



High-Grade Muckanippie Titanium Heavy Mineral Test Work

Marmota Limited (ASX: MEU) ('Marmota')

Marmota (ASX:MEU) is pleased to announce that high-grade titanium dioxide (TiO₂) samples have been dispatched to ALS Laboratories for **metallurgical test work to determine the heavy mineral** properties of the samples. The samples are from Marmota's **discovery last month** [ASX:MEU 13 Nov 2024] **of outstanding thick rich titanium mineralisation, from surface**, on Marmota's Muckanippie tenement EL 6166.

Key Points

- Last month, Marmota discovered **exceptional thick rich titanium** mineralisation at Muckanippie [see Fig. 1].
- **Metallurgical Test work has commenced**, and will include:
 1. **Heavy Liquid Separation (HLS)** to determine the **percentage of heavy mineral concentrates** of each sample. The Heavy Liquid Separation facilitates the separation of denser TiO₂-bearing heavy minerals from the less dense sands, slimes and clays within each sample.
 2. **X-Ray Fluorescence (XRF)** Laboratory analysis to determine the **TiO₂ content of the heavy mineral concentrates** of each sample;
 3. **X-Ray Diffraction (XRD)** analysis to determine **mineralogy of heavy mineral concentrates** for each sample, including the **percentage of high-value heavy minerals** such as rutile, anatase and ilmenite.
- Titanium is one of the critical minerals identified by governments worldwide with a range of uses in energy storage, semiconductors, surgical implants, pigments and the production of metal alloys.
- **Initial results expected in weeks.**

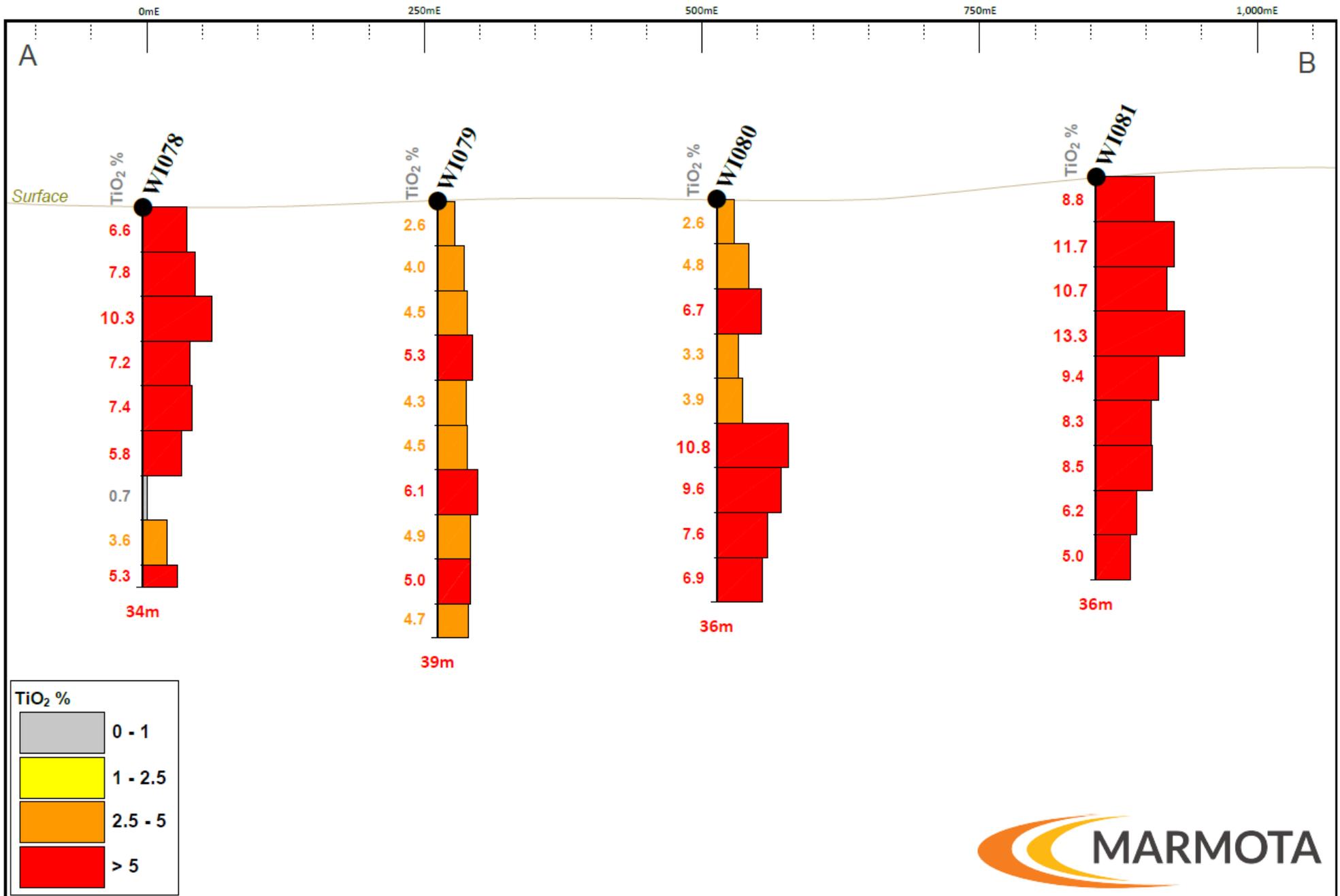


Figure 1: Cross-section from surface through all 4 outstanding Titanium Discovery Holes Hole 78 (NE) to Hole 81 (SW) [see also **Figure 3**]



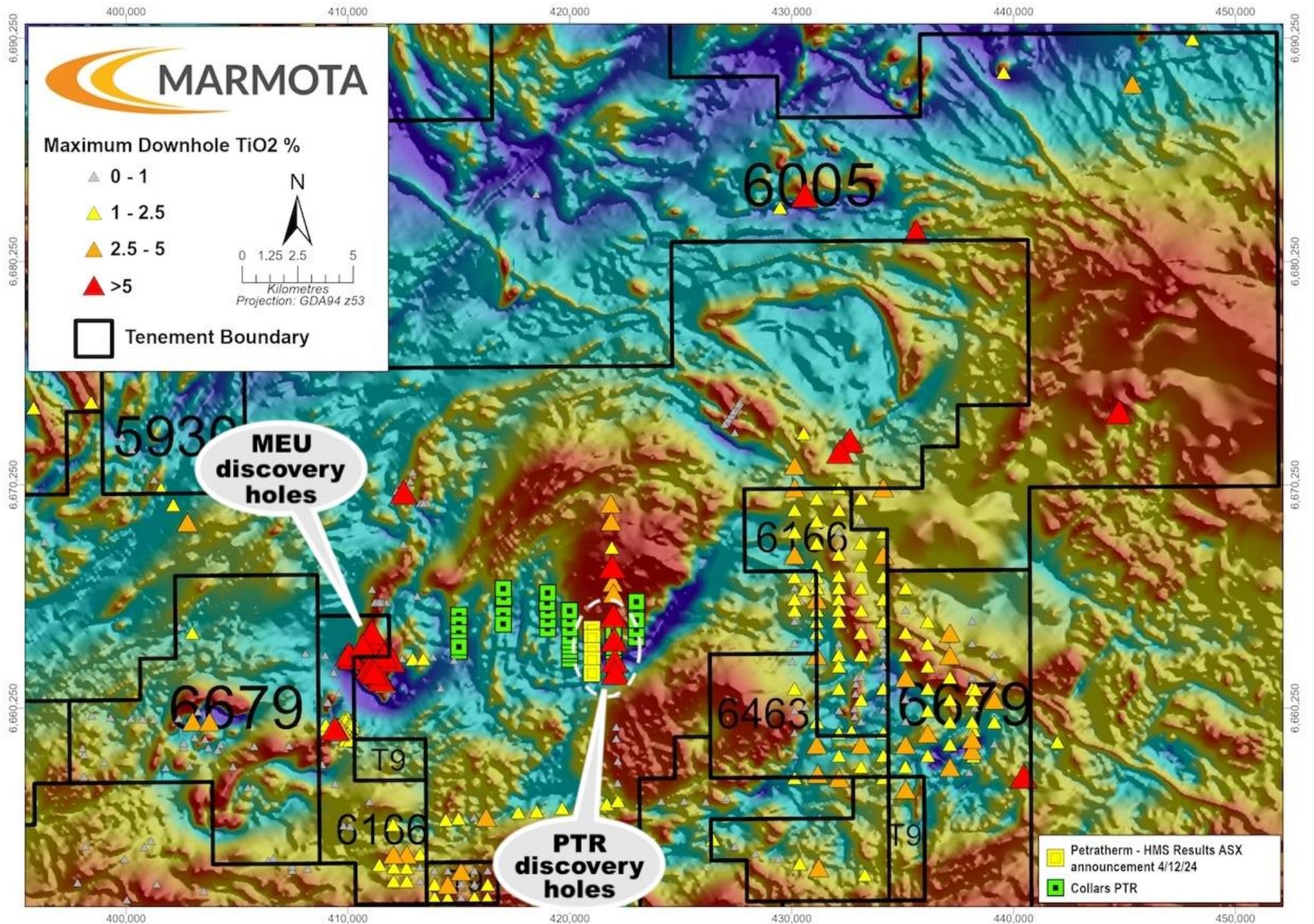


Figure 2: MEU Titanium Discovery Holes and PTR Discovery Holes over TMI (total magnetic intensity)

Background

- Marmota recently announced [ASX:MEU 13 Nov 2024] the discovery of **exceptional rich thick Titanium Dioxide** at Muckanippie, from surface.
- A fenceline of 4 drill holes was drilled over the target. **Every discovery hole along the fenceline ‘A to B’** intersected **exceptional rich thick Titanium Dioxide** (TiO₂).
- The discovery is **open in all directions**, including at depth.
- Discovery features exceptional **TiO₂ grades over 10%**, with every hole featuring remarkable intersections from surface [ASX:MEU 13 Nov 2024]:

28m @ 10.1 % TiO ₂	from 0m (from surface)	[Hole WI-081]	[incl 4m @ 13.3 %]
36m @ 6.2 % TiO ₂	from 0m (from surface)	[Hole WI-080]	[incl 4m @ 10.8 %]
39m @ 4.6 % TiO ₂	from 0m (from surface)	[Hole WI-079]	
24m @ 7.5 % TiO ₂	from 0m (from surface)	[Hole WI-078]	[incl 4m @ 10.3 %]

- The titanium discovery is **located close to transport infrastructure**, adjacent to both the Adelaide to Darwin rail line, and the Adelaide to Perth rail line [see Fig. 4].
- The new metallurgical testwork will determine:
 1. The **percentage of heavy mineral concentrates** of each sample, using **Heavy Liquid Separation** to facilitate the separation of denser TiO₂-bearing heavy minerals from the less dense sands, slimes and clays within each sample.
 2. **The TiO₂ content of the heavy mineral concentrates** of each sample using **X-Ray Fluorescence (XRF)**.
 3. **The mineralogy of heavy mineral concentrates** for each sample, including the percentage of **high-value heavy minerals** such as rutile and anatase and ilmenite, using **X-Ray Diffraction (XRD)** analysis.

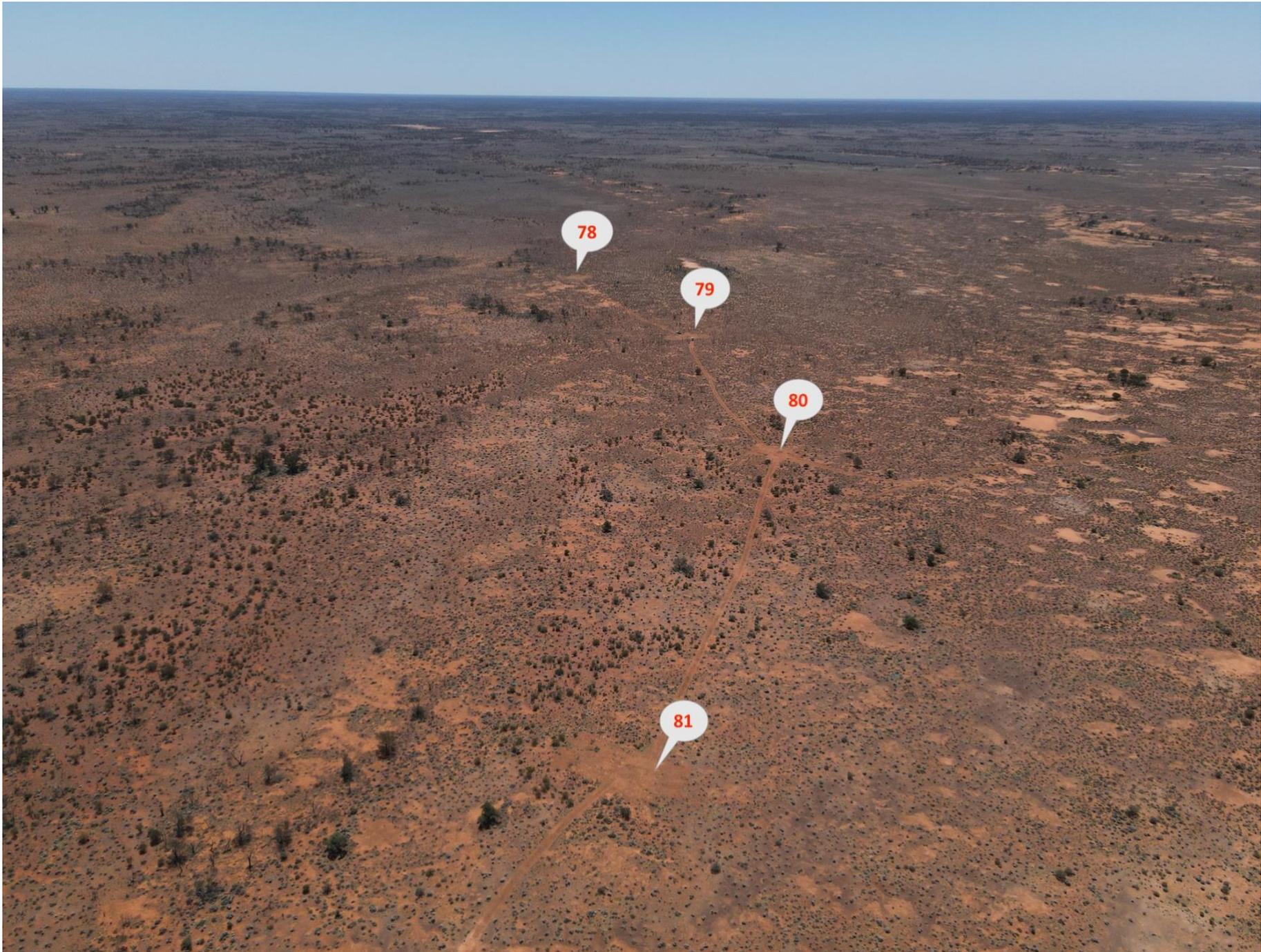


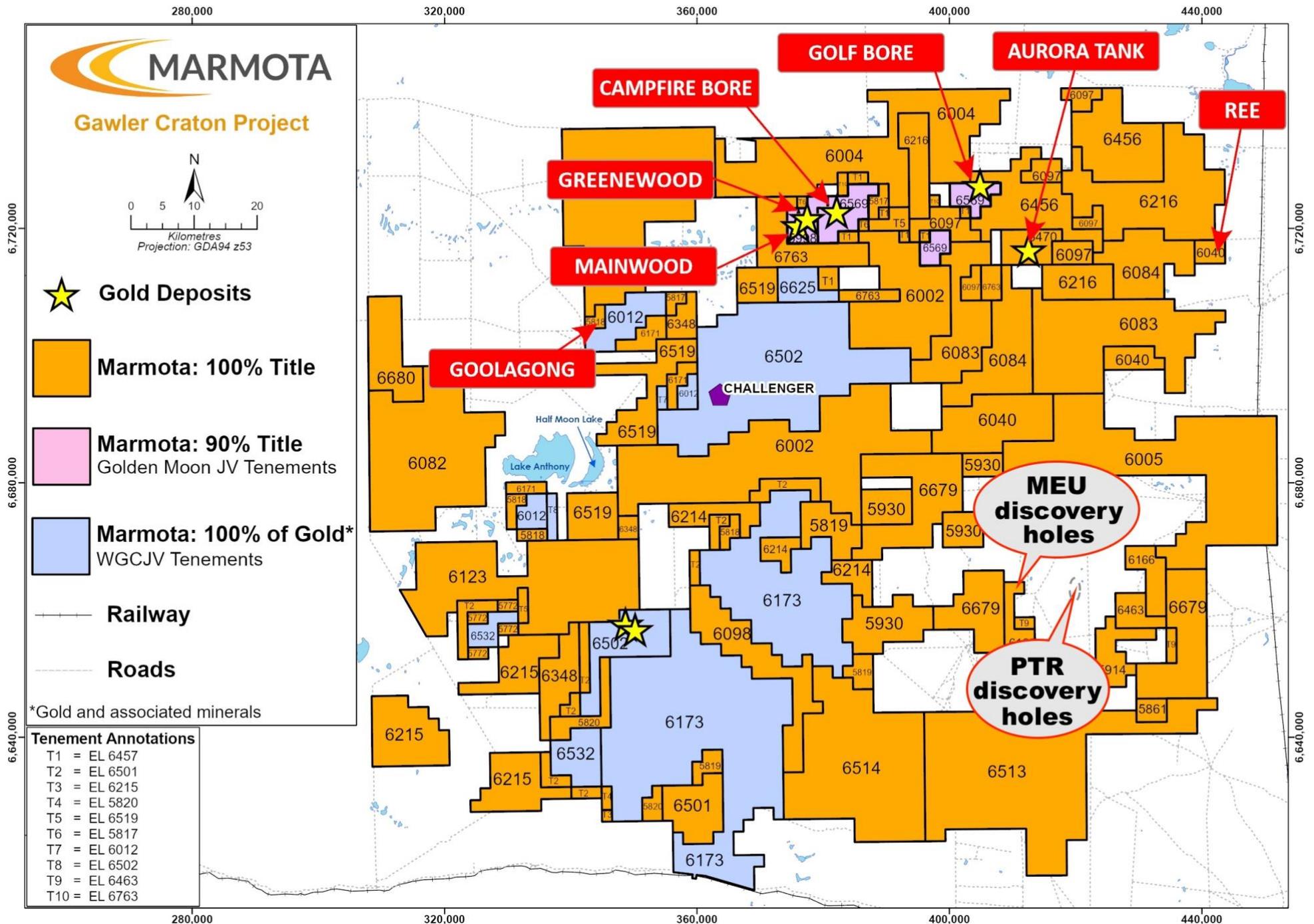
Figure 3: Titanium discovery holes WI-078 to WI-081 located in low-relief alluvial plane (aerial drone view)

Geological features

- **Excellent geological continuity *within* each hole:** see cross-section in [Fig.1](#).
- **Excellent geological continuity *between* each hole:** see cross-section in [Fig.1](#).
- **Highest titanium grades near surface**
In Marmota's Muckanippie discovery, the highest TiO₂ grades occur very close to surface [see cross-section in [Fig. 1](#)], with grades appearing to *decrease* with depth. This is consistent with the surface layer being transported weathered sands. The metallurgical testwork will determine the heavy mineral content of the sands.
- **Low iron content**
End product TiO₂ is bright white, whereas ilmenite is brown or black due to its iron content which requires further processing to remove the iron and turn it into a pure product. The average % iron ore content of the 4 discovery holes, over the first 24m from the surface, lies in the range 5% to 11%, which appears to be unusually low (good) for a titanium deposit [[ASX:MEU 13 Nov 2024](#)].

Geological comments: Muckanippie Complex

- The Titanium discovery lies within the Archaean Mulgathing Complex of the Gawler Craton in South Australia, on the adjacent tenement to the recent Petratherm Titanium discovery [[ASX:PTR 19 Nov 2024](#)] .
- The Muckanippie style of layered complex has been associated with major economic mineralisation, for instance in the Bushveld Complex of South Africa which contains world class deposits of chromium, platinum, palladium and titanium.
- The area shown in [Fig.3](#) (drone image) consists of a low relief alluvial plain. The titanium-rich sedimentary cover overlying the magnetic basement is interpreted to have been transported, raising the potential for mineralisation to extend beyond the magnetic anomaly.



Relation to Petratherm’s recent titanium discovery

Marmota refers to the ASX announcement of our next door neighbour, Petratherm Ltd (‘Petratherm’) dated 11 September 2024, entitled:

“Exceptional High-Grade Titanium Rich Heavy Mineral Sands Discovered Over Large Area At Muckanippie”
[ASX:PTR 11 Sept 2024].

The **best two Petratherm results**, obtained by re-assaying historic drilling for titanium on the adjacent tenement, were in holes CAR39 and CAR38, namely:

- CAR 39 – **20m @ 4.2% TiO₂** from 4m, including **4m @ 9.1% TiO₂** from 4m
- CAR 38 – **36m @ 4.0% TiO₂** from 0m, including **6m @ 7.8% TiO₂** from 8m

Best Petratherm titanium assay results

Source: ASX:PTR 11 Sept 2024

Every one of the 4 MEU contiguous discovery holes exceeds the above best results:

28m @ 10.1 % TiO ₂	from 0m (from surface)	[Hole WI-081]	[incl 4m @ 13.3 %]
36m @ 6.2 % TiO ₂	from 0m (from surface)	[Hole WI-080]	[incl 4m @ 10.8 %]
39m @ 4.6 % TiO ₂	from 0m (from surface)	[Hole WI-079]	
24m @ 7.5 % TiO ₂	from 0m (from surface)	[Hole WI-078]	[incl 4m @ 10.3 %]

The subsequent drilling by Petratherm (see ASX:PTR 4 Dec 2024) does not yet provide **TiO₂** grades for comparison.

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About Marmota Limited

Marmota Limited (ASX:MEU) is a South Australian mining exploration company focused on gold and uranium. Gold exploration is centred on the Company's gold discovery at Aurora Tank that is yielding outstanding intersections in the highly prospective and significantly underexplored Gawler Craton in the Woomera Prohibited Defence Area.

The Company's flagship uranium resource is at Junction Dam adjacent to the Honeymoon mine.

For more information, please visit: www.marmota.com.au

Competent Persons Statement

Information in this Release relating to Exploration Results is based on information compiled by Aaron Brown, who is a Member of The Australian Institute of Geoscientists. He has sufficient experience relevant to the styles of mineralisation and types of deposits under consideration and to the activities being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code of Reporting of Exploration Results, Mineral Resources and Ore Reserves." Mr Brown consents to the inclusion in this report of the matters based on this information in the form and context in which they appear.

Where results from previous announcements are quoted, Marmota confirms that it is not aware of any new information or data that materially affects the information included in the relevant market announcement and, in the case of estimates of Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed.

For the purpose of ASX Listing Rule 15.5, the Board has authorised for this announcement to be released.