

Pilgangoora: a world class lithium and tantalum project



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Dale Henderson, Chief Operating Officer
June Quarterly Results Call
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ASX: PLS

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Competent Persons Statements

The Company confirms it is not aware of any new information or data that materially affects the information included in the 17 September 2018 Pilgangoora Mineral Resource estimate and that all material assumptions and technical parameters underpinning the estimate continue to apply and have not materially changed when referring to its resource announcement made on 17 September 2018.

The Company confirms it is not aware of any new information or data that materially affects the information included in the 17 September 2018 Pilgangoora Ore Reserve estimate and that all material assumptions and technical parameters underpinning the estimate continue to apply and have not materially changed when referring to its resource announcement made on 17 September 2018.

The information in this presentation that relates to Exploration Results and Exploration Targets is based on and fairly represents information and supporting documentation prepared by Mr John Holmes (full-time Exploration and Geology Manager of Pilbara Minerals Limited). Mr Holmes is a shareholder of Pilbara Minerals. Mr Holmes is a member of the Australasian Institute of Geoscientists and has sufficient experience of relevance to the styles of mineralisation and types of deposits under consideration, and to the activities undertaken to qualify as Competent Persons as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Holmes consents to the inclusion in this report of the matters based on his information in the form and context in which they appear.

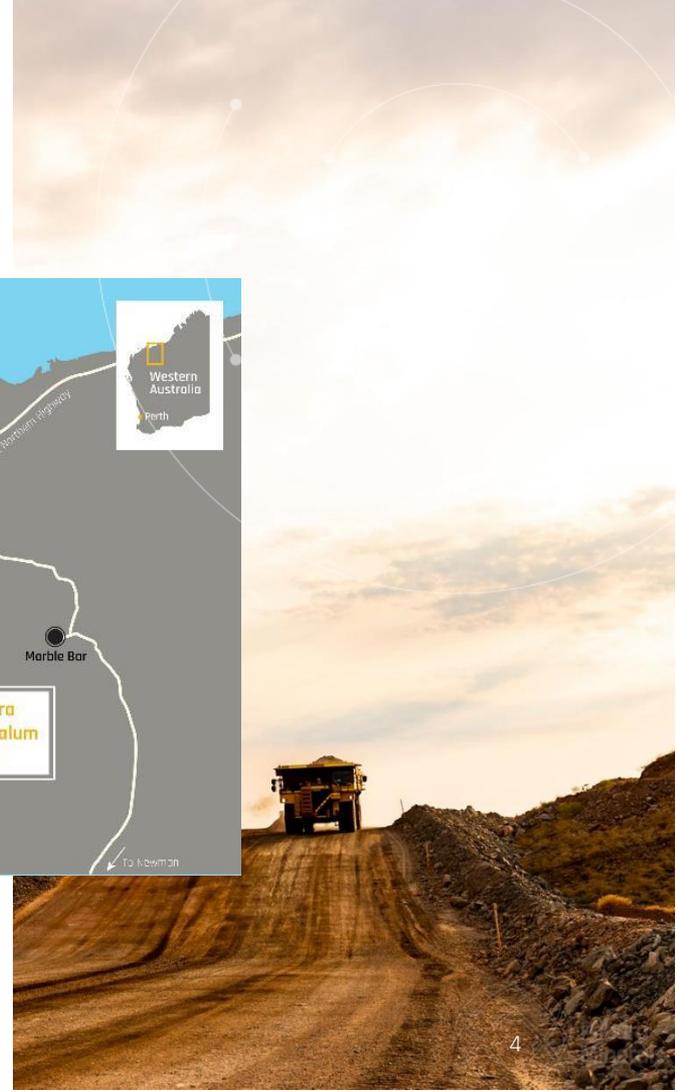
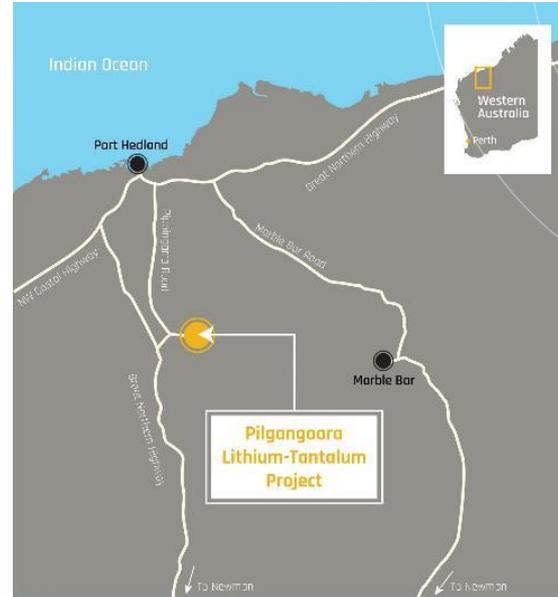
No New Information – Production Targets and Forecast Financial Information

The Company confirms that it is not aware of any new information or data that materially affects the information included in the announcement dated 26 March 2019 “Stage 3 Scoping Study Outcomes” and 17 September 2018 “Pilgangoora Resource and Reserve Upgrade”, and that all material assumptions and technical parameters underpinning the production targets, forecast financial information and estimates in those announcements continue to apply and have not materially changed.

Highlights June Quarter 2019

Production and sales growth continues with outstanding exploration success and POSCO JV DD complete with respective board decisions in Sept Quarter

- **Growth in production** - 63,782 dmt of spodumene concentrate despite scheduled shut-down (March quarter 52,196 dmt)
- **Increased quarterly shipping**
 - 43,214 dmt of spodumene concentrate (SC6.0)
 - 38,538 lbs tantalite concentrate (+5% Ta₂O₅)
- **High quality product** - grade shipped 6.0% Li₂O and 1.2% Fe₂O₃
- **Stage 1 offtake agreement** - signed with Great Wall Motor Company
- **Outstanding exploration results** – highlight potential in resource growth at Pilgangoora Project
- **Downstream participation and Korean sales** - POSCO JV DD complete and in-principle agreement on JV terms, with FID and approval by both boards expected in Sept Quarter



Production Summary

Growth in mine production and shipping during the June Quarter

Production

	Units	Q4 FY18	Q1 FY19	Q2 FY19	Q3 FY19	Q4 FY19	FY19 Total
Direct shipping ore (DSO) sold	<i>wmt</i>	145,974	205,766	0 ¹	0 ¹	0 ¹	205,766
Spodumene concentrate produced	<i>dmt</i>	-	11,015	47,859	52,196	63,782	174,852
Spodumene concentrate shipped	<i>dmt</i>	-	0	46,598	38,562	43,214	128,373
Tantalite concentrate produced	<i>lb</i>	-	22,151	56,663	33,374	67,075	180,077
Tantalite concentrate sold	<i>lb</i>	-	7,378	27,821	30,356	38,538 ²	104,062 ²

¹ The DSO program was suspended in Q2 FY19.

² Sales estimates pending final assays results.

Stocks

	Units	Q1 FY19	Q2 FY19	Q3 FY19	Q4 FY19
ROM stockpile	<i>wmt</i>	N/A ¹	487,292	520,606	685,912
Coarse ore stockpile	<i>wmt</i>	N/A ¹	82,430	96,139	83,620
Spodumene concentrate stocks	<i>dmt</i>	17,677 ²	17,266 ²	30,900 ²	51,468 ²
Tantalite concentrate product stocks	<i>lb</i>	14,774	43,616	46,634	75,171

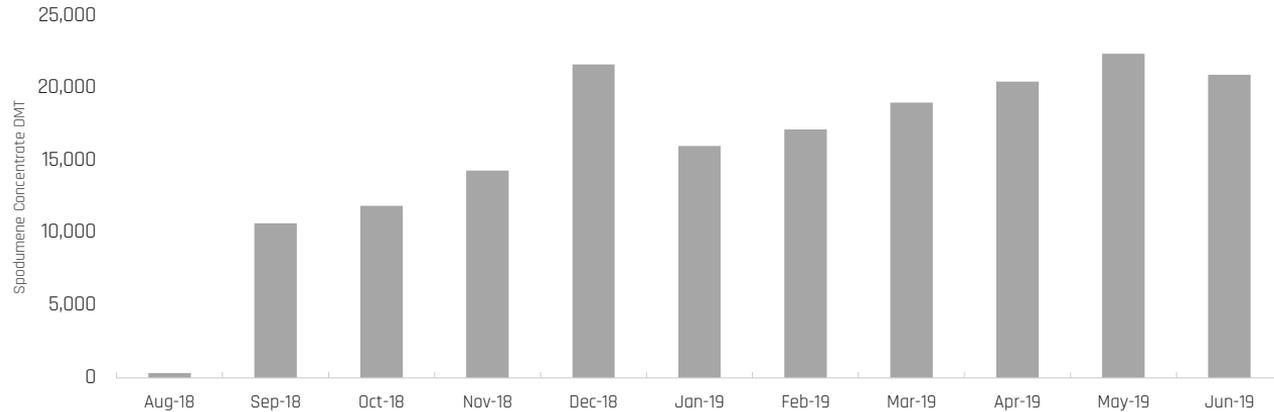
¹ No previous reporting for period due to completion of build and commissioning phase.

² Includes lower-specification stocks produced (incl. tonnes produced during initial commissioning phase), which are expected to be sold or blended to SC6.0 product over time.

Production trend

Plant throughput and utilisation continue to meet expectations and support consistent production growth over the financial year

Spodumene concentrate production (dmt)



- Nominal 5 day planned shut-down of the concentrator executed in mid June to rectify prior works performed by the EPC contractor and progress improvements works
- Recovery improvements over the Quarter achieved highest rate since commencement of operations at 55%, representing 73% of targeted design recovery (75%)
- Further improvements works planned over H2 CY2019 targeting to improve lithia recovery and achieve design recovery of 75%

- A total of 63,782 dmt (dry metric tonnes) spodumene concentrate produced during the June Quarter

Plant performance

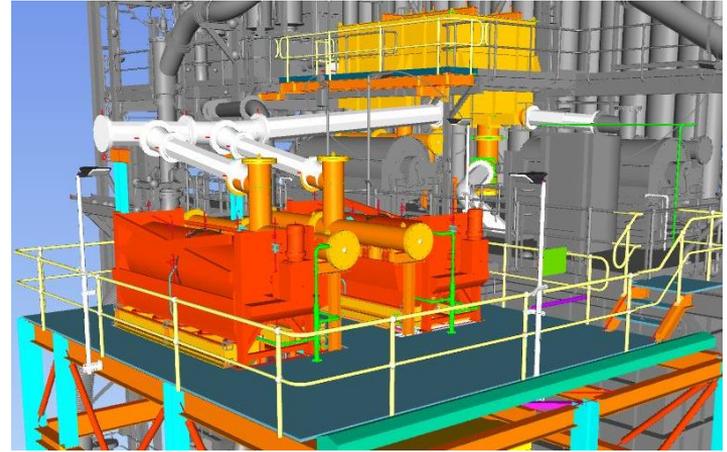
Continued Improvement / Optimisation projects progressing

Continued improvement for quarter;

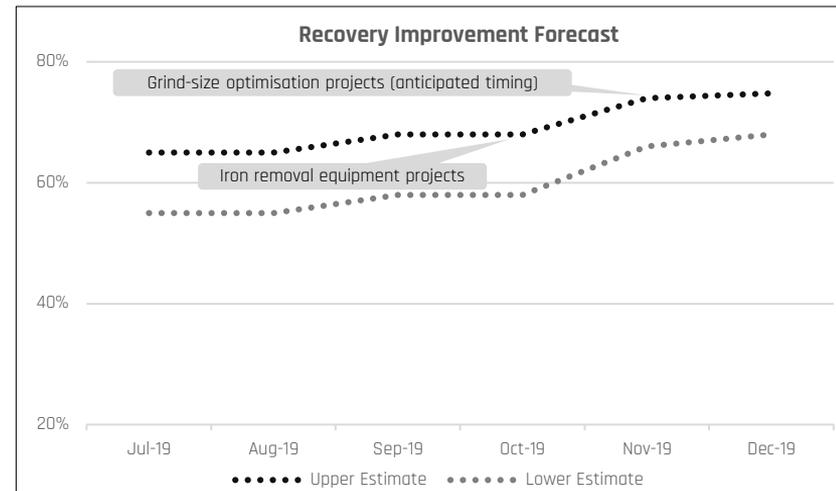
- Highest quarterly production to date 63,782 dmt
- Product quality remains strong (6.0% Li_2O , 1.2% Fe_2O_3), with growing recovery to product
- Excellent plant throughput and utilisation, with Stage 1 plant design criteria readily achieved during the June Quarter
- Completed rectification works - filter press improvements, ore presentation to iron removal system within DMS and replacement of non-specification valves (and piping)

Improvement projects for H2 CY19;

- Fines product circuit - grind-size optimisation analysis completing. Project implementation anticipated for Q4 CY19
- Fines product circuit - iron removal equipment expansion for LIMS (Q4 CY19) and WHIMS modifications (Q3 CY19)
- Valving and piping replacement for non-specification components
- Further improvement programs in progress - process controls, fines product flotation circuit optimisation and de-bottle necking opportunities



Above: Fines product circuit iron removal equipment (low intensity magnetic separation – “LIMS”) designed and in manufacture. LIMS primary purpose is removal of introduced iron from ball milling circuit.



Corporate update

POSCO DD complete with downstream JV progressing towards approval by respective boards in the Sept Quarter, with partnering process well progressed

Operating metrics – June Qtr

- Price received of USD\$644/dmt CFR China
- Cash operating costs¹ of USD\$528/dmt CFR China
 - Representative of ramp up and optimisation status as plant progresses towards name-plate capacity
 - Costs expected to target towards USD\$320-350/dmt CFR China by Q4 FY20 with anticipated improvements in recovery, plant stability and plant optimisation expected to contribute to the achievement of nameplate capacity

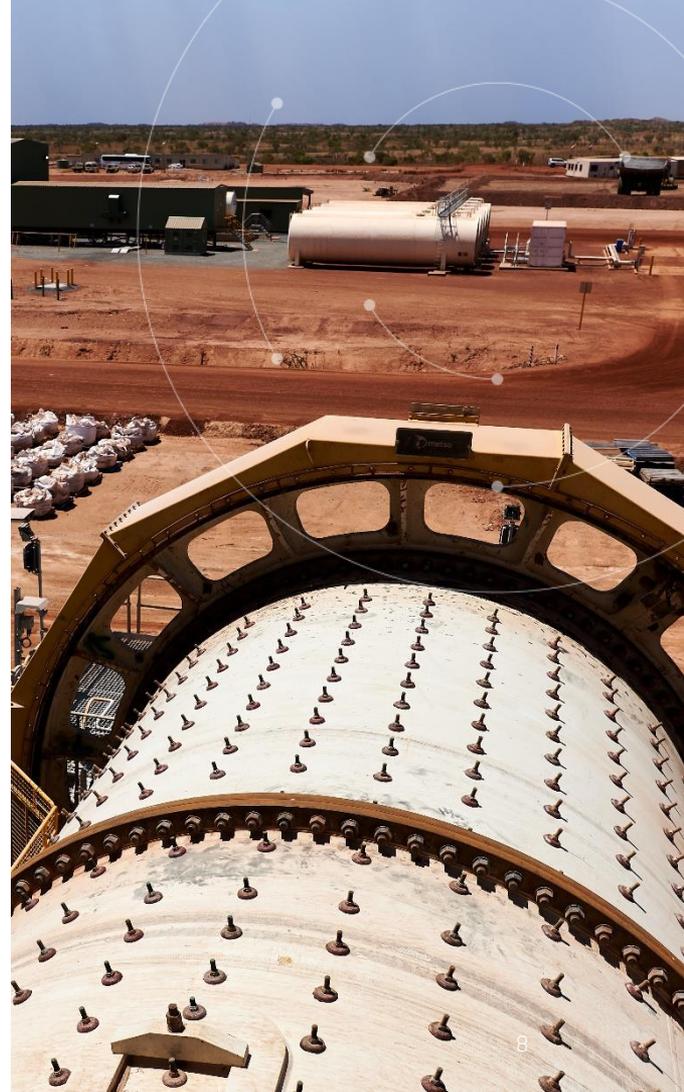
Cash balance

- \$63.6M cash in bank as of 30 June 2019
- Proceeds of A\$30.8M received largely from concentrate sales
- 51,468 dmt product stocks on hand

Proposed 30% lithium hydroxide JV with POSCO

- Due diligence complete and in-principle agreement reached on final JV terms. Formal transaction documents well progressed
- Final investment decision and approvals from both boards expected in Sept Quarter

Note 1: Cash operating costs include mining, processing, transport, state and private royalties, native title costs, port, shipping/freight costs, site based general and administration costs and is net of Ta₂O₅ credits



Production and sales update

Short term operational changes to support customer requirements, with operation expected to return to full capacity in the December Quarter

- Moderated production and sales until October in response to customer requirements
- Delay in the construction and commissioning of Stage 1 customers', Ganfeng and General Lithium, conversion plants in China
- Provides an opportunity to undertake plant improvement and rectification items of the prior Stage 1 EPC contract works
- Recent Stage 1 customer engagement signals production and sales to return to envisaged plant capacity in the December quarter
- Customer engagement continues.
- Further offtake agreement signed with Great Wall Motor Company for Stage 1 offtake, first shipment targeted for August

* Based on current expected market conditions and prior customer engagement

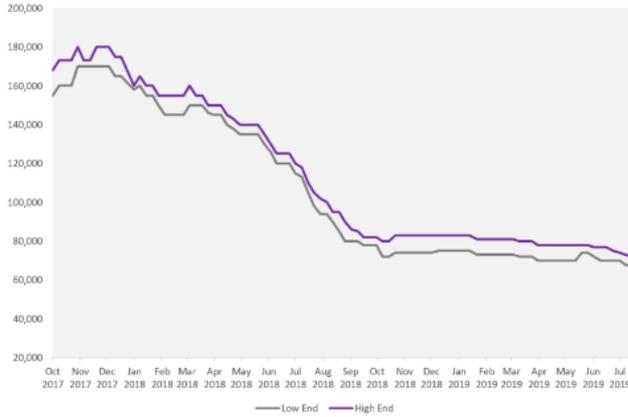


Global lithium chemicals pricing

Source: FastMarkets MB, Friday Jul 12 2019

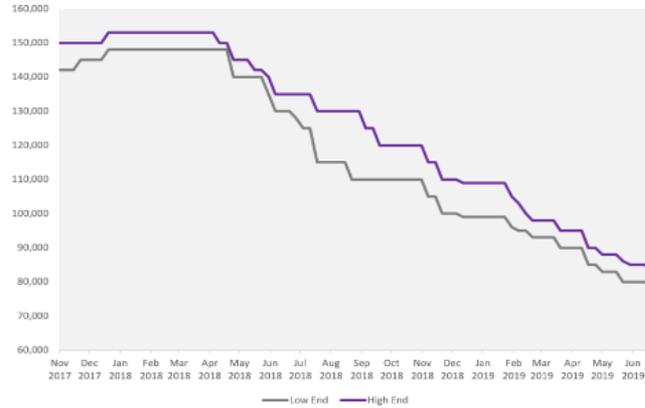
Lithium carbonate ex-works domestic China

Lithium carbonate min 99.5% Li_2CO_3 battery grade, ex-works domestic China, yuan per tonne



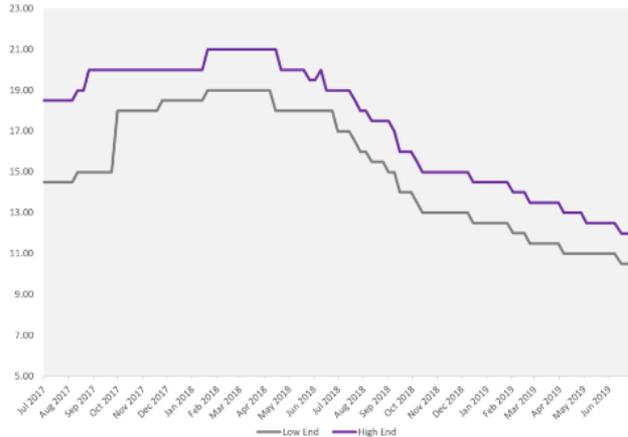
Lithium hydroxide ex-works China

Lithium hydroxide monohydrate min 56.5% $\text{LiOH}\cdot\text{H}_2\text{O}$ battery grade, ex-works domestic China, yuan per tonne



Lithium carbonate cif China, Japan and Korea

Lithium carbonate min 99.5% Li_2CO_3 battery grade, CIF China, Japan & Korea, \$ per kg



Lithium hydroxide cif China, Japan and Korea

Lithium hydroxide monohydrate min 56.5% $\text{LiOH}\cdot\text{H}_2\text{O}$ battery grade, CIF China, Japan & Korea, \$ per kg



China domestic pricing under pressure for the last 18 months as a function of central govt subsidy changes

Ex-China pricing weakening (even in the face of increasing demand), as export capacity comes out of China to Japan and Korea



Where is all the lithium (at the right quality) going to come from?



LONG TERM CONTRACTS

10+ year battery supply agreement LG Chem and CATL (**VW**)

10 year lithium supply agreement with Ganfeng Lithium (**Volvo**)

\$4.7B battery supply contract with CATL (**BMW**)



MAJOR COMMITMENTS

“Over the next 10 years **VW** will be launching 70+ new pure EVs...”

“The future of **Volvo** is electric and we are firmly committed to moving beyond the internal combustion engine”

“By 2025, **BMW** will offer 25 electrified models”

MASSIVE PLANS

SK Innovation plans to ramp up annual output from 5GWh to **100 GWh** by 2025
The Korea Herald, 27 May 2019

Asia-based battery companies and global carmakers are planning to spend **\$300B** on EV technology over the decade
Reuters, 15 May 2019

POSCO to expand global market share of battery material supply by 20% or **\$15.22B** of sales by 2030
POSCO, 6 March 2019



BIG TARGETS

Fully electric cars to make up 50% of **VW** global sales volume by 2025 (VW)

All new cars launched by **Volvo** from 2019 onwards will be partially or completely battery-powered

By 2025, electrified vehicles expected to account for between 15-25% of **BMW** sales

Stage 3 partnering process

Partners to be considered for Stage 3 offtake, chemical plant and project expansion

**Potential sale of
minority project
level interest
20 - 49%**

**Support funding
package Stage 2
and 3 expansion**

**Stage 3 offtake
and further
diversification
downstream**

**Fully integrated
lithium raw
materials and
chemicals supplier**

What sets us apart?

1



World class lithium resource

The Pilgangoora Project is one of the premier hard-rock lithium-tantalum resources globally (by size and grade) where there is both spodumene concentrate offtake and a joint venture position available, with Tantalite by-product credits.

2



Low cost operation

Forecast LOM cash cost of US\$291/t¹ (net of tantalum by-products) with the Pilgangoora Project's cost position benefiting from high grade, scalable mining operations, low strip ratio and tantalum by-products.

3



Quality product and customers

Pilbara Minerals has secured long-term offtake arrangements with world-class customers to support Stage 1 and Stage 2 production and has consistently delivered high quality products to market that meet customer requirements.

4



Clear expansion pathway

A three-phased growth strategy that includes expansion to 7.5Mtpa processing capacity (1.2Mtpa spodumene concentrate), development of a lithium hydroxide conversion facility and exploration target set to drive mine life extension.

5



Proven operator

Pilbara Minerals has a highly experienced management team who have led the Pilgangoora Project from first drill hole to production in under 4 years and successfully met high quality 6% battery grade product requirements.

6



Exploration upside

Pilbara Minerals plans to extend the mine life of the Pilgangoora Project through Resource conversion and further discoveries from its 50 - 90Mt of exploration targets which include potential near-surface tonnes.

7



Diversification into downstream processing

Through its joint venture with POSCO and the evaluation of a proposed secondary lithium chemical conversion facility in either Australia or overseas, Pilbara Minerals is positioned to expand its operations into the high-value lithium chemical market.

1. Metrics based upon Pilbara Minerals' Stage 3 Scoping Study, constrained by JORC Reserves of 108Mt



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