



Pure Minerals Limited

23 October 2018

ASX Announcement

LEACH TESTS CONFIRM DNi PROCESS™ IS IDEALLY SUITED TO PROCESS NEW CALEDONIA Ni-Co ORE

- QPM plans to utilise the DNi Process™ to extract nickel and cobalt from imported, high grade New Caledonian Ni-Co ore to produce nickel sulphate and cobalt sulphate for the emerging EV battery market
- Core Metallurgy Pty Ltd in Brisbane has completed an initial laboratory test program on representative ore samples from New Caledonia
- Extraction and leach time for nickel and cobalt exceeded target with over 95% extraction and better than four hours leach time
- Test program confirmed that the DNi Process™ is ideally suited to treating the New Caledonian ore types
- Pure Minerals has entered into a binding option agreement to acquire 100% of the issued capital of Queensland Pacific Metals Pty Ltd

Pure Minerals Limited (“PM1” or the “Company”) is pleased to announce that Queensland Pacific Metals Pty Ltd (“QPM”), the privately-owned entity which the Company recently secured an option to acquire (see PM1 announcement dated 15 October 2018), has successfully completed an initial laboratory test program to test the leach characteristics of a representative ore sample from New Caledonia.

The ore sample is representative of the ore which QPM plans to import to Australia for processing in Townsville under its binding ore supply agreement with Societe des Mines de la Tontouta and Societe Miniere Georges Montagnat S.A.R.L, two private New Caledonian entities.

QPM plans to use the DNi Process™, developed by Direct Nickel Projects Pty Limited, to process the New Caledonian ore. This processing technology utilises nitric acid under atmospheric pressure conditions to extract all valuable metals from a lateritic ore source.

The laboratory test program was conducted by Core Metallurgy Pty Ltd in Brisbane, Queensland and tested the leach characteristics of the ore samples provided by QPM’s ore supply partners. The objective of the work programme was to:

1. Conduct nitric acid leach tests on representative sample to determine nickel, cobalt and other valuable co-product extraction (iron, magnesium, aluminium, scandium);
2. Test the level of extraction and time taken to extract for each of the metals; and

3. Complete sample characterisation work, including assaying for nickel, cobalt and other valuable co-products.

The results of the test-work exceeded expectations, achieving nickel and cobalt extraction of greater than 95% in well under four hours leach time. In addition, valuable co-products aluminium, iron, magnesium and scandium also achieved the same impressive results.

Element	Sample Head Grade %	Extraction %
<i>Primary Products</i>		
Nickel	1.70%	98.00%
Cobalt	0.15%	98.10%
<i>Co-Products</i>		
Aluminium	1.37%	95.40%
Iron	35.55%	96.10%
Magnesium	6.14%	95.30%
Scandium	40 ppm	97.30%

Table 1: Results of leach test-work conducted by Core Metallurgy Pty Ltd

The test-work demonstrates that utilising nitric acid under atmospheric conditions is highly effective at extracting nickel and cobalt, removing the need to apply high pressures used under the High Pressure Acid Leach (HPAL) process. The high level of extraction allows for greater metal recoveries in the processing plant and the short leach time flows onto the design of the leach circuit and can result in a reduction of the overall process plant capital cost.

Direct Nickel's Chief Technologist, Dr Fiona McCarthy commented,

"The Kinetic Leach tests completed by Core Metallurgical are very encouraging. Extraction levels are at the high end of the range of leach tests we have completed on laterites from around the world, and the leach times also appear particularly short."

The next step for QPM will be to conduct an extensive laboratory program to replicate all process steps in the DNI Process™ and this will be followed by a continuous pilot plant program utilising the existing pilot plant located at CSIRO Minerals in Waterford, Western Australia.

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