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FYI HPA PILOT PLANT HPA TRIAL DELIVERS

Key points

- **FYI successfully concludes pilot plant trial at end user directed HPA specifications**
- **Pilot plant operational efficiency continues to surpass expectations**
- **Observation of the HPA trial material indicates excellent quality end product**
- **The trial's objective of HPA product improvement appears validated**
- **HPA samples to be sent for independent detailed analysis in the U.S**
- **Further enhancements to flowsheet and materials handling and construction were noted for possible technical and economic improvements to process flowsheet**

FYI Resources Ltd (**ASX: FYI**) is pleased to announce the conclusion of the detailed high purity alumina (**HPA**) production trial through the pilot plant in Welshpool, Western Australia.

The objectives of this HPA trial were to produce a stipulated end product specially tailored to the requirements of targeted potential customers and to incorporate several previously noted process design modifications into the production flowsheet. The result is to more closely align FYI's product to the specifications required of particular end users in both the LED and battery directed markets.

From a customer perspective, whilst purity is a key criterion to the HPA product requirement, other critical selection criteria include crystal sizing, crystal surface area and specific gravity ranges as well as certain remnant deleterious material tolerances.

Samples of the HPA product from the trial will be submitted for high level Glow Discharge Mass Spectrometry (**GDMS**) analysis to EAG Laboratories in New York, USA for independent, high accuracy, confirmation of HPA grades.

Commenting on the pilot plant trial, FYI Managing Director, Roland Hill, said "The trial was a culmination of process improvements noted from previous piloting and the objective of targeting the HPA end product to specifications stipulated by several prospective off-take groups. Whilst we are yet to receive the analysis, I believe we achieved our goal after observing the final product. This exercise bodes well with our continuing discussions with potential off-take parties and other project stakeholders including financiers."

Observations

Initial observations of the HPA trial were very positive. The trial proceeded to expectation and, in terms of the final product, on preliminary examination appeared to meet the higher end of the Company's anticipated internal quality measures.

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Pilot plant results implications

The first phase pilot plant results were very encouraging, providing a sound interpretation of batch, locked cycle and variability testing for incorporation into the design and construction of the continuous pilot plant. Subsequent pilot plant runs improved the level of understanding of the various unit processes, recycle streams, mass balances and the materials of construction. Through an ongoing series of continual improvements to the engineering and process flowsheet driven by the pilot plant results, FYI is improving upon the efficiencies of the HPA refining process resulting in possible capex and opex savings which enhance the overall economic case outlined in the definitive feasibility study.

This pilot trial production run was aimed at satisfying customer stipulated specifications, however we did observe that an overall improvement in the process and possible enhancement to project economics is possible.

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About FYI Resources Limited

FYI's is positioning itself to be a significant producer of HPA in the high growth and rapidly developing high tech consumer markets such as light emitting diodes (LED), phosphor, sapphire glass applications and electric vehicle / static power storage battery markets.

The foundation of FYI's development strategy is the superior quality HPA and innovative process flow sheet utilising moderate temperature and atmospheric pressure. The strategy has resulted in a potential world class HPA project as demonstrated and validated in the Company's published definitive feasibility study.

Competent Persons Statements

Metallurgy
The information in this report 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 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". Announcements in respect to previous metallurgical results are available to view on the Company's website at www.fyiresources.com.au

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JORC Code, 2012 Edition – Table 1

Section 1 Sampling Techniques and Data

Criteria	Commentary
Sampling techniques	Drilling sampling was previously reported *(ASX: 9.7.2018)*. 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 *(ASX: 9.7.2018)*.
Drill sample recovery	Previously reported *(ASX: 9.7.2018)*.
Logging	Previously reported *(ASX: 9.7.2018)*.
Sub-sampling techniques and sample preparation	Drilling sampling was previously reported *(ASX: 13.3.2019)*. 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 and then compositing into representative samples. The sampling procedures were under the control of qualified and experienced IMO employees and considered adequate for the intended metallurgical test work. Master composite samples were prepared representing the initial three years of the Cadoux life of mine resource. The composites underwent a stage of attritioning with the products screened to generate fine and coarse size fractions. The fine attritioned product underwent one stage of calcination to convert kaolin clay to metakaolin. The calcined product was leached with hydrochloric acid at temperature. The leach liquor underwent a series of precipitation stages, involving hydrogen chloride gas being sparged through the leach liquor allowing the precipitation of solid aluminium chloride. Sizes and representative nature of the samples is considered appropriate. All procedural work and preparation was conducted under strict controls and supervision. All testwork was conducted under test conditions by qualified and experienced technicians and overseen by qualified managers including Mr Alex Borger and Mr Daryl Evans (Independent Metallurgical Operations Competent Person).
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. Metallurgical reviews and testwork has been overseen and approved by Mr Alex Borger – Metallurgical Project Manager and Metallurgical Competent Person – Mr Daryl Evans.

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Criteria	Commentary
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 *(ASX: 9.7.2018)*.
Exploration done by other parties	Previously reported *(ASX: 9.7.2018)*.
Geology	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 recognizable rounded granitoid material. The thickness of the kaolin profile varies from less than 1m to a maximum of 28m. Fresh granitoids are found at depths of between 10 and 30m. All kaolin resources are within 4 to 11 metres of the surface. All holes are drilled vertically. Intersected kaolin thickness ranges from 4-28m.
Drill hole Information	Sample and drill hole coordinates are provided in market announcements.

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Criteria	Commentary
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 continued test work and product development.
Relationship between mineralisation widths and intercept lengths	Previously reported *(ASX: 9.7.2018)*.
Diagrams	Project related diagrams are presented in various previous ASX announcements released to the market at the relevant time.
Balanced reporting	The reporting is considered to be balanced.
Other substantive exploration data	As per notice to the market (see FYI ASX announcement 14th February 2019) and Definitive Feasibility Study (DFS), IMO completed a pilot plant trial for the refining of HPA following the flowsheet design that has been proposed and innovated by FYI to produce and refine aluminium leaching and precipitation characteristics of the kaolin to produce > 99.99% HPA. The pilot plant trial involved the 7 day commissioning and training of the plant and equipment immediately followed by a 7 day continuous "end to end" hydrometallurgical production trial utilising feedstock of composited kaolin samples of the last drilling program (see FYI ASX announcement dated 9th June 2018) The pilot trial run followed the exact flowsheet procedure (as has been previously reported) so as to replicate the final designed flowsheet. General analysis solution sampling was taken at set times throughout the 24 hour a day (2 shifts), on a 7 day a week schedule. Samples sent for GDMS analysis were selected on the basis of at least one sample per day following steady state of operations being achieved (i.e. cessation of day 1) with the aim of the samples spread evenly across the pilot duration. This provided a systematic approach to tracking the product and impurity grades within the pilot run. Samples were prepared by the collection of intermediate product sub sampling followed by two stage batch calcination. The HPA assays were conducted by GDMS analysis at EAG Laboratories in New York, USA. The results of the first phase of analysis is reported in this ASX release.
Further work	FYI is likely to continue metallurgical test work to further refine and improve the HPA process design with any work undertaken to be announced to the market as required.