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19 February 2025

Greenfields Exploration Drilling Uncovers a New Style of High-Grade Titanium Mineralisation at Muckanippie

Highlights

- Exploration drilling in greenfield areas, away from the Rosewood Heavy Mineral Sands Discovery has identified a new style of Titanium Rich Heavy Mineral (HM) Mineralisation hosted in Saprolite Clay.
- Trial Heavy Mineral separation tests returned exceptional, thick, high-grade results from all four holes tested. Drill intersections returned:
  - Nardoo Prospect: 24ND003 - **44m @ 29.4% HM** from surface to end of hole.
  - Duke Prospect: 24DK004 - **61m @ 19.7% HM** from surface to end of hole.
  - Claypan Prospect: 24CP009 – **45m @ 27.0% HM** from 6m.
    24CP004 – **48m @ 23.5% HM** from 10m to end of hole.
- HM mineralisation at Duke and Nardoo Prospects occur along a prominent magnetic trend which extends over 16 kilometres. Potential exists for the entire trend to be mineralised.
- At Claypan Prospect high-grade Titanium mineralisation is associated with discrete magnetic features, but mineralsation may also be present in untested non-magnetic zones and further drilling is required.
- The saprolite HM mineralisation start from or near surface and range from 40m to 60m in thickness. Potential exists for a free dig operation.
- Preliminary visual mineral logging of HM concentrates suggest a high-grade ilmenite-dominant content with leucoxene credits.
- This style of mineralisation, hosted in saprolite, has the potential to be mined and processed using similar methods to standard HMS Mining Operations.

Petratherm CEO, Peter Reid, commented:
"The Titanium Heavy Minerals hosted in saprolite clays at Muckanippie, represent a new style of mineralisation that we believe has tremendous upside potential. The drill results shows that the mineralisation is regionally extensive and has potential for large tonnage free dig ore. Importantly intercepts occur over wide thicknesses, making them favourable for open pit free dig mining. Saprolite hosted HM deposits have the potential to be mined and processed using very similar mining techniques to traditional HMS deposits.

The Muckanippie Project is shaping up as a Camp Style Province for Titanium with the Discovery of high grade HMS at Rosewood and now these new saprolitic hosted HM Prospects located just within a few kilometres. Potential exists for further new discoveries with follow up exploration drilling at Muckanippie."

Titanium is on the Australian Critical Minerals list and the Muckanippie Project offers potential to provide a secure and substantial domestic supply, as part of Australia's National Security"

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Drilling Program

Petratherm Limited (ASX: PTR) (**"PTR"** or "**the Company"**) is pleased to announce results from exploration drilling of titanium targets on the Muckanippie Project in the northern Gawler Craton, South Australia. During October 2024 the Company drilled 49 holes totalling 1,652 metres at 10 targets with the potential to host titanium-bearing Heavy Minerals (Figure 1). Anomalous titanium assays were intercepted at eight of the targets tested (Table 2 - TiO_2 assays). From these targets four drillholes were selected for trial Heavy Mineral Separation to test for the presence of titaniferous Valuable Heavy Minerals (VHMs). All four holes selected returned exceptional HM results presented in Table 1. Semi-quantitative visual logging of the HM concentrates was undertaken by Diamantina Laboratories and indicate an ilmenite dominant ore (Table 1).

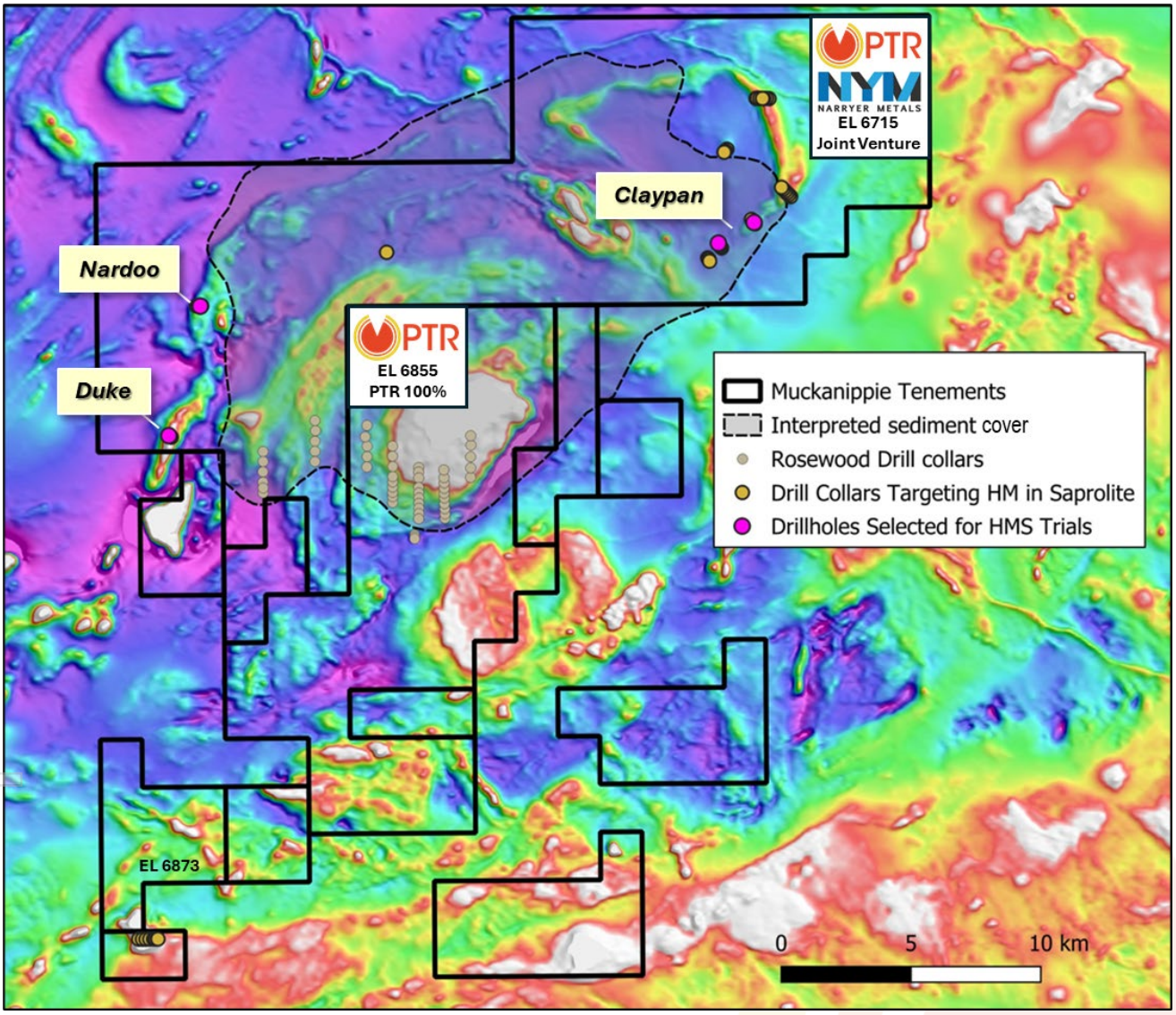

***Figure 1**: Magnetic image of Muckanippie Project Area, Tenements, Prospect Names and 2024 drill collars. The Project contains both 100% owned Petratherm tenure and the JV tenements, EL 6715 (Narryer Metals Limited, ASX:NYM) [1] and EL6873 (G4 Metals)[2]*

[1] ASX Announcement 18 April 2024 – Farm-in Agreement Expands Muckanippie Project
[2] ASX Announcement 29 Feb 2024 – Farm-In Agreement Executed – Muckanippie Project Expansion

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Table 1: Significant Heavy Mineral Intercepts

Saprolite HMC Significant Intercepts					Valuable HMC Mineralogy*			
Drill Hole	**From** (metres)	**To** (metres)	**Interval** (metres)	**HMC %** Original Sample	**Valuable HMC %**	**Illmenite %**	**Leucoxene %**	**Other %**
24CP004	10	58	48	**23.5**	**62.7**	**58.0**	**4.3**	37.2
incl.	25	33	8	**29.7**	**77.3**	**76.3**	**1.0**	22.7
and	44	58	14	**19.6**	**78.4**	**73.4**	**5.0**	21.6
24CP009	6	51	45	**27.0**	**38.6**	**33.8**	**4.8**	61.4
incl.	6	24	18	**30.5**	**47.2**	**42.5**	**4.7**	53.5
24ND003	0	44	44	**29.4**	**50.1**	**45.1**	**5.0**	49.9
incl.	29	44	15	**23.6**	**63.8**	**58.8**	**5.0**	36.2
24DK004	0	61	61	**19.7**	**36.6**	**31.3**	**5.3**	63.4
incl.	4	17	13	**18.0**	**76.9**	**71.9**	**5.0**	23.1

* **Cautionary Note:** 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 Valuable HMC Mineralogy is a semi-quantitative mineral counting method undertaken by an experience independent mineralogist with a reported accuracy of ± 5%.

Duke and Nardoo Prospects

HM mineralisation at Duke and Nardoo Prospects are formed from the deep weathering of a titanium rich basement horizon easily traceable from aeromagnetic data (Figures 1 & 4). The magnetic trend extends over an interpreted 16 kilometres on PTR's licence area, and potential exists for this entire trend to be mineralised. The Duke and Nardoo Prospects were drilled to test different parts of the magnetic trend, 5 kilometres apart. At both Duke and Nardoo HM mineralisation starts at surface and continues to end of hole (air core blade refusal). Drill cross sections are presented in Figures 2 and 3.

At Nardoo exceptional grades were encountered over the entire length of the hole, returning 44 metres at 29.4% HM. Diamantina Laboratories conducted visual logging of the HM concentrates from Nardoo which returned high ilmenite concentrations (averaging 45.1% of HM) with additional credits of high-value leucoxene (averaging 5.0% of HM). At Duke deep weathering produced a very thick HM saprolite sequence of 61 metres averaging 19.7% HM. Encouragingly, visual logging of the Duke HM concentrates also returned high ilmenite concentrations averaging 31.3% of HM and leucoxene averaging 5.3% of HM concentrates.

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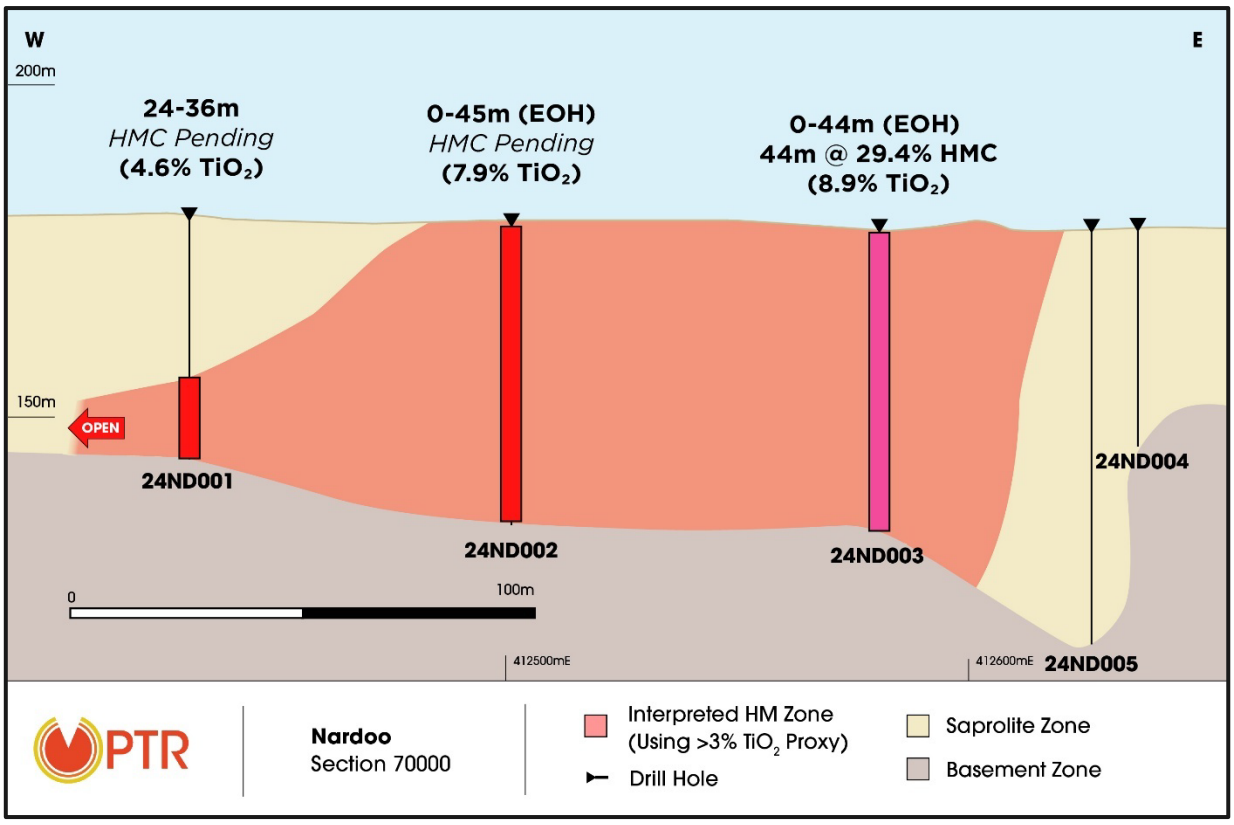

Figure 2: Nardoo Prospect cross section 70000 showing HM intercept and extent of TiO_2 mineralisation.

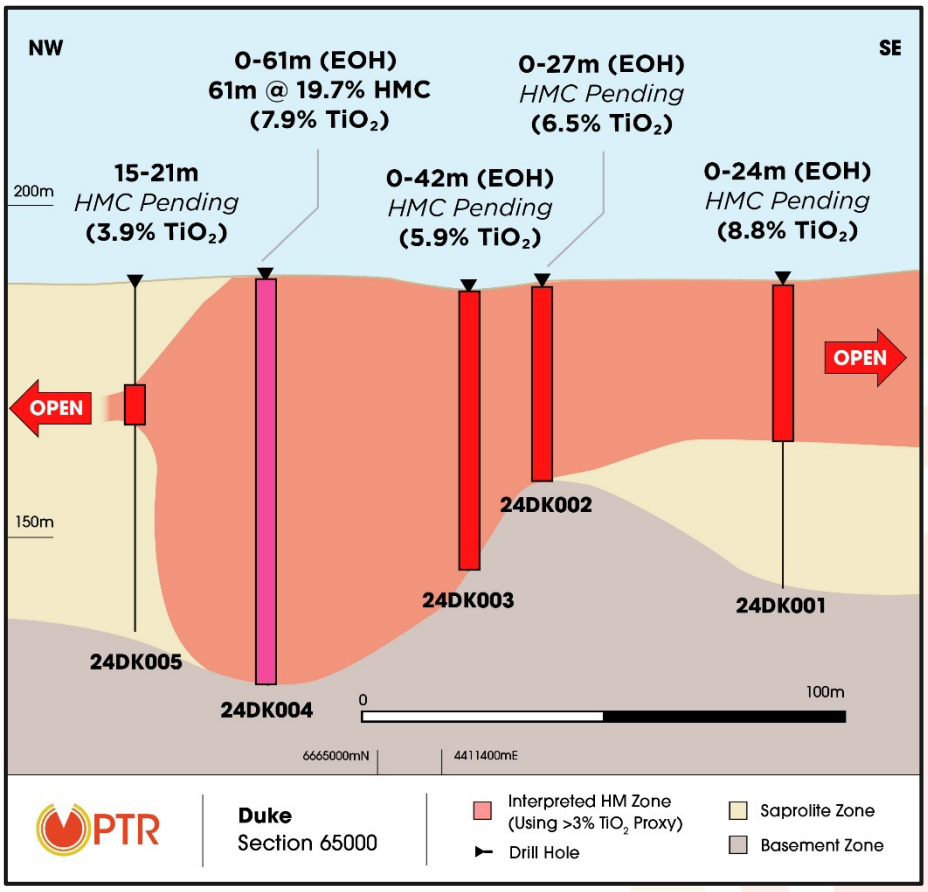

Figure 3: Duke Prospect cross section 65000 showing HM intercept and extent of TiO_2 mineralisation.

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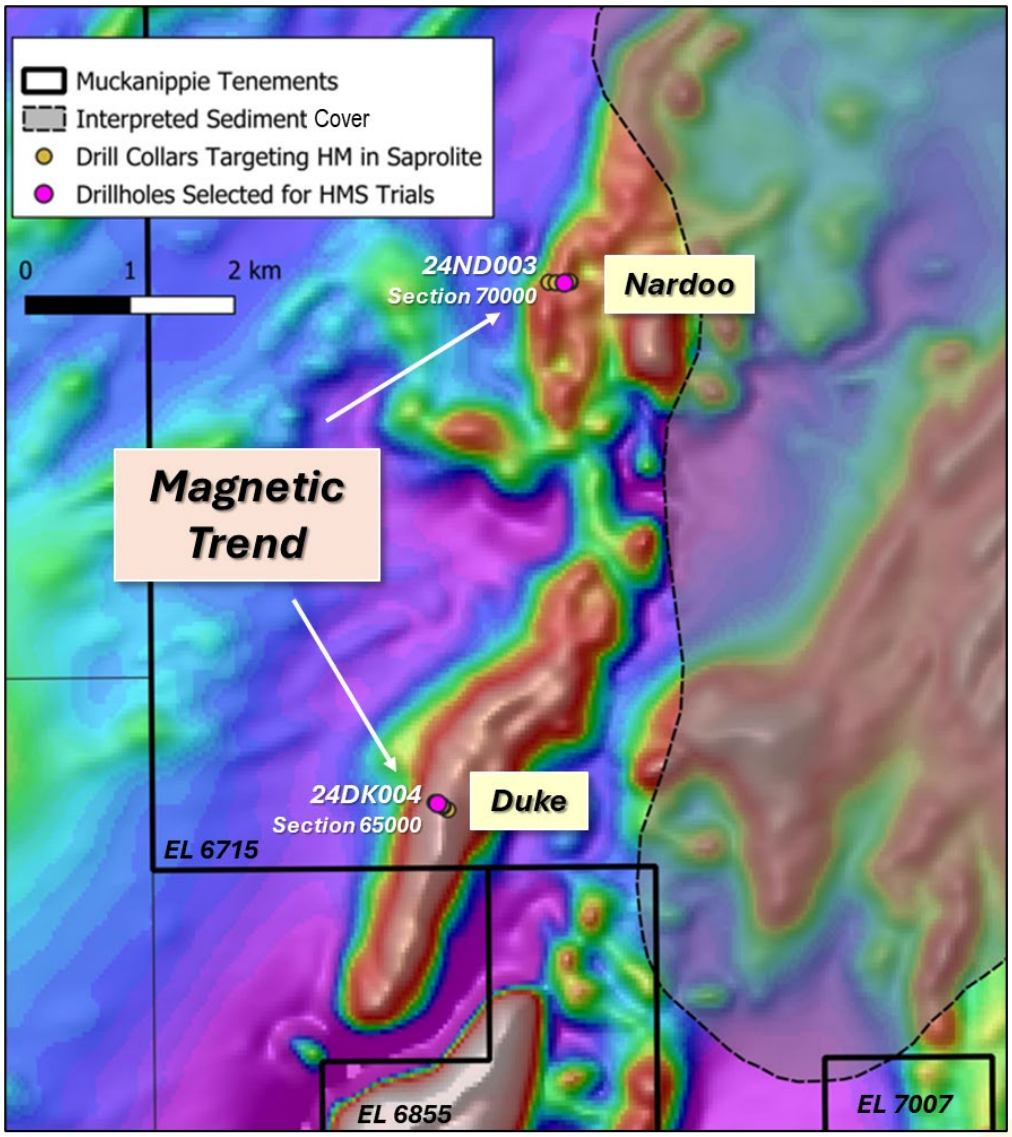

Figure 4: Magnetic image of Nardoo-Duke Prospect areas and 2024 drill collars. Note mineralisation occurs along a regionally extensive magnetic horizon which extends over a 16 kilometre trend on PTRs Muckanippie Project Area.

Claypan Prospects

Six different saprolitic/weathering targets were tested in the Claypan area (Figure 7). High titanium assays were returned from five of these targets, most notably from those around the southern rim of the targeted magnetic feature . Two holes were selected for initial HM assaying, both returning exceptional results. Drill hole 24CP004 returned **48 metres at 23.5% HM (including 8 metres at 29.7% HM)** and drill hole 24CP009 returned **45 metres at 27.0% HM**. Cross sections for these holes are presented in Figures 5 and 6. Similar or better TiO_2 assays in other holes on these sections suggest that the HM mineralisation is open in all directions.

Visual logging of the HM concentrates returned very high grades of titanium-bearing minerals. Drill hole 24CP004 averaged an exceptional 58% ilmenite for the HM zone along with 4.3% leucoxene credits giving a total VHM content of 62.7%. Drill hole 24CP009 averaged 33.8% ilmenite and 4.8% leucoxene in the HM zone. The drill hole immediately to the east, 24CP008, returned a thicker intercept with a higher TiO_2 grade (Table 2). HM mineralogy results (pending) are therefore anticipated to be better here, warranting additional drilling follow-up.

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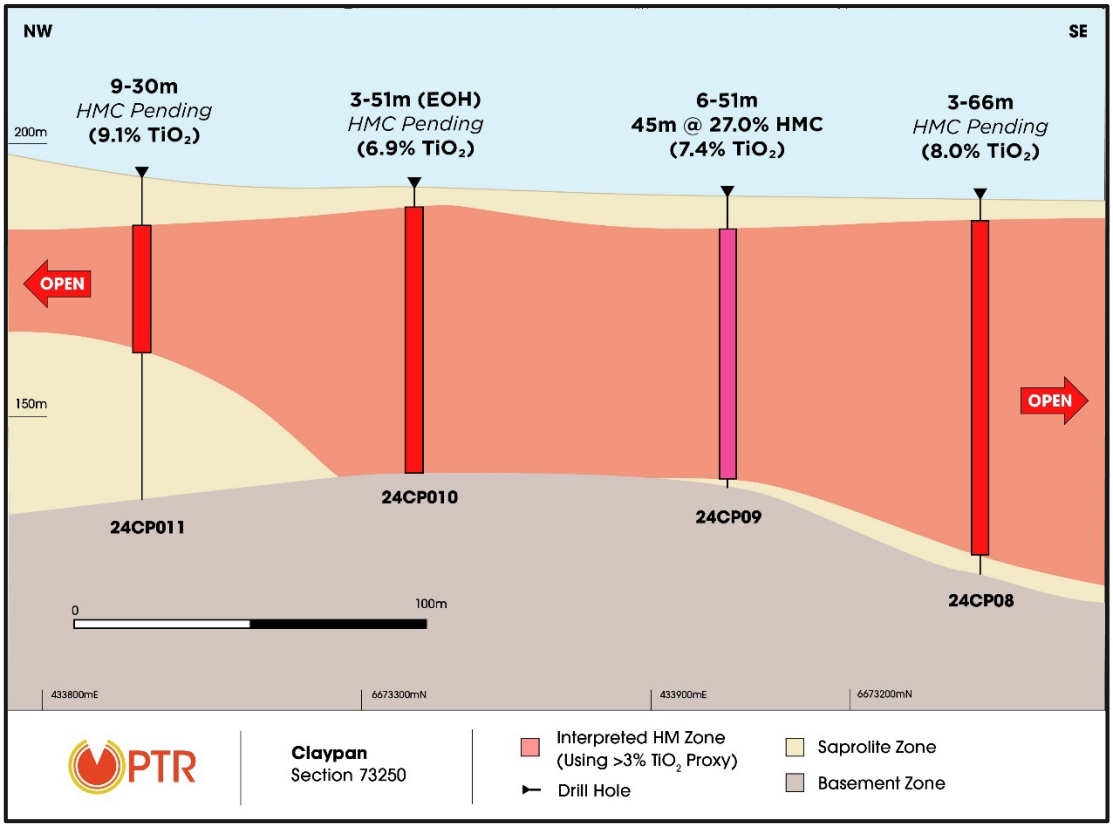

Figure 5: *Claypan Prospect – Cross section 73250 showing HM intercepts and extent of TiO_2 mineralisation.*

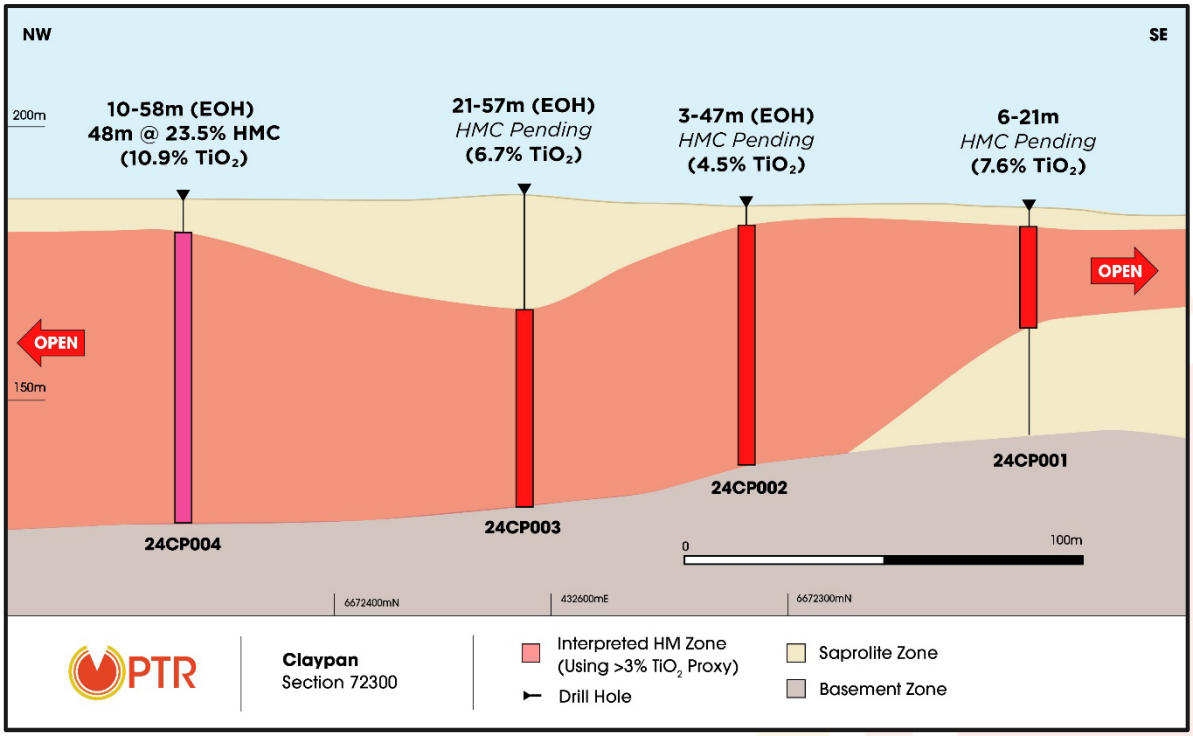

Figure 6: *Claypan Prospect – Cross section 72300 showing HM intercepts and extent of TiO_2 mineralisation.*

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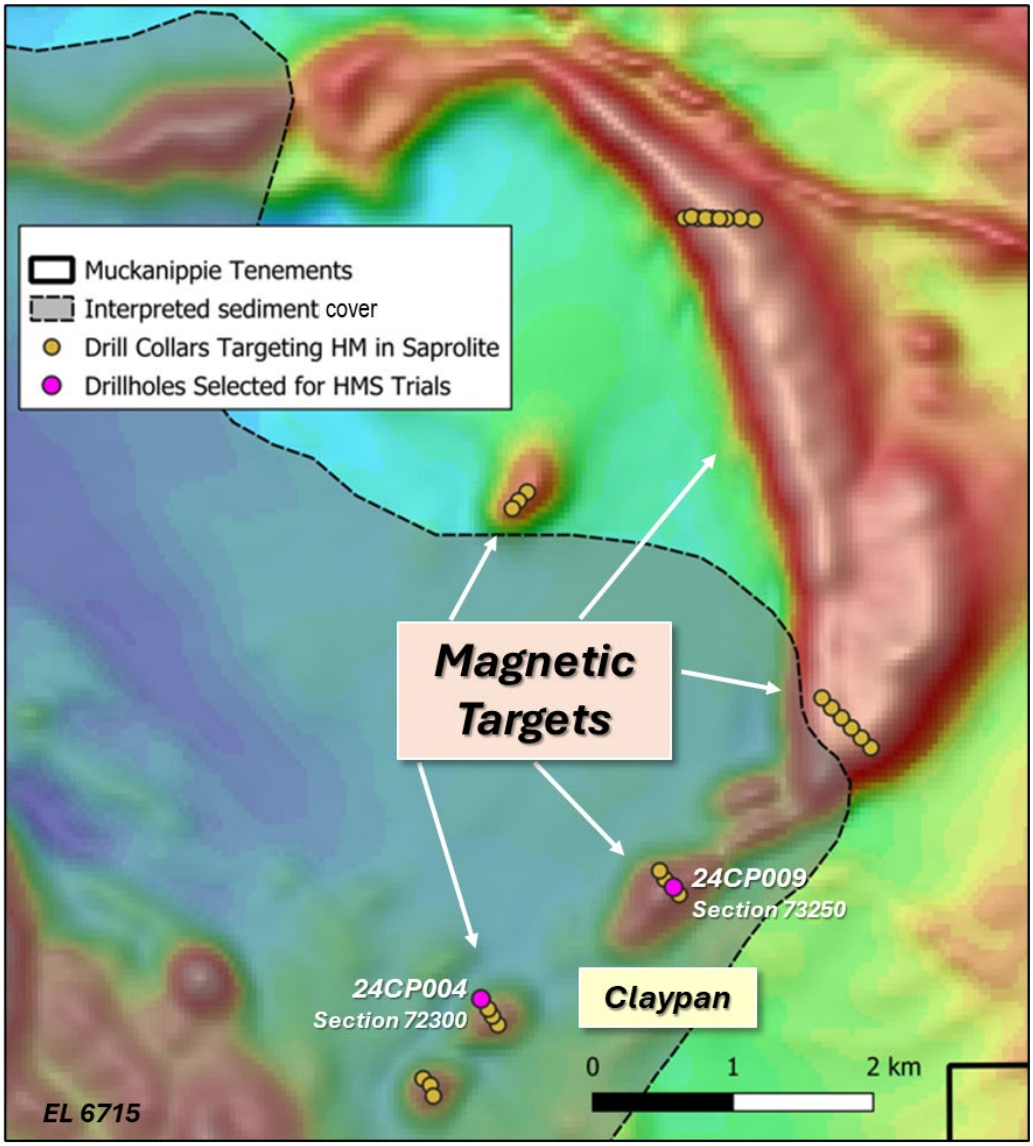

***Figure 7**: Magnetic image of Claypan Prospect areas and 2024 drill collars.*

Future Work

Given the encouraging initial trial HM work, other exploration drill holes with significant TiO_2 assays are being submitted for HM analysis and visual logging of HM concentrates. Following this, selected concentrates will be composited and submitted to benchtop and small-scale HM recovery investigations including magnetic and electrostatic separation of HM concentrate and geochemical evaluation of concentrate product. These results will complement the similar testing being undertaken on Rosewood samples and will help to determine if a joint mining operation is viable.

Additional exploration drilling will be undertaken to test the continuity of mineralisation relative to magnetic trends and to test other HM models currently being developed by the PTR team.

ENDS

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

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Table 2: Saprolite TiO_2% Significant Intercepts				
Drill Hole	**From** (metres)	**To** (metres)	**Interval** (metres)	**TiO_2 %**
24CP001	6	21	15	**7.56**
incl.	9	15	6	**8.67**
24CP002	3	47	44	**4.48**
incl.	36	47	11	**7.60**
24CP003	21	57	36	**6.67**
incl.	30	39	9	**9.25**
24CP004	6	58	52	**10.16**
incl.	12	30	18	**17.20**
and	27	30	3	**32.69**
24CP005	9	53	44	**5.02**
24CP006	9	48	39	**2.90**
24CP007	12	24	12	**6.98**
incl.	21	24	3	**15.00**
24CP008	3	66	63	**8.02**
incl.	6	15	9	**13.92**
and	21	27	6	**11.38**
24CP009	3	51	48	**7.25**
incl.	6	12	6	**11.51**
24CP010	3	51	48	**6.86**
incl.	6	9	3	**11.79**
and	42	51	9	**14.44**
24CP011	9	30	21	**9.13**
incl.	21	27	6	**18.75**
24CP012	3	28	25	**5.27**
24CP013	3	45	42	**6.39**
24CP014	6	12	6	**5.67**
24CP015	3	15	12	**4.90**
24CP026	6	21	15	**3.79**
24ND001	24	36	12	**4.63**
24ND002	0	45	45	**7.87**
incl.	3	27	24	**11.35**
and	3	9	6	**17.04**
24ND003	0	44	44	**8.98**
incl.	3	9	6	**17.01**
24DK001	0	24	24	**8.78**
incl.	15	24	9	**14.33**
24DK002	0	27	27	**6.54**
incl.	3	9	6	**9.83**
24DK003	0	42	42	**6.29**
24DK004	0	61	61	**7.81**
incl.	3	15	12	**11.62**
and	24	30	6	**13.28**
24DK005	15	21	6	**3.94**
24M101	15	24	9	**6.67**
24M105	0	21	21	**4.66**

Table 3: Saprolite target exploration drill collars

Hole ID	Easting MGA94 Z53	Northing MGA94 Z53	RL metres	Dip Deg.	Azimuth Deg.	EOH Depth metres
24CP001	432665	6672245	185	-90	0	41
24CP002	432625	6672307	185	-90	0	47
24CP003	432595	6672357	187	-90	0	57
24CP004	432544	6672430	186	-90	0	58
24CP005	432131	6671860	181	-90	0	53
24CP006	432183	6671814	181	-90	0	50
24CP007	432204	6671736	178	-90	0	68
24CP008	433957	6673175	188	-90	0	68
24CP009	433917	6673228	189	-90	0	52
24CP010	433856	6673284	191	-90	0	51
24CP011	433818	6673345	193	-90	0	57
24CP012	435324	6674225	178	-90	0	28
24CP013	435255	6674295	178	-90	0	45
24CP014	435185	6674366	176	-90	0	43
24CP015	435115	6674438	175	-90	0	15
24CP016	435043	6674510	174	-90	0	33
24CP017	434976	6674580	174	-90	0	30
24CP018	432873	6676052	170	-90	0	25
24CP019	432812	6675989	169	-90	0	19
24CP020	432767	6675934	172	-90	0	34
24CP021	434493	6677998	163	-90	0	6
24CP022	434393	6678008	163	-90	0	3
24CP023	434292	6678003	160	-90	0	7
24CP024	434193	6678007	160	-90	0	16
24CP025	434092	6678007	162	-90	0	16
24CP026	433993	6678007	163	-90	0	21
24CP027	434045	6678018	165	-90	0	16
24CP028	434146	6678009	162	-90	0	5
24CP029	434244	6678005	160	-90	0	10
24RW021	420841	6661190	177	-90	0	16
24RW022	420844	6661115	176	-90	0	20
24RW023	420842	6661039	174	-90	0	15
24ND001	412432	6670008	180	-90	0	36
24ND002	412501	6670004	179	-90	0	45
24ND003	412580	6670002	178	-90	0	44
24ND004	412636	6670009	178	-90	0	31
24ND005	412626	6670016	178	-90	0	62
24DK001	411463	6664954	188	-90	0	45
24DK002	411419	6664982	188	-90	0	28
24DK003	411408	6664995	187	-90	0	42
24DK004	411368	6665013	189	-90	0	61
24DK005	411341	6665023	188	-90	0	52
24M101	410210	6645610	192	-90	0	33
24M102	410352	6645609	195	-90	0	14
24M103	410492	6645610	193	-90	0	32
24M104	410635	6645612	194	-90	0	27
24M105	410781	6645615	192	-90	0	21
24M106	410864	6645613	194	-90	0	18
24M107	410950	6645615	194	-90	0	36

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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.

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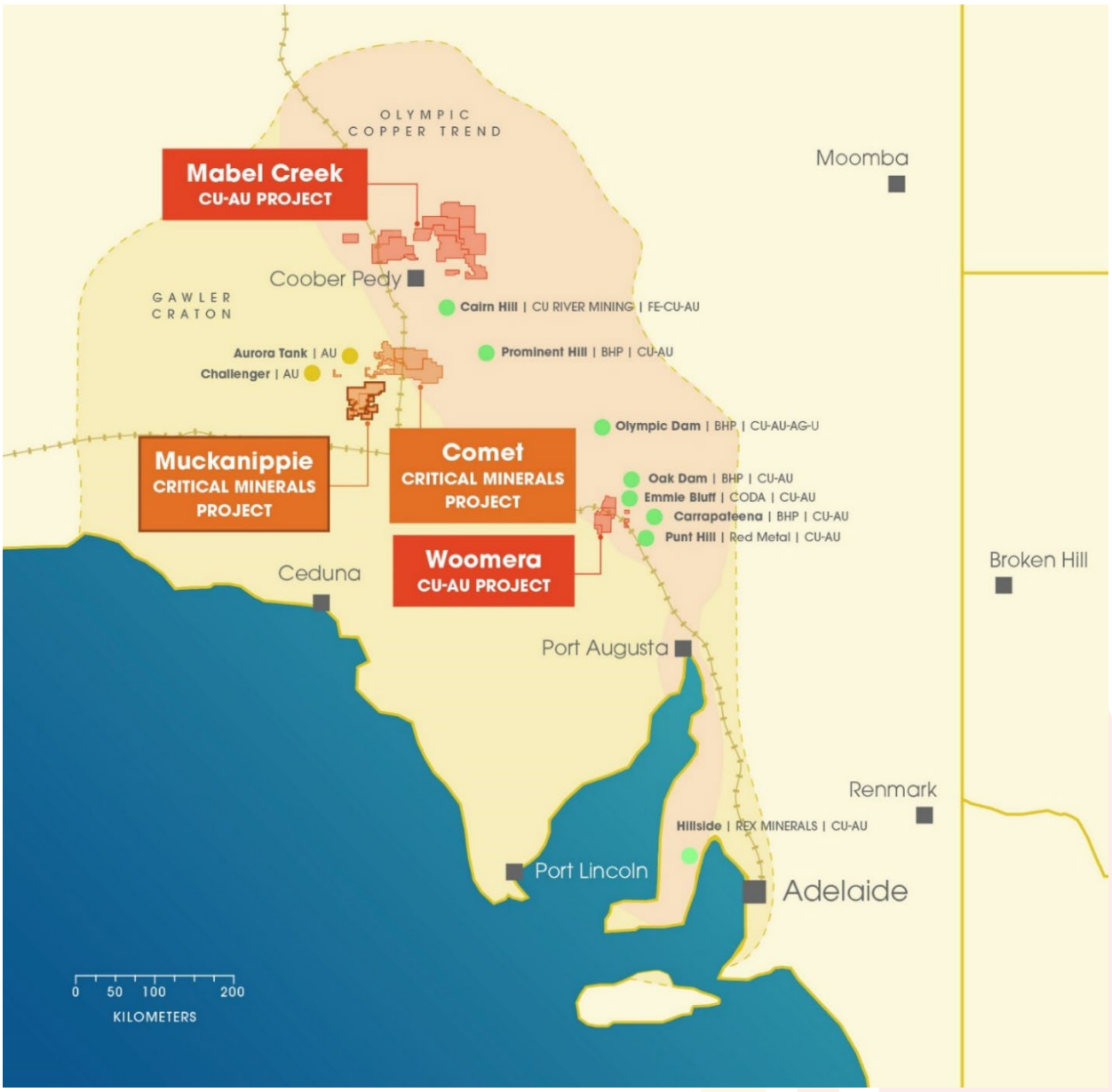
About Petratherm Limited

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 2025 calendar period.

In addition, PTR has a major project holding in the northern Gawler Craton of South Australia. Recent exploration has uncovered significant concentrations of 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

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.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *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.*	**Drilling** • 4 drillholes have been selected for Heavy Liquid Separation (HLS) testing, from recently completed Petratherm Drilling. • 1 metre samples were split from the drill rig using a cone splitter attachment to the cyclone. • A riffle splitter was subsequently used to split 1 metre samples for HLS testing. Results are contained in the main body of this report. • Samples were dried, weighed and soaked. • De-slime using 2mm and 38um Endecott sieves. • Standard HM separation conducted HLS on - 2mm /+0.038mm sand using Tetrabromoethane (TBE), discarding floats. • TiO_2 assays were derived from 3m composite bulk sample intervals and assayed using lithium borate fusion method and analysed using ICP-AES and ICP-MS, by ALS laboratories. • Heavy Mineral Sachets were independently logged by Diamantina Laboratories. Mineralogy was estimated from the separated heavy mineral concentrate, to the nearest 5% by an experienced mineralogist. • Historic drill hole information has been sourced from open file public records managed by the South Australian Department of Primary Industries and Resources. • 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.).*	• Petratherm has completed air core drilling.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample*	• Air core drilling methods were utilised throughout the duration of the program. • Hole diameters are 78mm.

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Criteria	JORC Code explanation	Commentary
	recovery and ensure representative nature of the samples. • *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.*	• A Geologist was on site for every drill hole to ensure that sample recoveries were appropriate. Excellent recoveries were recorded. • 1m sample intervals were collected in buckets and a 1 metre split sample taken using a cone splitter attached to the drill cyclone into pre-numbered calico bags. • 3m composite samples were collect using a spear method from 1m spoils.
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.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.* • *The total length and percentage of the relevant intersections logged.*	• All samples were geologically logged by the on-site geologist. • Geological logging is qualitative. • Representative chip trays containing 1 m geological sub-samples were collected. • Heavy Mineral Sachets were independently logged by Diamantina Laboratories. Mineralogy was estimated from the separated heavy mineral concentrate, to the nearest 5% by an experienced mineralogist
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *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.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• Samples averaging 1.6 kg were collected for laboratory assay, using a cone splitter. • It is considered representative samples were collected. • Samples were dried, weighed and soaked. De-slime using 2mm and 38um Endecott sieves. Standard HM separation conducted HLS on - 2mm /+0.038mm sand using Tetrabromoethane (TBE), discarding floats. • The nature, quality and appropriateness of sample preparation has been achieved. • Duplicate check samples have been introduced into the sample stream by the Laboratory. • Standard samples were introduced into the sample stream by the laboratory also completed standard assays. • Laboratory analytical charge sizes are standard sizes and considered adequate for the material being assayed.
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.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the*	• For the HLS work, internal quality control was carried out by Diamantina Laboratories. QC samples, in the form of standards and repeats were inserted at a rate of approximately 1 in 20.

Criteria	JORC Code explanation	Commentary
	analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc. • *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.*	• 3m assays for TiO_2 analysis carried out by ALS Laboratories, including blanks and standards.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• Verification of intercepts has been undertaken by an independent consultant geologist, who has visually assessed drill samples and examined the laboratory data. • All data used is from primary sources.
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.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• All maps and locations are in UTM grid (GDA94 Z53) and have been measured by a GPS with a lateral accuracy of ± 5 metres and a topographic accuracy of ±5 metres.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *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.* • *Whether sample compositing has been applied.*	• Petratherm has completed regional exploration drilling along drill traverses over magnetic anomalies. Drill hole traverses extend from 200 metres to 600 metres. • Data spacing is insufficient to establish the degree of geological and grade continuity required for a Mineral Resource estimation. • No compositing was used
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.* • *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.*	• Drill holes were targeted over magnetic features and drilled at 50-100m spacing on lines perpendicular to magnetic trends to give an indication of mineralised width. • The mineralisation in drillholes and is interpreted to be hosted in weathered saprolite, leaving the resistant oxide minerals preserved in weathered saprolitic clays. •
Sample security	• *The measures taken to ensure sample security.*	• Samples were taken directly from the field to Petratherm's warehouse and then couriered to Diamantina Laboratories in Perth. • Composite 3m samples taken directly to ALS Adelaide from Petratherm's warehouse.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• There is currently a review into the methods used to improve HM recoveries.

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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.* • *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. • EL 6855 was granted 100% to Petratherm Limited on 18/10/22 for a period of 6 years. • EL 7007 was granted 100% to Petratherm Limited on 15/08/24 for a period of 6 years. • 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. • 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 • The tenements are located approximately 120 km south south-west of Coober Pedy overlapping Bulgunnia, Mulgathing and Commonwealth Hill Pastoral Stations. • The tenements are located within the Woomera Prohibited Area (Green Zone). • **Native Title Claims:** SCD2011/001 Antakirinja Matu-Yankunytjatjara. • 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; • **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

Criteria	JORC Code explanation	Commentary
		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:*
	  ○ *easting and northing of the drill hole collar*
	  ○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar*
	  ○ *dip and azimuth of the hole*
	  ○ *down hole length and interception depth*
	  ○ *hole length.*
	• *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.*
		• Drill hole collar locations, RL, dip and azimuth of reported drill holes contained in Table 3 of this report.

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.* • *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.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• All reported drill results are true results as reported by the Laboratory. • All results above 2% HM are reported in Table 1 of Significant Intercepts. • All drill hole assay intervals above 3% TiO_2 are reported in Table 2 of Significant Intercepts.
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *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').*	• Down hole length, true width not known due to the interpreted steeply dipping geology.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being*	• See Figures in main body of release attached.

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	reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	
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 of 49 drill holes totalling 1,652 metres at 10 targets on the Muckanippie Project (see Figure 1) with the potential to host titanium-bearing Heavy Minerals. • These drill hole results are from initial reconnaissance drill traverses principally testing magnetic horizons.
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).* • *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. • Extensive mineralogical and metallurgical test work will be conducted on current drill samples to determine grade, mineralogy and nature of the heavy mineral mineralisation hosted in saprolite at several prospect sites. • Further infill and extension drilling is likely to occur in the near future.

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