

Pure Minerals Limited



Queensland
Pacific Metals

energy**mines**and**money**TM
AUSTRALIA

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COMPETENT PERSON STATEMENT: Information in this presentation relating to the processing and metallurgy is based on technical data compiled by Mr Boyd Willis, an Independent Consultant trading as Boyd Willis Hydromet Consulting. 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 21 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.



A Value-Add Business Opportunity for Australia

Townsville Energy Chemicals Hub – “TECH Project”



New Caledonia:
Importation of 600ktpa
high grade Ni-Co ore

Townsville:
New modern refinery
supported by infrastructure
and rich history of nickel
production

EV Market:
25,000tpa Ni sulphate
+ 3,000tpa Co sulphate
+ Valuable co-products

QPM is a wholly owned subsidiary of Pure Minerals Limited (ASX:PM1).

A criticism of the Australian resources sector is the lack of downstream processing for our natural resources.

QPM's TECH Project will reverse this trend by processing external sources of ore to produce value-added chemicals for the emerging battery sector.



Investment Highlights

Positive Scoping Study

- ✓ 600ktpa processing plant
- ✓ 25,000tpa Ni Sulphate + 3,000tpa Co Sulphate + valuable co-products
- ✓ DNi™ process – lower capex and opex compared to HPAL

High Grade Ore Supply

- ✓ Secured high grade Ni-Co ore supply agreement with two New Caledonia mining companies
- ✓ Expected grades 1.6% Ni / 0.17% Co (Contract minimum 1.4% Ni, 0.15% Co)
- ✓ Reliable source that previously supplied Queensland Nickel Refinery from 1989 until closure
- ✓ Low mining/exploration risk

Near Term Production

- ✓ Ore supply secured – feasibility and approvals work to commence in respect to construction of the processing plant
- ✓ Construction of the processing plant can potentially be commenced within 18 months

Battery Market Fundamentals

- ✓ Strong fundamentals for battery chemicals (Ni Sulphate / Co Sulphate)
- ✓ Nickel resurgence
- ✓ Majority of world's cobalt comes from DRC – QPM offers supply from a stable jurisdiction

Townsville Location

- ✓ Extensive infrastructure network including Port, Rail and Road
- ✓ Long term history of handling and processing imported ore from New Caledonia/Philippines/Indonesia
- ✓ Skilled labour and engineering support

Experienced Management

- ✓ Combined 75+ years nickel laterite experience and experience in New Caledonia
- ✓ Extensive experience with dealing with offtakers for nickel and cobalt
- ✓ Strong project development experience

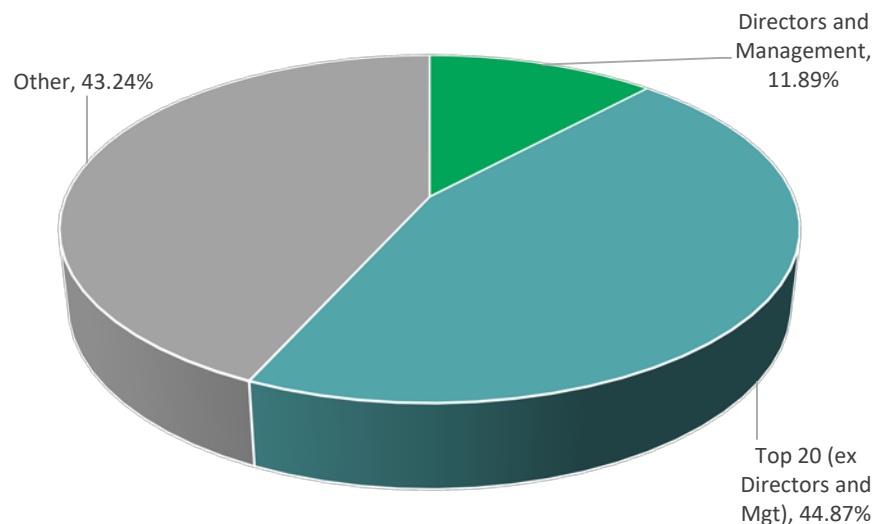


Corporate Overview

Board

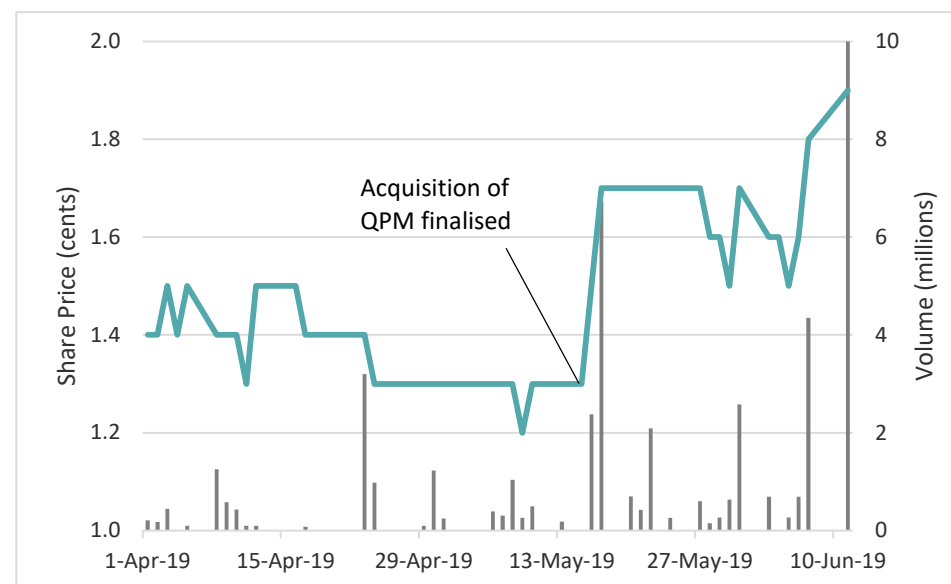
Non Exec Chairman	Eddie King
Managing Director	John Downie
Non Exec Director	Cameron Mclean

Shareholders



Capital Structure / Share Price

Shares on issue	347.7M
Share Price	1.9c
Market Cap	\$6.6M
Deferred Consideration Shares (subject to performance milestones)	333.3
3c Options	181.2



Townsville – The Ideal Location



Figure: Port of Townsville

- **Long Term History** – through Queensland Nickel Refinery, over 50 million wet tonnes in New Caledonia Ni-Co feed has been imported and processed in Townsville over 30 years.
- **Infrastructure** – Port, road, rail, power and water.
- **Politics** – political alignment to create industry in Townsville and North Queensland in general
- **Skilled Labour** – Skilled labour workforce available regionally.
- **Established Industrial Region** – Strong engineering support and long term history of industrial activity.
- **Future Battery Hub** – Imperium3 is planning to construct a battery factory in Townsville.
- **Logistics** – close proximity to New Caledonia minimising ocean freight costs.
- **Acid Supply** – Sulphuric acid produced in Townsville (Sun Metals refinery) and Nitric acid produced in Gladstone.



Scoping Study Highlights

Scoping Study Results	
Nickel Sulphate	25,000tpa (5,678t contained nickel)
Cobalt Sulphate	3,000tpa (639t contained cobalt)
Co-Products	221,000tpa hematite 8,700tpa alumina
Processing	Stage 1: Direct Nickel (DNI™ Process) to produce intermediate MHP product Stage 2: CSIRO Process to upgrade MHP to battery chemicals
Capex	US\$297M (includes 20% contingency)
Opex	\$108M pa \$0.93/lb nickel (after co-product credits)

Pre-Feasibility Study has commenced on the back of the positive Scoping Study – expected completion September 2019

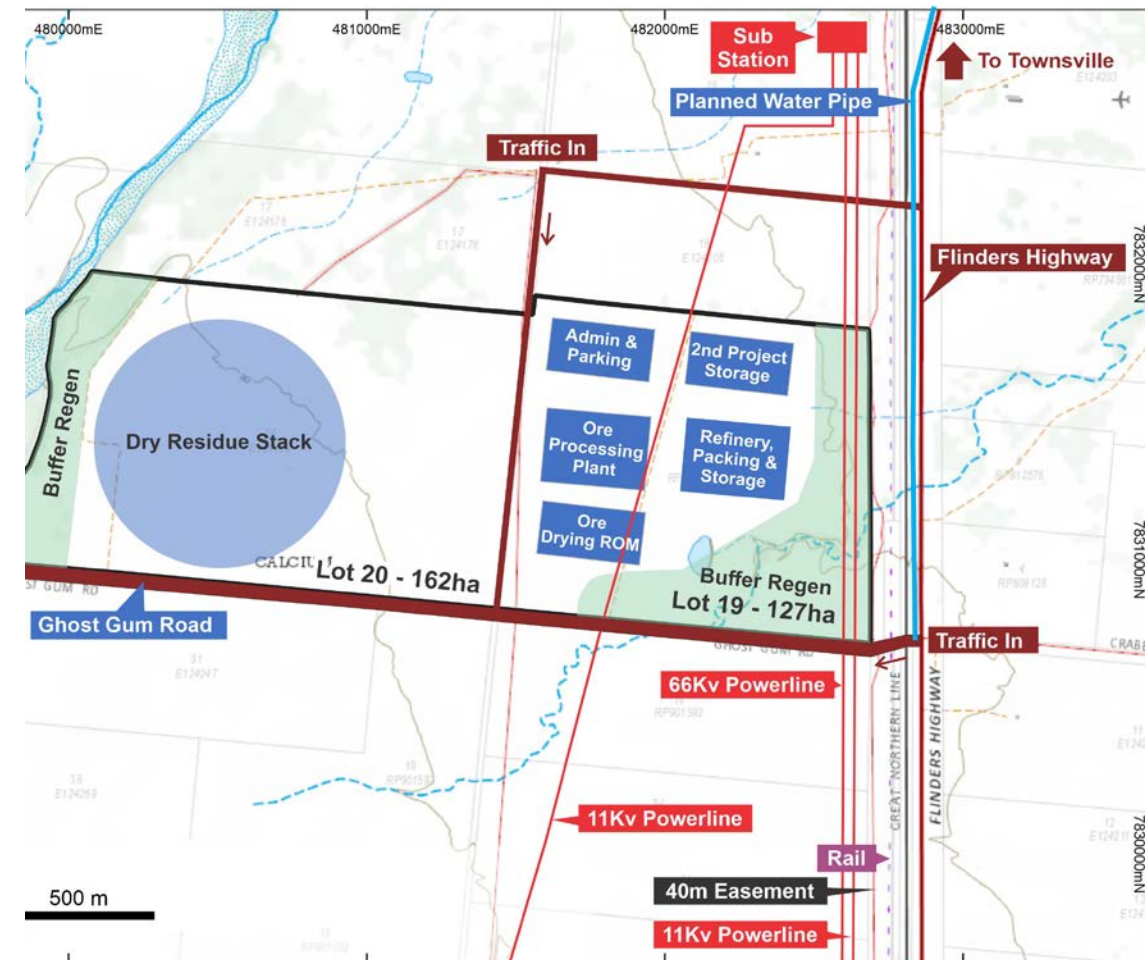


Figure: TECH project layout



Processing: Stage 1 DNi Process™

- Produces intermediate product – mixed hydroxide precipitate (“MHP”)
- Nitric acid leaching under atmospheric conditions
- Stainless steel plant construction – lowers capex, easy to source
- DNi Process™ recycles nitric acid (~95%), lowering opex
- Ability to extract co-products (iron, magnesia, alumina)
- Reduced residue footprint due to high product extraction and addition of few neutralising agents compared with other nickel processes
- Favourable licensing terms agreed with Direct Nickel for use of DNi Process™



Figure: Direct Nickel pilot plant in Western Australia



Processing: Stage 2 CSIRO Process

- Nickel sulphate and cobalt sulphate currently sell for a premium to the underlying metal price (15-25%)
- In partnership with CSIRO, QPM has successfully produced battery chemicals from a MHP generated by the DN_i Process™



Figure: Battery chemicals produced from MHP

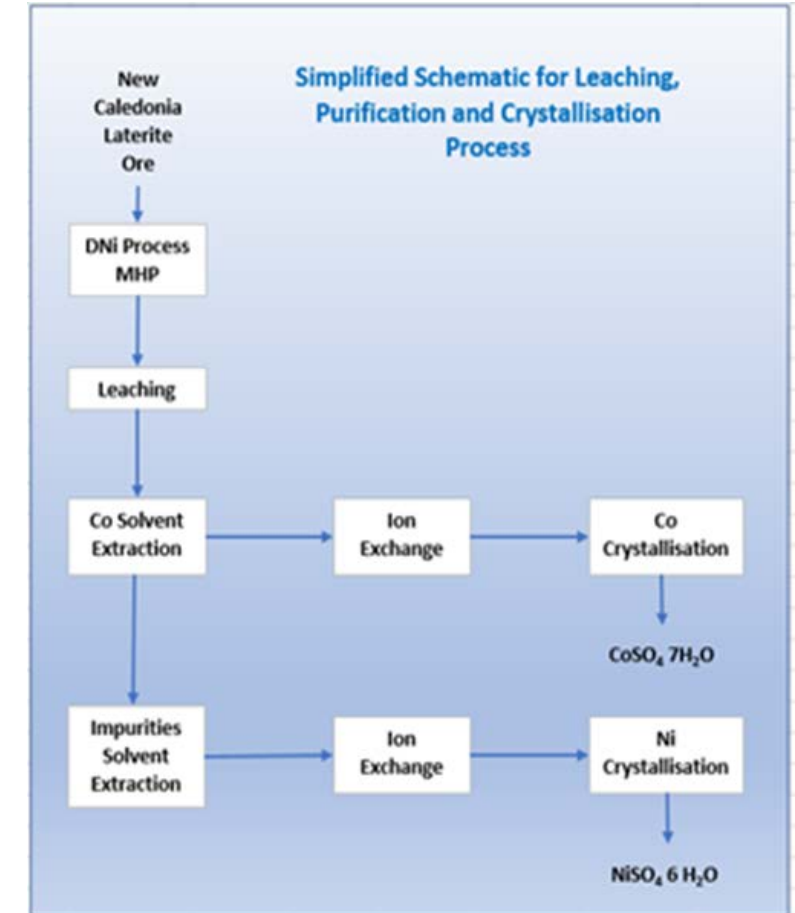


Figure: CSIRO Process Flowsheet



New Caledonia – World Class Ni Province

- New Caledonia hosts the best quality limonite within the Asia Pacific region
- Townsville lies ~2,100km from New Caledonia and is well positioned to process ore
- Australia is a long term, approved trading partner with New Caledonia. Ore supplied to Queensland Nickel since 1989
- New Caledonia hosts the world's largest laterite Ore Reserves, estimated to contain 700kt of Cobalt, 7Mt of Nickel, 140 Mt of Iron and 15Mt of Magnesia (Source: <https://minerals.usgs.gov>)

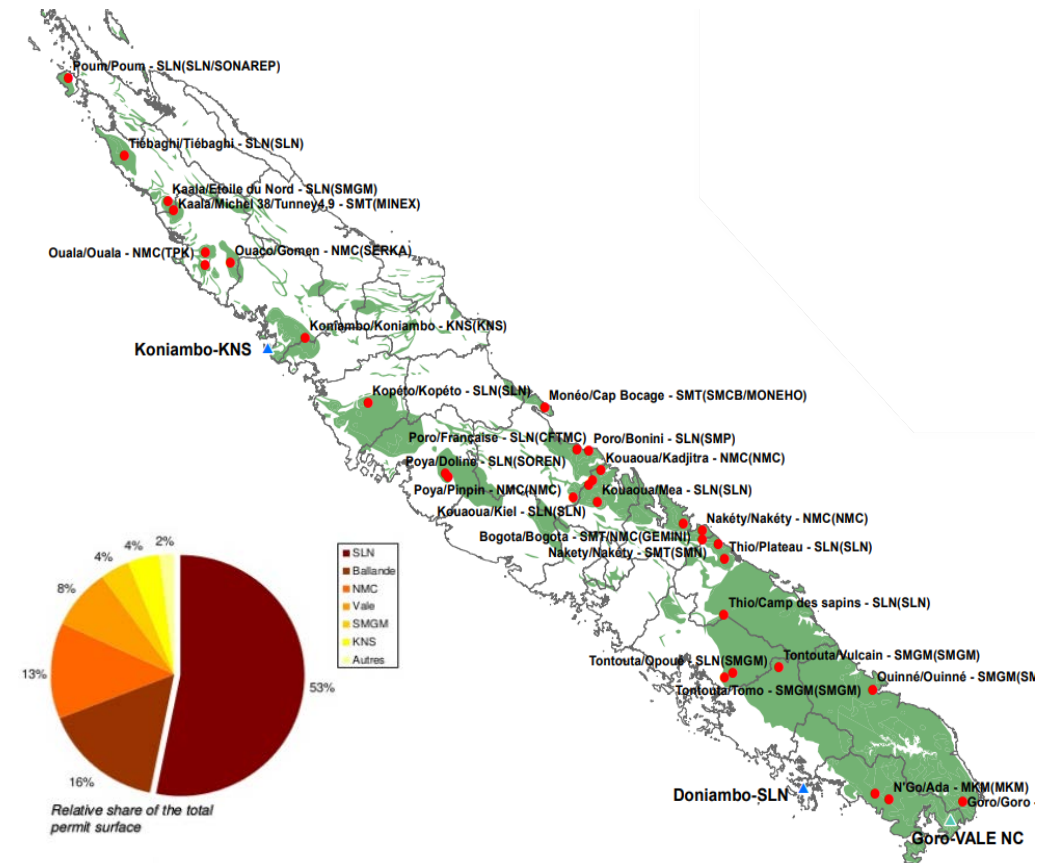


Figure: New Caledonia nickel projects

QPM Project Partners

- QPM's ore supply partners are Societe des Mines de la Tontouta ("SMT") and Societe Miniere Georges Montagnat S.A.R.L ("SMGM")
 - Hold 20% of the tenure in New Caledonia that comprises nickel projects
 - Well established mining companies that have been operating for decades
 - Initial supply of 600,000tpa – can be scaled up in the future
- Expected ore grade to be delivered to QPM 1.6% Ni / 0.018% Co(>50% higher than typical Australian nickel laterite projects)
- SMT and SMGM supplied Queensland Nickel Refinery from 1989 – 2016
- High grade reliable supply – no mining/exploration risk

New Caledonia Exports to Townsville	2008	2009	2010	2011	2012	2013	2014	2015	2016
Ore Tonnes Imported (t)	1,555,050	1,533,045	2,299,359	2,199,043	1,786,082	1,583,080	2,015,711	996,038	78,975
Contained Ni (t)	16,409	16,1680	23,202	22,338	18,290	16,144	20,190	9,962	865
Contained Co (t)	1,746	1,679	2,651	2,518	1,946	1,764	2,441	1,119	86
Ni Grade %	1.62%	1.62%	1.55%	1.56%	1.58%	1.57%	1.54%	1.54%	1.68%
Co Grade %	0.17%	0.17%	0.18%	0.18%	0.17%	0.17%	0.19%	0.17%	0.17%

Source: New Caledonia mines department



Forward Work Program

- Fast track to construction and production
- Near term focus is completion of Pre-Feasibility Study – Lycopodium has been appointed and has commenced

Pathway to Production	2018	2019				2020				2021	
	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Ore Supply Logistics											
Concept/Scoping Study											
Pre-Feasibility Study											
Metallurgical Test work											
Environmental and Permitting											
Definitive Feasibility Study											
Offtake Partnering											
Funding											
Project Construction											



Why Invest?

- **“New Kid on the Block”** – very low market capitalisation compared with other ASX listed nickel-cobalt peers with transaction only recently completed to acquire QPM
- **Rapid Growth Potential to Deliver Shareholder Value** – not your typical resources marathon with years of exploration – the next 18 months through to FID will be a sprint
- **Grade is King** – processing high grade material from New Caledonia delivers QPM a competitive advantage
- **Townsville** – great opportunity to utilise existing infrastructure and decades of experience to re-establish a value-add mineral processing business

