



# AVZ MINERALS LTD



THE MANONO LITHIUM AND TIN PROJECT – 1910 to 2018

OCTOBER 2018



# IMPORTANT NOTICE AND DISCLAIMER

This presentation should be considered in its entirety. If you do not understand the material contained in this presentation, you should consult your professional advisors. The sole purpose of this presentation is to provide shareholders with an update on current activities of the Company and the current state of exploration at the Manono Project in the Democratic Republic of Congo.

Any statements which may be considered forward looking statements relate only to the date of this presentation document. Such forward looking statements involve known and unknown risks, uncertainties and other important factors beyond the Company's control that could cause actual results, performance or achievements of the Company to be materially different from future results, performance, or achievements expressed or implied by such forward looking statements. As a result of these factors, the events described in the forward-looking statements in this document may not occur.

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## JORC statements & Qualifications / Competent Persons Statement

Given the size and mineralised nature of the pegmatites at Manono, the Company has generated an exploration target tonnage of between 1000 and 1200Mt at grade between 1.25% to 1.5% Li<sub>2</sub>O within pegmatite ore. The potential quantity and grade as stated, is conceptual in nature as there has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource.

This conceptual target has only been based on detailed prospect scale mapping, some 37 trenches totalling 2,800m producing 1200 assay samples and approximately 19,250m of logs relating to diamond core drilling from 42 drill holes as completed to-date. The company intends to embark on a significant drilling program to define Mineral Resources to JORC 2012 standard.

The information in this report that relates to Exploration Results and Exploration Targets is based on information compiled by Mr. Peter Spitalny, a Competent Person whom is a Member of the Australasian Institute of Mining and Metallurgy. Mr. Spitalny is a full-time employee of Hanree Consultants Pty Ltd. Mr Spitalny has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken 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 Spitalny consents to the inclusion in the presentation of the matters based on his information in the form and context in which it appears.

## MSA Resources Statement / Competent Person Statement

The information in this report that relates to mineral composition investigations is based on information compiled by Mr. Michael Cronwright, a Competent Person whom is a fellow of The Geological Society of South Africa and Pr. Sci. Nat. (Geological Sciences) registered with the South African Council for Natural Professions. Mr. Cronwright is a full-time employee of The MSA Group Pty Ltd. Mr Cronwright has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken 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. Cronwright consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in the document to which this statement is attached that relates to the geology of the Roche Dure pegmatite is based upon information compiled by Mr Michael Cronwright (M.Sc.), who is a fellow of The Geological Society of South Africa and Pr. Sci. Nat. (Geological Sciences) registered with the South African Council for Natural Professions. Mr Cronwright is a Principal Consultant with The MSA Group (Pty) Ltd (an independent consulting company). Mr Cronwright has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity he is undertaking to qualify as a Competent Person as defined in the 2012 edition of the JORC Code.

The Mineral Resource estimate has been completed by Mr Anton Geldenhuys (BSc Hons, MEng) who is a geologist with 17 years' experience in exploration and mining as well as Mineral Resource evaluation and reporting. He is a Principal Mineral Resource Consultant for The MSA Group (an independent consulting company), is a member in good standing with the South African Council for Natural Scientific Professions (SACNASP) and is a Member of the Geological Society of South Africa (GSSA). Mr Geldenhuys has the appropriate relevant qualifications and experience to be considered a Competent Person for the activity being undertaken as defined in the 2012 edition of the JORC Code.



# IMPORTANT NOTICE AND DISCLAIMER

## Cautionary Statements: Scoping Study Parameters

The Scoping Study referred to in this announcement has been undertaken to determine financial aspects of potential future operations at the Manono Lithium Project and to help drive future work programs. It is a preliminary technical and economic study of the potential viability of the Manono Lithium Project. It is based on low level technical and economic assessments that are not sufficient to support the estimation of Ore Reserves. Further exploration and evaluation work and appropriate studies are required before AVZ Minerals Limited (AVZ) will be in a position to estimate any Ore Reserves or to provide any assurance of an economic development case.

All costings and projections in financial modelling were prepared on the Measured and Indicated Resources as announced by AVZ on the 2nd August 2018. These combined, account for approximately 56.83% of the existing Mineral Resource. The Inferred Mineral Resources (43.17%) have not been utilised in any modelling as there is a low level of geological confidence associated with Inferred Mineral Resources and there is no certainty that further exploration work will result in the declaration of Indicated or Measured Mineral Resource. Furthermore, there is no certainty that further exploration work will result in the conversion of Measured and Indicated Mineral Resources to Ore Reserves.

The Scoping Study is based on the material assumptions tabulated below. These include assumptions about the availability of funding. While AVZ considers all of the material assumptions to be based on reasonable grounds, there is no certainty that they will prove to be correct or that the range of outcomes indicated by the Scoping Study will be achieved. To achieve the range of outcomes indicated in the Scoping Study, funding in the order of approximately \$156M (accurate to  $\pm 35\%$  and includes US\$36m contingency) will likely be required for Stage 1 (base case). Investors should note that there is no certainty that AVZ will be able to raise that amount of funding when needed. It is also possible that such funding may only be available on terms that may be dilutive to or otherwise affect the value of AVZ's existing shares. It is also possible that AVZ could pursue other 'value realisation' strategies such as a sale, partial sale or joint venture of the project. If it does, this could materially reduce AVZ's proportionate ownership of the project.

Given the uncertainties involved, investors should not make any investment decisions based solely on the results of the Scoping Study.

## Cautionary Notes: Forward Looking Statements

The findings contained in this study reflect an ongoing analysis and therefore there is no certainty that all the conclusions reached in this study will be realised. This report contains forward-looking statements. All statements, other than statements of historical fact, that address activities, events or developments in respect of which it is believed, expected or anticipated will or may occur in the future (including, without limitation, statements regarding estimates and/or assumptions in respect of production, revenue, cash flow and costs, estimated project economics, mineral resource and mineral reserve estimates, potential mineralization, potential mineral resources and mineral reserves, projected timing of possible production and exploration and development plans and objectives) are forward-looking statements.

These forward-looking statements reflect current expectations or beliefs based on information currently available. Forward-looking statements are subject to a number of risks and uncertainties that may cause the actual results of AVZ to differ materially from those discussed in the forward-looking statements, and even if such actual results are realized or substantially realized, there can be no assurance that they will have the expected consequences to, or effects on AVZ.

Factors that could cause actual results or events to differ materially from current expectations include, among other things: uncertainties relating to the availability and costs of financing needed in the future; uncertainty of estimates of capital and operating costs, production estimates and estimated economic return; the possibility that actual circumstances will differ from the estimates and assumptions used in the Manono Scoping study; failure to establish estimated mineral resources or mineral reserves; fluctuations in lithium and tin prices and currency exchange rates; inflation; metal recoveries being less than those indicated by the metallurgical test work carried out to date (there can be no assurance that lithium and tin recoveries in small scale laboratory tests will be duplicated in large tests under on-site conditions or during production); changes in equity markets; political developments in the DRC; lack of infrastructure; failure to procure or maintain, or delays in procuring or maintaining, permits and approvals; lack of availability at a reasonable cost or at all, of plants, equipment or labour; inability to attract and retain key management and personnel; changes to regulations affecting AVZ's activities; the uncertainties involved in interpreting drilling results and other geological data; and the other risks disclosed under the heading "Risk Factors" and elsewhere in the Company's public documentation.

Any forward-looking statement speaks only as of the date on which it is made and, except as may be required by applicable securities laws, any intent or obligation to update any forward-looking statement, whether as a result of new information, future events or results or otherwise, is disclaimed. Although it is believed that the assumptions inherent in the forward-looking statements are reasonable, forward-looking statements are not guarantees of future performance and accordingly undue reliance should not be put on such statements due to the inherent uncertainty therein.

The mineral resource figures referred to in this report are estimates and no assurances can be given that the indicated levels of lithium will be produced. Such estimates are expressions of judgment based on knowledge, exploration and mining experience, analysis of drilling results and industry practices. Valid estimates made at a given time may significantly change when new information becomes available. While it is believed that the resource estimates included in this report are well established, by their nature resource estimates are imprecise and depend, to a certain extent, upon statistical inferences which may ultimately prove unreliable. If such estimates are inaccurate or are reduced in the future, this could have a material adverse impact on AVZ. Mineral resources are not mineral reserves and do not have demonstrated economic viability. There is no certainty that mineral resources can be upgraded to mineral reserves through continued exploration.

Due to the uncertainty that may be attached to inferred mineral resources, it cannot be assumed that all or any part of an inferred mineral resource will be upgraded to an indicated or measured mineral resource as a result of continued exploration. Confidence in the estimate is insufficient to allow meaningful application of the technical and economic parameters to enable an evaluation of economic viability worthy of public disclosure (except in certain limited circumstances). Inferred mineral resources are excluded from estimates forming the basis of this Scoping Study and any feasibility study.

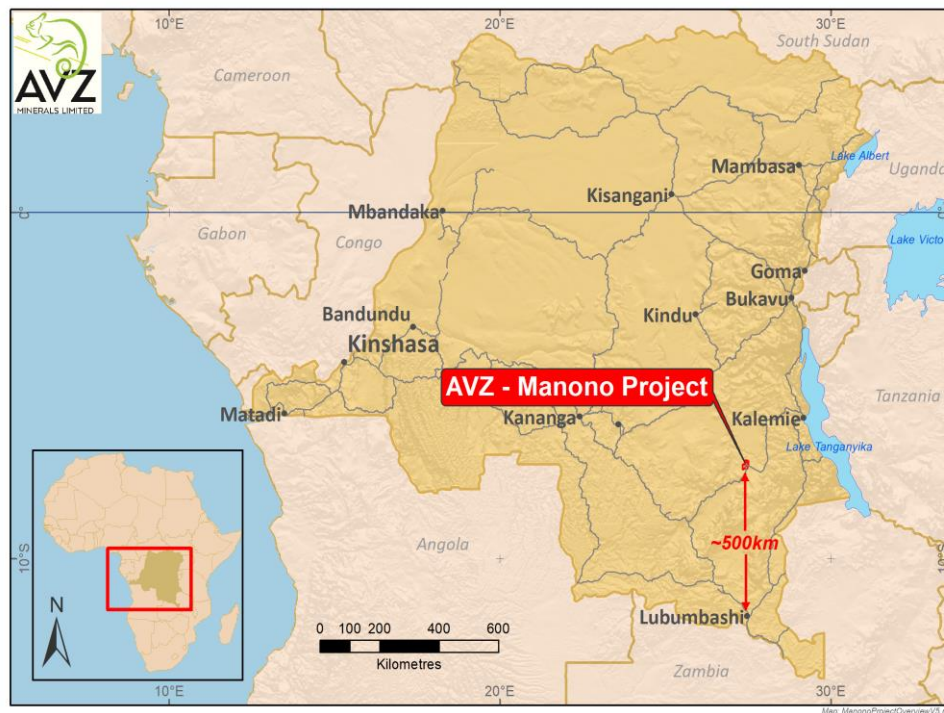


# AVZ MINERALS CORPORATE SNAPSHOT (ASX:AVZ)

## CAPITAL STRUCTURE (As at 12-Sep-18)

Shares Outstanding	1,888,461,449
Performance Rights and Options Outstanding	468,427,622
Share Price	AU\$0.099
Market Capitalisation	AU\$187 M
Cash at Bank	\$10 M
52 week share price range	
ASX	AU\$0.08–AU\$0.37

## HISTORIC SHARE PRICE



## SUBSTANTIAL SHAREHOLDERS

Management & AVZ Consultants	17.10%
Citicorp Nominees P/L	11.99%
JP Morgan Nominees Australia	8.28%
BNP Paribas Nominees P/L	5.81%
BNP Paribas Nominees P/L	5.26%



# SCOPING STUDY RESULTS

## Net Present Value (100%, pre-tax & pre-royalties)<sup>1</sup> US\$

Case 1: 2 Mtpa (Base Case) (AVZ 60% - 0.98bn)	1.64 Billion
IRR 2 Mtpa (Base Case)	~90%

## Parameter Value<sup>1</sup>

Potential Mine Life (Years) As Modelled	20
Measured Resources (t)	43.0 M
Indicated Resources (t)	104.7 M
Inferred Resources (t)	112.2 M
Annual throughput (Mtpa) Base Case	2.0
Production Target (t)	40 M
Strip ratio (t waste : t ore)	0.7:1
Average feed grade (%Li <sub>2</sub> O)	1.58
Recovery (%)	80%
Potential Annual Production (t 5.8% Li <sub>2</sub> O concentrate)	440,000
Open pit mining costs (US\$/t dry concentrate)	56
Processing cost (US\$/t dry concentrate)	64
Transport cost (US\$/t dry concentrate)	221
Admin & sustaining capital costs (US\$/t dry concentrate)	14
Average Cash Cost (US\$/t concentrate)	355
Concentrate Price (US\$/t)	920

- Scoping Study confirms potential for a world class, high margin, long life mining project.
- F.O.B. cost to Dar-es-Salaam estimated at US\$355/t of concentrate.
- Capex est. for 2Mtpa 1 of US\$150M-\$160M<sup>2</sup> - including US\$36M contingency.
- Estimates presented are on the basis of a 100% project interest. AVZ holds 60% of the Manono Lithium Project.
- The Scoping Study for the 4Mtpa (Case 2) and a 10Mtpa (Case 3) is currently in progress which will focus on leveraging economies of scale and optimisation of proposed expenditures in the 4Mtpa and 10Mtpa studies to further improve on the excellent results already contained in the 2Mtpa study.
- Tin by-product credits not taken into consideration in independent financial modelling. It is expected that these credits will be included in the Full Feasibility Study.
- Company is pursuing the 5-year tax concession offered by the DRC Government for “projects of significance”, which has not been taken into account in the independent financial modelling.
- Project economics can be improved further, especially in the areas of transport, processing and power costs by utilising a refurbished hydro plant at Piana Mwanga that has not been included in any financial modelling.
- With improvement in JORC categories, 10 Mtpa 15-year mine life can be increased to 20-years+.

<sup>1</sup>Please refer Scoping Study announcement titled “Scoping Study Highlights Strong Economic Potential of Manono” dated 9 October 2018. Please note Cautionary Statements regarding Scoping Studies and the Cautionary Statement regarding Forward Looking Statements on page 2.

<sup>2</sup>Estimate is accurate to ±35% and includes US\$36M contingency

The Company is not aware of any new information that materially affects the information included in the relevant announcement





# LITHIUM 5% CONCENTRATE PRICING

## CURRENT MARKET PRICING

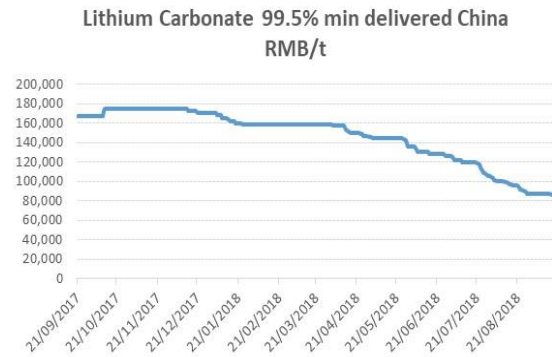
- 5.8% Concentrate price used for valuation is US\$920/t
- AVZ a premium product with the lowest level of impurities of all Aust. listed hardrock lithium projects.
- Price premium as it reduces the need for expensive processing to remove impurities.
- Iron ore pricing as an example shows price separation between higher & lower grade product.

**Asian Metal** published 5% lithium concentrate pricing 21<sup>st</sup> Sep 2018 is US\$ 820/t.

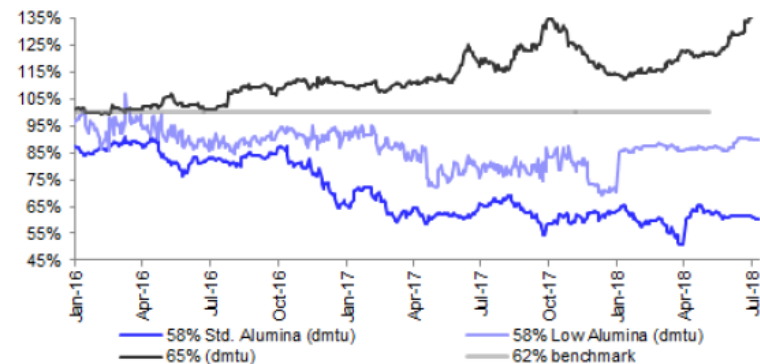
**Platts** reports 27th Sep 2018 price of 5-5.5% Lithium concentrate:

- FOB Australia RMB 6,500/t equivalent to US\$ 944.61/t;
- China internal pricing RMB 7,000 - 8,000/t equivalent to US\$ 1,017.27/t to US\$ 1,162.60/t.
- Over the last year in China **lithium carbonate price has fallen 66%** (US\$ 24,600 /t to US\$ 8,250 /t including 17% VAT) & **the lithium 5% concentrate price has only fallen 15%**. This highlights the stability in lithium concentrate pricing vs final derivatives.
- It is our view the spodumene converters in China have had their margins normalised from the super profits they were enjoying in 2017 and early 2018.

## TRENDS IN LITHIUM CARBONATE AND LITHIUM CONCENTRATE PRICING 2017 to 2018



## TRENDS IN IRON ORE SINCE 2016 (INDEXED)



Source: Deutsche Bank, Bloomberg Finance LP

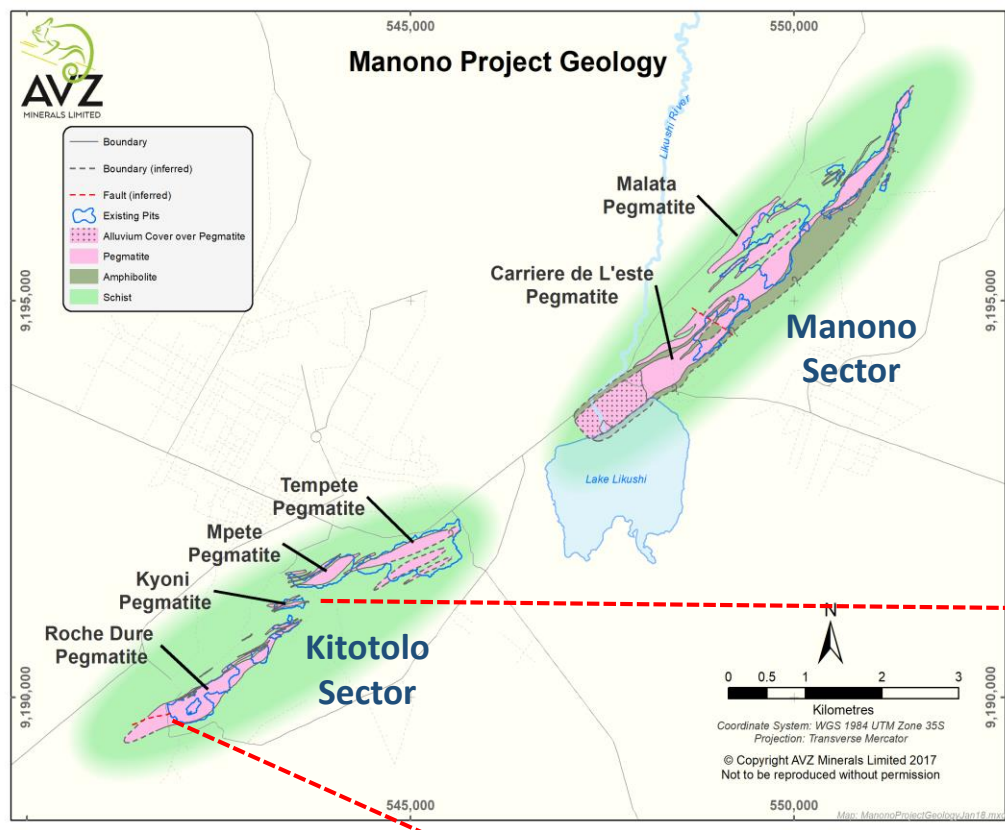
Source:

Asian Metals: <http://www.asianmetal.com/LithiumPrice/Lithium.html>

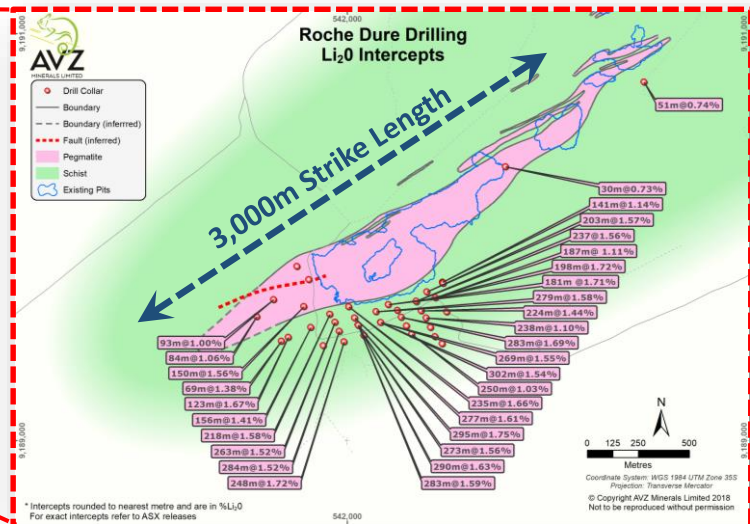
Platts: <https://mp.weixin.qq.com/s/6NFYHoerCk5vLDpe871Oxw>



# MANONO PROJECT – GEOLOGY



- Best geological information is observed from the area known as the Roche Dure Pit at the west end of the Kitotolo sector, investigated by 42 shallow drill holes (maximum depth approximately 100m).
- Drill sections indicate that the Kitotolo body dips around 40 degrees to the east, although steeper, faulted contacts are also recorded.
- The maximum thickness of the pegmatite in the RD Pit area is around 280m as intersected in recent drilling.
- Further north, the pegmatite body is interpreted as sub-horizontal to dipping @ 20°.
- Reverse faults parallel to the axis of the antiform suggest that the pegmatite bodies underwent NW-SE compression after emplacement.



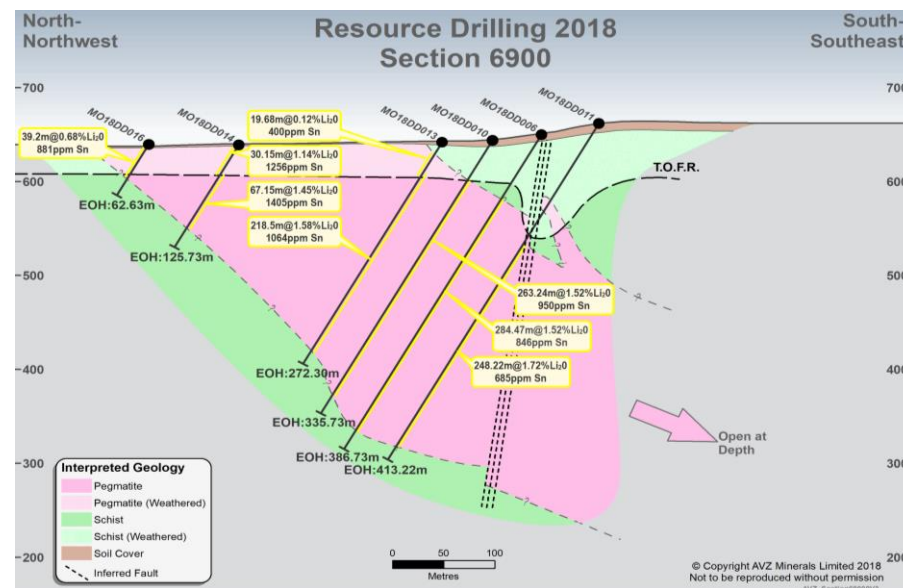
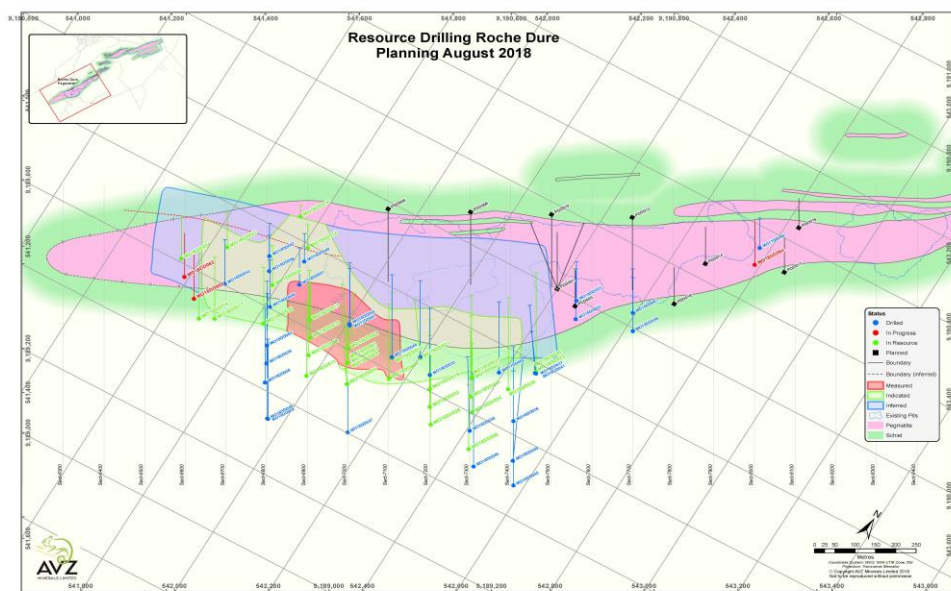


# MINERAL RESOURCE ESTIMATE

## MINERAL RESOURCE

- **259.9 Million tonnes grading 1.63% Li<sub>2</sub>O** (spodumene) is further categorized into Measured, Indicated and Inferred Mineral Resources.
- The initial Mineral Resource includes assay data from only 31 drill holes on 980m of strike length and geological data from 42 drill holes to enable interpretation of a geological model.
- All drill holes except two, MO17DD001 & MO17DD002 were completed in 2018 with commencement of the drilling program in Feb 2018.
- A total of 20,900m of diamond core, mainly PQ (3,129m) and HQ (10,447m) in size, has been completed at the Roche Dure pegmatite.

JORC CATEGORY	TONNES MILLIONS	Li <sub>2</sub> O %	Sn ppm	Ta <sub>2</sub> O <sub>5</sub> ppm	Fe <sub>2</sub> O <sub>3</sub> %
MEASURED	43.0	1.71	871	42	0.96
INDICATED	104.7	1.64	844	43	0.85
INFERRED	112.2	1.60	834	43	0.88
<b>TOTAL</b>	<b>259.9</b>	<b>1.63</b>	<b>844</b>	<b>43</b>	<b>0.88</b>







# PRELIMINARY METALLURGICAL TEST WORK



Rock Chip Sample collected showing white spodumene (the large, long prism to right of the blue pen) in a quartz feldspar matrix



9,000 Gauss Magnetic 1



Non-Magnetic

## POSITIVE PRELIMINARY METALLURGICAL TEST WORK

- Initial metallurgical test work completed on coarse assay reject material from holes MO17DD001 and MO17DD002.
- Simple spodumene mineralogy of the Roche Dure pegmatite responds well to a range of industry standard concentration techniques.
- Initial metallurgical test work demonstrates the Roche Dure prospect at the **Manono Lithium Project can produce up to 6.3% DMS concentrate (+3.35mm) using standard metallurgical laboratory test standards.**
- Concentrate specification shows the material is suitable for supply of a chemical grade concentrate to the growing lithium battery market.
- Possible upgrade of specification through further metallurgical test work is now being planned combined with resource drilling.

## INITIAL CHARACTERISATION TEST WORK

- Initial “mineral characterisation” investigations of the Roche Dure Pegmatite, **support the potential for high value ore within the Roche Dure pegmatite.**
- Roche Dure Pegmatite is **essentially homogenous and spodumene confirmed as the lithium mineral species** present within the pegmatite.
- The mean concentrations of “penalty” elements are low.
- **0.1% F, 0.3% P<sub>2</sub>O<sub>5</sub> and 0.4% Fe<sub>2</sub>O<sub>3</sub>**
- AVZ to commence detailed metallurgical test-work in Q4 2018.



# MANONO PROJECT – HYDRO POWER INFRASTRUCTURE



Piana Mwanga Hydro - Piana Mwanga would comprise an installation of up to a **32MW power plant- rehabilitation** and addition of one unit.#

- Capacity for 4 generators for total potential production of 64MW.

Dathomir and Cominière have agreed that Dathomir will secure finance for the rehabilitation of the Piana Mwanga hydroelectric power station.



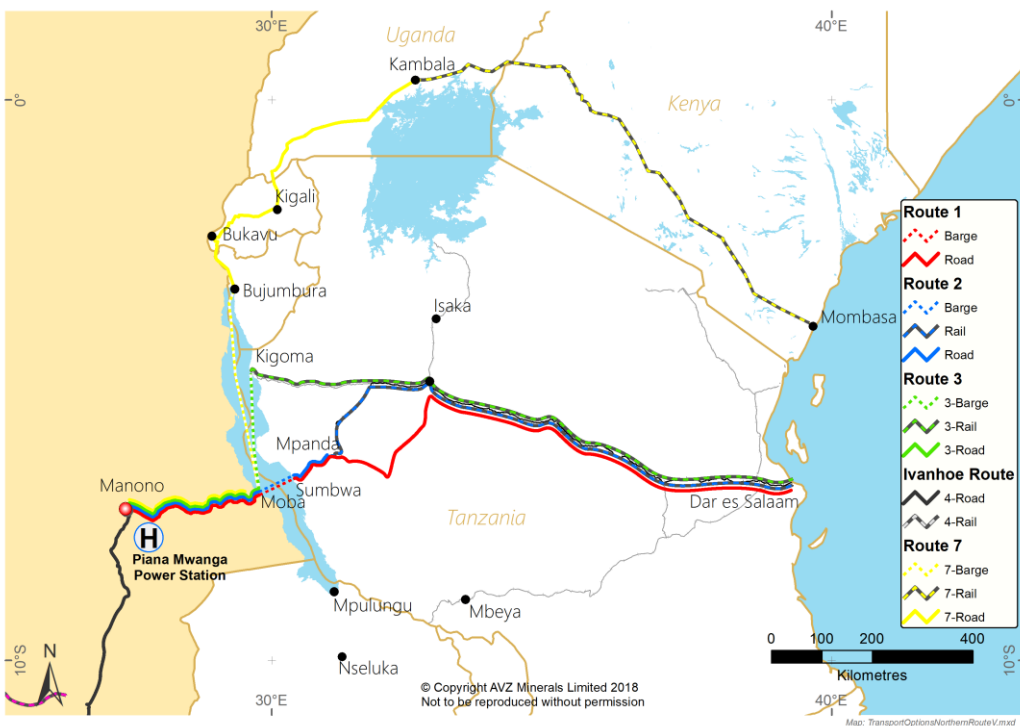


# MANONO PROJECT – ROAD & RAIL TRANSPORT ROUTES

DRC Ministry of Infrastructure, Public Works and Reconstruction has been fully funded for **US\$285M rehabilitation & bituminised** road Lubumbashi to Manono.

## Multiple Transportation Routes to Port

- Road to Kalemie or Moba – Barge to Kigoma – Rail to Dar es Salaam
- Road to Lubumbashi – Road to Dar es Salaam, tin & cobalt exports.
- Road to Lubumbashi – Road / Rail Durban, copper exports.
- Road to Kambala – Rail to Mombasa, copper & gold exports.



PREFERRED ROUTES	Transport	km	CAPEX US\$M	OPEX US\$/t Dry Concentrate
<b>Route 1</b>				
Manono to Moba	Road	360		
Moba to Kigoma	Ferry	240		
Kigoma to Dar es Salaam	Rail	1,450		
<b>Total</b>		<b>2,050</b>	<b>14.1</b>	<b>232.49</b>

<b>Route 2</b>				
Manono to Moba	Road	360		
Moba to Sumbwa	Ferry	75		
Sumbwa to Mpanda	Road	115		
Mpanda to Dar es Salaam	Rail	1,450		
<b>Total</b>		<b>2,000</b>	<b>13.1</b>	<b>240.63</b>

<b>Route 3</b>				
Manono to Moba	Road	360		
Moba to Sumbwa	Ferry	75		
Sumbwa to Dar es Salaam	Road	1,270		
<b>Total</b>		<b>1,705</b>	<b>12.5</b>	<b>221.34</b>



# MANONO PROJECT PLAN

Activity	CY2018				CY2019				CY2020			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Complete Scoping Study	■	■	■									
Complete Resource drilling		■	■	■								
Met Test Work Study			■	■	■							
Feasibility Study				■	■	■						
Transport route confirmed					■							
Licensing, Permitting & Environmental Approvals					■	■	■					
Detailed Engineering and Procurement						■	■	■				
Construction								■	■	■		
Commissioning										■		

## NEXT STEPS

- Complete drilling program H2 2018 for infill and exploration drilling programs are in progress. These programs are designed to:
  - Infill and expand the current resource base.
  - Select core to be utilised in the expanded metallurgical test-work programs.
  - Substantially upgrade the resource categories from the Maiden Resource.
  - Confirm geotechnical parameters for open pit mine planning.
- Detailed metallurgical test-work in Q4 2018. The metallurgical test work and Full Feasibility Study (FFS) is expected to take 6 months to complete.
- The Company intends progressing the Manono Lithium Project to FFS immediately. As well as improving the accuracy of cost estimates, the Study will provide additional definition on the Project's infrastructure requirements such as water, power and transport as well as potential credits for Tin & 5 year tax concession.
- In parallel, the Company intends to continue engaging with potential investment & off-taker partners and finance providers.



# GOVERNMENT & COMMUNITY RELATIONS

## Government Updates

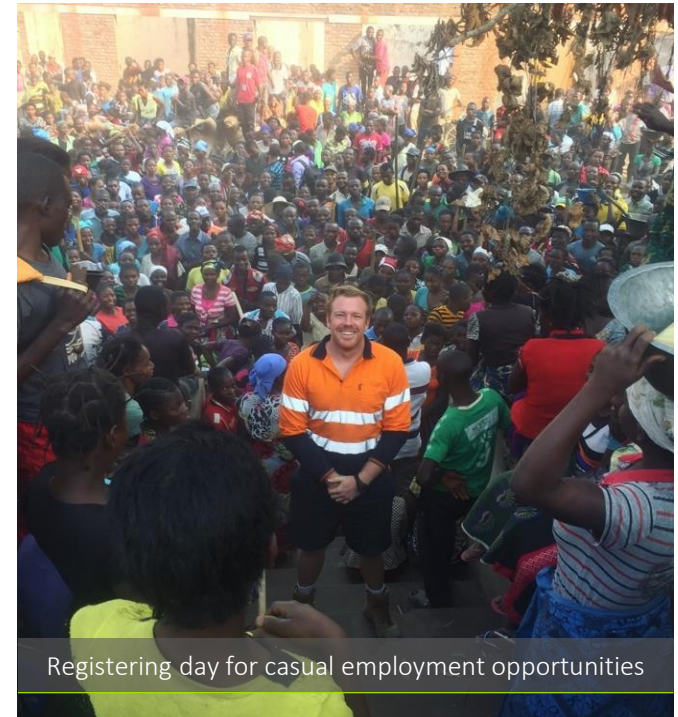
- Discussions held at the government offices in Kalemie, following on from a successful 2 days site visit by the Provincial Minister for Mines and the Governor of Tanganyika.
- The Regional Government will assist with haul routes for export of product and put aside sole use lands for product handling at Kalemie and Moba ports.

## Corporate Social Responsibility

- By April 2018, AVZ had employed over 600 local people safely on a casual basis.
- Recently provided casual employment to 320 displaced artisanal workers.
- Paid for logistic support of a polio vaccination scheme in greater Manono District.
- AVZ to assist NGOs such as Red Cross, CONCERN, Medicine Sans Frontiers in simple humanitarian activities until the mine is re-established.
- AVZ to establish a Foundation Trust to assist local community to allocate royalties from mining.



Site Visit of Government Officials

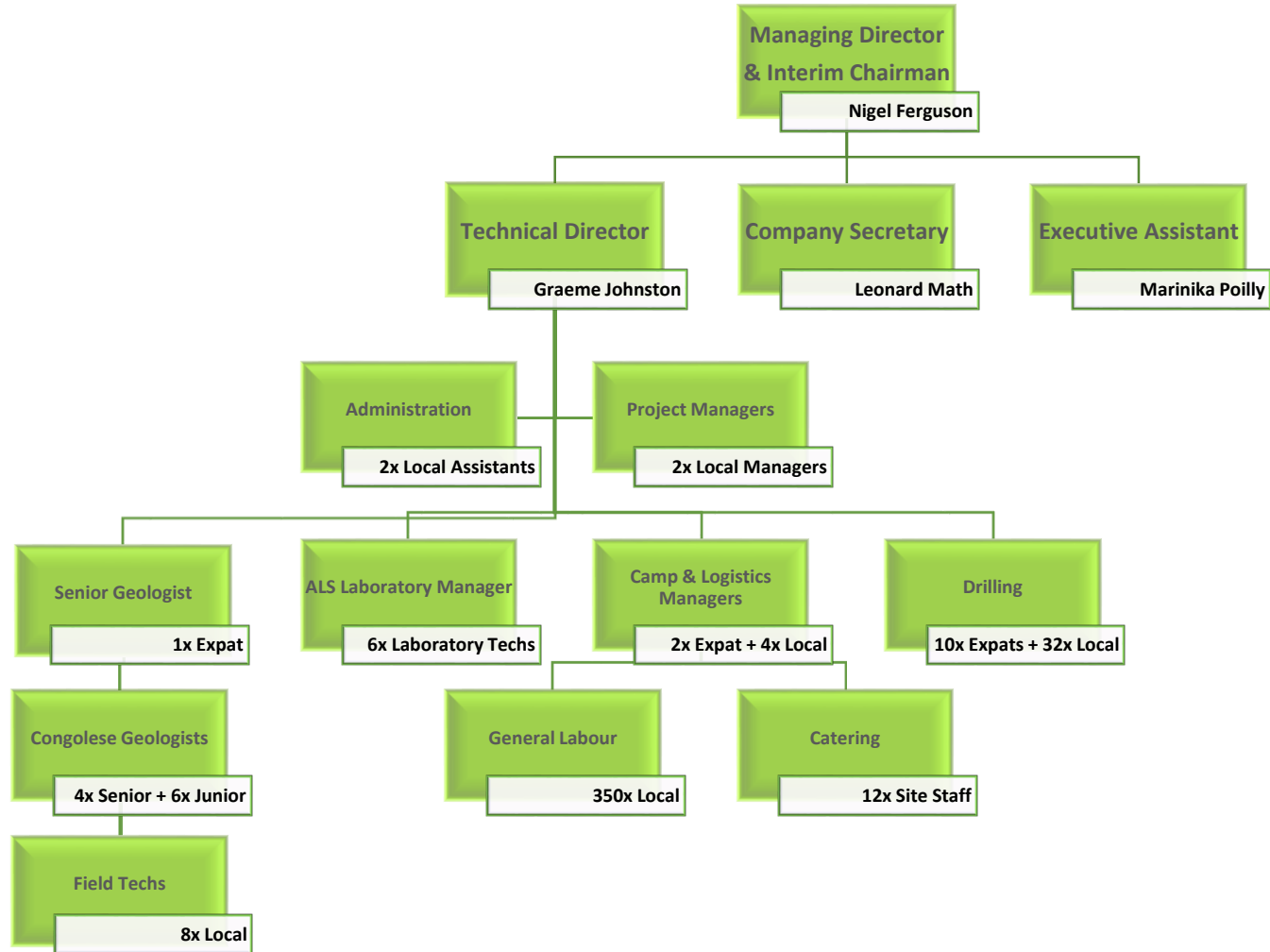


Registering day for casual employment opportunities



# AVZ MINERALS – ORGANISATIONAL CHART

## AVZ MINERALS DRC ORGANISATIONAL CHART





# THANK YOU

Roche Dure Pit

Main Manono Town

Mpete South Pit

## Company Contacts

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**Leonard Math** - Company Secretary

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