



ASX/Media Announcement

29 June 2017

PILBARA SETS STAGE FOR FURTHER GROWTH AT PILGANGOORA FOLLOWING SIGNIFICANT BOOST IN ORE RESERVES

Drilling success since DFS and strong customer demand allows Pilbara to evaluate expanded Stage 2 production of 5Mtpa as Pilgangoora Ore Reserves increase to 80.3Mt

HIGHLIGHTS:

- 15% increase in total Proved and Probable Ore Reserves at Pilbara's 100%-owned Pilgangoora Lithium-Tantalum Project to 80.3Mt grading 1.27% Li₂O, 123ppm Ta₂O₅ and 1.08% Fe₂O₃.
- The increase reflects the inclusion of drilling completed since the September 2016 Definitive Feasibility Study (maiden Ore Reserve: 69.8Mt grading 1.26% Li₂O and 132ppm Ta₂O₅).
- The updated Ore Reserve contains an estimated 1.0 million tonnes of lithium oxide and 22 million pounds of Ta₂O₅, extending the mine life to approximately 40 years based on a 2Mtpa operation.
- Reserve growth and customer demand conditions provide the opportunity to consider Stage 2 production of 5Mtpa, as compared to the previous 4Mtpa proposal outlined in the September 2016 Expansion PFS.
- Significant opportunities exist to further expand Mineral Resources and Ore Reserves, with further drilling campaigns to commence in July 2017.

Australian lithium developer, Pilbara Minerals Limited (ASX: PLS) (Pilbara or Pilbara Minerals) is pleased to announce a significant increase in the Ore Reserve estimate for its 100%-owned **Pilgangoora Lithium-Tantalum Project** in Western Australia (Figure 1), further strengthening its ability to increase production beyond the 2Mtpa Stage 1 project approved for development last week.

The expanded Ore Reserve of **80.3Mt grading 1.27% Li₂O, 123ppm Ta₂O₅ and 1.08% Fe₂O₃** is based on the upgraded Mineral Resource announced in January 2017 of 156.3 million tonnes @ 1.25% Li₂O containing an estimated 1.95 million tonnes of Li₂O.

The upgraded Ore Reserve, which represents approximately a 15% increase on the maiden Ore Reserve announced last year, incorporates additional drilling completed since the Definitive Feasibility Study ('DFS') released in September 2016.

Studies are now underway to evaluate increased production capacity to 5Mtpa, rather than 4Mtpa as originally contemplated, once operations at Pilgangoora have commenced at the initial targeted production rate of 2Mtpa (approximately 330,000tpa of spodumene concentrate per annum).

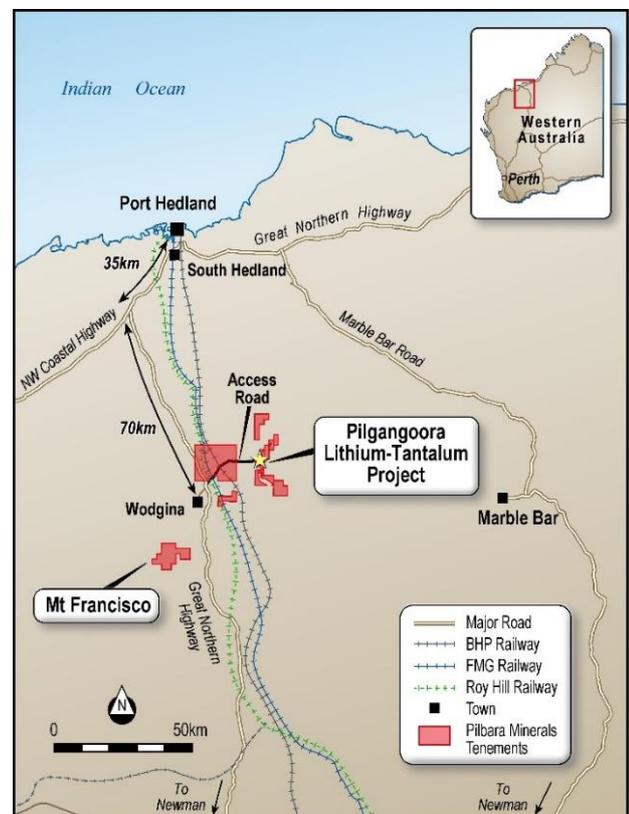


Figure 1 - Pilgangoora Project Location



Pilbara Minerals' Managing Director Ken Brinsden said the growth in Ore Reserves reflected the outstanding achievements of the Company's exploration team in delivering continued growth in the Pilgangoora Mineral Resource.

"Every drill program completed over the past few years has added significantly to our inventory, reinforcing Pilgangoora's position as a globally significant hard rock lithium-tantalum deposit," he said. "The new Ore Reserve announced today incorporates the most recent resource upgrade unveiled earlier this year and underpins a 40-year mine life at the Stage 1 production rate.

"This impressive result well and truly sets the scene for our Stage 2 expansion – and allows us to consider an increased production rate of 5Mtpa," Mr Brinsden added. "Given the rapid escalation in customer demand, the robust outlook for the lithium market and continued increases in the Resource and Ore Reserve, we have every reason to believe that Pilgangoora's production can continue to grow, subject of course to completing the appropriate studies."

2012 JORC Reserve Estimation

AMC Consultants were commissioned by Pilbara Minerals to assist in the development of the new Ore Reserve Estimate on Pilbara Minerals' 100% owned Pilgangoora Tantalum-Lithium Project. The Ore Reserves are based on the Mineral Resource update released on the 25th January 2017, by Pilbara Minerals, Competent Persons: Mr John Young (Executive and Technical Director of Pilbara Minerals Limited) and Mr Lauritz Barnes (Consultant with Trepanier Pty Ltd).

The Mineral Resource reported with all domains (capturing material above 0.01% Ta₂O₅) is outlined in the Table below in Table 1.

Table1: Pilgangoora Lithium-Tantalum Geological Mineral Resource Estimate (January 2017)

Category	Tonnage (Mt)	Li ₂ O (%)	Ta ₂ O ₅ (ppm)	Li ₂ O (T)	Ta ₂ O ₅ (Mlbs)
Measured	17.6	1.39	151	244,000	5.9
Indicated	77.7	1.31	125	1,017,000	21.5
Inferred	61.1	1.13	125	691,000	16.8
TOTAL	156.3	1.25	128	1,952,000	44.2

Notes:

1. Mineral Resource reported above 0.5 Li₂O% cut-off
2. Appropriate rounding applied
3. Refer to ASX announcement 25 January 2017

The study consisted of an initial conversion of the Mineral Resource model to a mining model by applying skin dilution to the mineralisation. This was followed by open pit optimisation to define the new economic mining envelopes and subsequent detailed open pit designs, mine scheduling and costing.

The mining method contemplates open pit mining using truck and hydraulic excavator operations mining 2 x 2.5m fitches for 5m benches for combination waste-pegmatite mining and 5m bench mining for waste mining. The mining method considered selective excavation techniques to, as far as practicable, separate waste rock from the mineralised pegmatite to minimise mining dilution. Skin dilution was applied to the boundary of the mineralisation using wireframes to create a proportional estimate and account for the effect of mixing waste with the pegmatite. The true width of the skin dilution was modelled to be approximately 0.5m on both hanging wall and footwall contacts. The equivalent ore loss and mining dilution within the Pilgangoora mining envelope was estimated to be 5% and 6% respectively.



Fe₂O₃ grade of waste (mafic rocks) mining dilution was derived from local estimates of a waste model generated using ordinary kriging. The 2.5m benches in combination with the application of hydraulic excavator (backhoe) to selectively mine the pegmatite from the waste resulted in a mining ore loss value of 5%.

Drilling and blasting will be by track mounted top of the hole rigs with sufficient mobility to access the pit from surface contour to pit bottom.

Geotechnical assessment of the weathered and fresh rock domains determined stable walls will be achievable using 50 degree batters in the weathered domain and 75 degree batters in the fresh rock domain. Benches will be established every 20m maximum with a minimum berm width of 10m.

An estimated 4.0 Mt of material comprising Inferred Resource and excluded oxide material above the cut-off grade was recovered within the pit designs. This mineralisation was treated as waste for the purposes of the Ore Reserve estimate but has potential to be added to the mining inventory with further drilling and metallurgical testing.

Key parameters used as part of the Ore Reserve estimation process included (but were not limited to):

- Assumed average of 2 million tonnes of ore processing per annum.
- A selling price of USD\$537/t for Battery Grade concentrate, at 6% Li₂O as provided by Pilbara Minerals.
- Mining costs derived from recently received mining contractor submissions which were based on the 2016 DFS mine designs and a new mining schedule which included the addition of the Lynas Find pit.
- A fixed recovery of 77.5% was applied to the lithium oxide recovery.
- Processing costs as per the 2 Mtpa rate developed by Como Engineering.

The June 2017 combined Ore Reserve for the final pit design is shown below in Table 2. In addition, the life-of-mine strip ratio for the 2017 Ore Reserve pit design was estimated to be 3.9 (t_w/t_o).

Table 2: Pilgangoora Tantalum-Lithium Project JORC Ore Reserve Estimate (June 2017)

Category	Tonnage (Mt)	Li ₂ O (%)	Ta ₂ O ₅ (ppm)	Fe ₂ O ₃ (%)	Li ₂ O (T)	Ta ₂ O ₅ (Mlbs)
Proved	17.3	1.30	141	1.03	230,000	5.4
Probable	62.9	1.25	119	1.10	790,000	16.5
TOTAL	80.3	1.27	123	1.08	1,020,000	21.8

Notes:

1. Ore loss was estimated to be 5% of the convertible Measured and Indicated Mineral Resource
2. The Ore Reserve estimate includes 4.4 Mt of diluting material at zero grade for Li₂O and Ta₂O₅ representing an equivalent dilution factor of approximately 6%.
3. The grade of Fe₂O₃ associated with waste rock dilution was estimated into a waste model using ordinary kriging and applied locally.
4. All Inferred Mineral Resource and unclassified mineral inventories within the mining envelope were treated as waste.
5. The Lynas Find pit and infrastructure is located on an exploration lease (E45/4523). A Mining Lease Applications has been lodged. All other pits are located within existing granted mining leases held by Pilbara Minerals.
6. Totals may not add up due to rounding and numbers are stated to 3 significant figures for tonnes, grade and contained oxide.
7. The Ore Reserve was estimated using the Net Smelter Return (NSR) method. The marginal economic cut-offs were estimated to be between \$25.86 per tonne and \$26.89 per tonne depending on the distance from the process plant.

This Ore Reserve is the economically mineable part of the Measured and Indicated Resource. It includes mining dilution and allowance for losses in mining. Appropriate assessments and studies have been carried out and include consideration of and modification by realistically assumed mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors. These assessments demonstrate at the time of reporting that extraction could reasonably be justified.

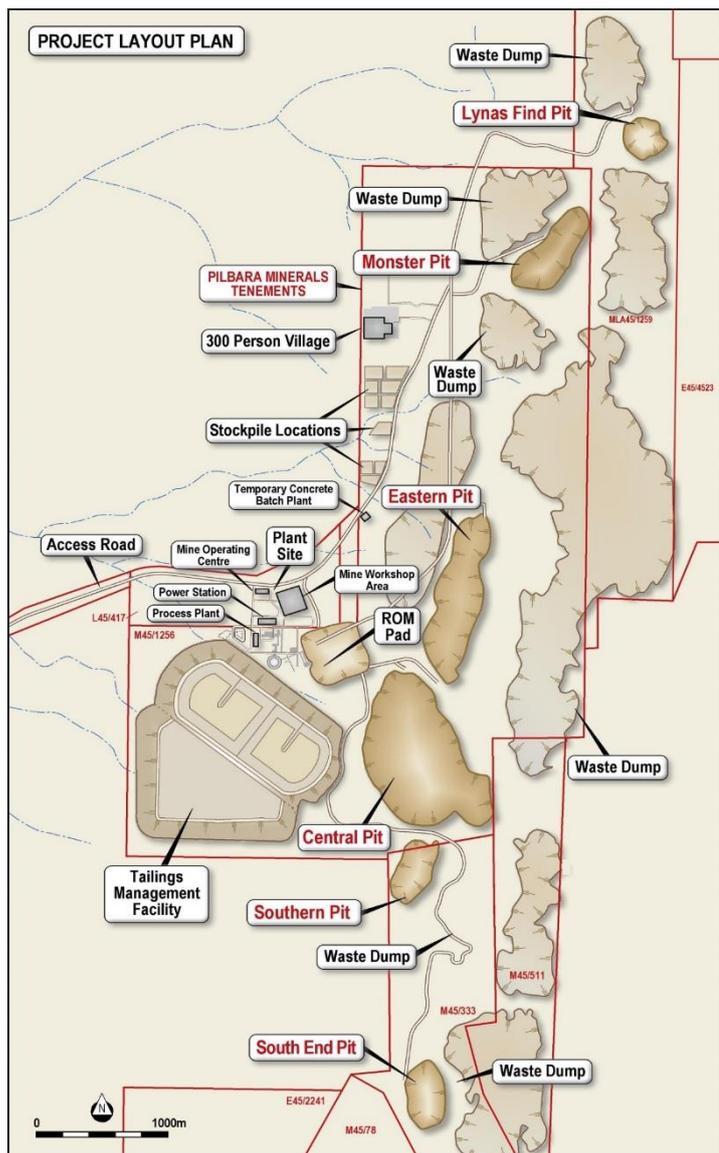


Figure 2 – Project Layout Plan

The pit and waste rock dump designs will impact the Pilgangoora Creek. Diversion channels proposed subsequent to the DFS were approved by the regulators as part of the approvals process. Further modification to these designs will be required to accommodate the expanded mining areas developed as part of the June 2017 Ore Reserve.

The waste rock dump designs take into account the potential acid forming material (PAF) likely to be encountered in the Eastern and Central deposits, and are designed to meet the M45/1256 license requirements. Waste rock characterisations studies to determine the quantity and reactivity of the PAF were undertaken as part of the DFS and will continue through the life of the operation as required.

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

Overall the mining cost inputs are based on current marketing pricing received from mining contractors' submissions, which were based on designs and schedules prepared for the DFS and modified to reflect the revised site layout (Figure 2).

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

As part of the Pilgangoora DFS, Pilbara Minerals commissioned Como Engineers to complete the mineral processing test-work including estimates for the capital required for construction of the processing plant. The findings and costs developed from this study were considered in this 2017 Ore Reserve estimate.

The essential elements of the process plant design utilise a combination of heavy media separation and flotation, to produce a 6% Li₂O concentrate.

Processing metallurgical consultants have conducted sufficient test work to indicate that Battery Grade Lithium concentrate can be produced at 6% Li₂O with a suitable Fe₂O₃ quality for sale in this market. Similarly, preliminary Tantalum concentrate products have been produced for third party sale.

A life of mine fixed recovery rate for Lithium oxide of 77.5% was applied base on metallurgical tests conducted by external metallurgical consultants as part of the feasibility studies. A fixed life of mine average Ta₂O₅ metallurgical recovery of 57.4% was also applied.

Mineralisation analysis and liberation estimates of the product and tails have been completed to support the design and the process flow with mass balances. Metallurgical test work has shown that Fe₂O₃ and deleterious elements are within acceptable range within the concentrate.



Competent Person's Statement

The information in this report that relates to the Mineral Resources is unchanged from the results released to the ASX on 25 January 2017. The Mineral Resource in the 25 January 2017 ASX release referred to it being prepared by Mr Lauritz Barnes, (Consultant with Trepanier Pty Ltd) and Mr John Young (Executive and Technical Director of Pilbara Minerals Limited). Mr Young is a shareholder of Pilbara Minerals. Mr Barnes and Mr Young are members of the Australasian Institute of Mining and Metallurgy and have 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. The Company is not aware of any new information or data that materially affects the information included in that market announcement and all material assumptions and technical parameters underpinning the estimate continue to apply and have not materially changed.

The information in this report that relates to Ore Reserves is based upon information reviewed and compiled by Mr Dion Fotakis, who is a Fellow of the Australasian Institute of Mining and Metallurgy. Mr Fotakis has sufficient experience relevant to the style of mineralization and type of deposit under consideration to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code)". Mr Fotakis has consented to the inclusion in the report of the matters based on this information in the form and context in which it appears. Mr Fotakis was appointed by Pilbara Minerals Ltd to provide project management and mining consulting services for the Pilgangoora project and is a shareholder.

Additional 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-Tantalum project which is among the largest Spodumene (Lithium Aluminium Silicate) projects 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 Spodumene 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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FORWARD LOOKING STATEMENTS AND IMPORTANT NOTICE

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 are indicative and 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.



JORC Code, 2012 Edition – Table 1 Appendix 1 to Announcement:

Table 1 - Section 4: Estimation and Reporting of Ore Reserves for the Pilgangoora Lithium-Tantalum Project		
Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves.	<p>Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.</p> <p>Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.</p>	<p>The Ore Reserve Estimate is based on the Mineral Resource released on the 25th January 2017, by Pilbara Minerals, competent persons: Mr John Young (Executive and Technical Director of Pilbara Minerals Limited), Mr Lauritz Barnes, (Consultant with Trepanier Pty Ltd).</p> <p>The Minerals Resources are reported inclusive of the Ore Reserves.</p> <p>Mr Fotakis has relied on the integrity and accuracy of the Mineral Resource for this Ore Reserve estimate.</p>
Site visit	<p>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</p> <p>If no site visits have been undertaken indicate why this is the case.</p>	<p>The Competent Person is currently the Manager Mining and visits the site frequently on a fly-in-fly-out basis. In the course of preparing this estimate the Competent Person has ensured the data and analysis used in this estimate is appropriate for the proposed operating conditions for the project.</p>
Study status.	<p>The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.</p> <p>The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.</p>	<p>The level of detail used in the preparation of this Ore Reserve estimate is consistent with that of a feasibility study. The Ore Reserve considered only the Measured and Indicated Resources published as part of the Mineral Resource on the 25th January 2017.</p> <p>As part of the Pilgangoora June 2017 Ore Reserve estimate, a mine plan was developed that was technically achievable and economically viable. This mine plan considered material Modifying Factors such as dilution and ore loss, various boundary constraints processing recoveries and all costs associated with mining, processing, transporting and selling the various products.</p>
Cut-off parameters.	<p>The basis of the cut-off grade(s) or quality parameters applied.</p>	<p>The Mineral Resource provided was a geologically domained resource; this geological model was modified for ore loss and dilution and evaluated to determine which blocks produced cash surplus when treated as ore.</p> <p>The Ore Reserve was estimated using the Net Smelter Return (NSR) method The marginal economic cut-offs were estimated to be between \$25.86 per tonne and \$26.89 per tonne depending on the distance from the process plant. The cut-off grade contemplates all pre-tax costs associated with the processing and selling of a composite Lithium and Tantalum product. Provision was made in the NSR estimate for the following costs:</p> <ul style="list-style-type: none"> • Incremental ore haulage to the process plant RoM, • Stockpile re-handle, • Processing, • Road transport, • Ship loading, • Royalties, • General overhead cost and administration. <p>The revenue was determined using a flat forward price for lithium concentrate of US\$537 per tonne and price for Tantalum concentrate of US\$ 73 per lb and an exchange rate of US\$0.75 per AU\$1.00.</p> <p>Process recoveries were applied as outlined below under “Metallurgical Factors or Assumptions”.</p>



Table 1 - Section 4: Estimation and Reporting of Ore Reserves for the Pilgangoora Lithium-Tantalum Project

Criteria	JORC Code explanation	Commentary
<p>Mining factors or assumptions.</p>	<p>The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).</p> <p>The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.</p> <p>The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.</p> <p>The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).</p> <p>The mining dilution factors used.</p> <p>The mining recovery factors used.</p> <p>Any minimum mining widths used.</p> <p>The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.</p> <p>The infrastructure requirements of the selected mining methods.</p>	<p>A feasibility level mining study was carried out by AMC Consultants in conjunction with a number of independent mining consultants appointed by Pilbara Minerals Ltd.</p> <p>This Ore Reserves estimate is based on the Mineral Resource released on the 25th January 2017, by Pilbara Minerals, competent persons: Mr John Young (Executive and Technical Director of Pilbara Minerals Limited), Mr Lauritz Barnes, (Consultant with Trepanier Pty Ltd).</p> <p>The Mining method contemplates open pit mining using truck and hydraulic excavator (backhoe) operations mining 2 x 2.5m flitches for 5m benches for combination waste-pegmatite mining and 5 m bench mining for waste mining. This mining method is considered appropriate for this style of mineralization and orebody.</p> <p>The mining method considered selective excavation techniques to, as far as practicable, separate waste rock (mafic rocks) from the mineralised pegmatite thereby minimising mining dilution. Dilution was modelled to reflect this approach. Skin dilution was applied to the boundary of the mineralisation using wireframes to create a proportional estimate and account for the effect of mixing waste with the pegmatite. The equivalent true width of the skin dilution was modelled to be approximately 0.5 m on both hanging wall and footwall contacts.</p> <p>The equivalent ore loss and mining dilution within the Pilgangoora mining envelope was estimated to be 5% and 6% respectively. The Ore Reserve estimate includes 4.4 Mt of diluting material at zero grade for Li₂O and Ta₂O₅.</p> <p>At Lynas Find the dilution was applied using the same method to the high grade envelope within the main pegmatite which in some areas was contiguous with the surrounding waste rock. The ore loss and dilution at Lynas Find was estimated to be 3% and 3% respectively.</p> <p>Fe₂O₃ grade of greenstone mining dilution was derived from local estimates of a waste model generated using ordinary kriging.</p> <p>The 2.5m benches in combination with the application of hydraulic excavator (backhoe) to selectively mine the pegmatite from the waste resulted in the selection of a mining ore loss value of 5%.</p> <p>Drilling and blasting was considered to be completed by track mounted top of the hole rigs with sufficient mobility to access the pit from surface contour to pit bottom.</p> <p>Geotechnical assessment of the weathered and fresh rock domains determined stable walls will be achievable using 50 degree batters in the weathered domain and 75 batters in the fresh rock domain. Benches will be established every 20 m maximum with a minimum berm width of 10m.</p> <p>Boundary constraints were applied in the pit optimisation to account for lease boundaries, diversion channels and mine abandonment bunds.</p> <p>The pit design recovered 3Mt of inferred material within the pit designs, this material was treated as waste for the purposes of the Feasibility study. There is no inferred material used in the Ore-Reserve estimation. This material is considered to have reasonable prospects of for upgrading and incorporation into the mining inventory.</p> <p>The pit design recovered 1 Mt of oxide material (measured, indicated and inferred material, including 45 Kt of inferred material) within the pit designs, this material was treated as waste for the purposes of the Feasibility study. There is no oxide material used in the Ore-Reserve estimation. This material is considered to have reasonable prospects of for upgrading and incorporation into the mining inventory.</p> <p>Infrastructure requirements for the project were based on estimates prepared by Engenium. These include estimates for site access road upgrade with improvements for rail crossings and highway intersections, a heavy vehicle workshop, light vehicle and fixed plant workshop, warehousing, fuel storage and</p>



Table 1 - Section 4: Estimation and Reporting of Ore Reserves for the Pilgangoora Lithium-Tantalum Project		
Criteria	JORC Code explanation	Commentary
		dispensing facility, explosive magazines, wash-down pad, waste management facility, power generation, potable water supply and office facilities.
Metallurgical factors or assumptions.	<p>The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.</p> <p>Whether the metallurgical process is well-tested technology or novel in nature.</p> <p>The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.</p> <p>Any assumptions or allowances made for deleterious elements.</p> <p>The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.</p> <p>For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?</p>	<p>A processing rate of 2 Million tonnes per annum was assumed.</p> <p>As part of the 2016 Pilgangoora Detailed Feasibility Study, Pilbara Minerals commissioned Como Engineers to complete the mineral processing test-work including estimates for the capital required for construction of the processing plant. The findings and costs developed from this study were considered in this 2017 Ore Reserve estimate.</p> <p>The essential elements of the process plant design utilise a combination of heavy media separation and flotation, to produce a 6% Li₂O concentrate.</p> <p>Processing metallurgical consultants have conducted sufficient test work to indicate that Battery Grade Lithium concentrate can be produced at 6% Li₂O with a suitable Fe₂O₃ quality for sale in this market. Similarly, preliminary Tantalum concentrate products have been produced for third party sale.</p> <p>A life of mine average fixed recovery 77.5%, as determined by external metallurgical consultants during the DFS, was applied.</p> <p>A life of mine average fixed recovery of 57.4% for Ta₂O₅ was applied in this estimate.</p> <p>Mineralisation analysis and liberation estimates of the product and tails have been completed to support the design and the process flow with mass balances.</p> <p>Metallurgical test work has shown that Fe₂O₃ and deleterious elements are within acceptable range within the concentrate.</p>
Environmental	<p>The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.</p>	<p>Appropriate environmental studies have been completed over the project area. No issues have been identified that would material impact the proposed location of pits, infrastructure or waste rock dumps (WRDs). Backfilling of pits has not been proposed to avoid potential sterilisation of future extensions to the ore reserve.</p> <p>Sterilisation drilling of some WRD footprints has been undertaken with further programs proposed and to be completed prior to the confirmation of the location of the proposed WRD locations. No issues have been identified that will materially impact on the proposed locations.</p> <p>The WRD designs allow for the encapsulation and storage of potential acid forming material (PAF) and are designed to meet the license requirements. Waste rock characterisations studies have been completed to a sufficient level of confidence.</p> <p>Management of top soil material including pre-stripping prior to mining and storage for future incremental rehabilitation was allowed for in this estimate.</p> <p>A Soil Characterisation review and report has been completed by environmental consultants, which will facilitate further detailed work regarding top soil management.</p> <p>A Mining Proposal has been approved by the regulators based on the DFS. There are reasonable expectations that an amendment to that proposal will be approved to account for the design changes resulting from the June 2017 Ore Reserve estimate.</p> <p>All Native Title issues associated with the DFS footprint were resolved as part of</p>



Table 1 - Section 4: Estimation and Reporting of Ore Reserves for the Pilgangoora Lithium-Tantalum Project		
Criteria	JORC Code explanation	Commentary
		<p>the Mining Proposal approval process. Heritage surveys of the Lynas Find area have been undertaken and there are no issue were identified. Additional heritage survey/s will be required for the expanded footprint required for the storage of waste rock.</p> <p>Hydrological and hydrogeological studies were undertaken during the 2016 DFS to assess the impact on surface and ground water flows. No significant impacts on or by the proposed mining operations were identified.</p>
Infrastructure	The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.	<p>Sufficient land exists to locate all proposed infrastructure, tailings management facilities (TMF) and waste rock dumps required for the project. The additional tailings produced as a result of the expanded reserve will be stored either in an expansion of the existing facility or disposed subaqueously in mined out areas.</p> <p>Product export will be via Port Hedland Port facilities, 150 km by road to the north. 115 km of this being sealed road. The unsealed sections of road will be upgraded to allow road haulage using double combination road trains.</p> <p>Power will be generated on site to meet the needs of the process plant and supporting infrastructure.</p> <p>A water balance assessment has determined the water resources already secured by Pilbara Minerals will be sufficient to meet the needs of the operation.</p> <p>During operations, the Pilgangoora creek will need to be diverted slightly from it's current alignment at a number of locations. Diversion channels proposed during the DFS were approved under the Mining Proposal. Extension to the Pilgangoora creek diversion channels as a result of the modified site layout will require approval by the regulators and no issues have been identified and as such there are reasonable expectations this will be granted. Costs for these diversions were allowed for in the preparation of this estimate.</p> <p>The workforce required for the operation will be engaged on a fly-in-fly-out (FIFO) basis. FIFO operations are well established within Western Australia and the broader Australian context. FIFO workers will generally commute between Perth and Port Hedland. Fully catered accommodation facilities will be established on site.</p>
Costs.	<p>The derivation of, or assumptions made, regarding projected capital costs in the study.</p> <p>The methodology used to estimate operating costs.</p> <p>Allowances made for the content of deleterious elements.</p> <p>The source of exchange rates used in the study.</p> <p>Derivation of transportation charges.</p> <p>The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.</p> <p>The allowances made for royalties payable, both Government and private.</p>	<p><u>Capital costs</u></p> <p>Capital estimates are based on the current forecast project capital costs of A\$234 million (inclusive of contingency and pre-production operating costs).</p> <p><u>Operating Costs</u></p> <p>Mining costs were based on current marketing pricing from mining contractor submissions recently received, which were based on the 2016 Detailed Feasibility Study mine design and a mining schedule derived from DFS design which included the addition of the Lynas Find pit. Unit costs received from the contractors were applied to the revised design and mining schedule. Mining Costs also consider activities for mining team operating costs, management and maintenance, mobile plant maintenance infrastructure, ore rehandle and crusher feed, clear and grub, top soil management, and rehabilitation and mine closure criteria. The life of mine average mining cost was estimated to be \$4.50 per tonne of material mined.</p> <p>The processing costs was estimated to be \$22.31 per tonne of ore treated and was prepared by Como Engineers Pty Ltd as part of the 2016 DFS, with adjustments from process improvements as per ASX announcement 12 May 2017.</p> <p>General and Administration costs were prepared by Pilbara Minerals and estimated to be \$2.39 per tonne of ore treated.</p> <p>Transport and shipping costs were based on 2016 DFS quotations for contractor</p>



Table 1 - Section 4: Estimation and Reporting of Ore Reserves for the Pilgangoora Lithium-Tantalum Project		
Criteria	JORC Code explanation	Commentary
		<p>supplied services and were estimated to be \$68.61 per dmt of concentrate. Tantalum transport and shipping charges were estimated to be \$4.09 per pound of Tantalum metal.</p> <p>Allowance has been made for state royalties at 5% in accordance with prevailing legislation. Third party royalties of 1% for Li₂O concentrate sales and 3.5% for Ta₂O₅ product sales were also included.</p> <p>No allowances were made for deleterious elements as Pilbara Minerals has shown in metallurgical test work that they are unlikely to exist in any significant way.</p>
Revenue Factors	<p>The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.</p> <p>The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.</p>	<p>Li₂O prices were determined by Pilbara Minerals for Chemical Grade product using market forecasts sourced from recognized independent analysts.</p> <p>Ta₂O₅ prices are provided by Pilbara Minerals for Tantalum concentrates using current information supplied by Metal Pages / Argus Media for Tantalum concentrates prices to a third party.</p>
Market assessment.	<p>The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.</p> <p>A customer and competitor analysis along with the identification of likely market windows for the product.</p> <p>Price and volume forecasts and the basis for these forecasts.</p> <p>For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.</p>	<p>Pilbara Minerals have entered into off take agreements for the sale of up to 95% of battery grade Li₂O concentrate production. Agreements are in place with various parties for minimum duration of six to ten years with options to extend. Discussion with third parties regarding and Ta₂O₅ concentrates is ongoing but are yet to be finalised.</p> <p>Price forecasts for the key commodities are detailed in the "Cut- off grade parameters" section above.</p>
Economics	<p>The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.</p> <p>NPV ranges and sensitivity to variations in the significant assumptions and inputs.</p>	<p>Lerchs-Grossman analysis of the deposit, via Whittle software, has been conducted to focus development around the economic portion of the deposit.</p> <p>Discounting interest rate of 10% was applied.</p> <p>Sensitivities conducted indicate the project is most sensitive to direct revenue factors such as price, metallurgical recovery, dilution, mining cost, and processing cost. These were completed using +/- 20% from assumed values. Net Present Value (NPV) for the project is positive.</p>
Social	<p>The status of agreements with key stakeholders and matters leading to social licence to operate.</p>	<p>Pilbara Minerals have agreements in place with traditional landowners with recognized title over the project area.</p> <p>The project is also located in the Pilbara region of Western Australia, one of the most significant mining regions of the globe. Pilbara Minerals have not identified or encountered any obstruction to gaining a social license to operate.</p>



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Other.	<p>To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:</p> <p>Any identified material naturally occurring risks.</p> <p>The status of material legal agreements and marketing arrangements.</p> <p>The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.</p>	<p>The project area is largely located inside mining leases. The Lynas Find pit and infrastructure is located on an exploration lease (E45/1259). Pilbara Minerals are seeking to include Lynas Find in an amendment to the Mining Proposal. No objections to the proposed infrastructure have been received or are being resolved.</p> <p>.</p> <p>The Mining Proposal, based on a slightly modified version of 2016 DFS was submitted to the Western Australian Department of Mineral and Petroleum and was approved 9th May 2017. Approval for minor amendments to the mining proposal including the Lynas Find pit will be required for the 2017 reserve.</p>
Classification.	<p>The basis for the classification of the Ore Reserves into varying confidence categories.</p> <p>Whether the result appropriately reflects the Competent Person's view of the deposit.</p> <p>The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).</p>	<p>Only Measured and Indicated Mineral Resource were considered and were converted by application of mining factors to the Ore Reserve. Diluting material was unclassified and assigned a diluting grade of zero for Li₂O and Ta₂O₅. The grade of Fe₂O₃ was determined in the manner described in the "Mining factors or assumptions" section.</p> <p>The Competent Person considers that, based on experience with projects of a similar nature, the Ore Reserve Estimate reflects a reasonable expectation of selective mining from a Spodumene pegmatite deposit.</p> <p>All Probable Ore Reserves were derived from Indicated Mineral Resources only. No downgrading of reserve classifications was deemed warranted in the estimation of this Ore Reserve.</p>
Audits or reviews.	<p>The results of any audits or reviews of Ore Reserve estimates.</p>	<p>This Ore Reserve estimate was prepared by independent consultants appointed by Pilbara Mineral and with the assistance and guidance of AMC consultants. Both parties conducting peer review of the other.</p> <p>The appropriateness of the Ore Reserve calculation was peer reviewed by peers within the AMC Consultants. No material flaws have been identified, and it is considered appropriate ore reserve at a feasibility level</p> <p>This Ore Reserve estimate was completed with to a level of accuracy considered to be: +/-15%.</p> <p>There are no modifying factors identified at the time of this statement that are not accounted for and that would have a material impact on the Ore Reserve estimate.</p>
Discussion of relative accuracy/confidence.	<p>Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an</p>	<p>The Feasibility study has been completed with a relative accuracy of +/-15%.</p> <p>All mining estimates are based on Australian costs.</p> <p>There are no unforeseen modifying factors at the time of this statement that will have any material impact on the Ore Reserve estimate.</p>



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	<p>approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.</p> <p>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</p> <p>Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.</p> <p>It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</p>	<p>Where practical and possible, current industry practices have been used to quantify estimations made.</p> <p>As part of ongoing works, it is recommended that further work is completed in mine scheduling and waste rock dump design in particular focusing on the first 10 years of the project to optimise project value while ensuring TMF and PAF management requirements and preparation of detailed volume and cost schedules for the PAF encapsulation, including clay pit locations and quantities of high density polyethylene linings.</p>