

First 4N HPA Production for Lava Blue Demonstration Plant

Highlights

- ✓ **Lava Blue's Demonstration Plant successfully commissioned late May / early June.**
- ✓ **Kilogram batches of better than 99.99% ("4N") High Purity Alumina ("HPA") have been produced from aluminium hydroxide feed source.**
- ✓ **Total production of 60kg is being targeted for production for customer evaluation.**
- ✓ **Production of 4N HPA from the Demonstration Plant is a major technical milestone in the pathway towards commercial production.**
- ✓ **Product produced from the Demonstration Plant is critical for QPM's offtake marketing efforts and will be provided to potential customers.**

Queensland Pacific Metals Ltd (**ASX:QPM**) ("**QPM**" or "**the Company**") is pleased to announce that 4N HPA has been successfully produced from the Lava Blue Demonstration Plant, located at QUT Redlands, Queensland.

Demonstration Plant

As with the TECH Project, QPM and Lava Blue procured aluminium hydroxide as a feed source for the Demonstration Plant. Production from Lava Blue' HPA demonstration facility in Brisbane has begun to ramp up and kilogram scale samples produced during commissioning are achieving better than 4N purity despite progressively diminishing contamination from commissioning new kilns. The results of a composite sample, produced June 15, and tested for purity in the QUT laboratory that is dedicated to the Lava Blue HPA project, are tabulated below.

Element	Sample QPM-HPA-150623-02-a	Sample QPM-HPA-150623-02-b	Sample average QPM-HPA-150623-02
Ca	12	9	10.5
Cr	4	4	4
Cu	7	7	7
Fe	30	29	29.5
Ga	<1	<1	<1
K	<5	<5	<5
Mg	4	4	4
Na	6	6	6
Ni	2	2	2

Si	13	11	12
Ti	1	1	1
Zn	1	5	3
Zr	<1	<1	<1
Total Impurities (mg/kg)	87	85	86
Purity (%)	99.9913	99.9915	99.9914

Figure: QUT analysis of HPA produced during commissioning of Lava Blue Demonstration Plant

Duplicates of the sample were tested and both the primary results of each test and the average of the test are displayed. While the results demonstrate greater than 99.99% purity is being achieved, higher than desirable iron, silicon and calcium contamination levels have been detected and are attributed to 'curing' of new kiln internals.

Both QPM and Lava Blue are excited to have achieved 4N HPA during the commissioning phase of this project. Lava Blue will continue to operate the Demonstration Plant with a target of producing 60 kg of 4N HPA. The operation of the Demonstration Plant is also providing valuable technical information for the design of commercial scale plant.



Figure: Sample from which material from analysis tabulated above was drawn in the QUT laboratory.



Figure: Aluminium hydroxide digestion facility



Figure: Crystallisation unit

QPM is also seeking to actively engage with potential HPA customers. It has recently appointed an in-house Technical Marketing Manager who will drive these efforts in conjunction with external HPA marketing experts. The samples from the Demonstration Plant will be critical to customer engagement.

This announcement has been authorised for release by the Board.

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 metal recovery from the style of mineralisation and type of deposits in New Caledonia where the ore will be sourced (from third parties pursuant to an ore supply agreement) and 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'. This includes over 25 years of experience in metal recovery from Laterite ores. Mr Willis consents to the inclusion of the technical data in the form and context in which it appears.



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

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. The total length and percentage of the relevant intersections logged. 	
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"> Samples of HPA submitted to QUT for analysis are discrete samples from a batch of material at 2 different time points during the final stage of processing. The QUT laboratory dedicated to HPA testwork performed sample preparation and analysis of the as provided PRISM samples.
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. 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. 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. 	<ul style="list-style-type: none"> HPA samples were split into duplicate samples and then prepared for analysis by a total digestion procedure. Samples were digested in sulfuric acid. The digest was then quantitatively transferred to a digestion tube and made up to volume with 2% single distilled nitric acid solution. Analysis of the duplicate HPA samples were performed to ensure accuracy and control. The samples were assayed using an ICP-OES. This work was undertaken in the QUT laboratory which is dedicated to HPA testwork.
Verification of sampling and assaying	<ul style="list-style-type: none"> The verification of significant intersections by either independent or alternative company personnel. The use of twinned holes. Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. Discuss any adjustment to assay data. 	<ul style="list-style-type: none"> No exploration drilling or sampling was undertaken
Location of data points	<ul style="list-style-type: none"> 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. Specification of the grid system used. Quality and adequacy of topographic 	<ul style="list-style-type: none"> No exploration drilling was undertaken

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

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

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"> ○ 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. <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"> • 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. • 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. • The assumptions used for any reporting of metal equivalent values should be clearly stated. 	<ul style="list-style-type: none"> • No exploration drilling or sampling was undertaken. • Metal equivalents were not used or reported.
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> • 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'). 	<ul style="list-style-type: none"> • No exploration drilling was completed.
Diagrams	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • No exploration drilling was completed.
Balanced reporting	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • No exploration results have been reported.

Criteria	JORC Code explanation	Commentary
	<i>of Exploration Results.</i>	
<i>Other substantive exploration data</i>	<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"> • Exploration drilling was not carried out.
<i>Further work</i>	<ul style="list-style-type: none"> • <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> • <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"> • No drilling or exploration work is planned.