

## DEVELOPING DOMESTIC PHOSPHATE SUPPLY IN SOUTHERN BRAZIL

June 2017

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**AGUIA Resources Limited** 

**ASX Code: AGR** 

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# **AGUIA: A Brazilian Fertilizer Company**



Aguia Resources is focused on becoming the **sole source of domestic phosphate supply** to the fertilizer market in southern Brazil

Trade-off studies completed as part of ongoing BFS indicating a significant reduction (up to 50%) in both CAPEX and OPEX for **Três Estradas** 

Ideal location with proximity to local infrastructure (roads, rail, power, port) in a major **farming region that imports 100% of phosrock** 

Named a strategic development project by the government of Rio Grande Do Sul State

Raised AUD\$20M in the last 18 months and increased institutional shareholder ownership by approximately 70%

MOU signed with US Strategic Investor, Nebari, to fund up to 100% of CAPEX for **Três Estradas** via commercially priced debt subject to certain conditions such as a definitive agreement

Environmental Impact Assessment submitted and permitting well underway



# **Global Agriculture Powerhouse**



Global grain output will have to increase by 50% and meat output will have to increase by 200% to meet global demand based on FAO growth projections

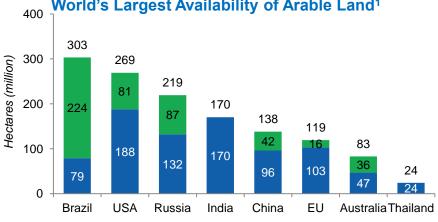
Brazil has the world's largest availability of unused arable land and the most renewable water

In 30 years Brazil has transformed from a food importer to one of the world's largest breadbaskets with agriculture representing 20% of GDP and exports now totalling US\$175bn per annum

8,233

World's Largest Availability of Fresh Water (bn m³/yr)<sup>1</sup>

Sources: <sup>1</sup>United Nations (UN) World Population Prospects, <sup>2</sup>United States Department of Agriculture



Available land

#### World's Largest Availability of Arable Land<sup>1</sup>

Land in use Available land				
Export Commodity	Brazil's Global Rank²			
Beef	1			
Coffee	1			
Poultry	1			
Sugarcane	1			
Ethanol	1			
Orange Juice	1			
Soybeans	2			
Tobacco	2			
Corn	3			
Cotton	4			

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## **Domestic Cost Advantage**



or personal use only

Brazil is the world's 3<sup>rd</sup> largest consumer of fertilizer, but accounts for only 4% of global fertilizer production

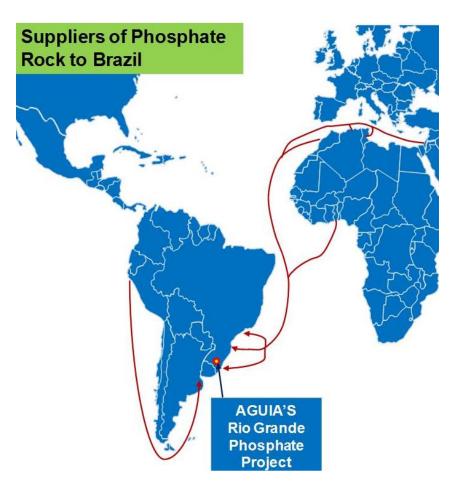
Brazil imports 65% of its phosphate and Southern Brazil is 100% reliant on phosphate imports with no new mines planned or under development in Southern Brazil

#### Aguia expects to have a sustained cost advantage to local fertilizer blenders of > \$50/t compared to imports<sup>1</sup> making our production of major strategic importance for the region

Southern Brazil currently consumes 700,000 tonnes of phosphate imports annually<sup>2</sup>

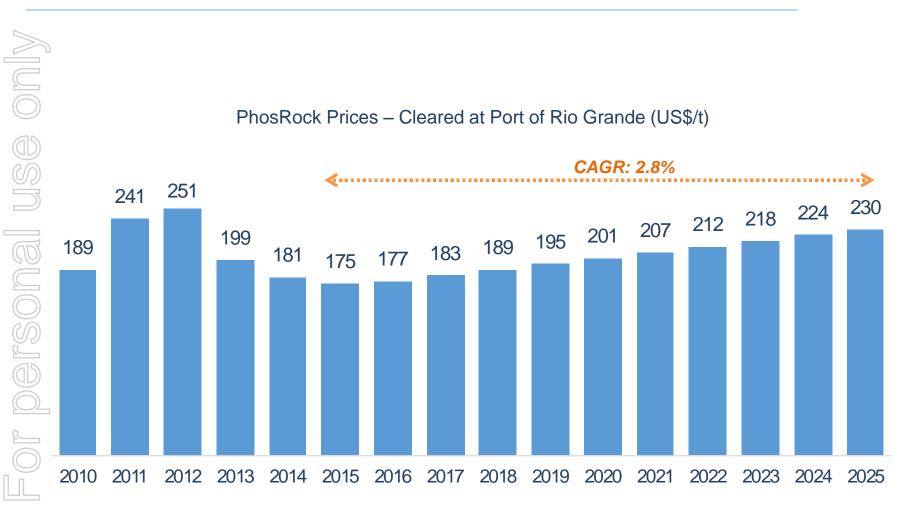
Timac and Yara are the major SSP producers at Rio Grande port with combined capacity of 1.1 Mt per annum of fertilizer production

Established aglime, DCP, cement and thermal coal markets are expected to provide secondary revenue stream for a calcite by-product



<sup>&</sup>lt;sup>1,2</sup> Includes Port Handling, AFMM(Brazilian Freight Tax @25% of freight and handling, and demurrage (at \$0.50/t/day, estimated at \$10/t), "Price and Competitiveness: Rock Price Forecast", Agroconsult, June 2015

## **Phosrock Price Forecast**



# **Rio Grande Do Sul: Três Estradas**

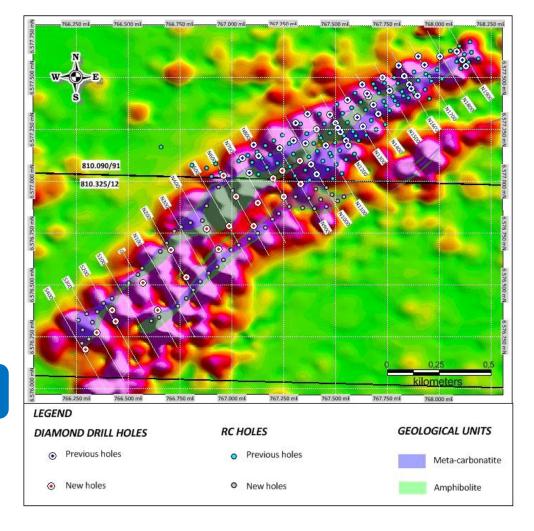


## JORC/43-101 compliant resource :

- > 0.745Mt Measured @ 4.42% P<sub>2</sub>O<sub>5</sub>
- 15.07Mt Indicated @ 4.75% P<sub>2</sub>O<sub>5</sub>
- 58.9Mt Inferred @ 3.97% P<sub>2</sub>O<sub>5</sub><sup>1</sup>

38,000 meters of drilling now complete; full reserve expected end of August 2017

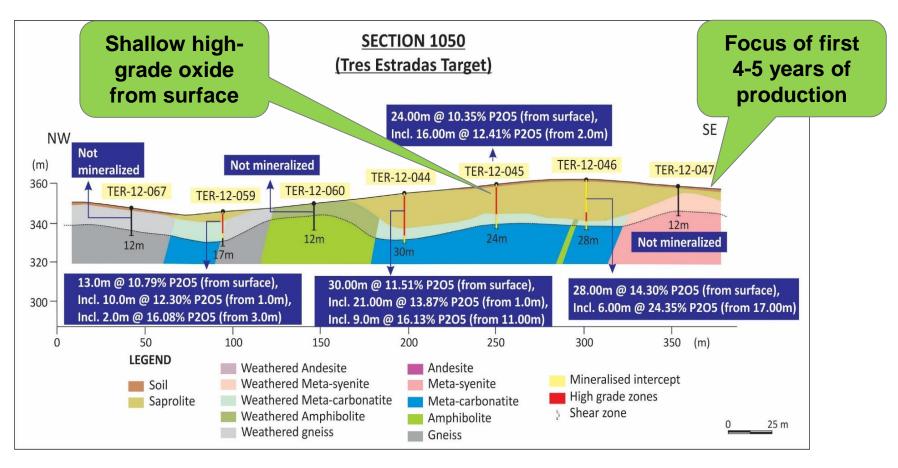




# **High-Grade Oxide Ore At Surface**

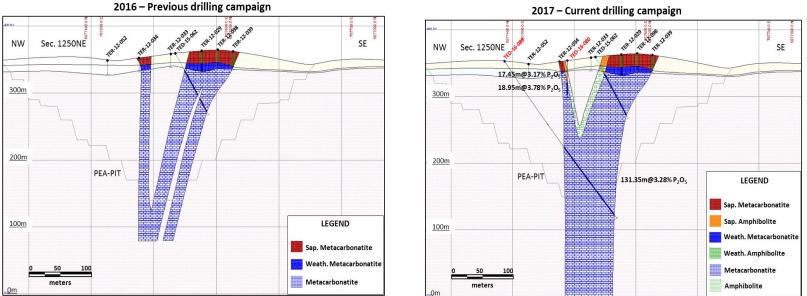


 Shallow high-grade oxide in the first 25 meters from surface provides significant optionality with trade-off studies



# 2016/2017 Completed Drilling Campaign

- Infill program to convert our inferred resources to measured and indicated
- Substantial ore horizon thickening has potential to improve strip ratio and reduce OPEX

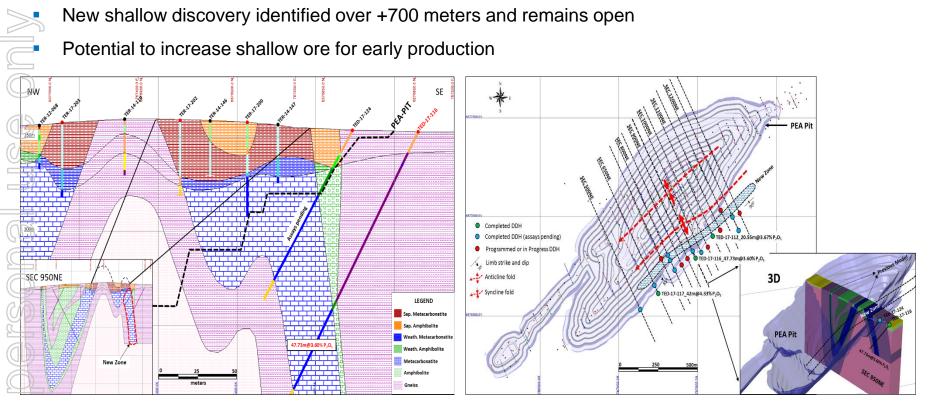


Drilling section 1250 NE of the Três Estradas deposit, showing the thickening of the carbonatite at depth (right) relative to the previous resource model (left)



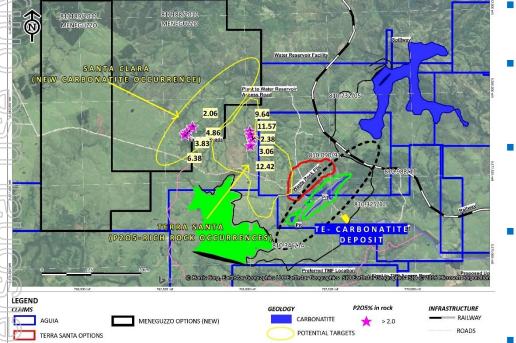
## **New Southeast Zone Discovery**





Drilling section 950NE of the Três Estradas Deposit, showing the new southeast zone as outlined in red in the inset at bottom left Insert on the bottom right shows cross section with the new carbonite zone intercepted by diamond drill hole TED-17-116

## **Rio Grande Do Sul Belt Consolidation**



Map showing Três Estradas carbonatite, the Terra Santa option acquired in December 2015 and the new Santa Clara occurrence 4.5 km to the northwest acquired in June 2016.

- Adjacent targets being explored in an effort to expand the regional resource
- Option signed on 4,500 ha Terra Santa located adjacent to Três Estradas, expanding footprint by 30%
- Initial exploration underway in a zone where up to 11.57% P<sub>2</sub>O<sub>5</sub> was returned from grab rock samples at surface<sup>2</sup>
- Option signed on 3,553 ha **Santa Clara** which includes 2km long geophysical anomaly with the same pattern as Três Estradas<sup>3</sup>
- Initial grab samples returned up to 6.37%  $P_2O_5$





# **Mining Plan**



Open-pit truck and shovel operation mining Três Estradas

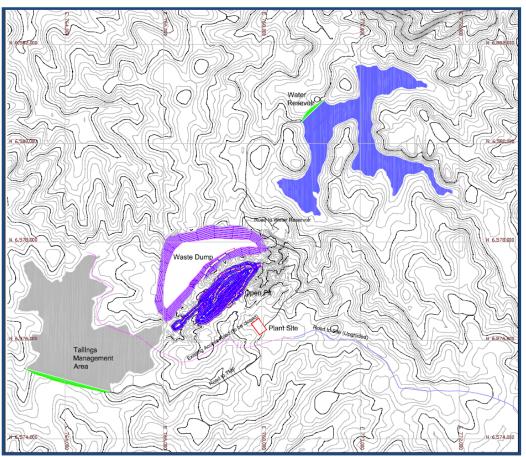
14 year life of mine

59 million tonnes of ROM mined with a strip ratio of 3.1:1 (waste to phosphate)

~50% increase in the mined tonnes compared to 2015 mining model

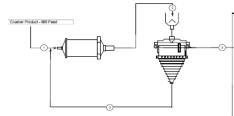
Total phosphate rock production of 6.6 million tonnes over life of mine, averaging 466,000 tonnes per year

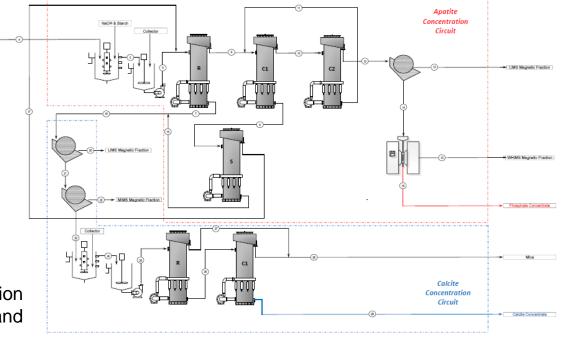
Total calcite production of 22.7 million tonnes over life of mine, averaging 1.6 million tonnes per year



# **Processing Plant**







Production will be a +30%  $P_2O_5$  concentrate with recoveries of approximately 80%

Tailings of the phosphate rougher flotation will be subject to magnetic separation and mica flotation to produce high quality calcite concentrate

Três Estradas has similar metallurgical properties as Vale's Cajati mine in Brazil and Yara's Siilinjarvi mine in Finland

- Average annual feed of 4.5 million tonnes per year or 13,700 tonnes per day
- Average annual production of 466,000 tonnes of phosphate concentrate and 1.6 million tonnes of by-product calcite

(Annual feed & production to be scaled as a result of the engineering trade-off studies)

## **High Quality Calcite By-Product**



Metallurgical studies conducted by Eriez Flotation Division confirm a high quality calcite by-product suitable for aglime can be produced from the Três Estradas deposit<sup>1</sup>

From the rougher tailings of the phosphate flotation, a calcite concentrate grading 48.55% CaO was produced with a CaO recovery of 83.1%

Calcite adds an important secondary revenue stream to Três Estradas deposit once in production

Calcite markets include aglime field spreading, animal nutrition, cement production and thermoelectric plants





# **Bankable Feasibility Study Fundamentals**

## Definition Phase Nov/16 to Apr/17

- Business and Engineering Alignment
- Meeting BEAM
- Mineral Reserve
- Collect Basic Data
- **Technology Selection**
- **Process Simplification**
- Constructability
- Energy Optimization
- **Residues Minimization**



## Design Phase Dec/17

- Fit for purpose
- Differing structure when possible
- Simple administrative structures
- Cladding and covering buildings when necessary
- Final BFS Report (JORC and NI 43-101)

Freeze Scope





# **Engineering Trade-Off Studies**



Highly experienced team of contractors engaged to develop the Bankable Feasibility Study of the Três Estradas Phosphate Project – now over 50% complete

Production scale has been optimized, maximizing project value and establishing a seamless integration into the Southern Brazil phosphate market at approximately 300k per annum of phosphate concentrate

First 4-5 years of production will focus on the high grade oxide material of  $+10\% P_2O_5$  which minimizes the need for crushing and flotation infrastructure at start-up

Both initiatives of Optimizing Production Scale, mining high grade oxide, and associated reductions in overall footprint will substantially reduce initial CAPEX (up to 50% reduction)

Proposed use of locally produced coal rather than diesel for drying the phosrock is expected to reduce operating costs (\$17.50/tonne diesel vs. \$2.50/tonne coal)

Other trade-off studies are ongoing and will be included in the final BFS which will reflect further material reductions in both CAPEX and OPEX once mine is operating

- Optimization of mine plan and strip
- > Optimization of logistics studies
- Optimization of flow sheet and by-product production

# **Major Advances Last 24 Months**



## Liquidity & Shareholder Base:

- Raised AUD\$20M, increased institutional ownership to ~70%
- Conditional approval for dual listing on TSXV
- Signed MOU with strategic investor to conditionally fund 100% of debt for CAPEX

#### Resource:

- Completed in excess of 30km of drilling, increased Indicated & Inferred Resource by 130%
- Infill drill campaign to convert Inferred to Measured & Indicated
- Identified new discovery zone

# Completed in Infill drill cam Identified new Technical Advances: Metallurgical product, testin PEA demonst BFS 50% cor

- Metallurgical studies confirm top quality phosphate concentrate and a high quality calcite by product, testing work underway at 3 tonne pilot plant
- PEA demonstrates technical and economic viability of Três Estradas
- BFS 50% complete with trade off studies providing material improvements to existing PEA

## Permitting:

 EIA submitted to regional authorities and 17 community consultations completed, named a strategic development project by the State of Rio Grande

# **Objectives for Next 12 Months**



## Liquidity & Shareholder Base:

- Commence trading on the TSXV and develop a North American presence
- Finalize terms of project financing and commence offtake negotiations

#### Resource:

- Issue new JORC/43-101 compliant resource based on results of infill drill campaign that converts Inferred Resource to Measure & Indicated
- Initial exploration of claims optioned adjacent to Três Estradas

## **Technical Advances:**

- Complete metallurgical testing work underway at 3 tonne pilot plant
- Complete Bankable Feasibility and finalize mine design and plan

## Permitting:

- Obtain Pre-License (LP) after successful review of EIA and commence application for Installation License (LI)
- Continue community outreach and consultation

## **Experienced Board & Management**



#### Justin Reid, Managing Director

Geologist and capital markets executive with over 20 years experience focused exclusively in the mineral resource space. Senior positions at Paladin Energy and National Bank Financial, where he directed the firm's sales and trading in the mining sector.

#### Fernando Tallarico, Technical Director

B.Sc. Geology, M.Sc., Ph.D. and P.Geo. Over 25 years' experience in minerals exploration in South America with Vale, Falconbridge/Noranda, BHP Billion and junior companies of the fertilizer sector. Has been instrumental in putting together Aguia's portfolio of assets.

#### Guilherme Jacome, Head of Engineering

With over 15 years of engineering experience, having worked on mining projects in Brazil, Chile, Australia, Canada, Zambia and Mozambique. In his most recent position, Mr. Jacome led a team that successfully completed the Bankable Feasibility Study for a \$2 billion potash project in Brazil in less than a year. Previously, Mr. Jacome was General Manager at Vale S.A.

#### Alfredo Rossetto Nunes, Senior Geologist

B.Sc. and M.Sc Geology, AusIMM member with over 25 years experience in mineral exploration in South America with Vale and Canadian/Australian junior companies of the noble metals sector. Participated in several grassroots discoveries including, gold, PGE and base metals.

#### Catherine Stretch, Chief Commercial Officer

Over 15 years experience in capital markets managing companies and funds in the resource sector with expertise in global agriculture. Formerly Chief Operating Officer of a Canadian fund management firm with +\$1bn in AUM.

#### Paul Pint, Executive Chairman

Mr. Pint, is a capital markets professional with over 20 years of experience in senior positions at various financial institutions and boutique investment banks in Canada. Mr. Pint is a Chartered Professional Accountant and holds a Bachelor of Commerce degree from the University of Toronto.

#### Zargos Hood, Financial Officer

Mr. Hood brings 19 years of experience in business administration related to auditing, consulting and M&A. The last 10 years of experience within the mining sector included financial, accounting, commercial and logistics management over base metals operations and fertilizer industry in Brazil.

#### David Gower, Director

Mr Gower has over 25 years' experience in the minerals industry including senior positions with Falconbridge Limited and Noranda Inc (now Xstrata). He is a member of the Association of Professional Geoscientists of Ontario and of the Canadian Institute of Mining.

#### Brian Moller, Non-executive Director

Mr Moller specializes in capital markets, mergers and acquisitions and corporate restructuring, and has acted in numerous transactions and capital raisings in both the industrial and resources and energy sectors. He has been a partner at the legal firm, HopgoodGanim for 30 years

#### Alec Pismiris, Non-executive Director

Mr Pismiris has over 30 years' experience in the securities, finance and mining industries. Mr Pismiris is currently a director of several ASX listed companies including Agrimin Limited, Hotcopper Holdings Limited and Pelican Resources Limited. Mr Pismiris is also company secretary of Agrimin Limited and Pelican Resources Limited.

#### Andrew Bursill, Corporate Secretary

Mr Bursill was appointed as company secretary on 28 September 2010. In addition, Mr Bursill is a director and company secretary of several listed, unlisted and private companies.

## **Local Photos**





Photos (clockwise from top left): Yara's facility at port of Rio Grande; TIMAC's facility at port of Rio Grande; rolling countryside around Três Estradas; phosphate mineralization at surface; railway line that goes through the property

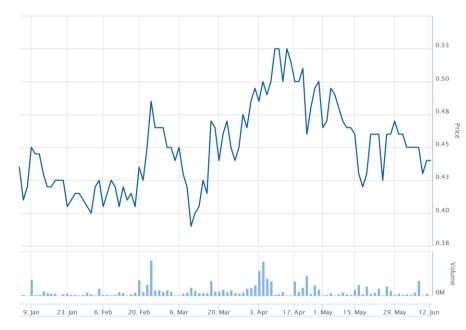
# **Capital Structure & Financing Activities**



## Fully Diluted Equity

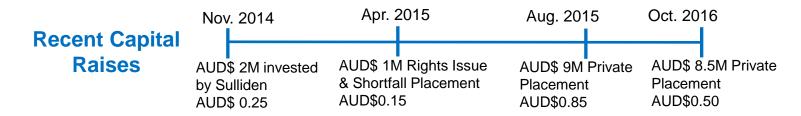
Ordinary Shares issued	90.8m		
Options	3.45m		
Fully Diluted	94.25m		
Undiluted Market Cap at A\$0.44 (15 June 2017)	\$41.5m		
Fully Diluted Market Cap at A\$0.44	\$49.3m		
52 week range	\$0.36 - 0.73		

#### **AGR Performance 2017 YTD**



### Major Shareholders

Sulliden Mining Capital	17%
Insiders/Management (ex Sulliden)	7.7%
M&G Investments	8.5%
AGF	3.5%



Rice paddies in Rio Grande do Sul – an example of local farming

Pastures and fields of crops in Rio Grande do Sul

Terrain at Três Estradas – cattle pastures

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Terrain at Três Estradas – rolling farm fields with visible outcroppings at bottom right

For person

Rail line 200 metres from edge of Três Estradas property For personal use only



# **THANK YOU**

## **Competent Persons Statement**



The Três Estradas Phosphate Project has a current JORC/43-101 compliant mineral resource which includes Measured Resources of 0.745 Mt grading 4.42% P2O5. Indicated Resources of 15.07 Mt @ 4.75% P2O5 and Inferred Resources of 58.9 Mt @ 3.97% P2O5. The Lucena Phosphate Project has a current JORC compliant inferred mineral resource of 55.1Mt grading 6.42%  $P_2O_5$ Information in this presentation is extracted from the following reports, which are available for viewing on the Company's website: 13 June 2017: Material Cost Improvement in Tres Estradas Trade-off Studies 3 April 2017: New Southeast Zone Discovery Proven Over 700 Metres of Strike 23 March 2017: Highly Encouraging Results Continue at Três Estradas 15 February 2017: Aguia Discovers New Mineralised Zone Extending from Surface at Três Estradas 1 February 2017: New Drilling Indicates Significant Thickening at Depth 13 December 2016: Infill Drilling Confirms Grades and Thickness of Três Estradas Mineralisation 29 November 2016: Definition Drilling for Aguia's Três Estradas BFS Proceeding Well ersona! 2 November 2016: Aguia Commences Infill Drilling 11 October 2016: Aguia Achieves Key Project Development Milestone with Environmental Impact Assessment Submitted for Três Estradas 12 July 2016: Aguia's Optimized PEA Unlocks Significant New Value 5 July 2016: Aguia Announces Metallurgical Test Results Confirming High Quality Calcite By-Product From Três Estradas Deposit 6 June 2016: Aguia Reports Positive New Column Flotation Results from its Flagship Três Estradas Phosphate Project 27 January 2016: Drilling Program at Joca Tavares and Três Estradas Delivers Positive Results to Further Strengthen Rio Grande Asset Base 9 December 2015: Aquia Signs Option to Expand Phosphate Land Position in Rio Grande 17 November 2015: Aquia Advances Exploration and Development Activities at Rio Grande Phosphate Project 19 August 2015, Positive preliminary economic assessment demonstrates robust economics for Três Estradas May 11, 2015: Aguia Reports 80% Phosphate Recovery from Oxidized Carbonatite and 65% from Fresh Carbonatite April 27, 2015: Aquia Significantly Increases Três Estradas Phosphate Resource by 130% to 70.1 Million Tonnes The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market

announcements listed above and, in the case of estimates of Mineral Resources or Ore Reserves that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

The technical and scientific information in this presentation, including information that relates to Exploration Targets, Exploration Results, Mineral Resources or Ore Reserves, is based on information compiled by Dr Fernando Tallarico, who is a member of the Association of Professional Geoscientists of Ontario. Dr Tallarico is a full-time employee of the company. Dr Tallarico 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'. Dr Tallarico consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.



## Enquiries:

Justin Reid, Managing Director jreid@aguiaresources.com.au

Catherine Stretch, Chief Commercial Officer cstretch@aguiaresources.com.au

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# **Três Estradas Mineral Resource**



CaO as

Calcite

(%)

63.68

61.63

62.19

20.17

 $P_2O_5$  as

Apatite (%)

12.38

9.75

10.47

14.93

Approximately 3,000m	Resource Classification	Domain	Tonnage (T X 1,000)	P <sub>2</sub> O5 (%)	CaO (%)
Poolo	Measured	WMCBT	204	5.23	35.58
		MCBT	541	4.11	34.44
	Total Measured Resou	rces	745	4.42	34.75
Jorc/43-101 red resource $P_2O_5$ ed resource $P_2O_5$ ed resource $P_2O_5$	Indicated	AMSAP	460	6.30	11.27
		CBTSA			
		Р	1741	10.49	16.88
		WMCBT	1545	4.67	34.78
		MCBT	11324	3.82	35.01
	Total Indicated Resources		15070	4.75	32.17
		AMSAP	521	6.09	11.08
		CBTSA			
	Inferred	Р	1470	11.65	17.72
		WMCBT	796	4.27	35.22

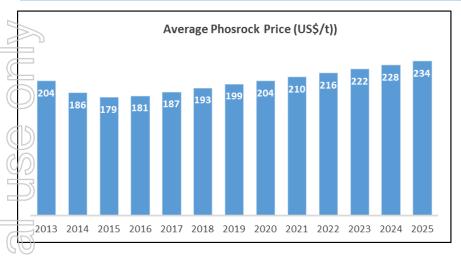
6.88 24.85 30.21 11.07 62.24 4.78 5.01 9.04 62.66 2.17 11.25 57.57 1.08 14.42 19.82 7.72 27.60 31.71 5.22 10.11 63.02 3.73 35.42 MCBT 52581 8.83 63.39 MAMP 4.01 19.08 34.14 3523 9.50 **Total Inferred Resources** 58891 3.97 33.78 9.41 60.46 Audited Mineral Resource Statement\*, Três Estradas Phosphate Deposit

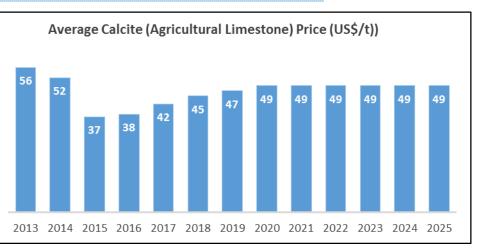
Millcreek Mining Group, July, 2016

- · Mineral resources are not mineral reserves and have not demonstrated economic viability.
- All numbers have been rounded to reflect relative accuracy of the estimates.
- Mineral resources are reported within a conceptual pit shell at a cut-off grade of 3% P<sub>2</sub>O<sub>5</sub>.

# **Principle Assumptions**







The Preliminary Economic Assessment (PEA) referred to in this presentation relies on the following assumptions:

A long term price of USD\$ 210/t phosrock for the entire Life of Mine. The price forecast reflects average prices cleared at the main Southern Brazilian ports and includes sea freight charges, demurrage, port costs and taxes.

A long term price of USD\$ 47/t of calcite (aglime) reflects local prices paid by the final consumer (farmers).

## **Other Key Assumptions:**

- Exchange Rate: BRL:USD = 3.80:1
- Production Royalty: 2% (of Gross Proceeds)
  - CFEM: 2% (of Gross Proceeds)
- Income Tax:
- Depreciation: 14.29% (7 year straight line)

34%