recognised materials testing company Eurofins EAG Laboratories were engaged to assay two of the 5kg batches (Blend 4 of 6) as being representative of the total material.

Blend 4, which was split into Batch 4-1 and Batch 4-2, returned exceptional assays. Batch 4-1 assayed at 99.99916% purity and Batch 4-2 assayed at 99.9988% purity. Another important assay result is that chloride was <1 ppm. This is important because it confirms complete conversion to HPA and provides full recovery of chloride back into the process.

This is an outstanding result demonstrating the potential to produce 5N HPA which sells at a premium to 4N HPA. The HPA marketing samples produced at the PRISM facility only went through one stage of purification and crystallisation. QPM's commercial design in its feasibility study included two stages of purification and crystallisation, which will facilitate higher purity alumina production in the TECH Project – both to attract a commercial premium and to make the QPM HPA production very robust.

With independent laboratory certification complete, the samples are now ready for distribution to potential offtakers.

## Batch 4-1 assay results

Element	Concentration [ ppm wt ]	Element	Concentration [ ppm wt ]
Li	< 0.05	Ag	< 0.5
Be	< 0.05	Cd	< 0.5
B	< 0.05	In	< 0.5
O	Matrix	Sn	< 0.5
F	< 5	Sb	< 0.1
Na	3.4	Te	< 0.1
Mg	0.45	I	< 0.1
Al	Matrix	Cs	< 0.1
Si	0.85	Ba	< 0.1
P	< 0.1	La	< 0.1
S	< 0.5	Ce	< 0.1
Cl	0.39	Pr	< 0.1
K	< 0.5	Nd	< 0.1
Ca	2.2	Sm	< 0.1
Sc	< 0.05	Eu	< 0.1
Ti	0.06	Gd	< 0.1
V	< 0.05	Tb	< 0.1
Cr	< 0.5	Dy	< 0.1
Mn	< 0.05	Ho	< 0.1
Fe	1	Er	< 0.1
Co	< 0.05	Tm	< 0.1
Ni	< 0.5	Yb	< 0.1
Cu	< 1	Lu	< 0.1
Zn	< 0.5	Hf	< 0.5
Ga	< 0.1	Ta	Electrode
Ge	< 1	W	< 5
As	< 0.5	Re	< 0.5
Se	< 0.5	Os	< 0.05
Br	< 0.5	Ir	< 0.05
Rb	< 0.05	Pt	< 0.1
Sr	< 0.05	Au	Interference
Y	< 0.05	Hg	< 0.5
Zr	0.1	Tl	< 0.1
Nb	< 5	Pb	< 0.1
Mo	< 5	Bi	< 0.1
Ru	< 0.5	Th	< 0.05
Rh	< 0.5	U	< 0.05
Pd	< 0.5		

Purity = 99.99916%

## Batch 4-2 assay results

Element	Concentration [ ppm wt ]	Element	Concentration [ ppm wt ]
Li	< 0.05	Ag	< 0.5
Be	< 0.05	Cd	< 0.5
B	< 0.05	In	< 0.5
O	Matrix	Sn	< 0.5
F	< 5	Sb	< 0.1
Na	6.7	Te	< 0.1
Mg	0.54	I	< 0.1
Al	Matrix	Cs	< 0.1
Si	1.1	Ba	< 0.1
P	< 0.1	La	< 0.1
S	< 0.5	Ce	< 0.1
Cl	0.56	Pr	< 0.1
K	< 0.5	Nd	< 0.1
Ca	2.7	Sm	< 0.1
Sc	< 0.05	Eu	< 0.1
Ti	0.08	Gd	< 0.1
V	< 0.05	Tb	< 0.1
Cr	< 0.5	Dy	< 0.1
Mn	< 0.05	Ho	< 0.1
Fe	< 1	Er	< 0.1
Co	< 0.05	Tm	< 0.1
Ni	< 0.5	Yb	< 0.1
Cu	< 1	Lu	< 0.1
Zn	< 0.5	Hf	< 0.5
Ga	< 0.1	Ta	Electrode
Ge	< 1	W	< 5
As	< 0.5	Re	< 0.5
Se	< 0.5	Os	< 0.05
Br	< 0.5	Ir	< 0.05
Rb	< 0.05	Pt	< 0.1
Sr	< 0.05	Au	Interference
Y	< 0.05	Hg	< 0.5
Zr	< 0.1	Tl	< 0.1
Nb	< 5	Pb	< 0.1
Mo	< 5	Bi	< 0.1
Ru	< 0.5	Th	< 0.05
Rh	< 0.5	U	< 0.05
Pd	< 0.5		

Purity = 99.9988%

**Competent Persons Statement**

Information in this announcement relating to the processing and metallurgy (including the JORC table in Annexure) is based on technical data compiled by Mr Boyd Willis, an Independent Consultant trading as Boyd Willis Hydromet Consulting (BWHC). Mr Willis is a Fellow and Chartered Professional of The Australasian Institute of Mining and Metallurgy (AusIMM). Mr Willis has sufficient experience which is relevant to the activity which they are undertaking to qualify as a Competent Person under the 2012 Edition of the 'Australasian Code for reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Willis consents to the inclusion of the technical data in the form and context in which it appears.

***This announcement has been authorised for release by the Board.***



QUEENSLAND  
PACIFIC METALS

ASX: QPM | ACN:125 368 658

For Further Info: P: +61 7 3517 5900 | E: [info@qpmetals.com.au](mailto:info@qpmetals.com.au) | W: [www.qpmetals.com.au](http://www.qpmetals.com.au)

Contact: Dr Stephen Grocott, MD & CEO | Address: Level 10, 307 Queens St, Brisbane Q 4000

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## ANNEXURE – JORC TABLES

## 1.1 Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <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 (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.</li> </ul>	<ul style="list-style-type: none"> <li>The aluminium hydroxide was a purchased commercial spec feed product.</li> <li>The aluminium hydroxide was processed through to aluminium chloride hexahydrate (ACH) at Lava Blue's PRISM (Predictive Research into Speciality Materials) facility</li> <li>The ACH was processed at PRISM through to HPA.</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <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>	<ul style="list-style-type: none"> <li>No exploration drilling was undertaken</li> </ul>
Drill sample recovery	<ul style="list-style-type: none"> <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>	<ul style="list-style-type: none"> <li>No exploration drilling was undertaken</li> </ul>
Logging	<ul style="list-style-type: none"> <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> </ul>	<ul style="list-style-type: none"> <li>No exploration drilling or logging was undertaken</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <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>	
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> <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> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling 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/second-half sampling.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul style="list-style-type: none"> <li>Samples of HPA submitted to EAG for analysis are discrete samples from a batch of material at 2 different time points during the final stage of processing.</li> <li>The EAG laboratory performed sample preparation and analysis of the as provided PRISM samples viz GD-MS.</li> </ul>
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>HPA samples were blended then split into duplicate samples. A composite of each split was taken for further characterisation. EAG then prepared these for analysis for non destructive analysis. Samples were then quantitatively transferred to a sample tube and measure by GD-MS using a Ta electrode.</li> <li>Analysis of the duplicate HPA samples were performed and purity calculated by EAG to ensure accuracy and control.</li> <li>The same samples were assayed using an ICP-OES undertaken in the QUT laboratory which is dedicated to HPA testwork.</li> </ul>
Verification of sampling and assaying	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>No exploration drilling or sampling was undertaken</li> </ul>
Location of data points	<ul style="list-style-type: none"> <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</li> </ul>	<ul style="list-style-type: none"> <li>No exploration drilling was undertaken</li> </ul>

Criteria	JORC Code explanation	Commentary
	<i>control.</i>	
<i>Data spacing and distribution</i>	<ul style="list-style-type: none"> <li>• <i>Data spacing for reporting of Exploration Results.</i></li> <li>• <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></li> <li>• <i>Whether sample compositing has been applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>• No exploration drilling was undertaken.</li> </ul>
<i>Orientation of data in relation to geological structure</i>	<ul style="list-style-type: none"> <li>• <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></li> <li>• <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></li> </ul>	<ul style="list-style-type: none"> <li>• No exploration drilling was undertaken.</li> </ul>
<i>Sample security</i>	<ul style="list-style-type: none"> <li>• <i>The measures taken to ensure sample security.</i></li> </ul>	<ul style="list-style-type: none"> <li>• HPA sample generation and sampling was performed by PRISM and then submitted to EAG laboratories for analysis.</li> <li>• The HPA sample preparation and analysis work was undertaken in the EAG laboratory, which is secure and only accessed by accredited workers.</li> </ul>
<i>Audits or reviews</i>	<ul style="list-style-type: none"> <li>• <i>The results of any audits or reviews of sampling techniques and data.</i></li> </ul>	<ul style="list-style-type: none"> <li>• No external audits have been completed.</li> </ul>

## 1.2 Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
<i>Mineral tenement and land tenure status</i>	<ul style="list-style-type: none"> <li>• <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></li> <li>• <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></li> </ul>	<ul style="list-style-type: none"> <li>• Not Applicable</li> </ul>
<i>Exploration done by other parties</i>	<ul style="list-style-type: none"> <li>• <i>Acknowledgment and appraisal of exploration by other parties.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Not Applicable</li> </ul>
<i>Geology</i>	<ul style="list-style-type: none"> <li>• <i>Deposit type, geological setting and style of mineralisation.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Not Applicable.</li> </ul>
<i>Drill hole Information</i>	<ul style="list-style-type: none"> <li>• <i>A summary of all information material to the understanding of the exploration</i></li> </ul>	<ul style="list-style-type: none"> <li>• No exploration drilling or sampling was undertaken.</li> </ul>



Criteria	JORC Code explanation	Commentary
	<p>results including a tabulation of the following information for all Material drill holes:</p> <ul style="list-style-type: none"> <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> <p>• 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>	
Data aggregation methods	<ul style="list-style-type: none"> <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 any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul style="list-style-type: none"> <li>• No exploration drilling or sampling was undertaken.</li> <li>• Metal equivalents were not used or reported.</li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> <li>• These relationships are particularly important in the reporting of Exploration Results.</li> <li>• If the geometry of the mineralisation with respect 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>	<ul style="list-style-type: none"> <li>• No exploration drilling was completed.</li> </ul>
Diagrams	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>• No exploration drilling was completed.</li> </ul>
Balanced reporting	<ul style="list-style-type: none"> <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</li> </ul>	<ul style="list-style-type: none"> <li>• No exploration results have been reported.</li> </ul>



Criteria	JORC Code explanation	Commentary
	<i>of Exploration Results.</i>	
<i>Other substantive exploration data</i>	<ul style="list-style-type: none"> <li>• <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></li> </ul>	<ul style="list-style-type: none"> <li>• Exploration drilling was not carried out.</li> </ul>
<i>Further work</i>	<ul style="list-style-type: none"> <li>• <i>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></li> <li>• <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></li> </ul>	<ul style="list-style-type: none"> <li>• No drilling or exploration work is planned.</li> </ul>