

# The World's Newest Mineral Sands Producer

Annual General Meeting – Business Update 24 November 2015

Trevor Matthews – Managing Director

### What makes MZI and Keysbrook compelling



- MZI is the world's newest producer of high value Zircon and TiO<sub>2</sub> products
- Focused on the Keysbrook Project, 70km from Perth
- Keysbrook is a high-margin long-life project with strong growth potential
- Construction completed and production commenced on budget and ahead of schedule
- Keysbrook will be the world's biggest primary producer of Leucoxene

#### **Robust Economics\***

Low LOM Operating costs
Premium quality products
Potential+30 year life, subject to
land access and further
approvals

# High Value Products\*

38 ktpa 88%  $TiO_2$ 29 ktpa 70%  $TiO_2$ 29 ktpa Zircon Concentrate (56%  $ZrO_2$  + 11% Rutile Grade  $TiO_2$ )

#### **Committed Sales**

Offtakes cover +85% of output
TiO<sub>2</sub> products L88 and L70 sales
agreements with Chemours
Zircon concentrate contract with
Tricoastal/Wensheng

#### Low Risk

100%-owned Australian Project
Construction complete
Production underway
Soft environmental footprint

#### **Growth Potential**

Significant potential to grow Resources through exploration Project expansion studies underway

# Strong Board and Management

Over 100 years of mineral sands experience within the company



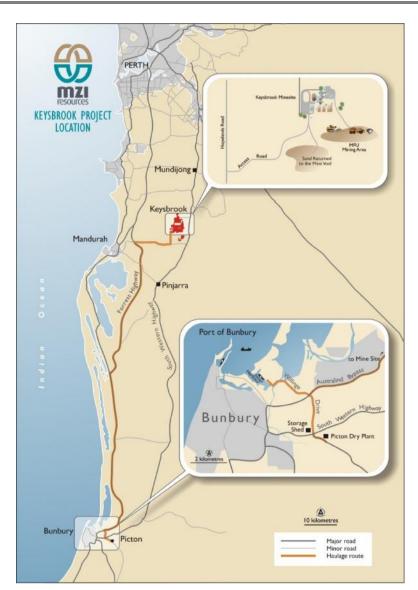
\*Please refer to the Independent Expert Report attached to the Notice of Meeting dated 7 October 2014 (see ASX release dated 9 October 2014) for supporting information and details of Keysbrook production forecasts. All material assumptions underpinning the production forecasts in the Independent Expert's Report continue to apply and have not changed.

ASX: MZI | PAGE 2

## The Keysbrook location advantage



- Mine located 70km south of Perth
- Near large population, mining and industrial centres
- No need for employee transport, accommodation or catering
- Connected to grid power, high standard road transport, product storage and port facilities
- Basic wet processing at mine site
- Dry processing de-risked via toll treatment agreement to utilise Doral plant at Picton



# Keysbrook: a platform for reliable long life supply



- 155Mt Global Mineral Resource\*, including Ore Reserves of 26Mt, with significant exploration upside
- High value product mix and potential +30\* years LoM at initial planned production rate
- Low cost mining free dig sand, average depth 2.2m with nil strip ratio
- Low slimes
- Simple conventional processing flowsheet
- Offtake agreements for +85% of production under five year sale agreements with Chemours and Tricoastal/Wensheng
- Testwork confirmed potential to increase HM recoveries specifically L88

# **Keysbrook: On Budget and Ahead of Schedule**

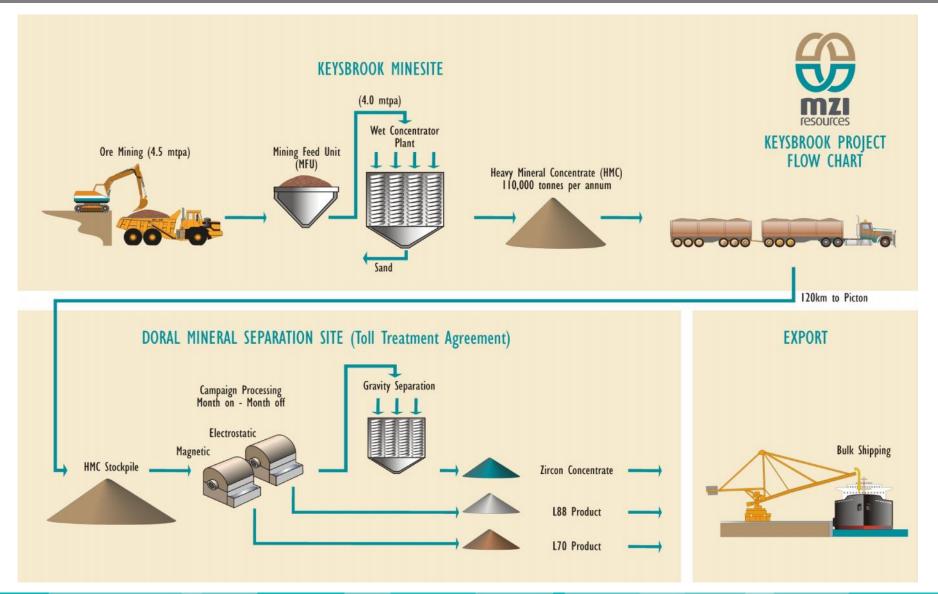


#### An outstanding performance to date:

- ✓ Siteworks commenced February 2015 with total capital development budget of \$75.6m
- ✓ Mining and wet processing commenced late October 2015, one month ahead of schedule and within budget
- ✓ First HMC concentrate produced 28 October 2015
- ✓ Dry plant commissioning commenced early November, first batch of saleable product produced 5 November 2015
- ✓ First sales targeted for December 2015 ahead of original early 2016 target date
- ✓ Commissioning ramp-up tracking to attain nameplate capacity by end 2015

# **Keysbrook – A Simple Flowchart**







**✓** Continuous mining commenced October 2015









✓ HMC production commenced at Keysbrook in late October 2015











### **Expansion potential**



- Cost effective recovery improvements increase production
- Large resource base and exploration upside provides substantial scope to increase annual production rate
- Significant processing capacity available at Picton MSP
- Potential to double mine output via addition of second MFU and concentrator expansion at Keysbrook
- Expansion studies underway



**Keysbrook WCP** 

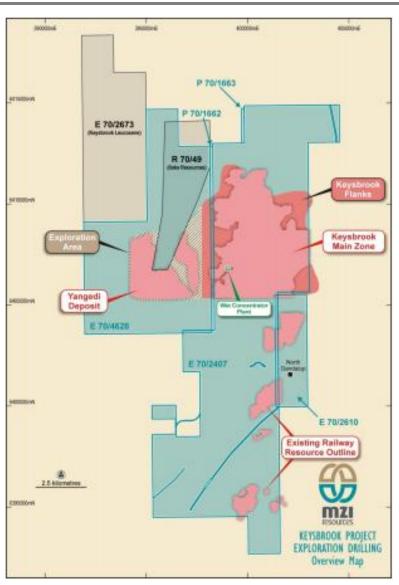


**Picton MSP** 

# **Expanding resources a platform for growth**



- Keysbrook Global Mineral Resource increased by 68% to 155Mt @ 2.0% HM in August 2015\*
- Total contained HM increased to 3.1Mt in the Keysbrook, Yangedi and Railway deposits
- Keysbrook Deposit increased 14% to 90Mt @
   2.2% HM containing 2.0Mt HM
- Maiden Mineral Resource estimate for Yangedi Deposit of 51Mt @ 1.5% HM containing
   0.79Mt HM
- Mineralisation remains open to the west, north and south
- Mineral Resources equivalent to +30\* years of life at initial production rates, subject to land access and further approvals
- Increased resource base positive for ongoing capacity expansion studies
- Current Ore Reserves of 26Mt @ 2.6% HM to be updated in late 2015



#### Soft environmental footprint minimises impacts



- Only small areas (30ha) opened for mining at any one time, average mining depth 2.2m
- No comminution of mined sand and chemical free processing
- Recycle >85% of annual water requirements
- No residual waste from processing
- After processing, sand and clay material is returned to the mined area
- Stockpiled topsoil is replaced and mine rehabilitation is complete within 2 to 3 growing seasons and returned to previous land use
- Disturbed areas revegetated to better than pre-mining state
- Comprehensive noise, dust, water and transport management plans in place



**Nearby post-mining rehabilitated pasture** 



Rehabilitation progress at MZI's Tiwi Islands project

#### **Market Outlook**



- ✓ Stable mineral sands market
- ✓ Modest long term price growth forecast
- Broad demand for products used in everyday life

#### **Zircon**

- The zircon price has eased slightly over the past year with premium grades currently selling for ~US\$1,000 pmt
- Supply/demand has remained largely in balance with major producers managing production
- Global consumption is currently assumed to be ~1.0 million tonnes per year, with demand growing in step with global GDP

#### **Titanium Dioxide**

- Demand for chloride TiO<sub>2</sub> feedstock is stable with conditions expected to improve through 2016
- Modest price growth anticipated post 2016





### Summary: MZI a rare gem in today's resources sector



- Keysbrook project construction completed and commissioning commenced on budget and ahead of schedule
- ✓ First production of saleable products achieved November 2015, first sales targeted for December 2015
- ✓ Globally competitive low cost producer
- ✓ Positive price/demand outlook for Keysbrook-type products
- ✓ Focused on higher-value end of mineral sands market: Zircon, Leucoxene88, Leucoxene70
- ✓ Five year binding sales contracts for +85% of annual production with blue chip customers (Chemours and Tricoastal/Wensheng)
- Long life asset with significant growth/expansion potential

### **Important Notice**



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#### **Forward-Looking Statements**

This presentation contains forward looking statements concerning the projects owned by MZI Resources Ltd. Statements concerning mining reserves and resources may also be deemed to be forward looking statements in that they involve estimates based on specific assumptions. Forward-Looking statements are not statements of historical fact and actual events and results may differ materially from those described in the forward looking statements as a result of a variety of risks, uncertainties and other factors. Forward Looking statements are based on Management's beliefs, opinions and estimates as of the dates the forward looking statements are made and no obligation is assumed to update forward looking statements if these beliefs, opinions and estimates should change or to reflect other future developments.

Data and amounts shown in this presentation relating to capital costs, operating costs and project timelines are internally generated best estimates only. All such information and data is currently under review as part of MZI Resources Ltd's ongoing development and feasibility studies. Accordingly, MZI Resources Ltd cannot guarantee the accuracy and/or completeness of the figures or data included in the presentation until the feasibility studies are completed.

#### Competent Person's Statement – Exploration Results

The information in this report that relates to exploration results is based on information compiled or reviewed by Mr Stephen Harrison BSc (Hons) who is a member of the Australia Institute of Geoscientists. Stephen Harrison is a full time employee of MZI Resources Ltd. Stephen Harrison has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking 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'. Stephen Harrison consents to the inclusion of this information in the form and context in which it appears in this report.



# Appendix

# **Keysbrook Metrics\***



Item	Result
Ore Mining Rate	4.5Mtpa
Average mining depth	2.2 metres
Strip Ratio	Nil
Mining Inventory	24.5 million dry tonnes (Reserve)
Mine Life	5.5 years (Reserve) +30 years (Resource)
Concentrator throughput	4.0Mtpa (dry)
Concentrator Recovery	L70 – 90% L88 – 71% Zircon – 98%
HMC Produced	111,000tpa (dry)
MSP contract	Toll treating – month on / month off
MSP throughput	111,000tpa (dry)
MSP Recovery	L70 – 99% L88 – 90% Zircon – 98%
Final Product*	L70 – 28,800tpa (dry) L88 – 38,400tpa (dry) Zircon con – 29,000tpa (dry)
Zircon concentrate composition	56% Zr, 11% L88



#### **JORC Mineral Resources**



Table 1: Keysbrook Project – Global Mineral Resources (above a 1% THM cut-off grade and below a 20% slimes grade)

Category	Tonnes	Total Heavy Mineral	Heavy Mineral	Clay Fines	
	(Mt)	(%)	(kt)	(-45um)%	
Measured	63.9	2.2	1,400	8.1	
Indicated	29.2	2.2	655	10.5	
Inferred	61.9	1.6	1,050	12.0	
Total	155.0	2.0	3,105	10.1	

**Table 2: Keysbrook Project Component Resource Statement** 

Category	Tonnes	Total Heavy Mineral	Heavy	Clay Fines	L70	L88	Zircon
	(Mt)	(%)	Mineral (kt)	(-45um) %	%	%	%
		Key	sbrook Deposit				
Measured	63.9	2.2	1,400	8.1	26.1	50.1	13.6
Indicated	15.6	2.2	350	10.2	28.0	46.1	14.7
Inferred	10.8	2.4	260	11.9	26.4	48.7	14.3
Total	90.3	2.2	2,010	8.9	26.5	49.2	13.9
		Ya	ngedi Deposit				
Inferred	51.1	1.5	790	12.1	61.2	20.0	10.8
Total	51.1	1.5	790	12.1	61.2	20.0	10.8
		Ra	ilway Deposit				
Indicated	13.6	2.2	305	11.0	-	-	-
Total	13.6	2.2	305	11.0	-	-	-

#### Notes relevant to Tables 1 and 2:

- 1. Reported above a cut-off grade of 1% HM and below a cut-off of 20% clay fines.
- 2. Stratigraphic units reported within the Mineral Resource are Yoganup Sand and Guildford Clay for Keysbrook, Bassendean Sand for Yangedi and Yoganup Sand for Railway.
- 3. Keysbrook Project resource is classified and reported in accordance with the guidelines of JORC Code 2012. Railway Deposit resource is classified and reported in accordance with the guidelines of JORC Code 2004.
- 4. HM is reported as a percentage of the +45um to -2mm size fraction reported as a percentage of the total material.
- 5. L70%, L88% and Zircon% are the proportion of the total HM.
- 6. The terms L70 and L88 refer to MZI products. L70 comprises minerals with an average titanium dioxide content of between 65% and 85% and L88 comprises minerals with an average titanium dioxide content between 85% and 95%.
- 7. Inconsistencies in totals are due to rounding.

#### **JORC Ore Reserves**



#### Keysbrook Project - Ore Reserve Statement as at 17 October 2012

Classification	Ore Million	In situ THM	THM Assemblage					
	tonnes	tonnes	THM grade	Magnetite	L70	L88	Zircon	Other
			%	%	%	%	%	%
Proved	23.0	610,000	2.7	0.26	27.8	46.6	14.6	10.8
Probable	2.8	68,000	2.5	0.26	27.4	46.5	15.0	10.8
Total	26.0	670,000	2.6	0.26	27.8	46.6	14.6	10.8

Note: L70 and L88 in the THM assemblage equates to the two Leucoxene products containing 70% TiO<sub>2</sub> and 88% TiO<sub>2</sub>

#### **Notes accompanying the Ore Reserve Statement:**

- 1. Ore Reserves are based upon a cut-off grade of 1.0% THM and Mineral Resource material containing more than 20% slimes have been excluded from the Ore Reserves estimation.
- The Ore Reserves are based upon a Leucoxene 70 price of US\$1,777 per tonne.
- 3. Mineral Resources have been reported as inclusive of Ore Reserves.
- 4. The Total Heavy Mineral (THM) assemblage is reported as a percentage of in situ THM content.
- 5. Tonnes and grade data have been rounded to two significant figures. Discrepancies in summations may occur due to rounding.
- 6. This Ore Reserve statement have been compiled in accordance with the guidelines of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code 2004 Edition).

### **Competent Persons Information**



#### Competent Person's Statements – Mineral Resources (Tables 1 and 2)

The information in this report which relates to Mineral Resources is based upon information compiled by Mrs Christine Standing (in relation to the Keysbrook Project) who is a Member of the Australasian Institute of Mining. Mrs Standing is an employee of Optiro Pty and has sufficient experience relevant to the style of mineralisation, the type of deposit under consideration and to the activity undertaken to qualify as a Competent Person as defined in the 2012 edition of he Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mrs Standing consents to the inclusion in the report of a summary based upon her information in the form and context in which it appears

The information in this report which relates to Mineral Resources is based upon information compiled Mr John Baxter (in relation to the Railway Deposit) who is a Member of the Australasian Institute of Geoscientists. Mr Baxter is a Consulting Geologist with sufficient experience relevant to the style of mineralisation, the type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2004 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Baxter consents to the inclusion in the report of a summary based upon his information in the form and context in which it appears.

For supporting information on Keysbrook Mineral Resources, refer ASX release - MZI increases Keysbrook Mineral Resources by 68% - dated 7 August 2015.

#### Competent Person's Statements – Ore Reserves

The information in this report which relates to Ore Reserves have been compiled by Mr Andrew Law of Optiro Pty Ltd, who is a Fellow of the Australasian Institute of Mining and Metallurgy. Mr Law has sufficient experience in Ore Reserve estimation relevant to the style of mineralisation and type of deposit under consideration to qualify as a Competent Person as defined in the 2004 Edition of the Australasian Code for Reporting of Mineral Resources and Ore Reserve. Mr Law consents to the inclusion in the report of the matters compiled by him in the form and context in which it appears.