



ASX ANNOUNCEMENT

28 July, 2014

PILBARA COMPLETES ACQUISITION OF PILGANGOORA TANTALUM-LITHIUM PROJECT, WA

KEY ACQUISITION CEMENTS PILBARA'S GROWTH AND DEVELOPMENT STRATEGY IN STRATEGIC METALS

HIGHLIGHTS:

- **Acquisition of large-scale Pilgangoora Tantalum-Lithium Project** from Global Advanced Metals Wodgina Pty Ltd ("GAMW") completed.
- **Pilgangoora contains a JORC compliant tantalum-lithium resource** calculated from historical drilling of:
 - *Inferred Resource: 10.4Mt @ 0.024% Ta₂O₅ (tantalite) containing 5,500,000lbs Ta₂O₅*
 - *Including: 8.6Mt @ 1.01% Li₂O (spodumene) containing 87,000 tonnes of lithium*
- **Outstanding potential to grow the resource**, with drilling planned targeting higher grade tantalite and spodumene zones within the known pegmatites plus in-fill and step-out drilling.
- **Pilgangoora is located just 55km from Pilbara's Tabba Tabba Tantalum Project** with the potential to provide long-term mine life extension to Tabba Tabba operations.
- **Tabba Tabba treatment plant upgradeable** with the addition of a flotation section which would enable extraction of Pilgangoora spodumene.

Pilbara Minerals Ltd (ASX: PLS) is pleased to advise that it has completed the acquisition of the world-class **Pilgangoora Tantalum-Lithium Project**, located 150km south-east of Port Hedland in WA's Pilbara region, from Global Advanced Metals Wodgina Pty Ltd ("GAMW").

The acquisition provides Pilbara with an attractive longer term growth opportunity in the strategic metals space, complementing and building on its flagship Tabba Tabba Tantalum Project (50/50 joint venture with Nagrom Mining), where mining and production is scheduled to commence in Q4 2014.

The Pilgangoora Project comprises five tenements, including two Exploration Licences (EL45/2232 and EL45/2241) and three Mining Leases (M45/78, M45/333 and M45/511) covering an area of 31km², which are prospective for tantalum and lithium mineralisation. The Project is located 25km from GAMW's world-class Wodgina Tantalum Mine and immediately north of and along strike from Altura Mining Limited's (ASX: AJM) Pilgangoora Lithium Deposit, which hosts a JORC Resource of **25.2Mt @ 1.23% Li₂O** (lithium oxide).²

GAMW completed extensive programs of Reverse Circulation (RC) drilling on EL45/2232 between 2008 and 2012, as well as broader-spaced drilling over the 3.2km strike length of the main pegmatite field on EL45/2232.

This enabled Pilbara to complete a maiden JORC Mineral Resource estimate and updated Exploration Target for the Pilgangoora Project, which was announced to the market on 17 June 2014.

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The resource, comprising **5.5 million pounds of contained tantalum** and **87,000 tonnes of contained lithium** (see full resource details below) adds significantly to the Company's portfolio of strategic metal assets in the Pilbara region and provides an attractive future growth opportunity alongside its soon-to-be-commissioned Tabba Tabba Tantalum Project.

Pilbara Executive Director and CEO, Mr Neil Biddle, said the Pilgangoora Project was an outstanding growth opportunity which the Company was fortunate to have secured.

"Together with the neighbouring Altura Mining deposit, Pilgangoora is almost certainly one of the largest hard rock tantalum-lithium deposits in the world and is a wonderful asset to have in our emerging Pilbara portfolio," Mr Biddle said.

"Our plan with Pilgangoora is to commence drilling soon to demonstrate extensions to the known mineralisation and upgrade the resource, which we believe could not only provide an incremental source of tantalite production to our Tabba Tabba plant but also in future be developed as a world-scale lithium project.

"Demand for lithium is growing rapidly because of its use in electronics and particularly portable and hand-held electronic devices, as well as batteries for energy storage and in electric and hybrid cars," he added.

Background on Pilgangoora

The initial work undertaken by Pilbara at Pilgangoora has involved the estimation of a maiden 2012 JORC compliant mineral resource for the Project using all historical data plus the updated drilling supplied by GAM and applying modern resource estimation methods. The calculation was carried out by independent resource consultancy Trepanier Pty Ltd (Trepanier), resulting in the estimation of an Inferred Resource.

The reporting of all domains (capturing material above 0.01% Ta₂O₅) results in an Inferred Mineral Resource estimate of:

- **10.4 million tonnes @ 0.024% Ta₂O₅ containing 5,500,000 lb of Ta₂O₅**

Within this, there is **8.6 million tonnes @ 1.01% Li₂O containing 87,000 tonnes of lithium oxide.**

The data utilised for the estimation process includes a drill-hole database of 100 holes plus surface geological mapping (Figure 1) and current topographical survey data. The geological model was developed by Pilbara and Trepanier using a constrained envelope that lies within the host pegmatite only.

The envelope was wire-framed using both geological logging information (in particular logging of zoning within the pegmatite and assay data for Ta₂O₅ and Li₂O. Note that there were insufficient samples analysed to allow populating of Li₂O into 7 of the 20 domains, hence the different tonnage reported above for the Li₂O resource. Details of the data used for the estimation, site inspection information and the quality control checks completed on the data are documented in Appendix 1 and 2 (Tables 1 to 3).

Due to the initial estimation of the Inferred Resource being in excess of 10M tonnes based on the limited RC drilling completed to date, Pilbara Minerals has announced (June 17, 2014) its **Exploration Target of 15 – 25 million tonnes @ 200 - 300ppm Ta₂O₅ and 1.2-1.5% Li₂O** (Table 1) which is based on the aforementioned drilling. An Exploration Target is conceptual in nature and there has been insufficient exploration to estimate a Mineral Resource in compliance with the JORC Code and it is uncertain if further exploration will result in the estimation of a Mineral Resource as defined by the JORC Code.

Table 1 – Pilgangoora Tantalum-Lithium Exploration Target¹ on E45/2232

Exploration Target ¹	Tonnes (Mt)	Grade Li ₂ O %	Grade Ta ₂ O ₅ ppm
Northern Area	5-10	1.2 - 1.5	200 - 300
Central & Southern Area	10-15	1.2 - 1.5	200 - 300
TOTAL	15-25	1.2 - 1.5	200 - 300

Exploration Target¹ : The potential quantities and grades are conceptual in nature and there has been insufficient exploration to date to define a Mineral Resource. It is not certain that further exploration will result in the determination of a Mineral Resource under the “Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, the JORC Code” (JORC 2012). The Exploration Target is not being reported as part of any Mineral Resource or Ore Reserve.

Pilbara has set a longer-term objective of defining a significant hard rock lithium and tantalum resource. Initial RC drilling in Q4 2014 (subject to funding) will focus on the higher-grade tantalum lenses to test the validity of the exploration target. Exploration results from the initial phase of RC drilling is expected to be available in December 2014. Pilbara will concurrently scope the potential for utilising PLS’ proposed Tabba Tabba Tantalum Project plant and infrastructure, located 55km to the north.

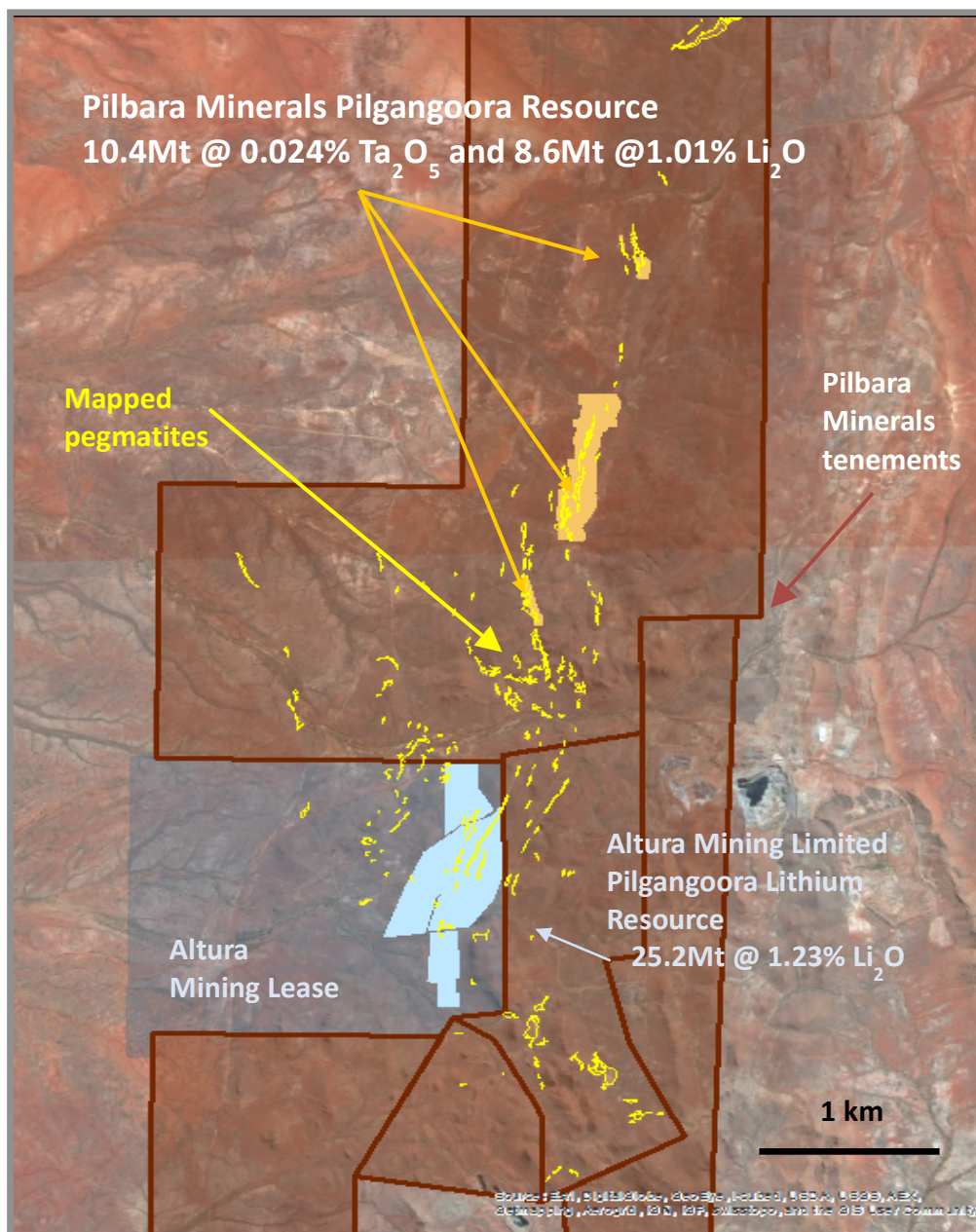


Figure 1 – Pilgangoora Project

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Pilgangoora History

Mining of four small hard rock tantalum prospects has been undertaken in the area around Pilgangoora, with recorded production taking place from 1947 to 1978. Tantalum production from Pilgangoora (Hickman 1983) was obtained from alluvial and colluvial placer deposits. However, ore grades were quite variable as mineralogy ranged from good-grade manganotantalite to manganocolumbite (Miles 1945 et al). Concentrate production at Pilgangoora up to 1977 is recorded at **33.31t of tantalite and 13.1t of tantalite–columbite** (Featherstone 2004).

In 1968, Ishihara Sangyo Kaisha Limited carried out sampling of about 30 creeks and gullies in the area. The survey established resources of about 0.288Mm³ of alluvial sediments containing an estimated 220g/m³ Ta₂O₅ and 100g/m³ of both Nb₂O₅ and SnO₂, using a cut-off grade of 60g/m³ (Hickman, 1983).

Pilgan Mining continued large-scale mining operations between 1978 and 1982, and then continued by the Pilgangoora Mining Venture from 1992 to 1996. These operations produced approximately 140t of tantalite concentrates, from an estimated 800,000 bank cubic metres (UBCMU) of screened alluvial and eluvial material.

Pilgans's disused tin–tantalum gravity separation plant is still in evidence at Pilgangoora and is situated adjacent to a large tailings dump. This plant is relatively sophisticated and has several trommel screens, vibrating jigs, and a series of spiral separators and shaking tables.

In recent years, a number of companies have shown an interest in the Pilgangoora area. In 2000, Kanowna Lights drilled over 27 auger holes in areas of tantalum enriched placer deposits. From this drilling the company estimated that the area had a resource of 400,000m³ of treatable sands from placer deposits that contained about 19.05t of Ta₂O₅ concentrate.

In November 2001, Haddington International Resources (now Altura Mining Limited – ASX: AJM) acquired Australian Tantalum which held several exploration licences to the north and west of GAMW's Pilgangoora Project. Altura recently completed a Scoping Study on its Pilgangoora Lithium Project which has resources of **25.2 million tonnes @ 1.23% Li₂O, containing 310,000 tonnes of lithium oxide (see AJM's ASX announcement - 3rd October 2012).**

Altura's Scoping Study outlined an 830,000tpa operation to produce up to 150,000tpa of spodumene concentrate at +6% Li₂O.

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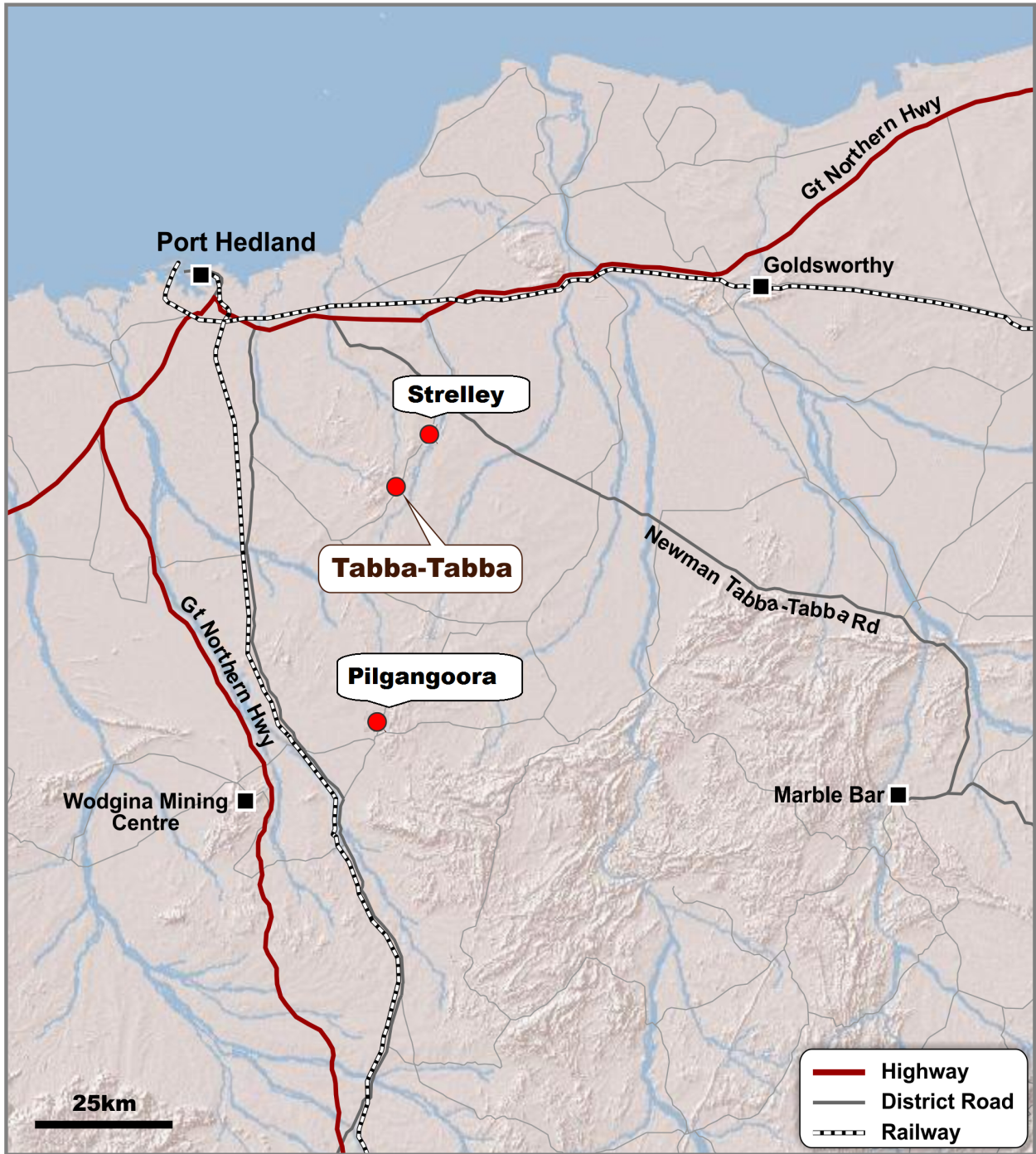


Figure 2 – Location Plan Pilgangoora Project

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More Information:

What is Lithium?

Lithium (Li) is recovered from the mineral spodumene and lithium-rich brines. It is used in a range of products such as ceramics, glass, batteries and pharmaceuticals. Lithium use has expanded significantly in recent years due to increasing use in rechargeable batteries in portable electronic devices and in batteries and electric motors for hybrid and electric cars.

What is Tantalum?

The primary source of tantalum is from minerals such as tantalite, columbite, wodginite and microlite contained in pegmatite ore bodies. The largest deposits are located in Australia, Brazil and Africa. Tantalum's **major use is** in the production of electronic components, **especially for capacitors**, with additional use in components for chemical plants, nuclear power plants, airplanes and missiles. It is also used as a substitute for platinum.

The tantalum market is boutique in size with around 1,300 tonnes required each year. However the market is rapidly growing due to capacitor use in wireless and handheld devices. PLS's Tabba Tabba Project could supply approximately 7% of the annual market consumption over two years. There are two major buyers of tantalum raw product worldwide: HC Starck and Global Advanced Metals.

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Competent Person's Statement

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

The information in this report that relates to Mineral Resources is based on and fairly represents information compiled by Mr Lauritz Barnes, (Consultant with Trepanier Pty Ltd) and Mr John Young (Executive and Chief Geologist 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. Specifically, Mr Young is the Competent Person for the database, geological model and completed the site inspection. Mr Barnes is the Competent Person for the database and the resource estimation. Mr Barnes and Mr Young consent to the inclusion in this report of the matters based on their information in the form and context in which they appear.

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