



ASX ANNOUNCEMENT

20 September, 2016

## PILGANGOORA DEFINITIVE FEASIBILITY STUDY CONFIRMS WORLD-CLASS AUSTRALIAN LITHIUM PROJECT

*Positive DFS on 2Mtpa base case paves way for project financing and development*

### Highlights:

- Pilbara's Board endorses the Definitive Feasibility Study ("DFS") for the **base case, 2Mtpa development of the 100%-owned Pilgangoora Lithium-Tantalum Project** in the Pilbara of Western Australia based on existing project reserves, with key outcomes including:
  - *Outstanding project economics, Post-tax NPV<sup>1</sup><sub>10%</sub> of **A\$709M** (March 2016 PFS: A\$407M) with robust margins, rapid payback (2.7 yrs) and strong IRR (38.1%);*
  - *Average annual production of approximately **314ktpa** of 6% spodumene concentrate (44ktpa LCE) and **321,000lbs** pa of tantalite;*
  - *Globally competitive cash operating costs<sup>2</sup> of US\$196/tonne CFR<sup>3</sup> for first 15 years and LOM cash operating costs<sup>2</sup> of **US\$207/tonne CFR<sup>3</sup>** reflecting Pilgangoora's scale, location, grade and product quality;*
  - *Forecast life-of-mine project revenue of **A\$9.23 billion** and project EBITDA of **A\$4.22 billion** over an estimated **36-year mine life**; and*
  - *Modest capital cost increase to **A\$214M** (March 16 PFS: A\$184M) arising from upfront investment to facilitate future substantial project growth and support improved lithium and tantalum recoveries.*
- Project on track for construction in 4<sup>th</sup> quarter CY2016 and commissioning from late 2017.
- Positive Pre-Feasibility Study (PFS) also completed to assess a future expansion option of the Pilgangoora Project to achieve 4Mtpa run-of-mine ore production and processing capacity, subject to further engineering studies and future market conditions (*see separate ASX Announcement today*).

***Pilbara Minerals will host a conference call on the DFS results for analysts, brokers, funds and media at 12.30pm (AEST) / 10.30am (AWST) today, Tuesday 20 September. The call can be accessed by investors via webcast at:***

<http://boardroom.media/broadcast/?refid=&eid=57db2824624fa8d523cf2fc2>

Australian lithium developer Pilbara Minerals Ltd (ASX: PLS) is pleased to advise that it has completed the Definitive Feasibility Study (DFS) on the initial 2Mtpa development of its flagship 100%-owned Pilgangoora Lithium-Tantalum Project in WA, with the results confirming the Project's exceptionally strong financial and technical merits and putting the Company on track to become Australia's next major lithium producer.

The DFS confirms the Pilgangoora Project's globally competitive forecast cash operating costs, robust margins, long life and exceptional economic returns – as well as its ability to scale-up to meet expected growing demand for lithium raw materials over the next decade.

In light of the substantial growth in the Pilgangoora Resource and Reserve during the year and the exceptionally strong outlook for global lithium demand, a separate Pre-Feasibility Study (PFS) has also

been completed on an expanded 4Mtpa production option. The results of this study have been provided in a separate ASX announcement today.

The highly successful DFS provides a strong platform for the Company to complete additional project off-take arrangements (in addition to its existing off-take agreement with General Lithium), secure project financing and commence construction – which is targeted to commence in the fourth quarter of CY2016 with commissioning targeted during Q4 CY2017.

### Summary of Key DFS Outcomes

Based on the proposed 2 million tonne per annum (Mtpa) stand-alone mining and processing operation, the DFS indicates that Pilgangoora will be a robust, high margin project with current forecast life-of-mine revenue of A\$9.23 billion and LOM Project EBITDA of A\$4.22 billion over an estimated 36-year mine life.

For the first 15 years of operations, revenues are expected to be A\$4.11 billion generating Project EBITDA of A\$1.99 billion (real).

A summary of the key DFS outcomes is provided below:

Study Outcomes	DFS – 2Mtpa Base case
Estimated Mine Life	36 years
<b>LOM Project revenue (real)</b>	<b>A\$9.23 billion</b>
<b>LOM Project EBITDA (pre-tax; real)</b>	<b>A\$4.22 billion</b>
Pre-production capital <sup>4</sup>	A\$214 million
<b>Post-tax NPV<sup>1-10%</sup></b>	<b>A\$709 million</b>
Internal Rate of Return (IRR)	38.1%
<b>LOM cash operating costs<sup>2</sup> (real, net of Ta<sub>2</sub>O<sub>5</sub> credits)</b>	<b>US\$207/tonne CFR<sup>3</sup></b>
Project payback	~2.7 years
<b>Average Annual EBITDA (real)</b>	<b>A\$121 million</b>
LOM assumed spodumene concentrate price (real)	US\$537/tonne CFR <sup>3</sup>
<b>First 15 years cash operating costs<sup>2</sup> (real, net of Ta<sub>2</sub>O<sub>5</sub> credits)</b>	<b>US\$196/tonne CFR<sup>3</sup></b>
First 15 years average annual EBITDA (real)	A\$133 million

1. NPV discount factors are presented on a nominal basis.
2. Cash operating costs include all mining, processing, transport, port, shipping/freight and site based general and administration costs, and an allocation of corporate administration/overhead cost, are net of Ta<sub>2</sub>O<sub>5</sub> by-product credits, but exclude state, and private royalties and native title costs.
3. CFR (“Cost and Freight”) is a trade term requiring the seller to arrange transport.
4. Pre-production capital costs exclude capitalised pre-production operating costs estimated to be \$10M.

Pilbara Minerals Managing Director & CEO Ken Brinsden said the completion of the highly successful Definitive Feasibility Study on a base case 2Mtpa development of the Pilgangoora Project within just six months of the March 2016 PFS was a huge achievement which put the Company firmly on track to become Australia’s next major lithium producer – and a key player in the rapidly changing global lithium landscape.

“The DFS results show a significant improvement in several key areas compared with the PFS, including a significant increase in the project’s Net Present Value (NPV<sub>10%</sub> post-tax) to A\$709 million and an Internal Rate of Return to 38.1%, combined with more accurate estimates of capital and operating costs,” Mr Brinsden said.

“What stands out from the vast amount of work that has been completed as part of the DFS is the exceptional technical, economic and financial fundamentals of the Pilgangoora Project – which is without doubt the world’s leading lithium development project, characterised by the scale, grade and quality of the resource, its low forecast operating costs and its scalability.

“We have long believed that Pilgangoora represents an enormously valuable strategic asset that has the potential to become a globally significant source of lithia raw materials,” he said. “The favourable results

from the DFS strongly support that belief, and provide us with the framework now to progress this world-class asset towards financing and production.”

“As previously foreshadowed, given the significant increase in the Pilgangoora Resource and Reserve base over the course of the year, we have also completed a Pre-Feasibility Study to assess the potential to double production from Pilgangoora to 4Mtpa from year three as an expansion option. This work has also delivered very compelling results which clearly would take the project to a new level. The results of the PFS on a 4Mtpa project option are outlined in a separate ASX announcement released today.

“In the interests of achieving an orderly entry of the Pilgangoora product to the market, the project will commence at the base case level of 2Mtpa. However, we are confident that the growth in the market is such that we should be able to fast-track the expansion option after further engineering studies and market analysis. With this in mind, the Company has decided to commit to some modest strategic upfront capital investment as part of the initial production phase to support future expansion,” he added.

“We will now further assess this opportunity, which would position us to fully capitalise on the outstanding market opportunity for lithium, underpinned by the transformational growth in the use of lithium-ion batteries which is occurring across the world.”

“The price assumptions in the DFS are based on a ‘consensus’ price forecast established from the average of input data from four globally recognised experts which at this point in time appear quite conservative in comparison to the current Chinese domestic and import price data,” Mr Brinsden said.

## DISCUSSION

Pilbara’s Pilgangoora definitive feasibility work has been completed to a high standard with the assistance of a group of highly experienced independent consultants and contractors, including:

- Process Plant Infrastructure and Non-Process Infrastructure – Como Engineers;
- Metallurgical Testwork – Como Engineers;
- Geology and Resources – Trepanier Pty Ltd and Pilbara Minerals Ltd;
- Mining, Mine Design and Reserves – MiningPlus;
- Tailings Management Facility and Geotechnical – ATC Williams;
- Hydrogeology and Hydrology – Groundwater Resource Management; and
- Financial Modelling – MJA Consulting.

DFS outcomes are based on a life-of-mine average spodumene concentrate price of US\$537/tonne CFR, which is well below the current spot price of approximately US\$650/tonne FOB (SC6.0 basis).

The Company’s DFS pricing deck has been based on price forecasts from leading independent commodity forecasters and leading investment banks and brokers including: Roskill, Deutsche Bank, Canaccord and Benchmark Minerals to create a ‘consensus’ price forecast for both Battery Grade Lithium Carbonate and spodumene concentrate pricing.

DFS product pricing and sales revenue outcomes reflect the pricing model agreed under the General Lithium off-take model (which references spodumene pricing to the Battery Grade lithium carbonate price), with the remaining concentrate sales outside the General Lithium contract referencing the consensus spodumene price forecast.

In comparison to the 2Mtpa Pre-Feasibility Study published in March 2016, the capital expenditure estimate has increased by approximately A\$30 million. The increase in capital expenditure is primarily due to the increase in the scale of the project from the PFS to the DFS and the revised process-flow design, which has resulted in several changes of scope plus additional process plant and equipment, some of which allows for the easy scalability to 4Mtpa in the future.

Key scope changes include:

- An increase in the primary crusher capacity from 2Mtpa to 4Mtpa;
- An increase in the crushed ore stockpile from 2Mtpa to 4Mtpa;
- DFS metallurgical testwork has resulted in the number of HMS stages being reduced from three to two, increasing the size of the gravity/flotation circuits including:
  - Increased ball mill capacity;
  - Increased gravity circuit size for improved Tantalite recovery;
  - Increased flotation circuit for improved Lithia recovery; and
  - Increased thickener capacity and filters increased;
- The cost of the raw water supply has increased due to a greater supply distance;
- Tantalite recovery to a 30% concentrate specification, as opposed to 5% as described in the PFS; and
- Increased engineering and supervisory costs as a result of increased scope.

The DFS was based on the updated Ore Reserve for Pilgangoora of 69.8Mt grading 1.26% Li<sub>2</sub>O (spodumene), 132ppm Ta<sub>2</sub>O<sub>5</sub> and 1.04% Fe<sub>2</sub>O<sub>3</sub> (see ASX Announcement – 22 August 2016). Process facilities in the base case are designed to handle 2Mtpa ore capacity and processing for chemical grade spodumene (SC6.0 specification).

Technical grade concentrate has been excluded from the DFS while the Company continues to establish bulk samples for the further purpose of product testing and qualification with key distributors and end-users. The Company remains confident in the Pilgangoora project's capacity to deliver technical grade spodumene concentrate sales and this product stream has been priced into the Company's 4Mtpa expansion option (See separate ASX Announcement today).

## FEASIBILITY STUDY OUTCOMES

### MINING / RESERVES

Pilbara Minerals commissioned Mining Plus (MP) to complete a DFS-level Mining Study on its Pilgangoora Lithium-Tantalum Project. This follows the Pre-Feasibility Level (PFS) Mining Study completed by Mining Plus in March 2016, with the resulting maiden Ore Reserve announced by Pilbara Minerals on 10 March 2016 (see Figure 1 – Pilgangoora Cross-Section showing both the original PFS pit outline and the new DFS pit outline).

The project contains pegmatite deposits, with the DFS based on an updated Mineral Resource geological model completed in July 2016, with updated and new mining contractor costs and prices applied to achieve feasibility level (+/- 15%) costing.

The Ore Reserves are based on the Mineral Resource update released to the ASX on the 11th July 2016, by Pilbara Minerals (see Appendix 1), Competent Persons: Mr John Young (Executive and Technical Director of Pilbara Minerals Limited) and Mr Lauritz Barnes (Consultant with Trepanier Pty Ltd).

During the DFS stage of work, Mining Plus's scope of work included the work areas outlined below:

- Mine Planning Criteria
- Optimisation
- Mine Design and Scheduling
- Mine Infrastructure
- Mine Contractor Pricing
- Cost and Revenue Modelling

- Feasibility Study Reporting
- JORC (2012) Ore Reserve Reporting
- Future Works Plan

The study consisted of an initial conversion of the Mineral Resource model to a mining model, followed by the completion of both open pit optimisation and mine shape optimisation using the mining models, and finally the development of engineered open pit designs, together with mine scheduling and costings.

The mining method is based on conventional open pit mining, and was evaluated for truck and hydraulic excavator (backhoe) operations utilising 4 x 2.5m flitches for 10m benches for combination waste pegmatite mining and 10m bench mining for waste mining.

A Whittle optimisation was performed and a subsequent ultimate and staged pits were designed valuing only JORC Mineral Resources in the Measured and Indicated categories.

Key parameters used as part of the pit optimisation process included (but are not limited to):

- Assumed average of 2Mtpa of ore processing;
- A selling price of US\$460.00/t for Battery Grade concentrate, at 6% Li<sub>2</sub>O as provided by Pilbara Minerals;
- Mining costs derived from submissions received from mining contractors who priced the previously completed study;
- Metallurgical recoveries have been provided by Como Engineering; and
- Processing costs for the 2Mtpa rate from Como Engineering.

The JORC Ore Reserve optimisation results and pit designs have been compared to recently completed DFS study's optimisation results, pit design and schedules to ensure this Ore Reserve estimate is economic and practically able to be achieved based on all available information. The JORC Ore Reserve for the final pit design is shown below. In addition, the life-of-mine strip ratio for the JORC Ore Reserve pit design's strip ratio is 4.1. It is reasonable to assume the JORC pit design is economically mineable.

**Table 1: Pilgangoora Reserve Estimate (August 2016)**

JORC Reserve Category	Tonnage (Mt)	Li <sub>2</sub> O (%)	Ta <sub>2</sub> O <sub>5</sub> (ppm)	Fe <sub>2</sub> O <sub>3</sub> (%)	Li <sub>2</sub> O (T)	Ta <sub>2</sub> O <sub>5</sub> (Mlbs)
<b>Proved</b>	<b>17.5</b>	<b>1.31</b>	<b>143</b>	<b>0.94</b>	<b>230,000</b>	<b>5.55</b>
<b>Probable</b>	<b>52.3</b>	<b>1.25</b>	<b>128</b>	<b>1.07</b>	<b>653,000</b>	<b>14.8</b>
<b>TOTAL</b>	<b>69.8</b>	<b>1.26</b>	<b>132</b>	<b>1.04</b>	<b>883,000</b>	<b>20.3</b>

The DFS pits, waste rock dumps and TMF designs incorporate the effects of general site and local drainage channels. As part of the pit and TMF designs initial diversion drains and embankments, where required, have been planned.

The waste rock dump designs take into account the potential acid forming material (PAF) likely to be encountered in the Eastern and Central deposits. Waste rock characterisations studies to determine the quantity and reactivity of the PAF have been undertaken in parallel with the mining studies.

Management of top soil material including pre-stripping prior to mining and storage for future incremental rehabilitation has been considered in the DFS. A Soil Characterisation review and report has been completed by environmental consultants.

Overall, the mining cost inputs (including Drill and Blast) are based on current market pricing received from mining contractors' submissions, which were based on the previously completed PFS study mine

design and schedule. Mining cost inputs applied in the study have been adjusted to reflect the mine design and schedule for the recently completed DFS.

Mining costs also consider activities for mining team operating costs, management and maintenance, mobile plant maintenance infrastructure, ore re-handle and crusher feed, clear and grub, top soil management, and rehabilitation and mine closure criteria.

Infrastructure requirements for open pit mining include: maintenance workshop for all mobile equipment, offices, crib rooms and amenities, fuel farm, water dams, and de-watering systems as required (see figure in Appendix 1 – Pilgangoora Project Plan and Mine Layout for the 70Mt reserve).

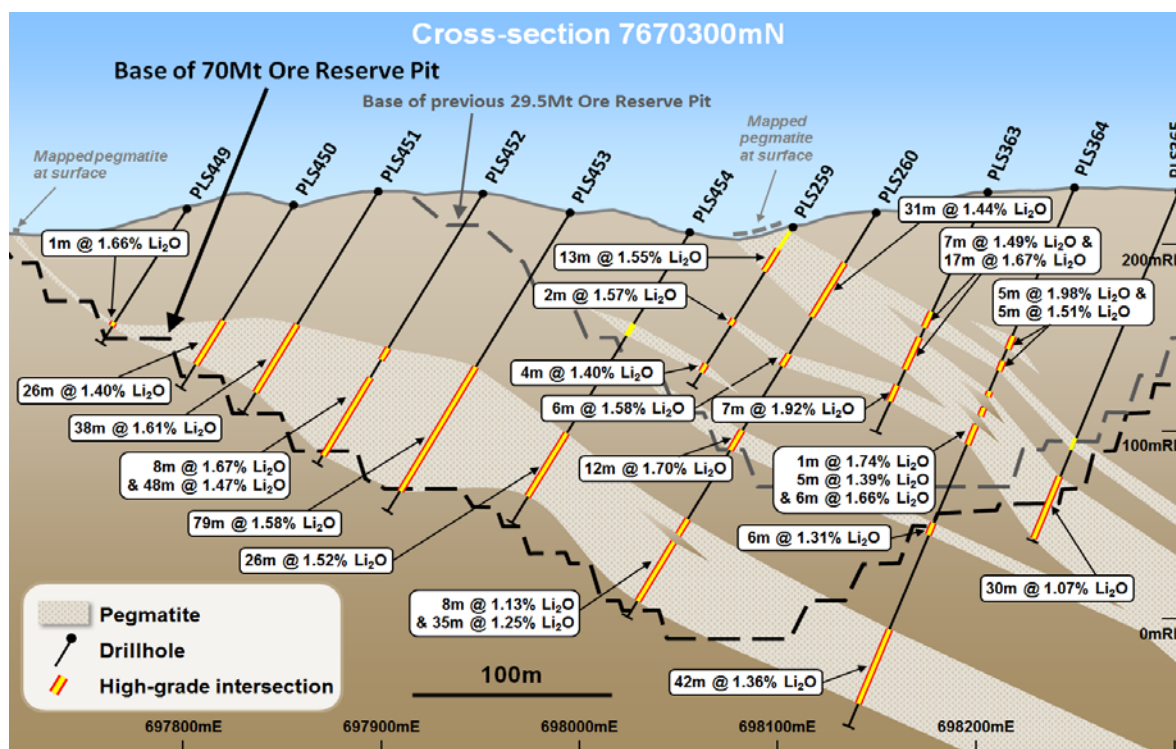


Figure 1 – Pilgangoora Cross-Section showing both the original PFS pit outline and the new DFS pit outline

## PROCESSING FACILITIES

DFS metallurgical testwork has been completed using both heavy media separation (HMS) and flotation testwork to further refine the proposed process plant flow-sheet and mineral recovery rates.

As a result of the completion of the Heavy Liquid Separation (HLS) variability testwork during Phase 2, the program demonstrated that the three stages of HMS proposed in the original flowsheet (as outlined in the PFS in March 2016) can now be reduced to two stages, eliminating the coarse rejects, improving plant operability and ultimately providing an expectation of further mineral recovery improvements for both Lithia and Tantalite during the post-DFS plant optimisation (and in particular float recovery) process.

The following testwork programs were completed on ore from the three Domains representing the first five years of mine life, namely the Eastern, Western and Central Domains:

- Comminution data, and optimisation of crushing and grind size;
- High Pressure Grinding Rolls (HPGR) variability testwork;
- Heavy Liquid Separation (HLS) optimising density operating parameters producing coarse spodumene and tantalum concentrates;

- Flotation operating parameters;
- Tantalum gravity testwork;
- Physical testing, settling and filtration; and
- Comprehensive mineralogical examination.

### PROCESS DESIGN

The concentrator plant is designed to process 2Mtpa of ore feed. The nominal capacity of the concentrator is 270tph of ore at an average utilisation rate of 85%.

The flowsheet has been designed to target two distinct product streams, namely:

- Chemical Grade spodumene at 6%  $\text{Li}_2\text{O}$  and medium iron; and
- Tantalite concentrate at 30%  $\text{Ta}_2\text{O}_5$ , pre final dressing.

The concentrator has six key areas including; crushing, feed preparation, dense media separation, gravity separation, grinding, flotation, magnetic separation and dewatering. Wet magnetic separation has been included in the flotation process for the reduction of iron in both the chemical and the future technical grade product.

The definitive process flow diagram for the proposed plant design is provided below:

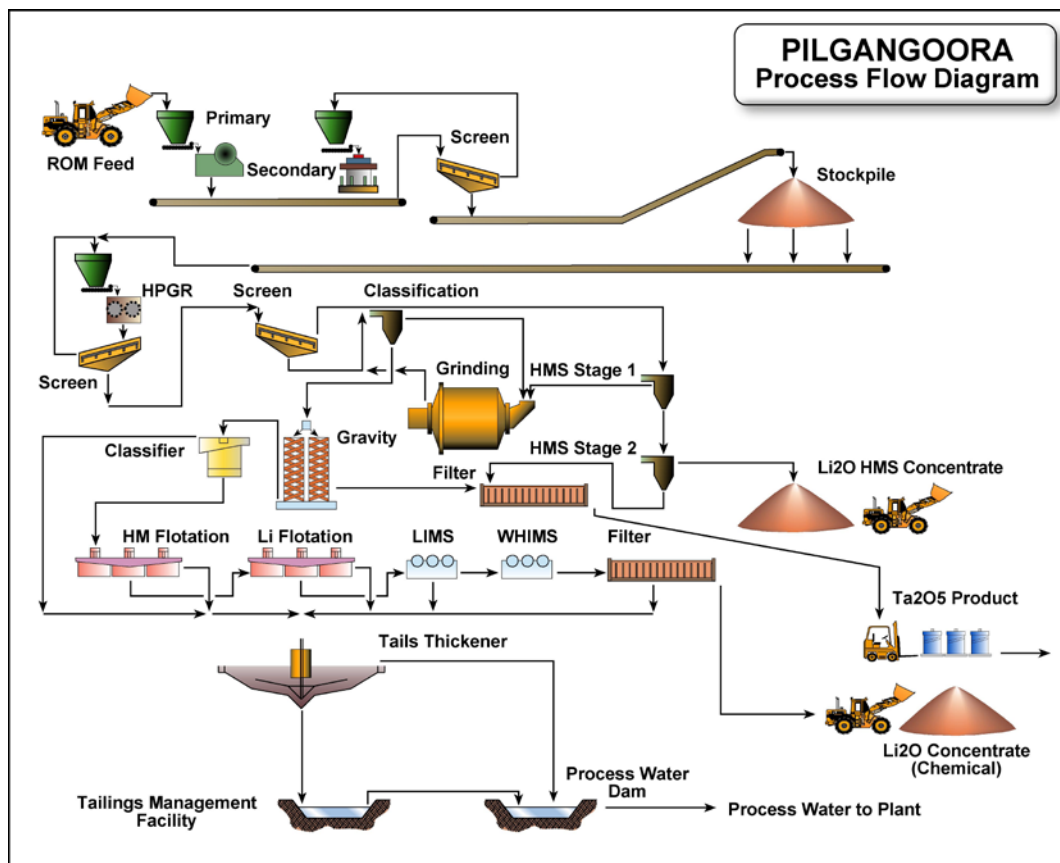


Figure 2: Process Flow Diagram

### **FLOTATION TESTWORK**

Flotation testwork has been carried out on all the Eastern, Western and Central Domain master composites, both on whole of ore and the additional truncated feed (-0.50 mm). The flotation testwork has been comprehensive and has involved KYSKY Adelaide (Kwan Wong); SGS Minerals Perth; SGS Lakefield Canada; and Nagrom Perth.

Some 150 batch flotation tests have been conducted to date under various conditions. The flotation testwork has been extensive with the operating conditions now identified using site water, with each domain's flotation recovery summarised below:

**Table 2: Flotation Recoveries**

Domain	% Recovery	% Li <sub>2</sub> O
Eastern	70.0	6.0
Western	73.3	5.5
Central	71.6	6.0

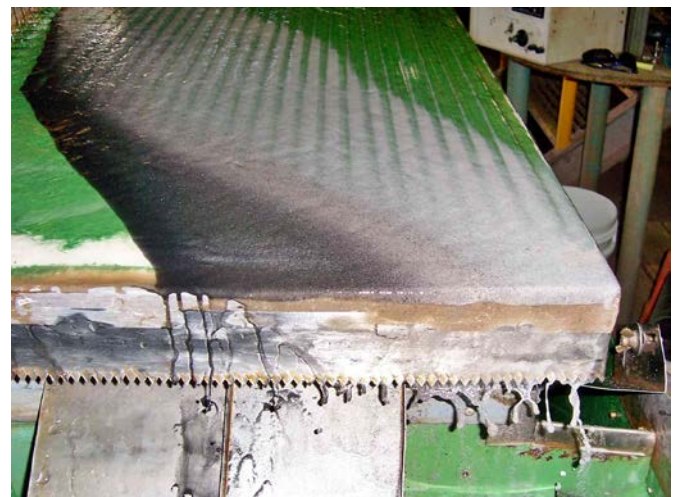
Flotation testwork is ongoing to further improve recoveries and optimise reagent consumptions.

### **TANTALITE GRAVITY TESTWORK**

A marked improvement in Tantalite recoveries at the Pilgangoora project has been achieved during the DFS metallurgical testwork, with overall recoveries approaching approximately 60% compared to the 47% recovery used in the March 2016 PFS. Mineral Technologies in Brisbane has completed gravity recovery testwork. The objective was to produce a 30% Ta<sub>2</sub>O<sub>5</sub> concentrate.



**Figure 3: Cleaner Spiral – Pilgangoora**



**Figure 4: Cleaner Table – Pilgangoora**

The spiral concentrate produced was then subjected to two stages of wet tabling, roughing and cleaning which produced a tantalum recovery of 69%, with the concentrate grading 31% Ta<sub>2</sub>O<sub>5</sub> in a mass yield of 0.06% with respect to the feed.

The DFS tantalite testwork, engineering and design has developed processes to produce a 30% Tantalite concentrate on site, with dry secondary mineral dressing undertaken off site.



## OVERALL MINERAL RECOVERIES

Overall recoveries determined from the testwork program on all the three Domains are summarised in Table 3 below:

**Table 3: Domain Total Recoveries**

Domain	% Li <sub>2</sub> O Recovery (HMS & Flotation)	% Ta <sub>2</sub> O <sub>5</sub> Recovery
Central	77.7	59.3
Eastern	78.1	57.3
Western	76.0	51.0

Further flotation testwork will be undertaken over the next three months to further improve the recoveries of lithium and optimise the reagent additions. There is still considerable upside from the work completed to date.

## HYDROLOGY AND HYDROGEOLOGY

### DEWATERING

Groundwater Resource Management Pty Ltd (GRM) has completed a dewatering assessment for the Pilgangoora Project.

A field testing programme comprised 35 airlift recovery tests and the collection of water quality data and groundwater level data across the project area. The results of the field testing programme were used to construct a 3D groundwater flow model for the deposits and surrounding groundwater system to estimate pit dewatering rates and simulate the impacts upon the groundwater environment from mining below the water table.

The groundwater draw-down contours suggest that other groundwater users in the area should not be impacted by dewatering. It should also be noted that any water supply bores installed within about 1 km of the pits will have impacts upon, and be impacted by, draw-down from dewatering.

The proposed mine dewatering strategy comprises a combination of two ex-pit dewatering bores (located between the Central pit and Pilgangoora Creek) and sump pumping.

### WATER SUPPLY

Groundwater Resource Management Pty Ltd (GRM) has completed a water supply assessment for the proposed Pilgangoora mine to assess whether the project water demand is attainable from on-tenement groundwater resources, or whether off-tenement options will be necessary. The estimated total project water demand is 1.83 GL/annum (58 L/sec) of fresh to brackish quality groundwater.

Field investigations were undertaken to assess the on-tenement water supply potential from fractured rock aquifers (the primary aquifer type within the project area). The combined on-tenement water supply sources (mine dewatering and three water supply bores) are estimated to provide about 27 to 30 L/sec for the duration of the project.

Detailed negotiations are nearing completion to take water, under agreement, from an existing licensed remote borefield. In addition, access has been obtained to existing high-flow bores in the near vicinity of the project area. It is anticipated that either (or both) of these options will be sufficient to supplement the on-tenement supply and satisfy the project's total water demand for both the 2Mtpa and 4Mtpa operations.

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## **TAILINGS MANAGEMENT**

ATC Williams has completed an options study and feasibility study design for a tailings management facility (TMF) to store flotation tailings generated during the life of mine. Tailings are anticipated to be produced at approximately 65% to 68% solids concentration at a rate of 1.68Mtpa over a 36-year mine life, resulting in a total storage requirement of 58.8 million tonnes.

In consultation with Mining Plus Pty Ltd and Como Engineers, the options study considered the requirements for waste rock dump construction during mine operation. An integrated waste landform (IWL) incorporating tailings and mine waste was chosen as the suitable means of tailings management and has been located as close as practical to the plant site.

Construction of the TMF landform will be on a staged basis. A two-cell (Cell 1 and Cell 2) impoundment will be developed on the north side of Pilgangoora Creek which bisects the site of the TMF (see Appendix 1 – Figure 2: Pilgangoora Project Plan and Mine Layout). This will provide storage for 35.1 million tonnes of tailings and 29.4 million m<sup>3</sup> of waste rock (over a period of 21 years at 2Mtpa ore throughput).

The maximum height of the facility is approximately 60 metres. Prior to completion of tailings deposition into the two-cell impoundment, Pilgangoora Creek will be diverted around the perimeter of the mining tenement and construction of a third TMF cell (Cell 3) will commence. Cell 3 provides storage for 23.8 million tonnes of tailings and 9.7 million m<sup>3</sup> of waste rock.

## **GEOTECHNICAL INVESTIGATION**

Geotechnical investigation has been completed for maximum pit slope definition and to provide engineering design parameters for infrastructure and TMF development.

The pit investigation comprised drilling of thirteen HQ cored holes around the proposed pit perimeters for assessment of rock mass weathering, strength and structural defect orientation and nature.

Geotechnical analysis has indicated that the optimum pit design will utilise minimum bench widths of 10m and maximum inter ramp angles of 52°.

A series of test pits and boreholes have been completed to facilitate the design of project infrastructure. Areas of potentially useable gravels were also encountered throughout the road alignment; screening of clayey fines from these gravel deposits is required to produce a suitable base course product.

## FINANCIAL EVALUATION

The key parameters and financial outcomes for the 2Mtpa Definitive Feasibility Study are set out below:

**Table 4 – Summary of Key Parameters**

Summary of Key Parameters from DFS Financial Model (2Mtpa)		
Life of Mine (LOM)	Years	36
LOM Ore Mined	Mt	69.8
LOM Waste Mined	Mt	284.3
LOM Strip Ratio	(waste:ore)	4.07
Plant Feed Rate	Mtpa	2.0
Average Lithium Head Grade	%	1.26
Average Lithium Recovery	%	77.5
Average Spodumene Concentrate Production	ktpa	314
Average Tantalite Production	k lbs pa	321
Average Realised Lithium Price	US\$/t CFR Real	537
Average Tantalite Forecast Price	US\$/lb FOB Real	73
Forecast FX Rate	AUD:USD	0.75
Initial Capital Costs <sup>2</sup> (including 10% contingency)	A\$M	214
Ave LOM Cash Operating Cost <sup>1</sup>	A\$/t product Real CFR	276 (US\$207)
Ave LOM Operating Cost <sup>1</sup> adj. for all royalty & native title costs	A\$/t product Real CFR	344 (US\$258)
Average Annual Project EBITDA (Real \$)	A\$M	121
<b>NPV (10% Discount Rate, Post Tax)</b>	<b>A\$M</b>	<b>709</b>
<b>IRR</b>	<b>%</b>	<b>38.1%</b>
<b>Payback</b>	<b>Years</b>	<b>2.72</b>

1. Cash operating costs include all mining, processing, transport, port, shipping/freight and site based general and administration costs, allocation of corporate administration/overhead cost, are net of Ta<sub>2</sub>O<sub>5</sub> by-product credits, but excludes state and private royalties and native title costs.
2. Pre-production capital costs exclude capitalised pre-production operating costs estimated to be \$10M.

### CAPITAL COST ESTIMATES

The capital cost estimate to construct a new 2Mtpa plant and infrastructure at the Pilgangoora site, including all direct and indirect costs, is approximately A\$213.9 million plus (± 15%). This estimate includes a contingency of 10%.

The costs presented have been estimated to an overall accuracy of ± 15%, which is commensurate with the level of study undertaken.

The table below summarises the key components of the capital cost estimate:

**Table 5 – Capital Costs Estimate**

CAPITAL ITEM	VALUE (M)	SOURCE/COMMENTS
Process Plant and Infrastructure	\$171.3	Como Engineers – Includes Crushing, HPGR, HMS, Milling, Tantalum recovery and dressing, Fine Spodumene Flotation, Tailings, Product Drying, Storage, Camp, Roads, Power & Water services, Comms, Fuel services, & General Equipment.
Owners Costs	\$21.5	Includes Project Management Costs; Warehouse, Critical Spares, First Fill etc.
Other Costs	\$2.8	
Contingency	\$18.3	10% of Plant, Infrastructure and Owners costs.
<b>TOTAL</b>	<b>\$213.9</b>	

In addition to these costs, it is expected that pre-production operating costs in the order of \$10 million will be incurred.

### **CASH OPERATING COST ESTIMATES**

The significant scale of the Pilgangoora Project, together with its location adjacent to existing infrastructure and relatively low strip ratio, contributes to very low forecast project cash operating costs. Spodumene cash operating costs are further enhanced with the by-product credits arising from Ta<sub>2</sub>O<sub>5</sub> concentrate sales.

The DFS LOM average cash operating costs after Tantalum credits is approximately **US\$207/t concentrate CFR**. Project costs at these levels indicate that Pilgangoora will be one of the lowest cost hard rock lithium producers globally.

Importantly, the average LOM cash operating costs for the first 5 years is expected to be a lower US\$189/t (CFR, net of tantalite credits).

For the first 15 years the cash operating cost is US\$196/t (CFR, after tantalite credits) of concentrate produced, as compared to US\$207/t derived from the March 2016 PFS.

**Table 6 – Cash Operating Costs Estimate Details on a cost per tonne of concentrate basis**

Cost Item	Operating Costs (LOM ave) Per tonne of Concentrate	
	A\$/t Concentrate	US\$/t Concentrate
Mining	115	87
Processing	154	115
Transport and Loading	48	36
G&A, and selling costs (incl corporate allocation)	35	26
Ocean Freight	24	18
<b>Total Cash Operating Costs (before tantalite credit) CFR</b>	<b>376</b>	<b>282</b>
Less: Tantalite Credit	(100)	(75)
<b>Total Cash Operating Costs (after tantalite credit) CFR</b>	<b>276</b>	<b>207</b>
Royalties (gov't and private royalty; native title)	68	51
<b>Total Cash Operating Costs adj. for Royalties CFR</b>	<b>344</b>	<b>258</b>

## FINANCIAL ANALYSIS – SENSITIVITIES

As shown in table 4 above, the DFS for the Pilgangoora Project demonstrates robust financial outcomes with a post-tax NPV<sub>10%</sub> of **A\$709M**, robust margins, a rapid payback (2.7 yrs) and a strong IRR (38.1%). The project is most sensitive to changes in the AUD price received for spodumene concentrate. Set out below are NPV sensitivities in AUD demonstrating the impact of price and exchange rate changes.

**Table 7 – NPV Sensitivities**

Price Scenario US\$/t CFR	400	500	Base Case	600	700
FX Rate					
<b>0.65 Flat</b>	631	901	989	1,171	1,440
<b>0.70 Flat</b>	506	757	838	1,007	1,257
<b>0.75 Flat</b>	398	632	<b>709</b>	865	1,099
<b>0.80 Flat</b>	303	522	594	741	960

## MARKETING

### OFF-TAKE

The first phase of the marketing plan was to establish and evaluate the interest in the project and its proposed products. This was successfully accomplished by signing non-binding Memoranda of Understanding (MOU's) with:

- Major Chinese off-takers for chemical grade spodumene;
- Major Trading Houses and Groups in Europe, USA & China that have the experience and knowledge of technical grade spodumene product and relationships with existing users; and
- Potential agents for Tantalum.

After receiving very positive and encouraging responses, the second phase was to progress with securing binding off-take agreements which include equity subscriptions or pre-payments and the offer of technical expertise and technology to evaluate a potential Joint Venture in a new chemical plant. The first such offtake was finalized and signed with **General Lithium Corporation** (GLC) of China (refer to ASX Announcements dated 4 and 5 July 2016).

The main terms of the Offtake Agreement with GLC are:

- Subject to a number of conditions including a waiver or non exercise of a third party first right of refusal, a final investment decision to mine and receipt of approvals and funding to develop the project;
- GL's equity subscription of up to 5% equity in the Company;
- Long term supply contract: 6yrs + 4yrs;
- Minimum quantities of chemical grade spodumene, 140,000tpa (~40% of total nominal capacity),
- Pricing based on a formula referencing Chinese domestic and import pricing of battery grade lithium carbonate;

- Prices recalculated from reference data on a quarterly basis; and
- Providing technical expertise, design and technology for the evaluation and development of a potential jointly owned Chemical Plant to be developed outside of China.

A further offtake agreement with another major Chinese converter is currently being negotiated on terms which if completed may include a pre-payment of an agreed amount that is to be repaid via instalments based on future shipments of spodumene product.

In relation to technical grade spodumene, the major trading houses globally have established keen interest to enter into exclusive agency agreements once bulk pilot plant samples are available for testing.

For tantalum concentrates, two agency agreements are at the finalisation stages pending availability of pilot plant samples.

### DEMAND OUTLOOK

Pilbara is developing the Pilgangoora Project against a backdrop of increasing global lithium consumption, being led by the rechargeable battery market, which accounted for 32% of total lithium consumption in 2015 (being just over 55,000t of Lithium Carbonate Equivalent – LCE).

The main driver of the forecast is motivated by the recent commencement by major automotive manufacturers of the mass production of EVs, HEVs and PHEVs using lithium-ion batteries, driven by Chinese legislation, Electric Bus demand, and Tesla’s success with its existing models.

The Company has undertaken its own analysis and has estimated the growth in Chinese chemical conversion capacity as a result of engagement with the market over the last 12-18 months. It’s the Company’s view that further growth in conversion capacity is expected to emerge over the coming four to five years (both within and outside China) to support the substantial growth emerging in global lithium-ion supply chains.

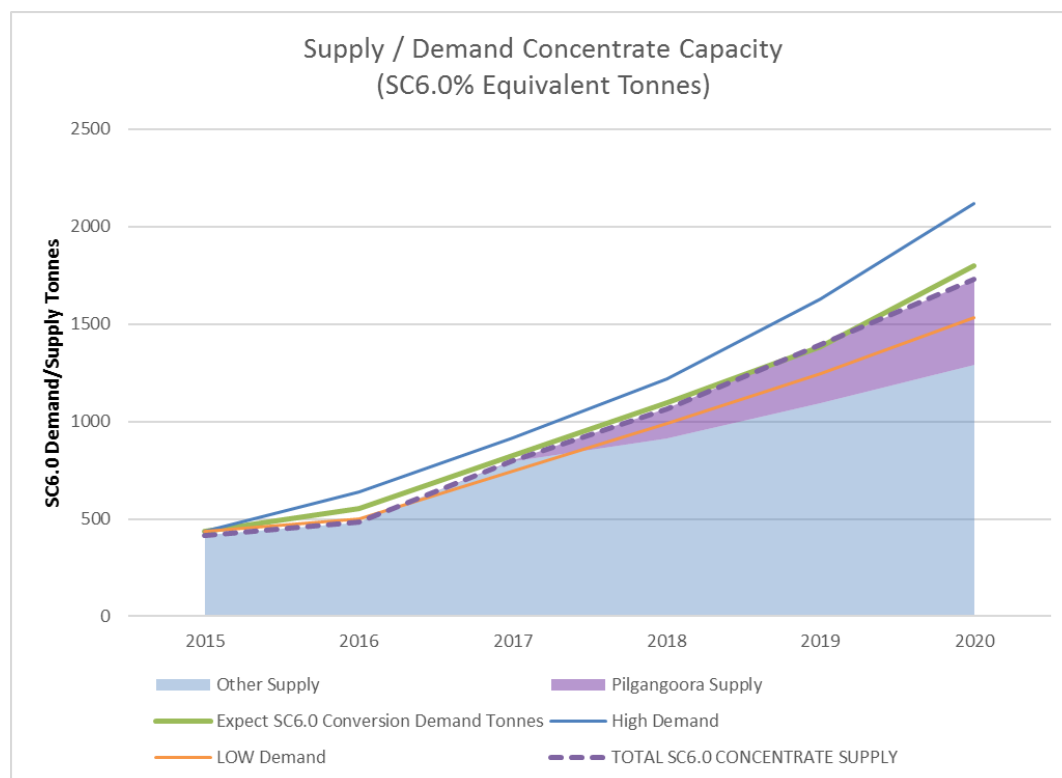


Figure 5: Chemical Conversion Capacity/Demand Model (Pilbara Estimates, August 2016)

**PRICE OUTLOOK**

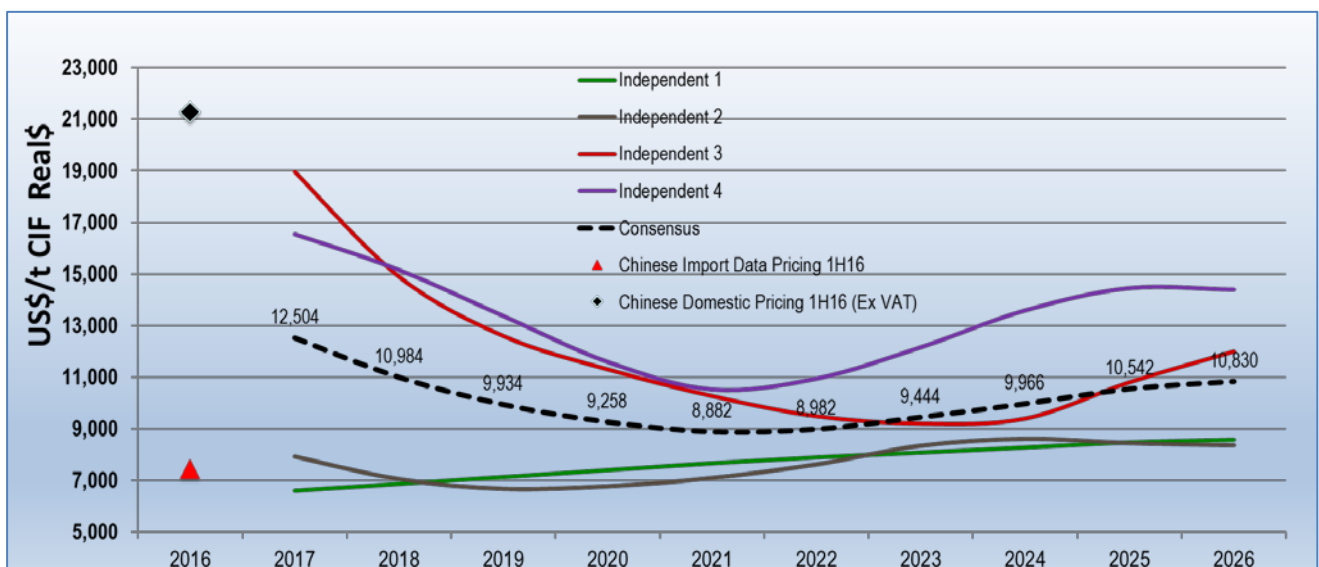
There is no exchange traded market for hard rock lithium mineral concentrates, or lithium chemicals or compounds. Pilbara commissioned independent assessments/reports by world-renowned industry experts Roskill and Benchmark Mineral Intelligence to assess LOM pricing conditions for lithium products equivalent to those expected to be produced from the Pilgangoora Project.

The Pilgangoora Feasibility outcomes are based on life-of-mine average spodumene price of US\$537/tonne CFR, which is well below the current spot price of approximately US\$650/tonne FOB (SC6.0 basis). The Company’s DFS pricing deck has been derived from a basket of independent economic and bank/broker forecasters including: Roskill, Deutsche Bank, Canaccord and Benchmark Minerals to create a ‘consensus’ price forecast for both Battery Grade Lithium Carbonate and spodumene concentrate pricing.

Within Pilbara’s existing and proposed off-take agreements, chemical grade spodumene prices will be based on a formula that tracks both the Chinese domestic battery grade lithium carbonate prices and import battery grade carbonate prices. It is the case that the majority of the supply of lithium raw material to Chinese cathode material makers is sourced locally from Chinese converters of spodumene and not brine producers. With that in mind, the effect of Chinese domestic battery grade carbonate pricing is a key determinant of pricing outcomes for Pilbara Minerals’ chemical grade spodumene product.

According to Asianmetal website that tracks the Chinese market prices, in H1-2016 the battery grade lithium carbonate price peaked to approx US\$21,500/t excluding VAT in April 2016 and dropped marginally to US\$20,400/t excluding VAT in June 2016.

Feasibility product pricing and sales revenue calculations reflect the effect of the General Lithium off-take model (which references spodumene pricing to the Chinese domestic and import Battery Grade lithium carbonate price), with the remaining concentrate priced against the consensus spodumene price forecast.



**Figure 6: Lithium Carbonate Price Forecast – Consensus Model**

Forecasts for spodumene pricing are varied. The 'consensus' line recommended for Pilbara Minerals’ DFS model is a simple average across the independent forecasters utilised by the Company (see Figures 6 and 7). For reference, estimated 2016 pricing YTD would be in the range of approximately USD\$575-\$600/t, and will probably close the end of the year at the top end of that range.

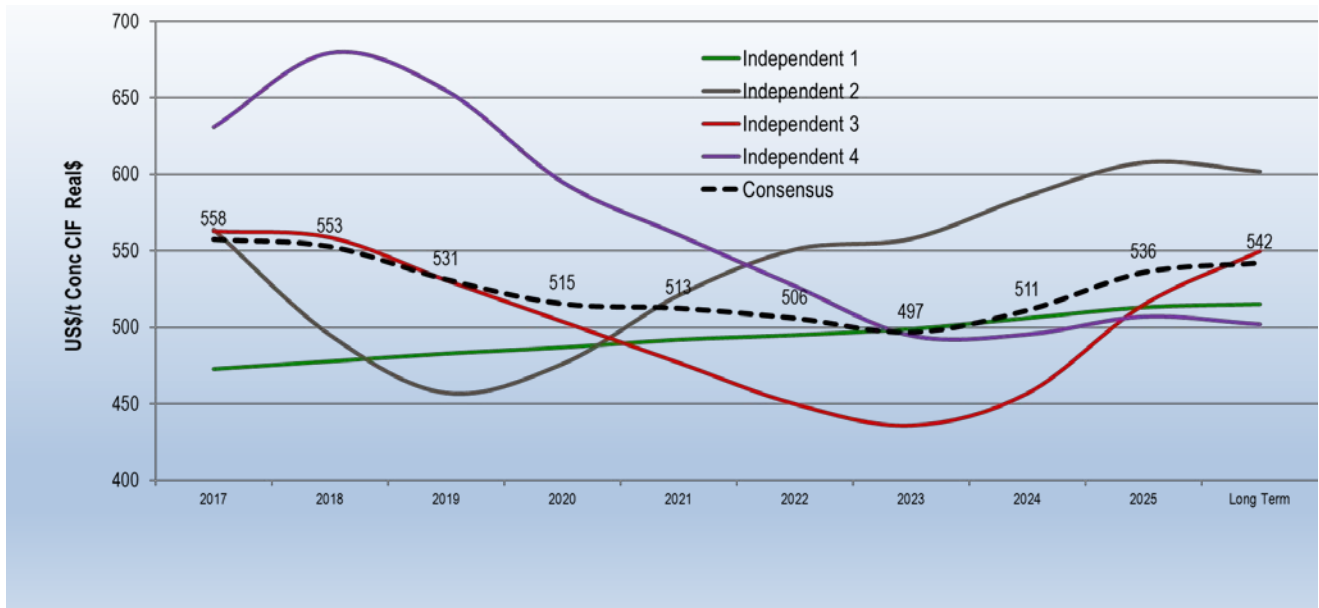
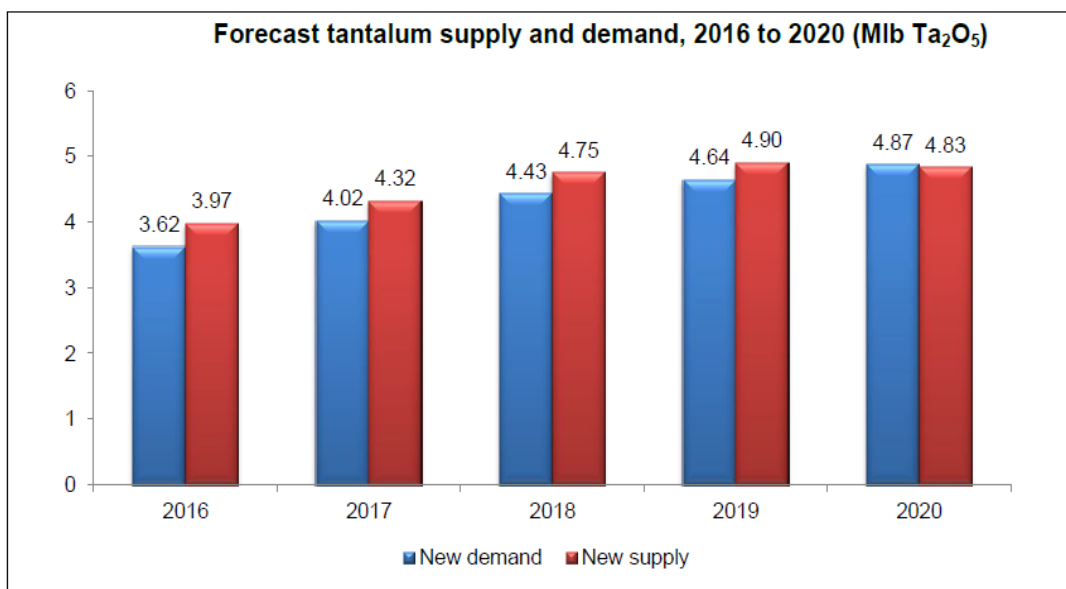


Figure 7: SC6.0 Spodumene Concentrate Price forecast – Consensus Model

**TANTALUM**

According to Roskill’s 12<sup>th</sup> edition 2016 Tantalum Report, the outlook for tantalum supply and demand, as shown in Figure 8, during the period 2016 to 2020 indicates a possible surplus of supply of about 0.25 – 0.35Mlbspa Ta<sub>2</sub>O<sub>5</sub> until 2019 and a possible deficit of 40,000lbs in 2020.

It is a delicate balance and Roskill believes that any potential disruption to supply caused by war, terrorist acts (in Central Africa), natural disasters and operational problems could result in sudden shortfall in supply that could lead to a price spike. In Australia, Roskill states that in 2015 tantalum supply was almost entirely a by-product of lithium mining and is projected to increase through several greenfield and brownfield projects in the pipeline.



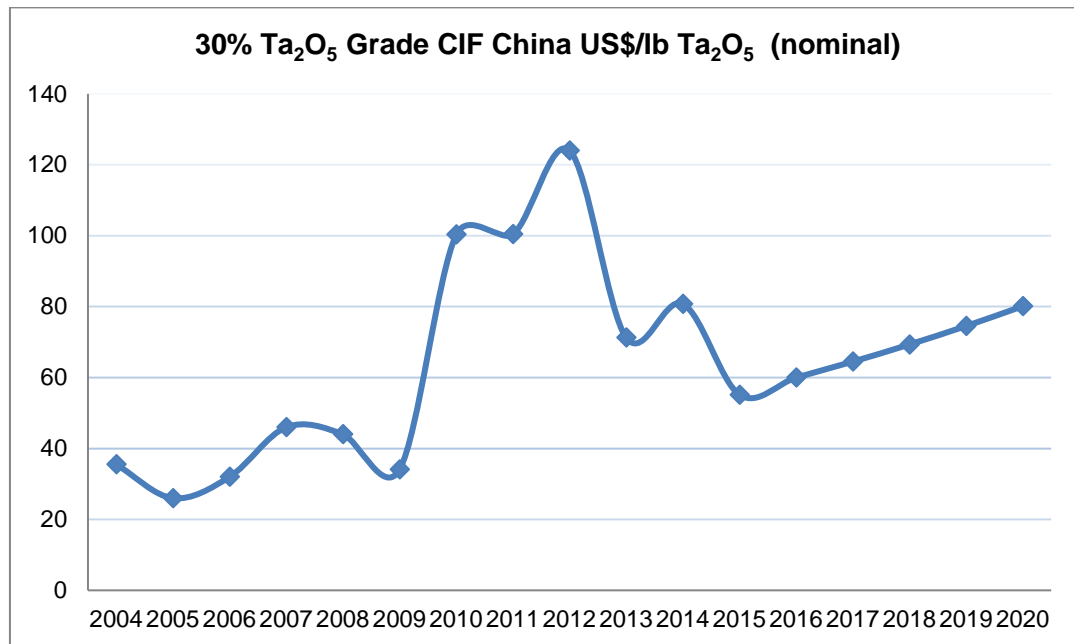
Source: Roskill

Figure 8: Forecast tantalum supply and demand, 2016 to 2020 (Mlb Ta<sub>2</sub>O<sub>5</sub>, Roskill Jan16)

Tantalum concentrates are sold both via long-term contracts and on the spot market. Contract prices are rarely disclosed but are negotiated based on market prices. Roskill considers it reasonable to assume that



prices will rise gently to reach about US\$80/lb Ta<sub>2</sub>O<sub>5</sub> by 2020. Figure 9 provides both historical and Roskill's forecast prices.



Ref: Roskill Forecast 2016 to 2020 and Asianmetal year end prices to 2015

**Figure 9: Historic and Forecast tantalum prices, 2004 to 2020 for 30% Ta<sub>2</sub>O<sub>5</sub> grade CIF China US\$/lb CIF**

## ENVIRONMENTAL ASSESSMENT & APPROVALS

### ENVIRONMENTAL IMPACT ASSESSMENT

Pilbara Minerals is committed to delivering best practice environmental outcomes and, in line with this commitment, has completed the required environmental impact assessment (EIA) studies to support regulatory approval applications for the commencement of mine construction. These EIA studies include the following:

#### Ecological

- Level 2 Flora and Vegetation Assessment (MMWC Environmental, 2016)
- Level 2 Vertebrate Fauna Assessment (360 Environmental, 2016)
- Level 1 Short-Range Endemic Fauna Assessment (Bennelongia, 2016)
- Level 1 Subterranean Fauna Assessment (Bennelongia, 2016)

#### Materials Characterisation

- Tailings Characterisation Assessment (Graeme Campbell & Associates, 2016)
- Waste Rock Characterisation Assessment (Graeme Campbell & Associates, 2016)
- Soil Characterisation Assessment (SignificantENV, 2016)

#### Water

- Mine Dewatering Assessment (Groundwater Resource Management, 2016)
- Water Supply Assessment (Groundwater Resource Management, 2016)
- Surface Water Assessment (Groundwater Resource Management, 2016)

No major issues or risks have been identified by these environmental studies.

No Environmentally Sensitive Area (ESA), Threatened Ecological Community (TEC) or Threatened Flora exist within the Project area. The waste rock and tailings material streams have been assessed to be largely geochemically benign. It is estimated that less than 10% of the total waste rock volume will be potentially acid-forming (PAF). Isolation of the small amounts of PAF material within the WRD landforms will meet industry best-practice.

The mine dewatering assessment results indicate generally low permeability conditions across the Project area except for modest permeability in the southern portion of Central Pit due to its close proximity to Pilgangoora Creek. There will be localised draw-down impacts on the Pilgangoora Creek aquifer system (i.e. approximately 2km draw-down extent of 11km total length), with the groundwater draw-down contours suggesting that no other groundwater users in the area will be impacted by this abstraction.

Due to the relatively large size of the Project, the results of surface water assessment have had an influence on the positioning of the waste rock landforms and other proposed disturbance footprints. The surface water management planning for the Project takes into consideration that two sections of Pilgangoora Creek (i.e. between Central & South pits and around TMF Cell 3) will be diverted approximately half-way through the life of mine.

#### **ENVIRONMENTAL APPROVALS**

As indicated in above section (EIA), there have been no major issues or risks identified on the environmental front to date, with the following environmental approval and licensing applications in the process of being completed:

##### *Department of Mines and Petroleum (DMP)*

- Mining Proposal, including associated Mine Closure Plan
- Native Vegetation Clearing Permit

##### *Department of Water (DoW)*

- Groundwater Well Licence (GWL), including associated Operating Strategy

##### *Department of Environment Regulation (DER)*

- Works Approval for prescribed premises.

#### **PROJECT IMPLEMENTATION**

Overall, the schedule for delivery of the Project is aggressive, with major construction occurring throughout the course of 2017 in order to achieve a plant commissioning milestone late in December of that year. As such, Pilbara Minerals' development strategy will be to pursue opportunities where feasible that take advantage of existing "fit-for-purpose" plant and equipment.

An overall timeline of delivery outlining key activities through to commissioning and production is provided in Figure 10 below:

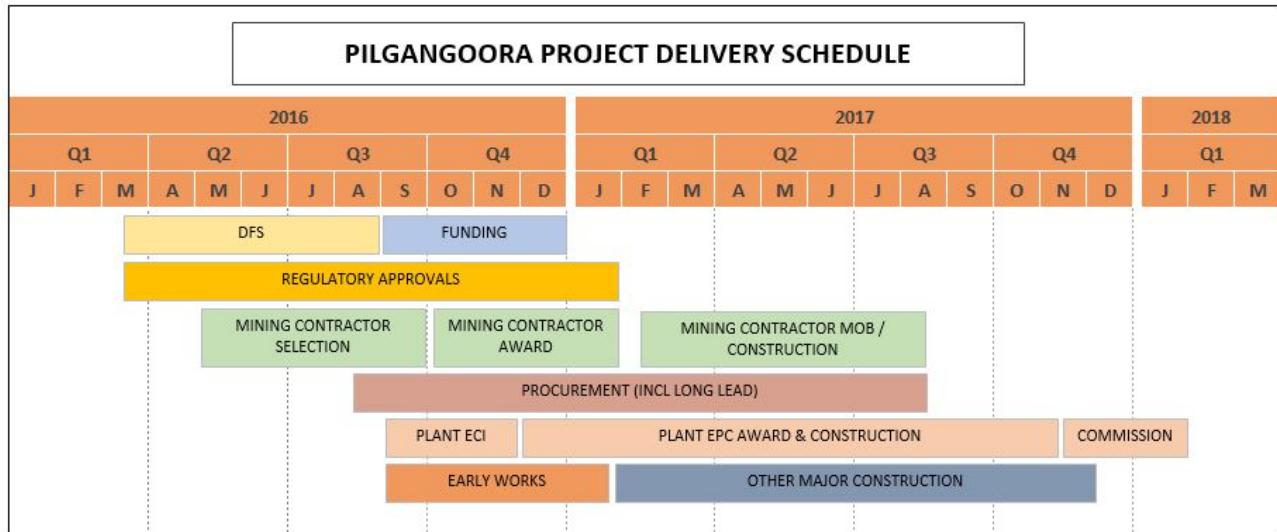


Figure 10: Project Delivery Timeline

**EXECUTION STRATEGY**

Pilbara Minerals has developed an execution approach to the Project through works undertaken during the course of the Definitive Feasibility Study, delivering facility scope which will include:

- Mine ROM, Waste Dumps and Mine Facilities;
- Workshops and Contractor Facilities;
- Central power station & fuel storage facilities;
- Processing plant;
- Tails Storage facility;
- On-site laboratory and sampling;
- 300-room accommodation camp;
- Non-process buildings and associated infrastructure; and
- Upgraded access road and intersection to site from the Great Northern Highway.

**PROJECT MANAGEMENT CONSULTANT**

In delivering the Project, Pilbara Minerals will adopt a strategy that has the project scope managed and delivered through the services of a PMC group who will be integrated into the Owner’s team for the duration of the Project. The PMC will not only bring a technical capability to the Project through appointed experienced people, but will also provide tailored governance solutions commensurate with the requirements of the Project.

An organizational model as to how this structure will be arranged is provided in Figure 11 below.

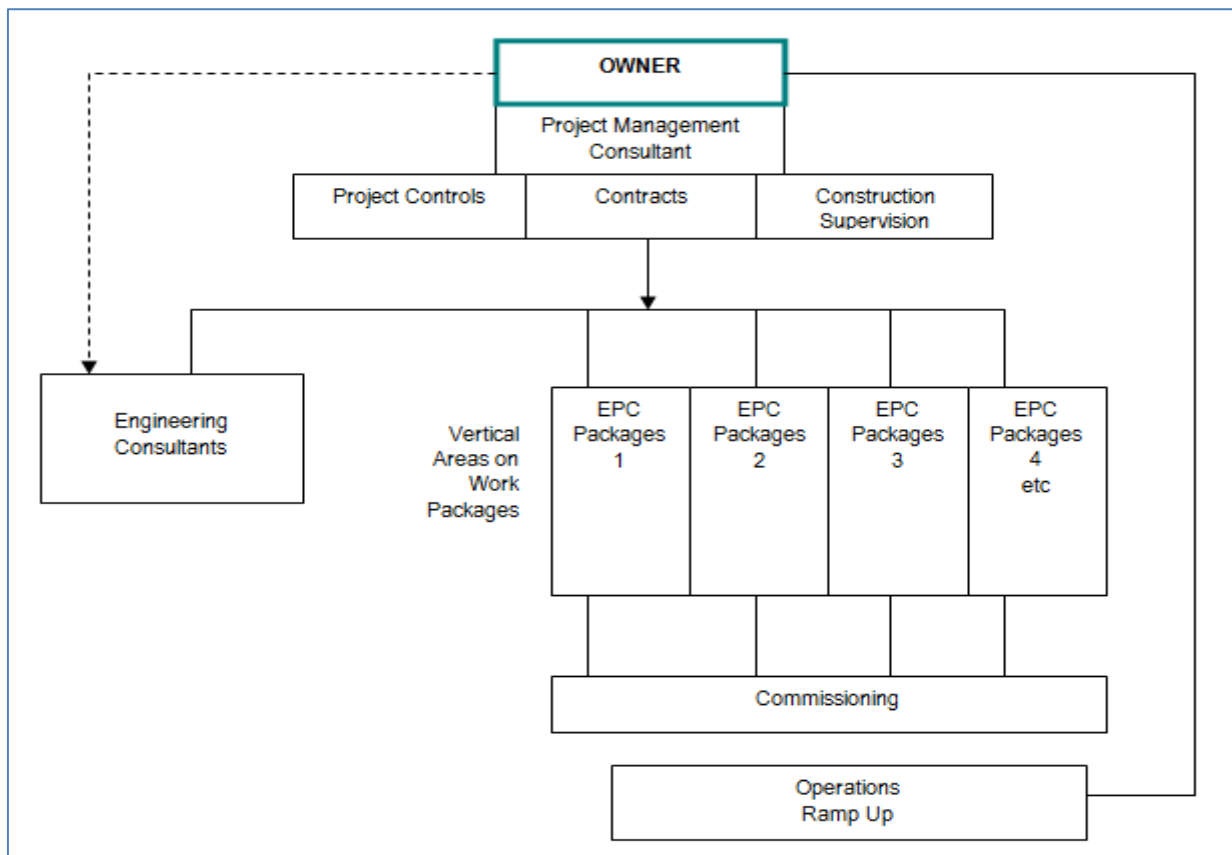


Figure 11 – Project Organisation Model

#### **PROCUREMENT AND CONTRACTING STRATEGY**

In addressing the overall project scope, delivery targets and risk profiles, specific works will be “packaged” and engaged across a number of commercial styles, including (but not necessarily limited to):

- Engineer, Procure and Construct (EPC);
- Design & Construct (D&C);
- Supply Only;
- Construct Only;
- Build, Own, Operate (BOO);
- Service Agreements; and
- Consultancy Agreements.

These head agreements have been developed by Pilbara Minerals through the course of the Definitive Feasibility Study and will be managed and administered by the appointed PMC.

Operational readiness will be key in the overall contract & procurement approach and scopes are (or will be) drafted with this in mind.

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### **PROCESS PLANT ECI/EPC**

As the organizational model has identified in Figure 11, a number of EPC-style packages will be adopted for this Project. One of the major packages that will lend itself to such an approach is the Process Plant facility. It is envisaged that this package will constitute a significant portion of the project capital value, and includes equipment which will be critical path.

Those “long lead” items that have been identified through the DFS work will have supply orders placed preceding the appointment of the EPC in order to maintain the delivery schedule.

Preceding the appointment of the EPC Contractor, the Company continues to undertake a competitive Early Contractor Involvement (ECI) approach in which both technical and commercial aspects of the package will be developed.

### **OPERATIONAL PHILOSOPHY**

For the most part, the supply chain will be fully contracted, with the exception of the process plant, which is intended to be fully operated and maintained by Pilbara Minerals.

In summary:

- Mining – Contractor Operated;
- Processing – Pilbara Minerals Operated;
- Haulage, Product Storage & Port Delivery – Contractor Operated
- Camp Services – Contractor Operated;
- Power Station – Contractor Operated;
- Access Road Maintenance – Contractor Maintained; and
- Laboratory Services – Contractor Operated.

### **More Information:**

#### **ABOUT PILBARA MINERALS**

Pilbara Minerals (“Pilbara” – ASX: PLS) is a mining and exploration company listed on the ASX, specialising in the exploration and development of the specialty metals Lithium and Tantalum. Pilbara owns 100% of the world class Pilgangoora Lithium-Tantalite project which is the second largest Spodumene (Lithium Aluminium Silicate) project in the world. Pilgangoora is also one of the largest pegmatite hosted Tantalite resources in the world and Pilbara proposes to produce Tantalite as a by-product of its Lithium production.

#### **ABOUT LITHIUM**

Lithium is a soft silvery white metal which is highly reactive and does not occur in nature in its elemental form. It has the highest electrochemical potential of all metals, a key property in its role in Lithium-ion batteries. In nature it occurs as compounds within hard rock deposits and salt brines. Lithium and its chemical compounds have a wide range of industrial applications resulting in numerous chemical and technical uses. A key growth area is its use in lithium batteries as a power source for a wide range of applications including consumer electronics, power station-domestic-industrial storage, electric vehicles, power tools and almost every application where electricity is currently supplied by fossil fuels.

#### **ABOUT TANTALUM**

The Tantalum market is boutique in size with around 1,300 tonnes required each year. Its primary use is in capacitors for consumer electronics, particularly where long battery life and high performance is required such as smart phones, tablets and laptops.

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**-- ENDS ---**

**Competent Person's Statement**

*The Company confirms it is not aware of any new information or data that materially affects the information included in the 11<sup>th</sup> of July , 2016 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 11<sup>th</sup> of July 2016.*

*The Company confirms it is not aware of any new information or data that materially affects the information included in the 22<sup>nd</sup> of August , 2016 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 22<sup>nd</sup> of August 2016.*

**Forward Looking Statement and Important Information**

*This announcement may contain some references to forecasts, estimates, assumptions and other forward-looking statements. Although the Company believes that its expectations, estimates and forecast outcomes are based on reasonable assumptions, it can give no assurance that they will be achieved. They may be affected by a variety of variables and changes in underlying assumptions that are subject to risk factors associated with the nature of the business, which could cause actual results to differ materially from those expressed herein. All references to dollars (\$) and cents in this announcement are to Australian currency, unless otherwise stated.*

*Investors should make and rely upon their own enquiries before deciding to acquire or deal in the Company's securities.*

*This release does not constitute an offer to sell, or a solicitation of an offer to buy, securities in the United States or any other jurisdiction. Any securities described in this release have not been, and will not be, registered under the US Securities Act of 1933 and may not be offered or sold in the United States except in transactions exempt from, or not subject to, registration under the US Securities Act and applicable US state securities laws.*

## APPENDIX 1

### PROJECT BACKGROUND

The Pilgangoora Lithium-Tantalum Project is located approximately 120km south of Port Hedland in Western Australia’s Pilbara region (see Figure 1). The Project is readily accessible by road, with relatively simple access to existing infrastructure (including downstream port facilities) at the existing port of Port Hedland.

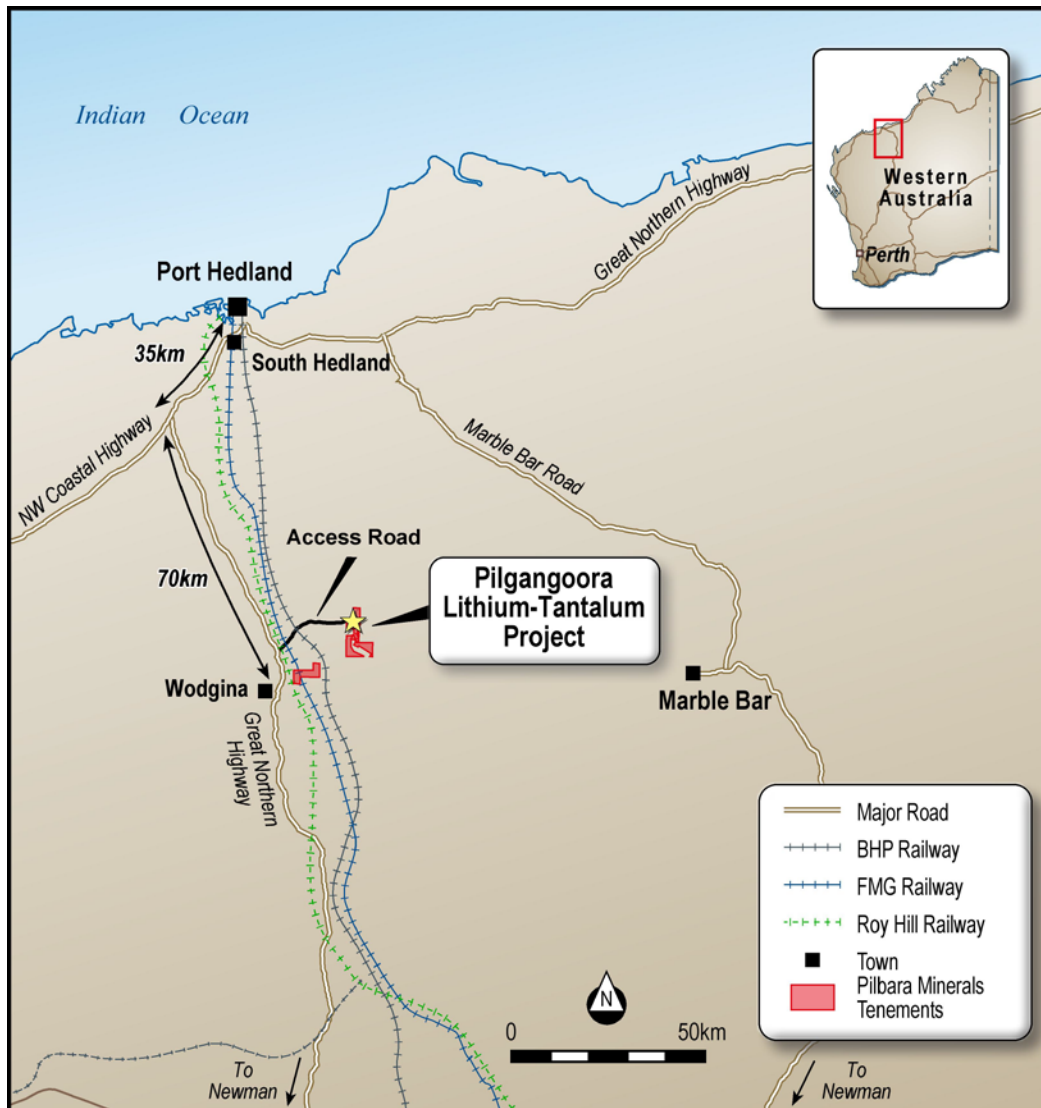


Figure 1: Pilgangoora Lithium-Tantalum Project Location

The Definitive Feasibility Study works was primarily delivered through consulting and contract resources. The major contract – for engineering, design and metallurgical study management services for the process plant infrastructure (and non-process infrastructure) components of the Definitive Feasibility Study (DFS) – were completed by the respected Australian-based engineering, metallurgy and construction services group, Como Engineers Pty Ltd (“Como Engineers”).

The process plant and infrastructure design contract included the mine site footprint and encompassed metallurgical input, implementation planning, capital and operating cost estimates, risk and operations management, as well as the design of roads and supporting infrastructure.

While the scale of the Resource (and therefore Reserve potential) indicates that a larger mine could potentially be established, it is the Company’s view that initial production should be limited to facilitate entry of the Project’s product streams into the market in an orderly manner.

Figure 2 below shows the proposed site layout inclusive of mining areas, processing facilities and non-process infrastructure.

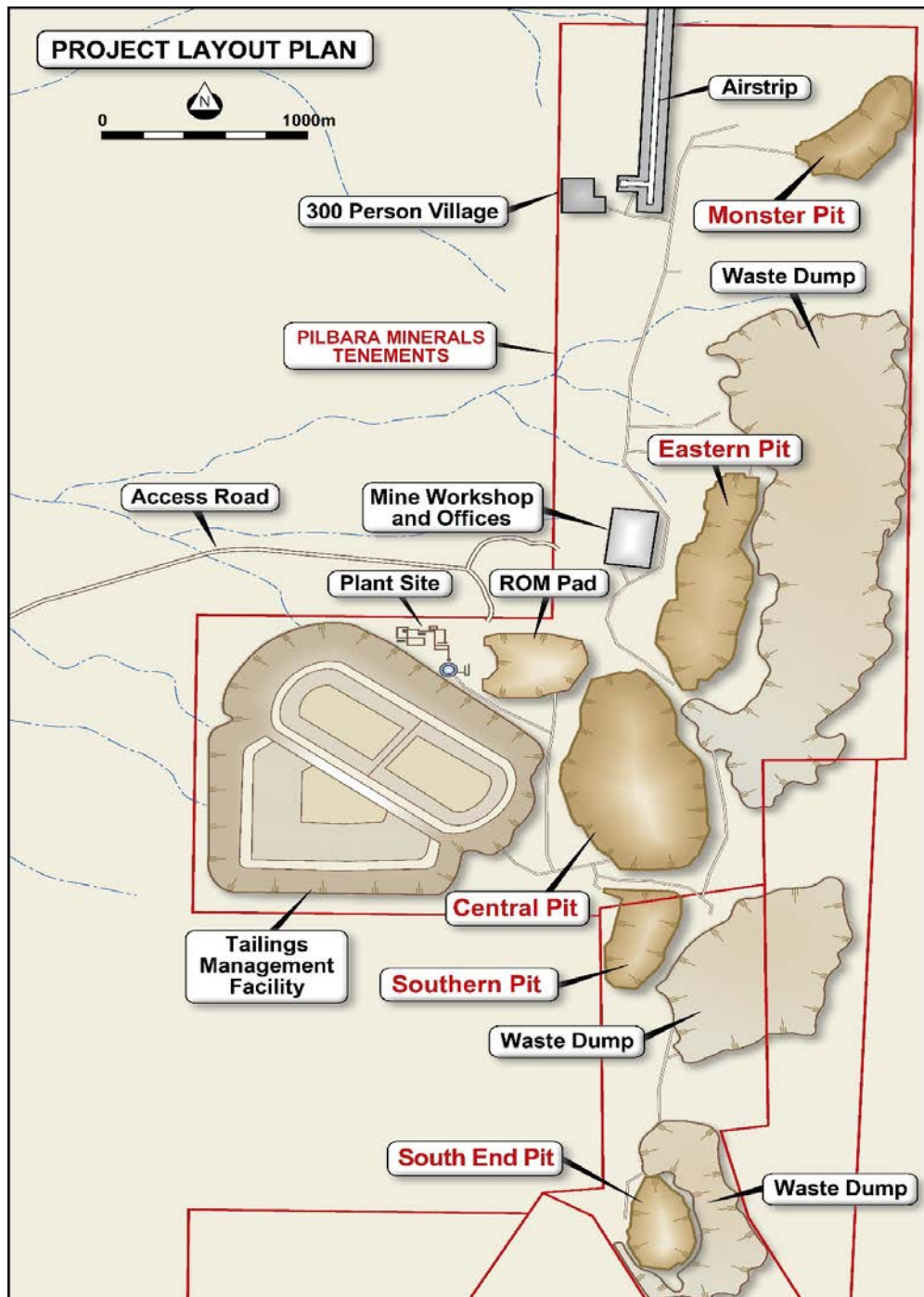


Figure 2: Pilgangoora Project Plan and Mine Layout



Following conventional open pit mining and delivery to the Run-of-Mine pad, ore will be processed to concentrate the lithium and tantalum product streams. Concentrates are then transported in bulk (or in certain circumstance some technical grade product may be bagged) for ship loading and delivery to downstream customers.

The Project’s entire logistics chain is shown in Figure 3 below:

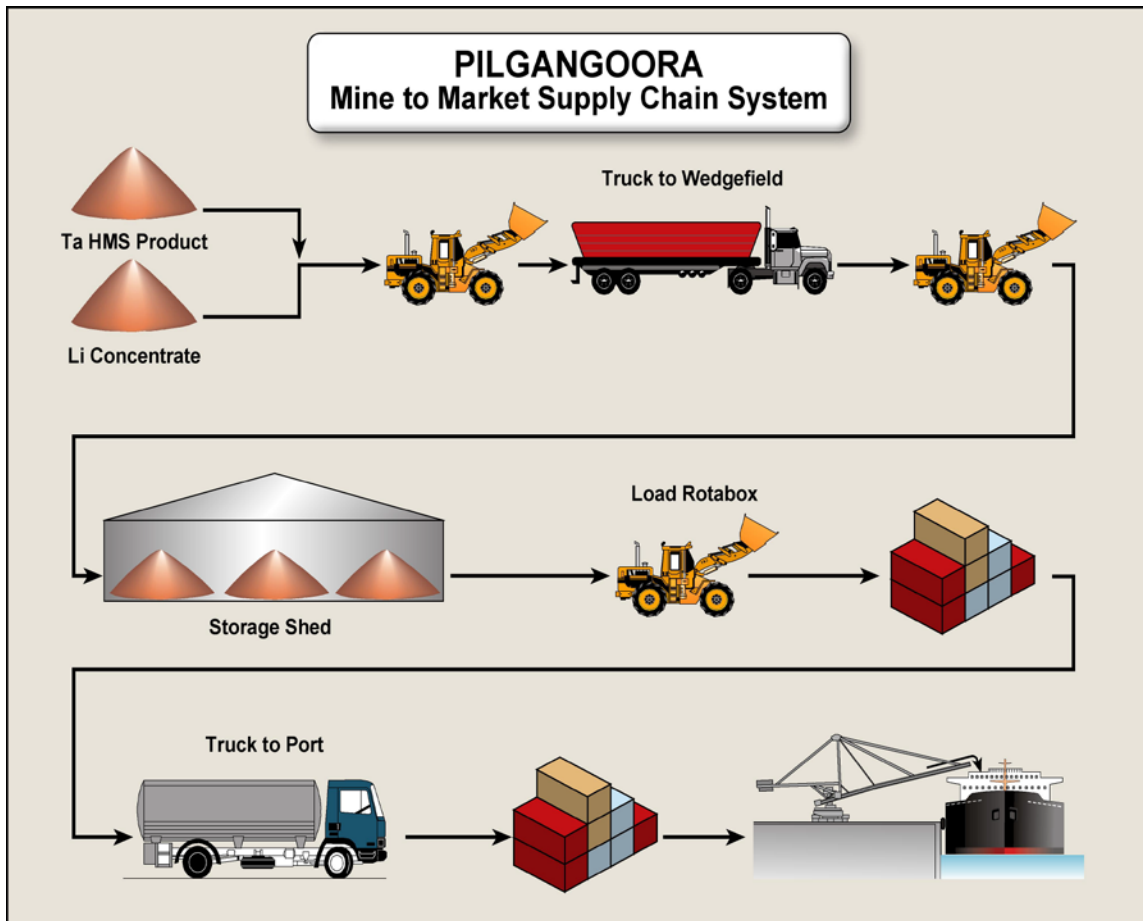


Figure 3: Pilgangoora Logistics Chain

## GEOLOGY / RESOURCES

The Pilgangoora Lithium -Tantalum deposit is located on the western flank of the East Strelley greenstone belt, in a sequence of highly deformed, fault bounded mafic dominated supracrustal rocks, which protrude into the Carlindi Batholith. Lithologies within the project area are dominantly tholeiitic metabasalts with thin interflow metasedimentary units. The metabasalts may contain abundant fine to coarse grained actinolite, possibly of hydrothermal origin, within the centre of the project area is an intrusive sequence of layered meta-ultramafic sills, with subordinate metamafic units, are up to 500 m thick. This ultramafic sequence is comprised of peridotite, pyroxenite and Mg- and Fe-rich varieties of dolerite, with gradational contacts between units.

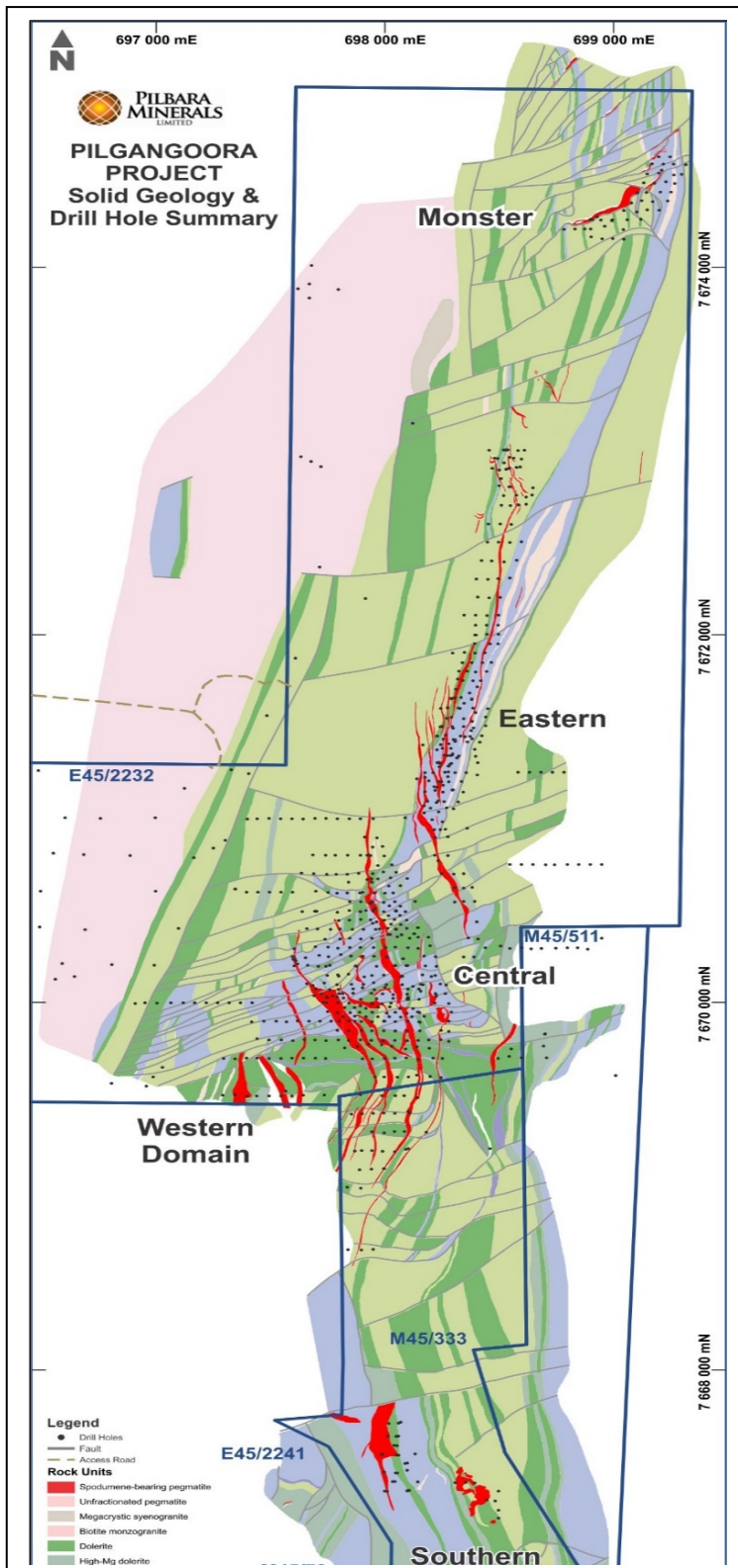


Figure 4 – Solid Geology and Drill Hole Summary

Recently completed mapping at Pilgangoora has recognised defined four phases of deformation in the project area. The first phase (D1) produced the steeply inclined attitude of the supracrustal rock sequence by the development of a fold and thrust belt. A regional strike slip fault system developed across the greenstone belt in D2, as an interconnected network of layer parallel strike slip faults with discordant cross faults.

This faulting pattern is particularly strongly developed in the vicinity of the Central and Western pegmatite domains. The D3 event is related to the pegmatite emplacement these breach the D2 structures and have a local preference for exploitation of the Ultramafic rock package.

Three principal pegmatite groups or domains are identified in the centre of the project area – Eastern, Western and Central. Two outlying pegmatite groups, Monster and Southern, are also identified, which have strike lengths of up to 350 and 500 meters respectively. These latter two groups are not discussed further here. Pegmatites of the three principal domains have a strike length of up to 1.4 km, and mostly range in thickness from 1-30 metres, although pegmatites of the Central and Western domains may be up to 70 m thick.

The distribution of the Pilgangoora pegmatites is shown in Figure 5. Drilling has shown that the pegmatites occur as dykes dipping to the east at 20-60° (See Figures 2 to 5), striking parallel to sub-parallel to the dominant NNW trending schistose (D3) fabric within the greenstones. Pegmatites of the three principal pegmatite groups typically breach D2 faults. The Central and Western pegmatites generally occur within dip-slip (D3) shear zones, and the Eastern pegmatites within strike slip (D3) shear zones.

The updated resource – comprising **128.6 million tonnes grading 1.22% Li<sub>2</sub>O (spodumene) and 138ppm Ta<sub>2</sub>O<sub>5</sub>**, containing **1.57 million tonnes of lithium oxide and 39 million pounds of Ta<sub>2</sub>O<sub>5</sub>** – incorporates the results of successful in-fill and exploration drilling completed from February to June 2016, and represents a **60 per cent increase in total resource tonnage** compared with the resource upgrade announced on 1<sup>st</sup> February 2016.

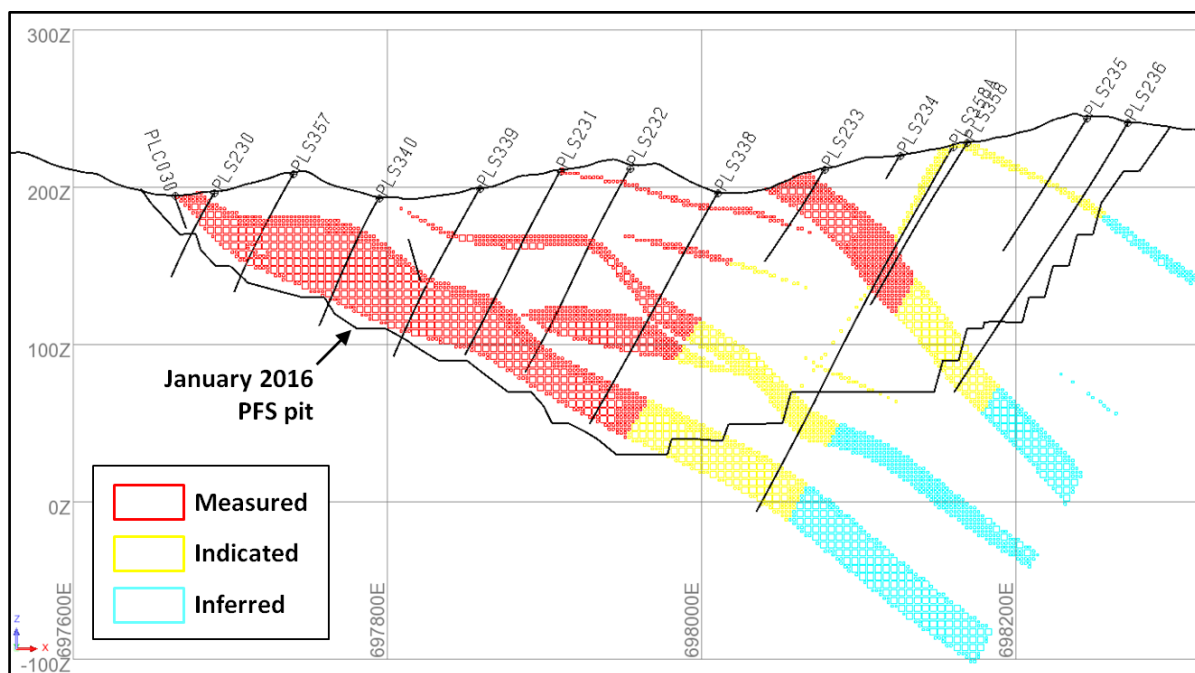
The estimation was carried out by independent resource consultancy, Trepanier Pty Ltd (“Trepanier”), resulting in the estimation of measured, Indicated and Inferred Resources. The reporting of all domains (capturing material above 0.01% Ta<sub>2</sub>O<sub>5</sub>) results in an Indicated and Inferred Mineral Resource estimate (Table 1) totalling:

- **128.6 million tonnes @ 1.22% Li<sub>2</sub>O, containing 1,572,000 tonnes of Li<sub>2</sub>O**

**Table 1: Pilgangoora Project – Mineral Resource Estimate**

Category	Mt	Li <sub>2</sub> O (%)	Ta <sub>2</sub> O <sub>5</sub> (ppm)	Li <sub>2</sub> O (T)	Ta <sub>2</sub> O <sub>5</sub> (M lb)
Measured	18.0	1.36	150	245,000	5.9
Indicated	65.6	1.24	131	812,000	19.0
Inferred	45.0	1.15	144	515,000	14.2
<b>TOTAL</b>	<b>128.6</b>	<b>1.22</b>	<b>138</b>	<b>1,572,000</b>	<b>39.2</b>

The envelope was wire-framed using both geological logging information (in particular logging of zoning within the pegmatite) and assay data for Ta<sub>2</sub>O<sub>5</sub>, Li<sub>2</sub>O and Fe<sub>2</sub>O<sub>3</sub>. Table 2 illustrates the breakdown of the resource by area, and Figure 3 shows a typical cross section through the Central and West pegmatites (as well as the PFS pit outline) showing the typical distribution of Measured, Indicated and Inferred categories



**Figure 5 – Cross Section (7670100mN) of the Central & West pegmatites (PFS pit outline) showing the typical distribution of Measured, Indicated and Inferred categories**

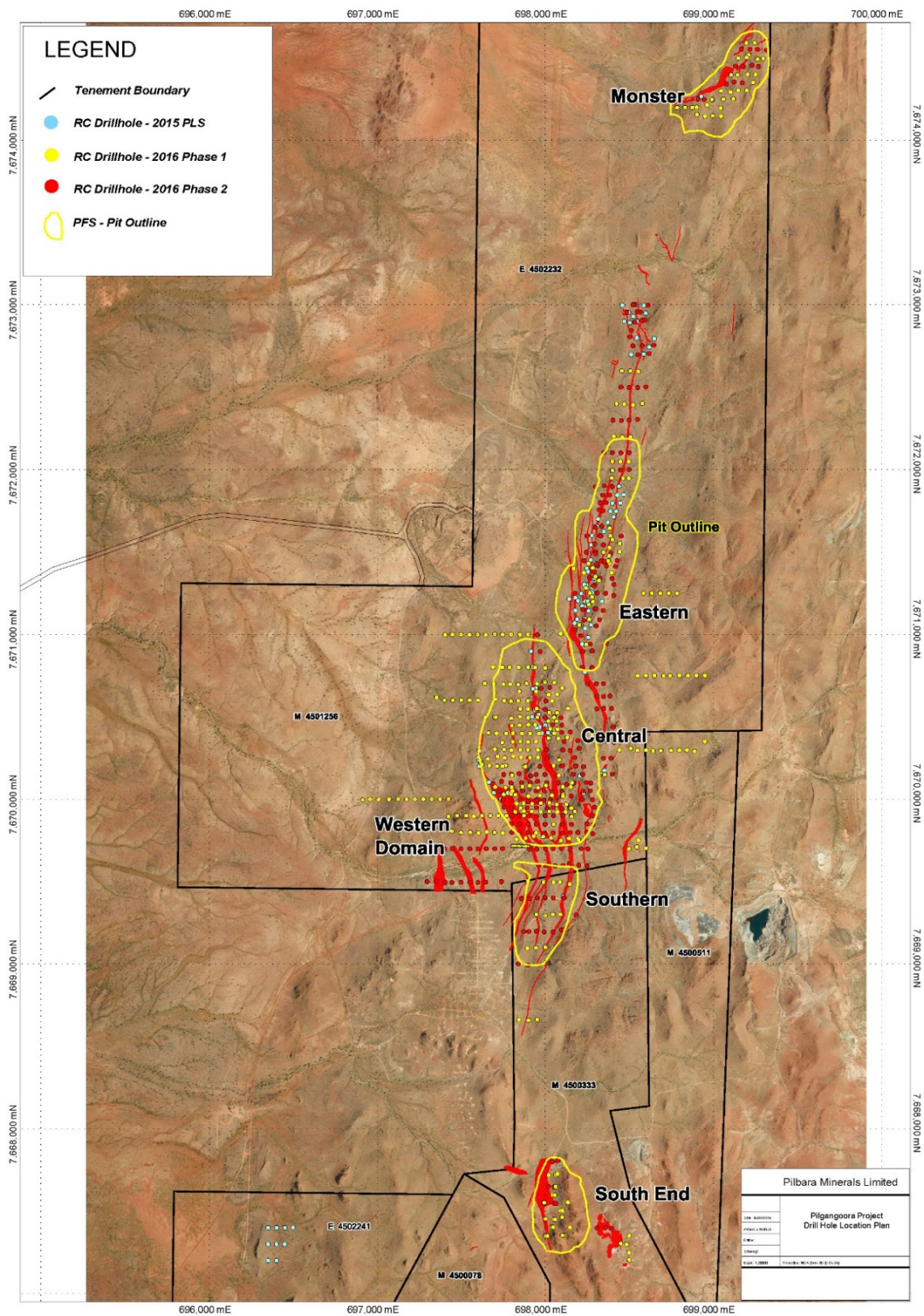


Figure 6 – Pilgangoora RC collar locations within licences E45/2232 and M45/333 showing the 2016 resource drilling and the proposed pit Outlines.