5th September, 2017

# Excellent metallurgical test results achieved additional information

Outstanding results for the first stage metallurgical test program for High Purity Alumina (HPA) from the Cadoux kaolin project in Western Australia was announced by FYI Resources (the "Company" or "FYI") on 4 September 2017. Additional information is provided in Appendix A.

# **Highlights**

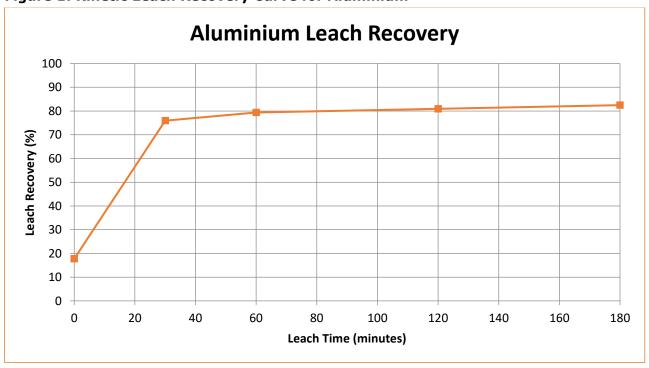
- Excellent aluminium leach recoveries greater than 82%;
- Preliminary leach results indicate selective leaching of aluminium;
- Outstanding progress on the second stage HPA precipitation tests;
- Second stage (precipitation) testing is underway.

The program objective is designed to determine the amenability of the Cadoux kaolin project for HPA extraction.

The metallurgical test work program is being undertaken and managed by Independent Metallurgical Operations Pty Ltd (IMO) in Perth. The program comprises: prebeneficiation, calcination, acid leach testing and selective precipitation of alumina on a composite generated from the Cadoux Kaolin Project.

The first stage results exceed expectation of recoverable alumina through conventional leaching with recoveries exceeding **82%** as depicted in Figure 1.

Figure 1: Kinetic Leach Recovery Curve for Aluminium





The impressive leach results set a solid platform for the second stage precipitation test work in achieving the target HPA product.

Equally as notable is the Final Solution assays which indicate low co-leaching of deleterious elements as depicted in in the table below.

**Table 1: Final Leach Solution Assays** 

	Al	Ba	Ca	Cr	Fe	K	Mg	Na	P	S	Si	Ti	V
	ppm												
Final Solution	50,280	17	153	12	850	257	115	176	43	20	11	22	15

The metallurgical testwork sample was selected from composited intervals from the last drilling programme (refer to ASX Company announcement dated 14 June 2017). The sample is considered to be representative of the deposit and centred at N6606100 and E518800.

#### Summary

On reviewing the metallurgical results, FYI Managing Director, Mr Roland Hill said "The first stage metallurgical leach results are particularly pleasing as, in simple terms, they have exceeded our initial expectations confirming our view that the quality of Cadoux kaolin has excellent feedstock characteristics for HPA processing. We will now focus on the second stage metallurgical precipitation test work and anticipate further positive results increasing our confidence that commercial HPA can be generated from the high grade kaolin at Cadoux".

#### Further information:

Roland Hill Managing Director

Tel: +61414666178

#### **About FYI Resources Limited**

FYI is an ASX listed natural resources public company focused on the project development of strategic commodities.

The Company's principal objective is the assembling of a quality portfolio of potash projects in Southeast Asia with the view to long term development and production.

In addition, FYI will also be capitalising on an exceptional opportunity to develop a major HPA (high purity alumina) production project in Western Australia.



## **Competent Person statement**

#### Metallurgy:

The information in this release that relates to metallurgy and metallurgical test work is based on information reviewed and compiled by Mr Daryl Evans, a Competent Person who is a Fellow of the Australian Institute of Mining and Metallurgy (AusIMM). Mr Evans is an employee of Independent Metallurgical Operations Pty Ltd, and is a contractor to FYI. Mr Evans has sufficient experience that is relevant to this style of processing response and type of deposit under consideration, and to the activity that he has undertaken to qualify as a Competent Person as defined in the 2012 Edition of the Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code). Mr Evans consents to the inclusion of the report in the form and context in which it appears.

### **Appendix A September 2017**

# JORC Code, 2012 Edition – Table 1

## **Section 1 Sampling Techniques and Data**

Criteria	Commentary
Sampling techniques	Drilling sampling was previously reported (14 June 2017).  Metallurgical test work applied to the recovered drilling samples is intended to determine aluminium leach and precipitation characteristics of the kaolin. Sample preparation and metallurgical test work was performed by Independent Metallurgical Operations Pty Ltd (IMO) in Perth, Western Australia.
Drilling techniques	Previously reported (14 June 2017).
Drill sample recovery	Previously reported (14 June 2017).
Logging	Previously reported (14 June 2017).
Sub-sampling techniques and sample preparation	Drilling sampling was previously reported.  The sampling techniques for the metallurgical test work was in line with industry standards in determining composite samples representative of the resource. This included drying and splitting of individual samples from the 58 drill holes and then compositing into a representative sample.  The sampling procedures were under the control of qualified and experienced IMO employees and considered adequate for the intended metallurgical test work.  Sizes and representative nature of the samples is considered appropriate.  Details of the sample techniques is described in the "Other substantive exploration data" section in Table 2.



Criteria	Commentary
Quality of assay data and laboratory tests	Analysis for the leach test work was deemed appropriate for the detailed test work as it was undertaken in laboratory environment with precision equipment and included worldwide accepted controls.
Verification of sampling and assaying	The metallurgical test work was supervised by suitably qualified personnel under laboratory conditions.
	Primary data is captured on paper in the laboratory and then re-entered into spreadsheet format by the supervising metallurgist, to then be loaded into the company's database.
	No adjustments are made to any assay data.
Location of data points	All samples used in the metallurgical test work have been accurately recorded by the laboratory technician and checked by the supervising metallurgist.
Data spacing and distribution	Industry standard sample distribution and source material representation methodology has been applied.
Orientation of data in relation to geological structure	Industry standard sample distribution and source material representation methodology has been applied. The risk of sample bias is considered to be low.
Sample security	All samples were under supervision at the laboratory. All residual sample material is stored securely in sealed bags.
Audits or reviews	Mr Evans has reviewed QAQC results and found these to be acceptable.

# **Section 2 Reporting of Exploration Results**

Criteria	Commentary
Mineral tenement and land tenure status	Previously reported (14 June and 26 July 2017)
Exploration done by other parties	Previously reported (14 June 2017).
Geology	As previously report, the project area is underlain by weathered granitoid Archaean rock of the Yilgarn Granites is the likely parent material for the kaolin. Here, deep weathering of the feldspathic and ferromagnesian minerals within the metamorphosed granitic has resulted in the formation of kaolinite. There is no outcrop but recognizable granitoidal fragmental rocks are sometimes present just below surface. The crust of the overburden comprises gravel and sands over reddish to off white clay. White kaolin underlies the overburden followed by weathered, partial oxidised and then fresh ganitoids at depth. The recent drilling at the property has revealed a weathering profile which is very common in Western Australia with the granitoid rocks, deeply weathered forming a leached, kaolinized zone under a lateritic crust. Analysis at the Laboratory shows particle size distributions are typical of "primary style" kaolins produced from weathered granites. The crust of overburden comprises gravel and sands over reddish to off-white clay to an average depth of 5m. White kaolin then averages approximately 16 m before orange to yellow sandy and mottled clays are intersected which are followed by



Criteria	Commentary
	recognizable rounded granitoid material. The thickness of the kaolin profile varies from less than 1m to a maximum of 22m. Fresh granitoids are found at depths of between 10 and 30m. All kaolin resources are within 4 to 11 metres of the surface. 47 air core drillholes were completed with a total of 824m drilled. All holes were drilled vertically. Intersected kaolin thickness ranged from 4-11m.
Drill hole Information	Sample and drill hole coordinates are provided in market announcements (14 June 2017).  The metallurgical testwork sample was selected from composited intervals from the last drilling programme. The sample is considered to be representative of the deposit and centred at N6606100 and E518800.
Data aggregation methods	The nature of the metallurgical testwork did not require data aggregation, however all data points where noted and recorded in the appropriate data base to be used in follow up test work.
Relationship between mineralisation widths and intercept lengths	Previously reported (14 June and 26 July 2017).
Diagrams	Project related diagrams are presented in previous ASX announcements (14 June and 26 July 2017).
Balanced reporting	The reporting is considered to be balanced.
Other substantive exploration data	Metallurgical test-work is being conducted on composite kaolin samples by Independent Metallurgical Operations (IMO). IMO are following a standard diagnostic flowsheet template to determine aluminium leaching and precipitation characteristics of the kaolin.
	The test work involves the following procedure of composited samples of the recent drilling program (see FYI ASX announcement dated 14 June and 26 July 2017)
	The sample was calcined at 700°C for one hour to convert the Kaolin to an acid soluble species. The sample was then leached in 26% (w/w) Hydrochloric acid at 20% solids and 100°C for 180 minutes with samples being collected to provide kinetic leach recoveries.
Further work	Second stage metallurgical precipitation test work is continuing and will be announced to the market when completed.