



31 January 2020

## Activity Report for the quarter ended 31 December 2019

### Highlights

- *Definitive Feasibility Study (DFS) close to finalisation*
- *HPA pilot plant trial successfully completed, with FYI achieving 99.99% purity from the first round of continuous 'end-to-end' production*
- *An optimized production phase exceeded FYI's target grade, with the trials delivering up to 99.997% purity HPA and highlighting potential for 5N production*
- *The success of the pilot plant trials validates the Company's HPA flowsheet and provided insights to further improve the flowsheet for technical and economic purposes*
- *FYI conducted tours of the pilot plant facility for strategic groups, including national and international end users, in order to showcase FYI's innovative processing methods from kaolin*
- *The Company received a further R&D tax incentive rebate payment of \$777,631 which was directed towards the continued development of the Company's HPA project*

### Post-quarter end

- *FYI's Mining Proposal (MP) and associated Mine Closure Plan (MCP) formally approved by the Western Australian Department of Mines, Industry Regulation and Safety (DMIRS)*
- *The MP and MCP are significant milestones, with only minor approvals required before commencing construction and mining activities*

The Board of High Purity Alumina (HPA) developer, FYI Resources Limited (ASX: FYI) ("Company" or "FYI"), is pleased to release its activity report and Appendix 5B for the quarter ended 31 December 2019. Commenting on the quarter, FYI Resources Managing Director Roland Hill said:

"The December quarter was very encouraging for the Company. We continued to progress the DFS with several development improvements from the PFS thanks to the inclusion of the HPA pilot plant trials. The pilot plant delivered excellent results in the context of the study, exceeding our targets and highlighting the viability of our processing flowsheet. The trial success will be showcased to potential offtake parties, financiers and other key stakeholders, as well as providing key data points as we finalise our definitive feasibility study for Cadoux."

## DFS progress

The DFS progressed positively over the quarter incorporating excellent study inputs from the ongoing R&D activities and associated study work (see below for further detail). The level of study detail and diligence by our expert study managers, supports an expected robust and positive DFS.

With the metallurgical phase of the study largely now completed, the final focus of the study is on the engineering phase including the completed design and cost estimation (both CAPEX and OPEX) of the project.

## 99.99% target purity HPA exceeded from pilot plant trial

During the quarter, the Company announced the first round of results from the Company's recently completed HPA pilot plant trial (see ASX announcement 9th October 2019). These results achieved the target grade, averaging 99.99% Al<sub>2</sub>O<sub>3</sub> (4N HPA) and validates the flowsheet design for our Cadoux HPA project.

FYI's pilot plant trial production was designed to test functional operations of its innovative HPA flowsheet design and to observe and analyse the continuous "end to end" process operation for scale up factors for inclusion into the proposed full-scale commercial plant.

Using kaolin feedstock from the Cadoux mining lease, FYI completed two pilot plant trial product phases: one phase comprised a standard process, the second phase included an optimised trial which included flowsheet and materials handling modifications to the plant to test the potential to improve upon the targeted 4N HPA.

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

The EAG Laboratories confirmed that each phase achieved an average grade exceeding the target purity of 99.99% Al<sub>2</sub>O<sub>3</sub>.

EAG laboratories GDMS results for the second phase of pilot plant tests were:

GDMS HPA Analysis	
Sample #	Al <sub>2</sub> O <sub>3</sub> %
1	99.995
2	99.997
3	99.994
4	99.993
<b>Average</b>	<b>99.995</b>

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### Pilot plant results implications

The pilot plant trials were extremely encouraging and well supported by the above target results. Importantly for product development, the trials provided verification of the previous "bench top" test work (the batch, locked cycle and variability testing) and the other supporting tests undertaken and incorporated into the design and construction of the pilot plant.

In addition to demonstrating that the production of target grade  $> 99.99\%$   $\text{Al}_2\text{O}_3$  is possible on a continuous basis from the Cadoux kaolin feed material, the pilot plant also provided valuable processing, operational and materials handling information that will be used to improve the engineering design criteria for a full-scale plant including the various unit processes, recycle streams, mass balances and materials of construction.

Pleasingly, it was noted that through trialing minor modifications to the pilot plant, the HPA process efficiency and yield could be improved incrementally resulting in potentially increased economic production.



### FYI tours of HPA pilot plant facility to key customer and finance groups

FYI conducted a number of pilot plant tours for strategic groups and media to view the continuous HPA refining process in operation from "end to end" utilising kaolin, sourced from the Company's 100% owned Cadoux project, as feedstock.

The visitor groups were invited on the basis of their current and/or future involvement and support of FYI's HPA strategy and include potential customers, commodity traders, project investors and financiers, government, researchers, Future Battery Industry representatives and media.



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Over the development phase of the definitive DFS, FYI recognised several core objectives for the pilot plant. They included:

- a full demonstration of the complete “end to end” process allowing the observation of the operating characteristics of the innovative process flowsheet developed for FYI’s HPA strategy;
- several important results (both positive and negative) from this trial have provided important insights to optimise economic parameters such as recoveries, flow rates, materials handling, and opex and capex costs;
- having access to the facility allows the visitor groups to be more deeply informed as a potential partner regarding the innovative flowsheet and of FYI’s long-term development strategy;
- allows for more meaningful due diligence by interested parties; and
- the high-quality output produced by the pilot plant will be utilised for product qualification and negotiations with potential off-take parties.

### **FYI receives Kwinana site approval to advance HPA production strategy**

FYI received approval from LandCorp for the lease of a prime 6-hectare industrial site in the Kwinana Industrial Area (KIA) as the location for its proposed HPA production facility where the Company intends to refine the kaolin feedstock from its Cadoux project into HPA.

The KIA is part of the greater Western Trade Coast, Western Australia’s premier industrial area. This strategic zone is widely recognised as a manufacturing, engineering, chemical and resource processing and refining hub boasting a number of leading industrial and resource refining companies as proponents. Amongst the many benefits of locating in the KIA, is the synergies and economies available between the participating industries operating in the zone. In locating its HPA refinery in the KIA, FYI can benefit from the existing infrastructure, cheaper input costs, transport links and accessibility and available skilled workforce.

### **KIA selection and approval criteria**

In order to be offered a site within the KIA, FYI had to demonstrate a number of key attributes including contributing to sustainable development, social advancement, technology breakthroughs or innovations, environmental protection that go beyond regulation, and the potential for a sustainable future.

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Schematic location diagram of FYI's HPA refinery site in Kwinana Industrial Area

### R&D tax rebate payments

FYI received an R&D tax incentive rebate payment of \$777,631 during the December quarter.

The R&D tax incentive rebate is an Australian Federal Government initiative jointly administered by AusIndustry and the Australian Taxation Office under which eligible companies can receive cash refunds of up to 43.5% of all eligible expenditure on designated research and development projects.

The rebate payment relates to FYI's expenditure on the development of the Company's innovative process design to refine HPA from aluminous clay (kaolin).

The R&D rebates are directed towards the continued development of the Company's HPA strategy of being a fully integrated, low-risk, low-cost producer of high purity alumina products.

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## Corporate

As at 31 December 2019, FYI's cash at bank was approximately \$416,000.

With the technical studies associated with the DFS now largely completed, the ongoing corporate cash burn rate is expected to reduce significantly following the release of the study report. The Company is actively pursuing long term project finance alternatives as well as funding for ongoing working capital and support of the capital requirements for the HPA project.

## Planned March Quarter Activities

- finalising and publication of the HPA feasibility study (DFS)
- progressing customer engagement
- continued HPA product development
- advance project financing
- progress Kwinana refinery site
- advance HPA project to final investment decision (FID)

## For more information please contact:

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## About FYI Resources Limited

FYI's is positioning itself to be a significant producer of high purity alumina (HPA) in the rapidly developing light emitting diode (LED) and phosphor applications and the electric vehicle and static power storage markets as well as other associated high-tech product markets.

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

FYI is progressing positively with its DFS supporting a planned production of 4N and 5N HPA following the successful pilot plant trial achieving the targeted production grade of 99.99% Al<sub>2</sub>O<sub>3</sub>.



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### **Interest in Mineral Tenements at 31 December 2019**

<b>Tenement</b>	<b>Location</b>	<b>Interest at the beginning of the quarter</b>	<b>Interest at the end of the quarter</b>
E70/4673	Western Australia	100%	100%
E70/5145		100%	0%
M70/1388		100%	100%
WMM SPLs (6)	Thailand	100% (under application)	100% (under application)

### **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 metallurgical results are available to view on the Company's website at [www.fyiresources.com.au](http://www.fyiresources.com.au).

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 and that all material assumptions and technical parameters underpinning the estimate 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 announcement.

## Appendix 5B

### Mining exploration entity and oil and gas exploration entity quarterly report

Introduced 01/07/96 Origin Appendix 8 Amended 01/07/97, 01/07/98, 30/09/01, 01/06/10, 17/12/10, 01/05/13, 01/09/16

**Name of entity**

FYI Resources Limited

**ABN**

85 061 289 218

**Quarter ended ("current quarter")**

31 December 2019

<b>Consolidated statement of cash flows</b>	<b>Current quarter \$A'000</b>	<b>Year to date (6 months) \$A'000</b>
<b>1. Cash flows from operating activities</b>		
1.1 Receipts from customers	-	-
1.2 Payments for		
(a) exploration & evaluation	(526)	(1,455)
(b) development	-	-
(c) production	-	-
(d) staff costs	(76)	(136)
(e) administration and corporate costs	(71)	(119)
1.3 Dividends received (see note 3)	-	-
1.4 Interest received	-	1
1.5 Interest and other costs of finance paid	(36)	(36)
1.6 Income taxes paid	-	-
1.7 Research and development refunds	778	778
1.8 Other	-	-
<b>1.9 Net cash from / (used in) operating activities</b>	<b>69</b>	<b>(967)</b>
<b>2. Cash flows from investing activities</b>		
2.1 Payments to acquire:		
(a) property, plant and equipment	-	-
(b) tenements (see item 10)	-	-
(c) investments	-	-
(d) other non-current assets	-	-

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<b>Consolidated statement of cash flows</b>		<b>Current quarter \$A'000</b>	<b>Year to date (6 months) \$A'000</b>
2.2	Proceeds from the disposal of:		
	(a) property, plant and equipment	-	-
	(b) tenements (see item 10)	-	-
	(c) investments	-	-
	(d) other non-current assets	-	-
2.3	Cash flows from loans to other entities	-	-
2.4	Dividends received (see note 3)	-	-
2.5	Other (provide details if material)	-	-
<b>2.6</b>	<b>Net cash from / (used in) investing activities</b>	<b>-</b>	<b>-</b>
<b>3.</b>	<b>Cash flows from financing activities</b>		
3.1	Proceeds from issues of shares	-	-
3.2	Proceeds from issue of convertible notes	-	-
3.3	Proceeds from exercise of share options	-	-
3.4	Transaction costs related to issues of shares, convertible notes or options	-	(6)
3.5	Proceeds from borrowings	750	999
3.6	Repayment of borrowings	(550)	(550)
3.7	Transaction costs related to loans and borrowings	-	-
3.8	Dividends paid	-	-
3.9	Other	-	-
<b>3.10</b>	<b>Net cash from / (used in) financing activities</b>	<b>200</b>	<b>443</b>
<b>4.</b>	<b>Net increase / (decrease) in cash and cash equivalents for the period</b>		
4.1	Cash and cash equivalents at beginning of period	147	940
4.2	Net cash from / (used in) operating activities (item 1.9 above)	69	(967)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	-	-
4.4	Net cash from / (used in) financing activities (item 3.10 above)	200	443
4.5	Effect of movement in exchange rates on cash held	-	-
<b>4.6</b>	<b>Cash and cash equivalents at end of period*</b>	<b>416</b>	<b>416</b>

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## Mining exploration entity and oil and gas exploration entity quarterly report

<b>5. Reconciliation of cash and cash equivalents</b> at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts	<b>Current quarter \$A'000</b>	<b>Previous quarter \$A'000</b>
5.1 Bank balances	416	147
5.2 Call deposits	-	-
5.3 Bank overdrafts	-	-
5.4 Other (provide details)	-	-
<b>5.5 Cash and cash equivalents at end of quarter (should equal item 4.6 above)</b>	<b>416</b>	<b>147</b>

**6. Payments to directors of the entity and their associates**

- |  | <b>Current quarter<br/>\$A'000</b> |
|--|------------------------------------|
| 6.1 Aggregate amount of payments to these parties included in item 1.2                                   | 76                                 |
| 6.2 Aggregate amount of cash flow from loans to these parties included in item 2.3                       | -                                  |
| 6.3 Include below any explanation necessary to understand the transactions included in items 6.1 and 6.2 |                                    |

Payment of fees to executive and non-executive directors including superannuation.

**7. Payments to related entities of the entity and their associates**

- |  | <b>Current quarter<br/>\$A'000</b> |
|--|------------------------------------|
| 7.1 Aggregate amount of payments to these parties included in item 1.2                                   | -                                  |
| 7.2 Aggregate amount of cash flow from loans to these parties included in item 2.3                       | -                                  |
| 7.3 Include below any explanation necessary to understand the transactions included in items 7.1 and 7.2 |                                    |

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8. <b>Financing facilities available</b> <i>Add notes as necessary for an understanding of the position</i>	Total facility amount at quarter end \$A'000	Amount drawn at quarter end \$A'000
8.1 Loan facilities	-	-
8.2 Credit standby arrangements	-	-
8.3 Other (advance on estimated R&D tax rebate)	750	750
8.4 Include below a description of each facility above, including the lender, interest rate and whether it is secured or unsecured. If any additional facilities have been entered into or are proposed to be entered into after quarter end, include details of those facilities as well.		

The Company has arranged the forward payment of its estimated 2020 R&D tax rebate through Innovative Technology Funding Pty Ltd. The advance is for up to \$750,000 being 80% of its expected tax rebate resulting from eligible R&D expenditure for the current financial year. The principal and accrued interest (at 15% p.a.) for the facility is repayable out of the actual tax refunded. The facility is for a maximum of 12 months and is secured against the Company's R&D offset rebate.

9. <b>Estimated cash outflows for next quarter</b>	\$A'000
9.1 Exploration and evaluation	(670)
9.2 Development	-
9.3 Production	-
9.4 Staff costs	(77)
9.5 Administration and corporate costs	(31)
9.6 Other (provide details if material)	-
<b>9.7 Total estimated cash outflows</b>	<b>(778)</b>

10. <b>Changes in tenements (items 2.1(b) and 2.2(b) above)</b>	Tenement reference and location	Nature of interest	Interest at beginning of quarter	Interest at end of quarter
10.1 Interests in mining tenements and petroleum tenements lapsed, relinquished or reduced	E70/5145 (WA)	Direct	100%	0%
10.2 Interests in mining tenements and petroleum tenements acquired or increased				

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### Compliance statement

- 1 This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.
- 2 This statement gives a true and fair view of the matters disclosed.

Sign here:



Company secretary

Date: 31 January 2020

Print name: Phillip MacLeod

### Notes

1. The quarterly report provides a basis for informing the market how the entity's activities have been financed for the past quarter and the effect on its cash position. An entity that wishes to disclose additional information is encouraged to do so, in a note or notes included in or attached to this report.
2. If this quarterly report has been prepared in accordance with Australian Accounting Standards, the definitions in, and provisions of, AASB 6: Exploration for and Evaluation of Mineral Resources and AASB 107: Statement of Cash Flows apply to this report. If this quarterly report has been prepared in accordance with other accounting standards agreed by ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standards apply to this report.
3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.