

18<sup>th</sup> September 2018

## HPA metallurgical process flowsheet optimised for high grade, Cadoux feedstock

FYI Resources Limited (the “Company” or “FYI”) is pleased to provide a summary outline of the Company’s optimised high purity alumina (HPA) process flowsheet designed specifically for the kaolin feedstock from FYI’s Cadoux project (EL70/4673) in Western Australia. This follows the recent achievement of independently verified **99.997% HPA** from Cadoux.

### Highlights

- Extensive metallurgical testwork undertaken on Cadoux’s superior kaolin characteristics
- FYI’s metallurgical flow sheet specifically designed for Cadoux kaolin feedstock
- Proposed HPA flowsheet design should lead to cost effective (Capex and Opex) processing
- Exceptional HPA recoveries of **99.997% Al<sub>2</sub>O<sub>3</sub>** independently verified
- Revised Mineral Resource Estimate, tailored to optimised flowsheet, to be completed by CSA Global

Development and optimising of FYI’s processing flowsheet for refining of HPA from Cadoux kaolin feedstock has been successfully completed for the prefeasibility phase of metallurgical testwork. The independently verified recovery grade of 99.997% Al<sub>2</sub>O<sub>3</sub> (see ASX release 3<sup>rd</sup> September 2018) is a result of significant metallurgical testwork and associated development of the flowsheet suited specifically to the Cadoux kaolin feedstock.

The metallurgical response to the characteristics of the Cadoux kaolin has been excellent in achieving purity of 99.997% Al<sub>2</sub>O<sub>3</sub>. As a result, the processing flow sheet is straightforward and effective. This is expected to positively impact on the capital and operating costs of the HPA project.

No two ore bodies are the same in their character and content and different processing flowsheets and technologies are required to recover the targeted product from an ore body in a viable and cost-competitive manner. FYI’s HPA flowsheet development is specifically engineered towards Cadoux’s unique geology, mineralogy and physical characteristics and substantially different to a “standard” HCl leach and precipitation process.

Advantages of the design are:

- utilisation of “off-the-shelf” items and equipment that should reduce capital expenditure as well as reducing equipment construction and delivery times;
- expected lower operating costs from rate and ease of chemical process; and
- better than anticipated processing time for the entire multiple stage circuit.

### Feedstock quality

The quality of the feedstock is key to production of a high-grade alumina product for low-cost processing. An ideal feedstock, as a minimum requirement, should be high in aluminium, low in deleterious elements, not be complex in its composition, nor variable as a feedstock and it must have certain crystal structures and compound qualities for the chemical stages of the process to react successfully.

This is the distinct advantage that kaolin offers in the processing of HPA over the traditional feedstock derived from refined aluminium (which is expensive) or from industrial waste or other by-product industrial sources which has a low aluminium grade, has a high level of soluble deleterious minerals such as sodium and is metallurgically complex and difficult to refine – making it difficult to refine and achieve a target high grade product of 99.99% Al<sub>2</sub>O<sub>3</sub>.

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The kaolin feedstock at our 100% owned Cadoux project exhibits excellent grade and qualities that is suited to FYI's developed HPA process flowsheet and refined over the prefeasibility study period. The outcomes are demonstrated in the efficiency and effectiveness of the flowsheet and the high-grade product that has resulted.

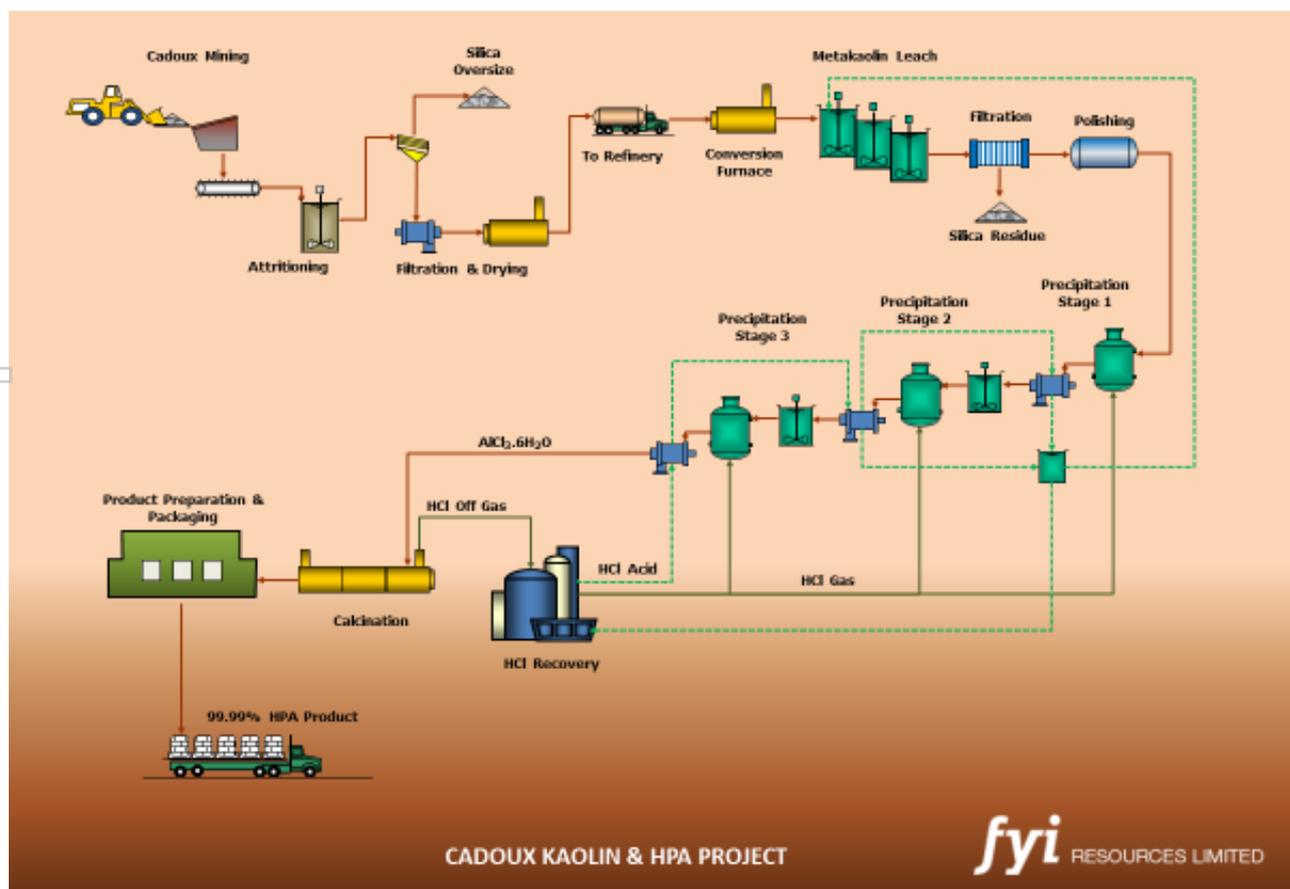
The additional benefits of the Cadoux kaolin as a feedstock source is that FYI controls and manages the provenance of the product throughout the process chain, the geology and mineralogy is uncomplicated and well understood, the ore is amenable to the process and, importantly to the economics of the project, it is a very low-cost input.

FYI's processing flowsheet has been successfully tested on all the mineralised zones of the Cadoux deposit, however, a selected resource area for the initial operations has been targeted by FYI (the focus area of the revised mineral resource estimate currently being finalised by CSA Global) which should provide an excellent source of feedstock for the first several decades of processing.

FYI, through its HPA process consultants Independent Metallurgical Operations and GR Engineering Services, will continue refining the metallurgical flow sheet during the various development phases to enhance process efficiencies and further reduce Capex and Opex costs.

#### HPA flowsheet design

The optimised process flowsheet (*Figure 1 - below*) will form the basis of process design, equipment selection and equipment sizing, and should reduce both capital and operating costs for the project. The flowsheet has relatively straightforward processing design parameters utilising atmospheric pressure, moderate temperature and incorporating numerous "off the shelf" processing items and equipment.



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FYI's Managing Director, Mr Roland Hill, said of the metallurgical studies "Attaining the excellent base grade of 99.997% HPA is a remarkable achievement and a testament to the efficiency and effectiveness of the Cadoux process flowsheet. The Company's focus is on building a quality HPA strategy as well as delivering a superior investment return to shareholders – so operating margins and capital costs are important to our business case. We expect our extensive defining test work program and resulting flow sheet optimisation to bear fruit for us by having a material impact on the project economics".

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**About FYI Resources Limited**

FYI's is positioning itself to be a significant producer of high purity alumina (4N or HPA) in a rapidly developing: LED, electric vehicle, smartphone and television screen as well as other associated high-tech product markets.

The foundation of the HPA strategy is the superior quality aluminous clay (kaolin) deposit at Cadoux and positive response that the feedstock has to the Company's moderate temperature, atmospheric pressure HCl flowsheet. The strategy's quality attributes combine resulting in world class HPA project potential.

**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). Announcements in respect to metallurgical results are available to view on the Company's website at [www.fyiresources.com.au](http://www.fyiresources.com.au). 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 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 information in the form and context in which they appear. 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 and that all material assumptions and technical parameters underpinning the findings in the relevant market announcements continue to apply and have not materially changed.

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