**19 November 2024**

# Outstanding Rosewood Metallurgical Results Indicates Significant High Value Titanium Minerals

## Highlights

- A trial heavy mineral separation test, using samples from historical drilling at the Rosewood Prospect, has returned highly significant Heavy Mineral (HM) grades and mineralogy.
- Composite samples from wide spaced drill holes over 2.5 kilometres returned heavy mineral (HM) concentrations of 12.0% and 12.5 % from shallow depths.
- Laboratory analysis confirms high titanium mineral content of the HM fraction with results reporting approximately 65% $TiO_2$, indicating a significant portion of higher value Ti Minerals are present.
- X-Ray Diffraction analyses of HM fraction indicates 19-21% Rutile, 4-7% Anatase and 68-70% Pseudo-rutile.
- Company has recently completed regional drilling of Rosewood Prospect stepping away from these historical drill holes covering an expanded area of approximately 8km x 2km.
- 90 samples from a representative drill section trending over 1.8 kilometres selected for fast-tracking HM separation analysis with results expected in 3-4 weeks.
- Titanium is on the critical minerals list for Australia, US and EU and has uses in electric vehicles and battery storage, wind technology, pigments, and as an alloy in steel and superalloys.

**Petratherm CEO, Peter Reid, commented:**

*"The initial metallurgical results from historic drilling at the Rosewood prospect are outstanding and beyond our expectations. As the Muckanippie project evolves, it continues to surprise with emerging potential to be a significant source of high value Titanium minerals and transformational for the Company.*

*"This outcome is a massive step forward for the Muckanippie Titanium Project and supports our strategy to maintain momentum on activities over the coming weeks and months to determine the full potential of the project. We now eagerly await the initial batch of heavy mineral results from Petratherm's recent drilling at Rosewood and look forward to providing results as they come to hand."*

**Petratherm Limited** (ASX: PTR) ("**PTR**" or "**the Company**") is pleased to announce results from an initial trial heavy mineral sand (HMS) separation test using samples collected from historic drill holes stored at the South Australian Core Library (CAR series drill holes). The composite samples were collected from widely spaced contiguous drill holes along a 2.5-kilometre-long traverse on the eastern side of the Rosewood HMS Prospect area, located within the Company's Muckanippie Project in the northern Gawler Craton, South Australia.

Results from three composite samples submitted to ALS Laboratories for Heavy Liquid Separation (HLS) analysis confirmed high grade Heavy Mineral (HM) separation results (7.2-12.5% HM). Associated high $TiO_2$ grades between 63.4% and 65.0% are additionally reported and high value heavy minerals, including rutile have been identified. Detailed results from the initial trial HMS separation tests and metallurgical test work are described herein.

In October, Petratherm completed seven drill traverses at 1 kilometre to 2 kilometre spacing, over the Rosewood Prospect (fifty drill holes totalling 1,697 metres) as part of a larger exploration program to determine the nature and extent of the HMS mineralisation identified from mapping and re-assaying of historic drilling (Figure 1)[1]. All metres from this program have been submitted for $TiO_2$ and multi-element assay to help identify the best mineralised zones.

Additionally, to help accelerate understanding of the HMS mineralisation, the Company has submitted an initial batch of 90 samples from 5 drill holes along a single 1.8 kilometre traverse at Rosewood to determine indicative HM grades and thicknesses. These results are expected in approximately 3-4 weeks.

Petratherm previously reported high titanium dioxide ($TiO_2$) sample grades from Rosewood and this report provides new detail on the nature of the HMS mineralisation. It should be noted that the results presented in this report are based on Petratherm's analysis of samples obtained from historic drill holes and Petratherm makes no warranties that these samples are necessarily representative of the broader Rosewood target.

## Historic Drill Hole Heavy Mineral Results

Petratherm previously reported high $TiO_2$ grades from historic drill holes (CAR series) at the Rosewood HM Prospect (Figures 1 & 3)[2]. Geological interpretation of the data suggests two extensive marine placer style, flat-lying, high-grade HM sheets are present within a broader mineralised zone (Section A-a, Figure 2). Three representative composite samples from additional material held at the South Australian Core Library were selected from these zones for HM separation test work. Samples Met 1 and Met 2, each totalling 8 metres of composite sample, were collected from the upper horizon, from four drill holes covering 2.5 kilometres of strike length. Sample Met 3, totalling 10 metres of composite sample, was selected from the lower mineralised horizon, across three drill holes. Composite sample locations are shown in Figure 2 and described in Table 1.

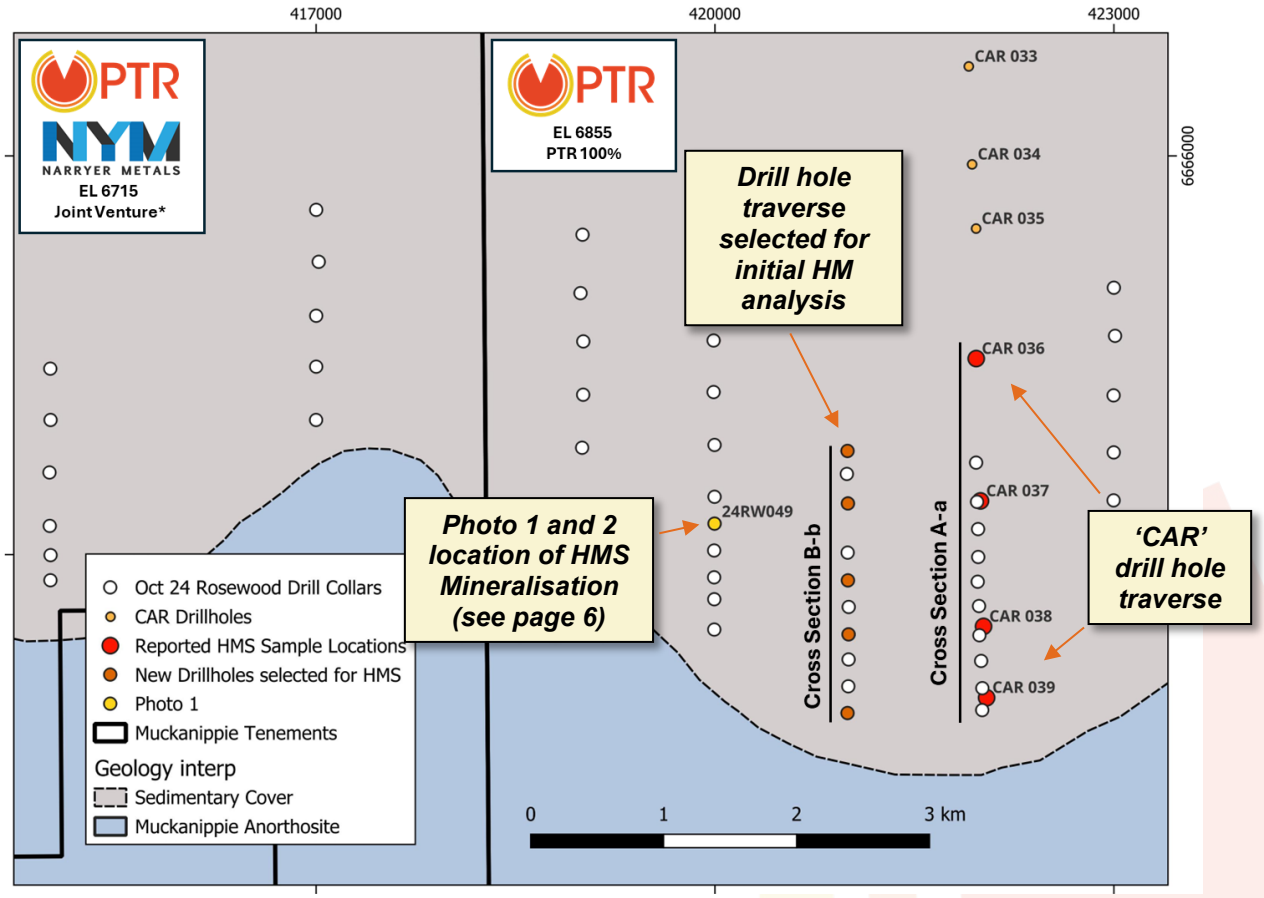



**Figure 1** – *Location of historic CAR drill holes, Petratherm October 2024 drilling and cross-sections for the Rosewood HM Prospect.*

[1] ASX Announcement 31 October 2024 – Muckanippie Titanium Drilling Successfully Completed
[2] ASX Announcement 11 September 2024 – High-Grade Titanium Rich Heavy Mineral Sands at Muckanippie

The three composite samples were submitted to ALS Laboratories in Perth for Heavy Liquid Separation (HLS) analysis to determine HM content. Excellent HM concentrations have been reported from the upper zone with the two composites reporting 12.48% and 12.01% HM respectively over 4 metres of interpreted true thickness. The lower zone reports reduced, but still highly significant, 7.24% HM content. The lower zone sample has a high fines (slime) content, and once these fines are removed the beneficiated ore records a 31.90% HM content. Potential exists to produce a beneficiated ore and further work will be undertaken.

**Table 1: Composite samples of historic drilling**

| Sample ID | HM Zone | Drill Hole | Depth (m) | Thickness (m) | HM % Original Sample | Slimes % (<0.045mm) |
|---|---|---|---|---|---|---|
| **Met 1** | Upper Zone | CAR 38 | 8-12 | 4 | **12.48** | 16.68 |
| | | CAR 39 | 4-8 | 4 | | |
| **Met 2** | Upper Zone | CAR 36 | 6-10 | 4 | **12.01** | 15.19 |
| | | CAR 37 | 8-12 | 4 | | |
| **Met 3** | Lower Zone | CAR 37 | 22-24 | 2 | **7.24** | 77.31 |
| | | CAR 38 | 24-26 | 2 | | |
| | | | 28-30 | 2 | | |
| | | CAR 39 | 22-24 | 2 | | |

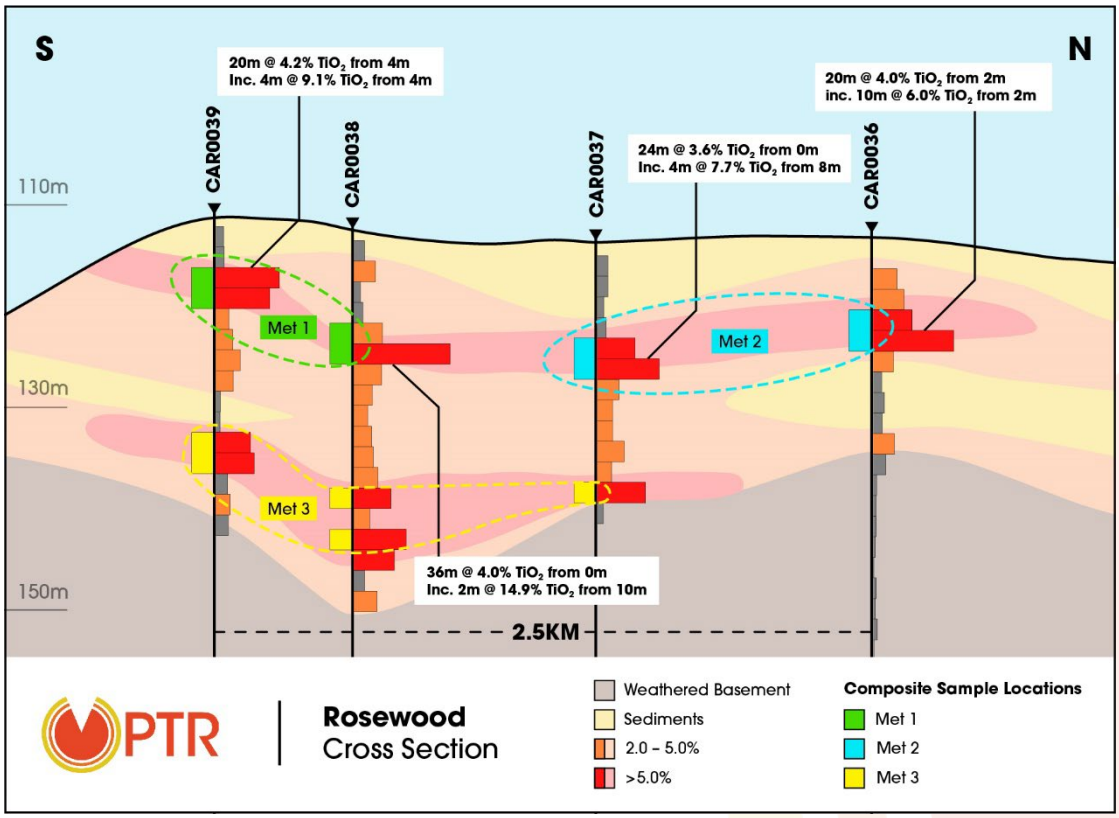



**Figure 2** – *Section A-a showing location of HMS trial samples from CAR drillholes at the Rosewood Prospect.*

## Heavy Mineral Assay Results

Geochemical assays of the three HM concentrates report high $TiO_2$ concentrations between 63.4% and 65% (Table 2), consistent with values expected from high-value titanium minerals. Significant vanadium ($V_2O_5$) credits ranging from 0.28% to 0.35% occur and very low deleterious U-Th concentrations are reported.

**Table 2: Heavy Mineral geochemical assay results**

| Sample Nos. | HMC % | $TiO_2$(%) | $Al_2O_3$(%) | CaO(%) | $Fe_2O_3$(%) | $La_2O_3$(%) | MgO(%) | MnO(%) | $SiO_2$(%) | Th(ppm) | U(ppm) | $V_2O_5$(%) | $ZrO_2$(%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Met 1** | **12.48** | **63.4** | 3.02 | 0.22 | 21.0 | 0.01 | 0.15 | 0.67 | 6.35 | 80 | 20 | 0.28 | 0.18 |
| **Met 2** | **12.01** | **65.0** | 2.92 | 0.23 | 19.5 | <0.01 | 0.18 | 0.66 | 6.18 | 70 | < 10 | 0.30 | 0.15 |
| **Met 3** | **7.24** | **64.5** | 1.35 | 0.20 | 25.4 | <0.01 | 0.09 | 0.39 | 2.21 | 60 | 10 | 0.35 | 0.38 |

## Heavy Mineral Mineralogical Assessment

The separated HM material was subjected to X-Ray Diffraction analysis to help determine the mineralogy of the sample. Results are presented in Table 3 as a percentage of the HM fraction. All samples returned exceptionally high rutile concentrations (up to 21%). Rutile is the highest-grade naturally occurring form of titanium. The presence of rutile was confirmed by petrological analysis. Additionally, the samples returned 4-7% anatase, a mineral very similar in use and value to rutile, and 68-70% pseudo-rutile. Pseudo-rutile is a form of leucoxene, also a valuable titanium-bearing mineral.

**Table 3: Heavy Mineral Mineralogical Assessment**

| Mineral or Mineral Group | MET 1 Mass % | MET 2 Mass % | MET 3 Mass % |
|---|---|---|---|
| **Rutile*** | 21 | 21 | 19 |
| **Pseudorutile*** | 69 | 68 | 70 |
| **Anatase** | 4 | 5 | 7 |
| **Goethite** | - | - | 3 |
| **Kandite group** | 5 | 3 | < 1 |
| **Quartz** | 1 | 2 | 1 |

**As a cautionary note the samples have a poorly crystalline nature due to leaching of iron and weathering processes and results preceded by an asterisk indicate a larger than usual uncertainty in regard to the quantity and phase reported. The approximate 20% $Fe_2O_3$ and 65% $TiO_2$ concentrations reported however from the XRF data (Table 2) support the XRD results presented herein and therefore are considered a reasonable guide of mineral concentrations. The quantitative results shown in the table have been normalised to 100%, and the values shown represent the relative proportion of the crystalline material in the sample.*

## Exploration Drilling Completed

As reported previously, the Company recently completed its maiden drilling program at the Muckanippie Project Area, completing 100 vertical air-core holes for a total of 3,392 metres (Figure 3)[1]. Half of these drill holes were drilled at the Rosewood HM Prospect in order to determine the nature and extent of the HM mineralisation identified from mapping and re-assaying of historic drilling.

Holes at Rosewood were drilled on north-south traverses spaced between 1 kilometre and 2 kilometres apart (Figure 1). Drill traverses varied from 1.6 kilometres to 2.2 kilometres in length, with variable spacing of 200 metres to 400 metres along the traverses. The area drill tested to date at Rosewood covers approximately 8 kilometres by 2 kilometres. An example of one of the better panned intersects is shown in Photo 2 from 10-11 metres in drill hole drill hole 24RW049 where a visual estimate of 20% HM content was logged (Figure 1 for location). No identification of the HM species can be made until further laboratory work is completed (refer to Cautionary Note at end of this report for further details).

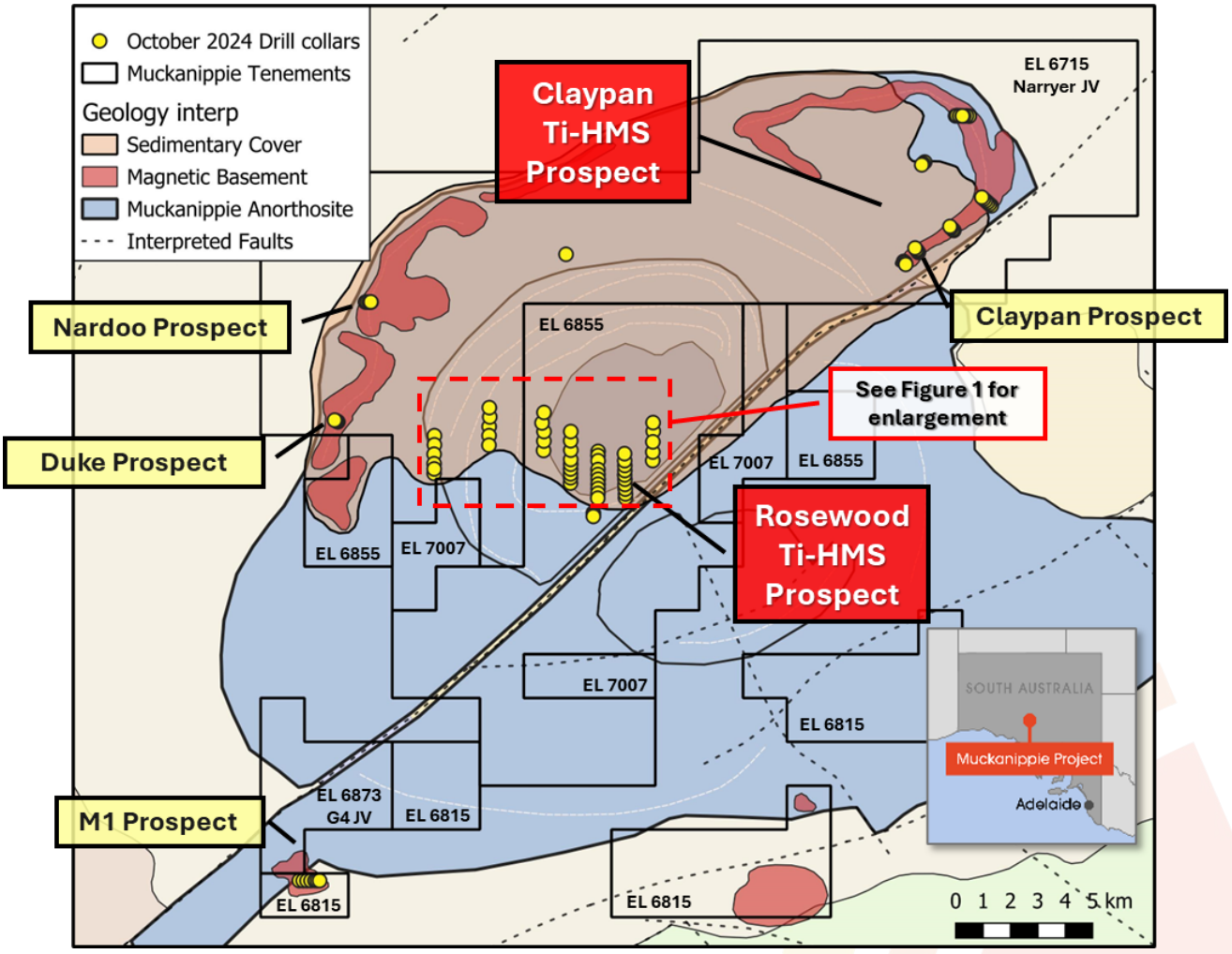



**Figure 3** – *Interpreted Geology Map of Muckanippie Project Area with Prospect Names and 2024 drill collars.*




**Photo 1** – *High-grade Heavy Mineral Sand interval from recently completed drilling (drill hole 24RW049, 10-11m). Sands become distinctively dark grey due to higher heavy mineral content. See Photo 2 of the panned sample and Cautionary Statement.*




**Photo 2** – *Panned Heavy Minerals from drill hole 24RW049, (10-11 metres). HM estimate based solely on visual inspection is 20% and is yet to be assayed. No identification of the HM species can be made until laboratory work is completed. Results are expected in 4 to 6 weeks' time. Refer to Table 4 at the end of this report for further Cautionary Statement details.*

Three-metre drill composites from the Rosewood Prospect have been despatched to ALS Laboratories for multi-element analysis including $TiO_2$ by Lithium Borate Fusion. These results will help to define the better HM mineralised zones and assist in prioritising samples for HM content analysis and other metallurgical test work. Results from this work will be returned in batches over the next 4-8 weeks. In anticipation of positive results, an initial selection of 90 samples from five drill holes along one traverse (Figure 1, Section B-b Figure 4) have already been submitted to ALS Laboratories in Perth for HM content and sample feed sizing analysis. Results from this work are expected in 3-4 weeks.

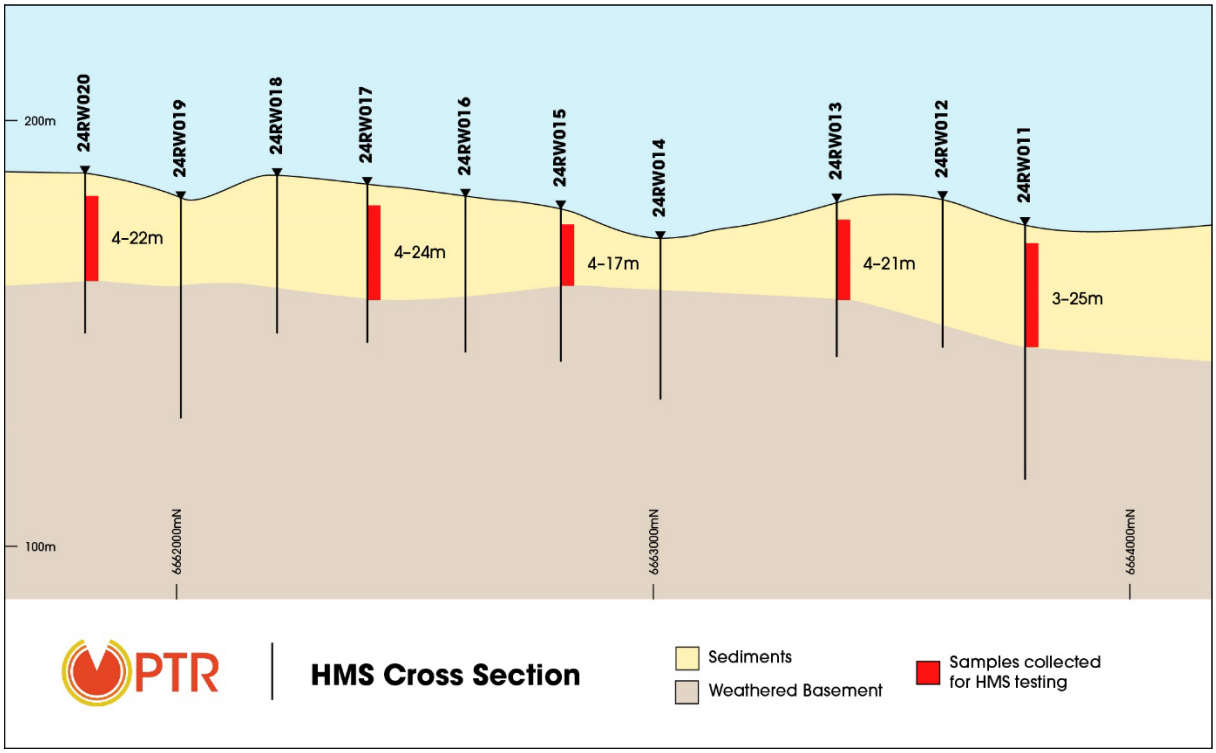



**Figure 4** – *Section showing samples from current drilling recently dispatched for Heavy Mineral analysis.*

## About the Muckanippie Project

In September 2024, PTR announced a high-grade heavy mineral sand (HMS) discovery at its Muckanippie Project area southwest of Coober Pedy in South Australia (Figure 3). The Muckanippie Titanium Project contains both 100% owned Petratherm tenure and the JV tenement EL 6715, owned by Narryer Metals Limited (ASX:NYM)[3]. Reconnaissance mapping and surface sampling along with assaying of historic drill core stored at the South Australian Government's Core Library identified previously unknown high-grade Titanium mineralisation spanning many square kilometres at two prospect sites, Rosewood and Claypan.

Outcrop samples recorded exceptional grades ranging between 10% and 50% titanium dioxide ($TiO_2$). The mineralisation occurs from or near surface (<10 metres) and is present as heavy mineral bands forming sheet-like Heavy Mineral Sand (HMS) mineralisation. Re-assaying of historical wide spaced drilling confirms HMS mineralisation extends at least 6 kilometres to the North.

At Claypan significant Titanium-Vanadium mineralisation has also been identified in the underlying basement source rock, returning grades up to 21.0% $TiO_2$ and 0.44% $V_2O_5$, and additionally has potential for primary basement mineralisation (Refer to PTR ASX Release 11/09/2024 for details and JORC Table 1 information).

# ENDS

[3] PTR ASX release 18/04/2024 – Farm-in Agreement Expands Muckanippie Project

This announcement has been authorised for release on the ASX by the Company's Board of Directors.


For further information:

**Peter Reid**
Chief Executive Officer
preid@petratherm.com.au
0435 181 705

Media and Broker Contact

**Jason Mack**
White Noise Communications
jason@whitenoisecomms.com
0400 643 799


**Competent Persons Statement:**
The information in this report that relates to Exploration Targets and Exploration Results is based on information compiled by Mr Peter Reid, who is a Competent Person, and a Member of the Australian Institute of Geoscientists. Mr Reid is not aware of any new information or data that materially affects the historical exploration results included in this report. Mr Reid is an employee of Petratherm Limited. Mr Reid has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken 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'. Mr Reid consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

## Cautionary Note on Visual Estimates

**Table 4: Photos 1 & 2 - Heavy Mineral Visual Estimate**

| Item | Drill hole | Interval (metres) | Nature of Mineral Occurrence | Minerals Observed | Heavy Mineral Abundance | Assay Result Expected |
|---|---|---|---|---|---|---|
| Photos 1 & 2 | 24RW049 | 10-11 | Heavy mineral sand layer forming concordant bands within a silty sand horizon. Some minor indurated silcreted bands present. | Titanium bearing heavy minerals. No identification of the HM species can be made until further laboratory work is completed. | 20% of total volume | Dec-24 |

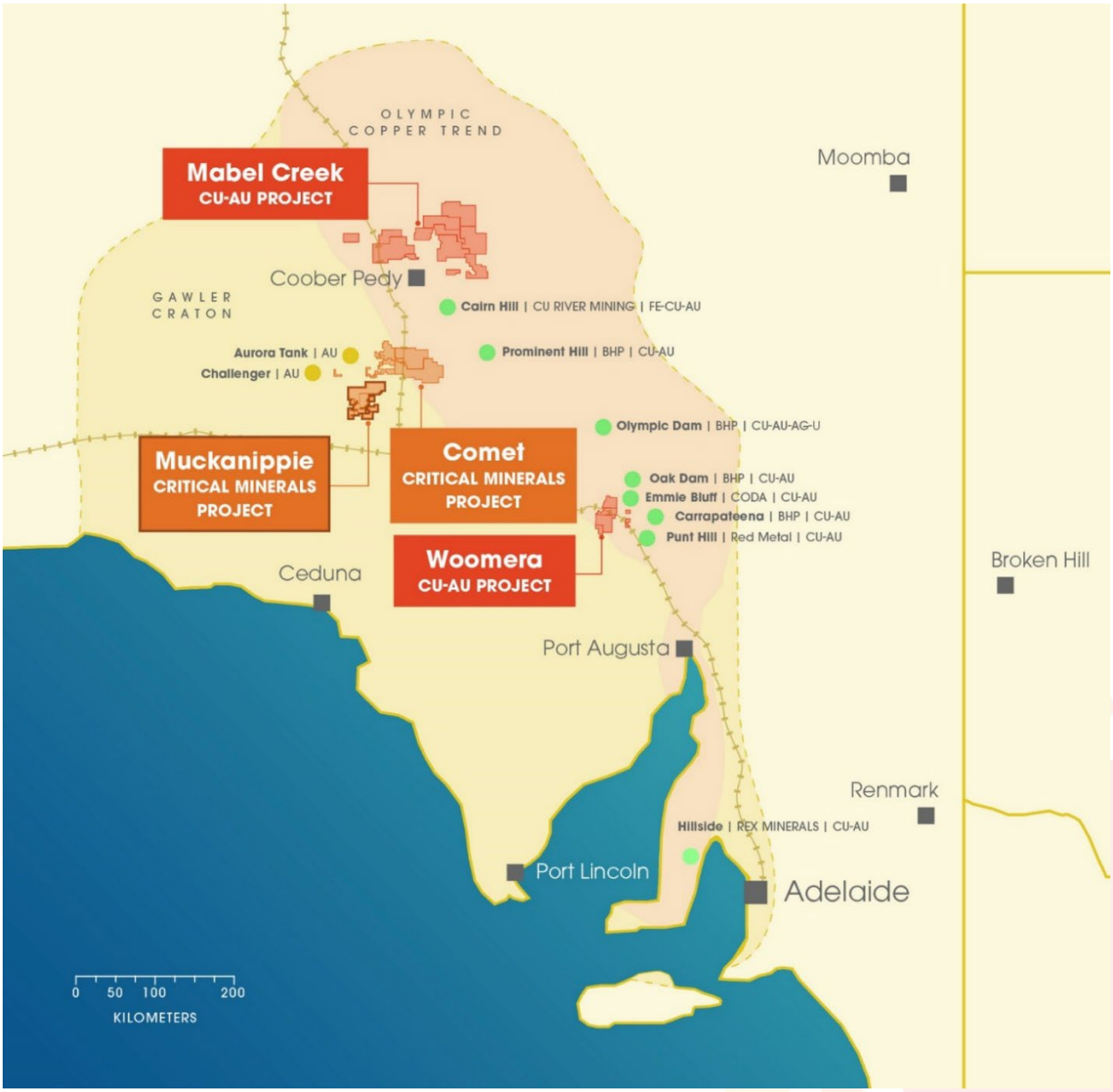
Visual estimates of mineral abundance should never be considered a proxy or substitute for laboratory analyses where concentrations or grades are the factor of principal economic interest. Visual estimates also potentially provide no information regarding impurities or deleterious physical properties relevant to valuations.

The photos contained herein are of a higher-grade mineralised horizon and are not necessarily indicative of the broader mineralisation in the area. Assays have been submitted for geochemical testing and results are expected in 4 to 6 weeks' time.

## About Petratherm Limited

Petratherm Limited (ASX: PTR) is a copper and critical minerals explorer focused on the discovery of world-class deposits in both frontier and mature mineral provinces. The Company has two major exploration projects in the world-class Olympic Copper-Gold Province of South Australia. Work in the region has uncovered Iron-Oxide Copper-Gold style alteration/mineralisation at both its Mabel Creek and Woomera Project Areas. Geophysical targeting work has defined several compelling Tier-1 Copper-Gold targets which the Company is aiming to drill test during the 2024 calendar period.

In addition, PTR has a major project holding in the northern Gawler Craton of South Australia. Recent exploration has uncovered significant concentrations titanium rich heavy mineral sands (HMS) over large areas. The mineral sands are associated with the weathering of a major intrusive complex, the Muckanippie Suite, which has been found to be highly prospective for other critical minerals including Platinum Group Elements, Vanadium, and Titanium. This is an early-stage Greenfields project with exceptional upside potential.




*PTR's Project Locations in South Australia*

**Table 5: Drill Hole Collars**

| Hole ID | Easting MGA94 Z53 | Northing MGA94 Z53 | RL metres | Dip Deg. | Azimuth Deg. | EOH Depth metres |
|---|---|---|---|---|---|---|
| **CAR 030** | 421837 | 6669463 | 180 | -90 | 0 | 62 |
| **CAR 031** | 421860 | 6668673 | 179 | -90 | 0 | 54 |
| **CAR 032** | 421892 | 6667487 | 178 | -90 | 0 | 35 |
| **CAR 033** | 421909 | 6666673 | 172 | -90 | 0 | 67 |
| **CAR 034** | 421934 | 6665936 | 181 | -90 | 0 | 55 |
| **CAR 035** | 421964 | 6665453 | 182 | -90 | 0 | 53 |
| **CAR 036** | 421965 | 6664475 | 185 | -90 | 0 | 55 |
| **CAR 037** | 421997 | 6663404 | 184 | -90 | 0 | 80 |
| **CAR 038** | 422020 | 6662460 | 186 | -90 | 0 | 52 |
| **CAR 039** | 422043 | 6661923 | 187 | -90 | 0 | 79 |
| **24RW001** | 422010 | 6661830 | 163 | -90 | 0 | 72 |
| **24RW002** | 422011 | 6661995 | 182 | -90 | 0 | 36 |
| **24RW003** | 422002 | 6662200 | 194 | -90 | 0 | 30 |
| **24RW004** | 421989 | 6662393 | 192 | -90 | 0 | 33 |
| **24RW005** | 421986 | 6662613 | 182 | -90 | 0 | 33 |
| **24RW006** | 421976 | 6662796 | 182 | -90 | 0 | 30 |
| **24RW007** | 421980 | 6662982 | 186 | -90 | 0 | 39 |
| **24RW008** | 421979 | 6663192 | 186 | -90 | 0 | 33 |
| **24RW009** | 421971 | 6663397 | 183 | -90 | 0 | 33 |
| **24RW010** | 421964 | 6663692 | 182 | -90 | 0 | 60 |
| **24RW011** | 420997 | 6663780 | 184 | -90 | 0 | 53 |
| **24RW012** | 420992 | 6663607 | 189 | -90 | 0 | 33 |
| **24RW013** | 421000 | 6663385 | 187 | -90 | 0 | 33 |
| **24RW014** | 420998 | 6663015 | 180 | -90 | 0 | 33 |
| **24RW015** | 421000 | 6662806 | 186 | -90 | 0 | 33 |
| **24RW016** | 421006 | 6662606 | 188 | -90 | 0 | 33 |
| **24RW017** | 421005 | 6662400 | 190 | -90 | 0 | 33 |
| **24RW018** | 421005 | 6662211 | 192 | -90 | 0 | 24 |
| **24RW019** | 421003 | 6662009 | 186 | -90 | 0 | 45 |
| **24RW020** | 420997 | 6661808 | 192 | -90 | 0 | 33 |
| **24RW024** | 419995 | 6662436 | 185 | -90 | 0 | 33 |
| **24RW025** | 419995 | 6662664 | 190 | -90 | 0 | 33 |
| **24RW026** | 419994 | 6662829 | 192 | -90 | 0 | 33 |
| **24RW027** | 419001 | 6663804 | 189 | -90 | 0 | 23 |
| **24RW028** | 419009 | 6664203 | 195 | -90 | 0 | 33 |
| **24RW029** | 419010 | 6664604 | 192 | -90 | 0 | 33 |
| **24RW030** | 417001 | 6664797 | 198 | -90 | 0 | 33 |
| **24RW031** | 417001 | 6664414 | 195 | -90 | 0 | 33 |
| **24RW032** | 417000 | 6664013 | 191 | -90 | 0 | 33 |
| **24RW033** | 418980 | 6664966 | 187 | -90 | 0 | 33 |
| **24RW034** | 419004 | 6665407 | 183 | -90 | 0 | 33 |
| **24RW035** | 417020 | 6665203 | 189 | -90 | 0 | 33 |
| **24RW036** | 417001 | 6665594 | 188 | -90 | 0 | 33 |
| **24RW037** | 415001 | 6664399 | 192 | -90 | 0 | 33 |
| **24RW038** | 415003 | 6664013 | 188 | -90 | 0 | 33 |
| **24RW039** | 414995 | 6663618 | 191 | -90 | 0 | 33 |
| **24RW040** | 414997 | 6663216 | 192 | -90 | 0 | 33 |
| **24RW041** | 415002 | 6662807 | 194 | -90 | 0 | 33 |
| **24RW042** | 415003 | 6662996 | 191 | -90 | 0 | 33 |
| **24RW043** | 423009 | 6664646 | 195 | -90 | 0 | 33 |
| **24RW044** | 423000 | 6665008 | 193 | -90 | 0 | 24 |
| **24RW045** | 422998 | 6663408 | 191 | -90 | 0 | 37 |
| **24RW046** | 422999 | 6663769 | 188 | -90 | 0 | 33 |
| **24RW047** | 422998 | 6664198 | 189 | -90 | 0 | 33 |
| **24RW048** | 419994 | 6663031 | 194 | -90 | 0 | 33 |
| **24RW049** | 419997 | 6663233 | 194 | -90 | 0 | 33 |
| **24RW050** | 419997 | 6663435 | 196 | -90 | 0 | 30 |
| **24RW051** | 419997 | 6663825 | 198 | -90 | 0 | 30 |
| **24RW052** | 419990 | 6664223 | 194 | -90 | 0 | 21 |
| **24RW053** | 419990 | 6664611 | 194 | -90 | 0 | 21 |

# EL6815, EL6855, EL6715, EL6873 & EL7007 (Muckanippie Project) JORC Table 1

## Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| ***Sampling techniques*** | • *Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.*<br>• *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.*<br>• *Aspects of the determination of mineralisation that are Material to the Public Report.*<br>• *In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse Au that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.* | • 5 drillholes have been selected for Heavy Liquid Separation (HLS) testing, from recently completed Petratherm Drilling.<br>• 1 metre samples were split from the drill rig using a cone splitter attachment to the cyclone.<br>• A riffle splitter was subsequently used to split 1 metre samples for HLS testing. Results are pending.<br>• 3 composite samples were collected for HLS testing from historic CAR drillholes located at the South Australian Drill Core Reference Library.<br>• Approximately 50 grams per historic 2 metre sample was collected to produce approximately 200-gram composite samples.<br>• Samples were composited over adjacent holes due to limited sample volume, from similar depths.<br>• Samples were dried, controlled crushed and screened to remove < .045 mm slimes.<br>• HM content testing conducted using Static HLS on -1/+0.045mm sand using Tetrabromoethane (TBE), discarding floats.<br>• The resulting Heavy Mineral fractions were analyzed using XRF.<br>• The HM fractions were prepared for XRD testing. Each sample was pressed into a back-packed sample holder to minimize preferred orientation of the particles. Powder X-ray diffraction (XRD) was used to analyse each sample and Rietveld refinement |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | | was used in the quantification of the minerals identified in each sample.<br>• Historic drill hole information has been sourced from open file public records managed by the South Australian Department of Primary Industries and Resources.<br>• Additional details from historic drilling are unknown. |
| ***Drilling techniques*** | • *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).* | • Historic CAR exploration drilling reported was RC.<br>• Additional details from historic drilling are unknown.<br>• Petratherm has completed air core drilling however results are currently pending. |
| ***Drill sample recovery*** | • *Method of recording and assessing core and chip sample recoveries and results assessed.*<br>• *Measures taken to maximise sample recovery and ensure representative nature of the samples.*<br>• *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.* | • Petratherm has completed drilling and results are currently pending.<br>• Additional details from historic drilling are unknown. |
| ***Logging*** | • *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.*<br>• *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.*<br>• *The total length and percentage of the relevant intersections logged.* | • Petratherm has completed drilling however results are currently pending.<br>• Additional details from historic drilling are unknown. |
| ***Sub-sampling techniques and sample preparation*** | • *If core, whether cut or sawn and whether quarter, half or all core taken.*<br>• *If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.*<br>• *For all sample types, the nature, quality and appropriateness of the sample preparation technique.*<br>• *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.*<br>• *Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate/second-half sampling.*<br>• *Whether sample sizes are appropriate to the grain size of the material being sampled.* | • Samples taken from South Australian drill core library were taken from representative 2 metre composites.<br>• Approximately one third to one half of each sample was taken for analysis. Average composite sample weight was 200 grams. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| ***Quality of assay data and laboratory tests*** | • *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.*<br>• *For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.*<br>• *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.* | • Internal quality control was carried out by ALS laboratories. |
| ***Verification of sampling and assaying*** | • *The verification of significant intersections by either independent or alternative company personnel.*<br>• *The use of twinned holes.*<br>• *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.*<br>• *Discuss any adjustment to assay data.* | • Petratherm has completed drilling however results are currently pending. Additional details from historic drilling are unknown. |
| ***Location of data points*** | • *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*<br>• *Specification of the grid system used.*<br>• *Quality and adequacy of topographic control.* | • All maps and locations are in UTM grid (GDA94 Z53). Drill hole positions have been reproduced from SA Government open file databases and the accuracy of this data is unknown. |
| ***Data spacing and distribution*** | • *Data spacing for reporting of Exploration Results.*<br>• *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.*<br>• *Whether sample compositing has been applied.* | • Petratherm has completed drilling however results are currently pending.<br>• Data spacing is insufficient to establish the degree of geological and grade continuity required for a Mineral Resource estimation. |
| ***Orientation of data in relation to geological structure*** | • *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.*<br>• *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.* | • Petratherm has completed drilling however results are currently pending.<br>• The mineralisation in drillholes and mapped in outcrop is interpreted to be recent flat lying fluvio-deltaic marine sediments.<br>• Historic drilling is vertical and gives a true reflection of grade, thickness and continuity. |
| ***Sample security*** | • *The measures taken to ensure sample security.* | • Samples were taken directly from the South Australian Core Library by PTR staff to the ALS preparation facilities. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| ***Audits or reviews*** | • *The results of any audits or reviews of sampling techniques and data.* | • There is currently a review into the methods used by ALS for analysis of titanium ores. |

## Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| ***Mineral tenement and land tenure status*** | • *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.*<br>• *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.* | • EL6815 was granted 100% to Petratherm Limited on 12/08/2022 for a period of 6 years.<br>• EL 6855 was granted 100% to Petratherm Limited on 18/10/22 for a period of 6 years.<br>• EL 7007 was granted 100% to Petratherm Limited on 15/08/24 for a period of 6 years.<br>• EL6873 was granted to G4 Metals Pty. Ltd. on 18/11/2022 for a period of 6 years. Petratherm Ltd may earn up to a 70% interest via a 2 Stage Farm-in with further provisions, dependent on elections, to earn up to a 100% equity in the project. Refer to PTR ASX release 29/02/2024.<br>• EL6715 was granted on 06/04/2022 to Leasingham Metals Pty. Ltd. a, wholly owned subsidiary of ASX listed Narryer Metals Ltd. for a period of 6 years. Petratherm Ltd may earn up to an 70% interest, via a 2 Stage Farm-in with further provisions, dependent on elections, to earn up to an 80% equity in the project. Refer to PTR ASX release 18/04/2024<br>• The tenements are located approximately 120 km south south-west of Coober Pedy overlapping Bulgunnia, Mulgathing and Commonwealth Hill Pastoral Stations.<br>• The tenements are located within the Woomera Prohibited Area (Green Zone).<br>• **Native Title Claims:** |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | | SCD2011/001 Antakirinja Matu-Yankunytjatjara.<br>• The tenements are in good standing and no known impediments exist. |
| ***Exploration done by other parties*** | • *Acknowledgment and appraisal of exploration by other parties.* | • Previous exploration work includes;<br>• **Surface Geochemical Sampling:** Calcrete **Airborne Geophysics:** Magnetics & Radiometrics. **Ground Geophysics:** Prospect scale Magnetics, Gravity and EM. **Exploration Drilling:** Open file records indicate 296 RAB / Air core, 2 sonic & 51 RC reconnaissance and prospect scale holes drilled over Project Group. |
| ***Geology*** | • *Deposit type, geological setting and style of mineralisation.* | • Petratherm is exploring for Ti-Fe-V-P, rare earths, and Au-PGM associated with the Muckanippie Suite. Targets include primary basement mineralisation and secondary enrichments as HMS placers in overlying younger cover strata. |
| ***Drill hole Information*** | • *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:*<br>○ *easting and northing of the drill hole collar*<br>○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar*<br>○ *dip and azimuth of the hole*<br>○ *down hole length and interception depth*<br>○ *hole length.*<br>• *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.* | • Petratherm has completed drilling however results are currently pending.<br>• PTR recent drill hole collars are presented in Table 5<br>• Details from historic drilling are presented in Table 5.<br>• Data sourced from SA Government open file databases and the accuracy of this data is unknown. |
| ***Data aggregation methods*** | • *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.*<br>• *Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low-grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.*<br>• *The assumptions used for any reporting of metal equivalent values should be clearly stated.* | • Petratherm has completed drilling however results are currently pending.<br>• No assumptions of metal equivalent values were made or used. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| ***Relationship between mineralisation widths and intercept lengths*** | • *These relationships are particularly important in the reporting of Exploration Results.*<br>• *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.*<br>• *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').* | • The mineralisation viewed in drillholes and outcrop is interpreted to be recent, flat lying fluvio-deltaic marine sediments. Historic drilling is vertical and should give a true reflection of thickness and continuity. |
| ***Diagrams*** | • *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.* | • See Figures in main body of release attached. |
| ***Balanced reporting*** | • *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.* | • Petratherm has completed drilling however results are currently pending. |
| ***Other substantive exploration data*** | • *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.* | • No other substantive exploration data has been collected by Petratherm. |
| ***Further work*** | • *The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).*<br>• *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.* | • A range of exploration techniques are being considered to progress exploration.<br>• Extensive metallurgical test work will be conducted on current drill sample to determine grade, mineralogy and nature of the heavy mineral mineralisation at Rosewood.<br>• Further infill and extension drilling is likely to occur in the near future. |