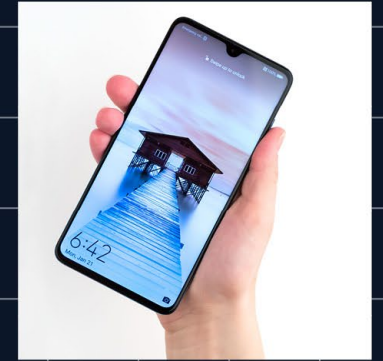




PVW
Resources



RIGHT PLACE

RIGHT TEAM

RIGHT TIME

EXPLORING FOR UNCONFORMITY-RELATED REE DEPOSITS

The Australian Rare Earth Conference, 1 November 2022

ASX : PVW

DISCLAIMER

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Compliance Statement

The information in this report that relates to REE exploration results is extracted from the ASX announcements dated 13 October 21 titled "Confirmation of high-grade Heavy Rare Earths at Tanami Project (100%) , Western Australia" , dated 18 November 21 titled "Tanami Rare Earths Project – Exploration Update", dated 7 December 21 titled "Mineralogy confirms Heavy Rare Earths at Tanami are Xenotime", dated 8 September 22 titled "Initial drilling confirms widespread heavy rare earth mineralisation at Tanami REE Project, WA" and dated 24 October 2022 titled "Assays confirm Rare Earths and Gold Potential at Tanami" which are available to view on the Company's website (pvwresources.com.au). The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that that all material assumptions and technical parameters in the relevant announcements continue to apply and have not materially changed. The Company confirms that the form and context in which the

Competent Person's findings are presented have not been materially modified from the original market announcements.

Competent Person's Statement

The information in this documents that relates to REE Exploration Results is based on information compiled by Mr Robin Wilson who is a Member of the Australasian Institute of Mining and Metallurgy. Mr Wilson is a consultant to PVW Resources and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking 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' (the JORC Code). Mr Wilson consents to the inclusion of this information in the form and context in which it appears.

The information in this document relating to gold Exploration Results is based on information compiled by Mr Karl Weber, a professional geologist with over 25 years' experience in minerals geology including senior management, consulting, exploration, resource estimation, and development. Mr Weber completed a Bachelor of Science with Honours at Curtin University in 1994; is a member of the Australasian Institute of Mining and Metallurgy (Member No. 306422) and thus holds the relevant qualifications as Competent Person as defined in the JORC Code. Mr Weber is a full-time employee of PVW Resources. Mr Weber has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking 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' (the JORC Code). Mr Weber consents to the inclusion of this information in the form and context in which it appears.



ACKNOWLEDGEMENTS

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Teimoor Nazari-Dehkordi, Carl Spandler,
Nick Oliver**

**Australian Critical Minerals Research Centre -
University of Adelaide**

Portable Spectral Services

AXT Pty Ltd



Outcrop of REE mineralised Pargee Sandstone (basal conglomerate) -Castella prospect



A DIVERSIFIED, WELL-FUNDED EXPLORER

Unlocking new Rare Earths and gold discoveries

- ▶ Specialist team – proven track record of Rare Earth Elements (REE) discovery and development
- ▶ Focused on the greenfields Tanami REE Project, WA:
 - **18km long corridor** with strong potential for a major new unconformity-hosted heavy REE discovery
 - Watts Rise and Castella prospects (Killi Killi), rock chip assays up to **12.45% TREO**
 - HREE mineralogy confirmed as **xenotime**
 - Significant high-grade **gold potential**
- ▶ Maiden drill program **completed in September this year:**
 - ~10,000m of RC complete, ~16,000m of AC drilling complete
 - **Widespread REE mineralisation** in initial RC drilling
 - Gold drill results up to **8m @ 2.58 g/t Au**



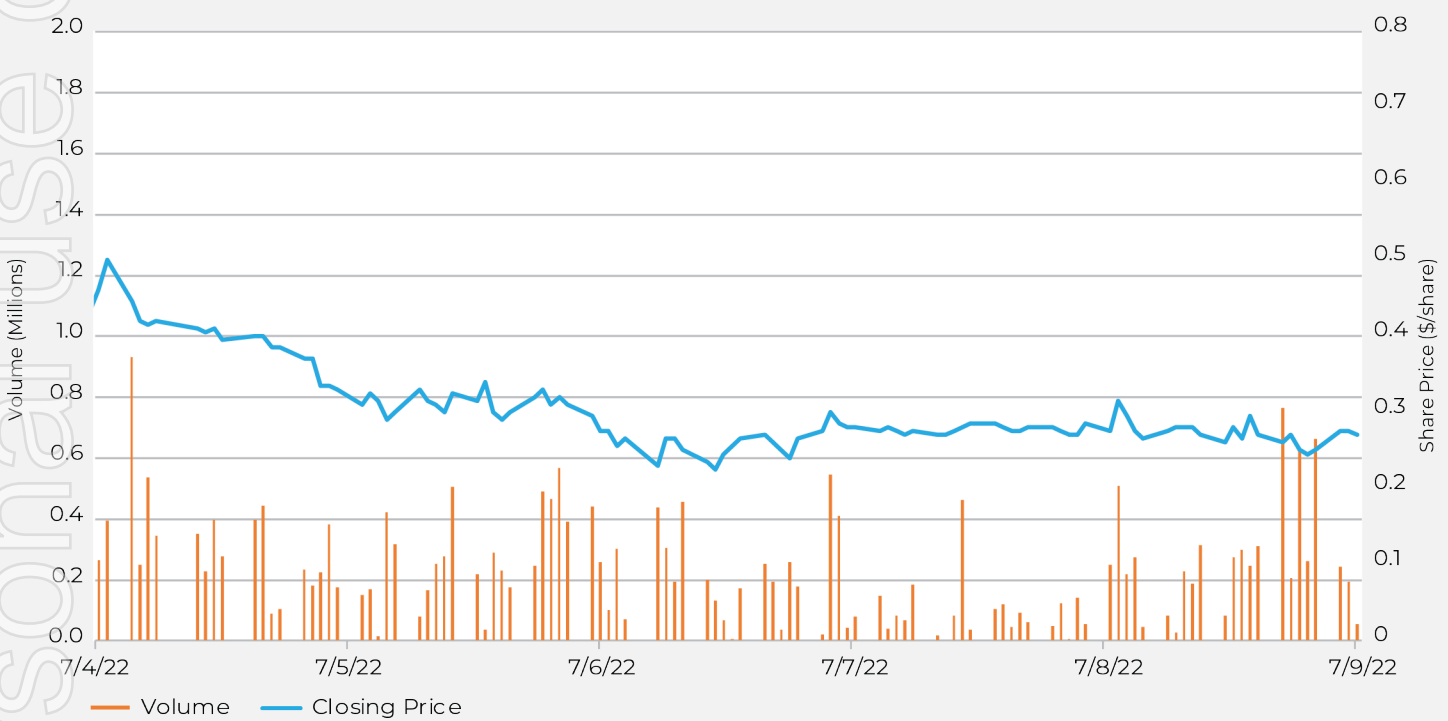
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CORPORATE OVERVIEW



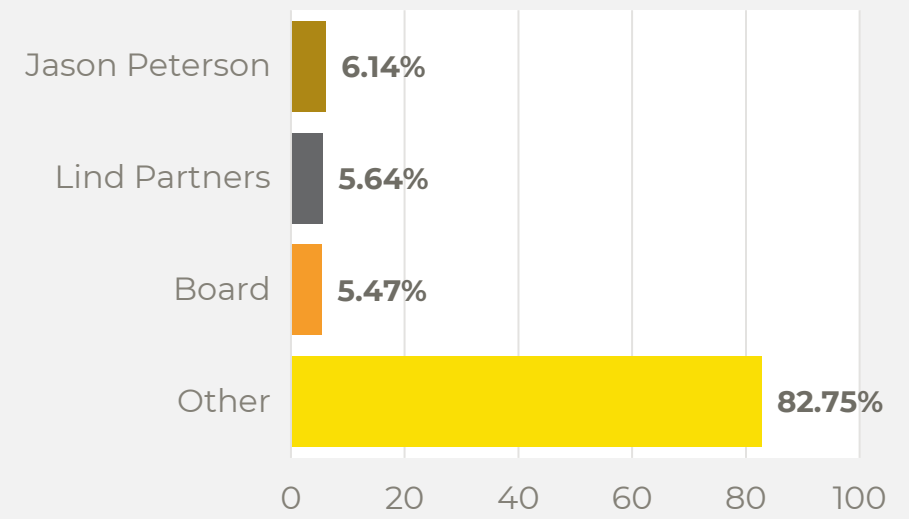
<p>Shares on issue</p> <p>96,335,413</p>	<p>Share price</p> <p>14 cents</p>	<p>Market capitalisation</p> <p>\$13.5m</p>	<p>Cash at bank*</p> <p>\$7.3m</p>
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Share price performance (ASX:PVW)



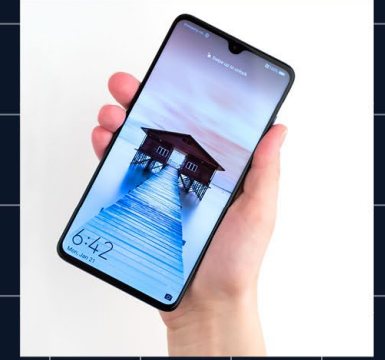
Top shareholders

Top 100 own 64.06%





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RIGHT PLACE

RIGHT TEAM

RIGHT TIME

RIGHT PLACE – TANAMI REE AND GOLD

Large-scale discovery potential in Australia's new Heavy Rare Earth province

ASX : PVW

WHAT ARE UNCONFORMITY-RELATED REE DEPOSITS (“HURREE”)



Wolverine discovery outcrop, Browns Range (ASX:NTU)



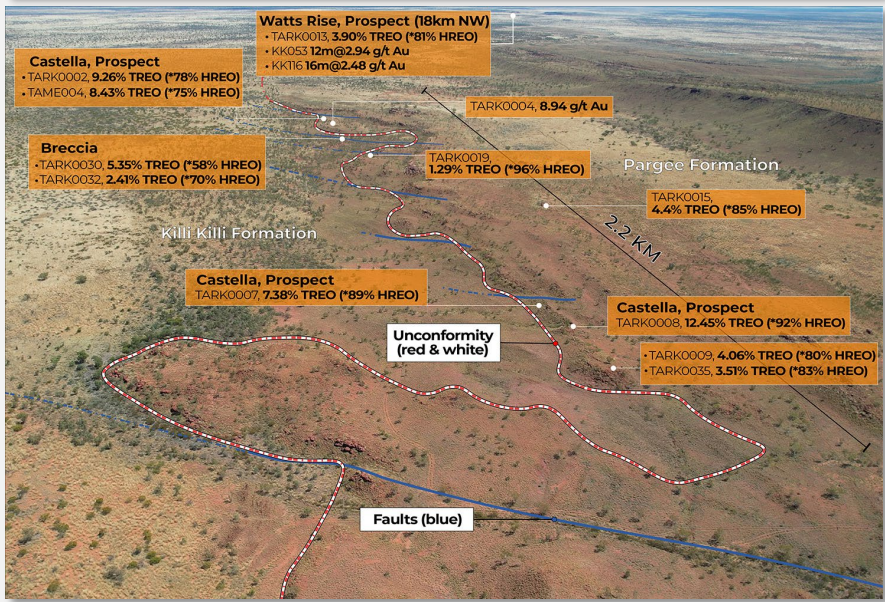
Castella prospect

Similar geological setting to unconformity-related uranium deposits of Australia and Canada

- ▶ HURREE model first proposed by Nazar-Dehkordi et al, 2018 based on Browns Range
- ▶ Best known examples at Browns Range – e.g. Wolverine and Gambit deposits
- ▶ Browns Range – xenotime-rich veins and breccias close to a regional unconformity between Archean metasediments (Browns Range Metamorphics) and overlying younger Proterozoic metasediments (Gardiner Sandstone)
- ▶ Watts Rise/Castella (Killi Killi) – xenotime disseminated, in stratiform horizons, or within veins and breccias close to regional unconformity between Palaeoproterozoic Killi Killi Formation and overlying younger Pargee Sandstone
- ▶ Maw Zone, Athabasca Basin, Canada (Rabiei et al, 2017) – xenotime in brecciated sandstones above regional unconformity



HYDROTHERMAL UNCONFORMITY RELATED REE (“HURREE”)

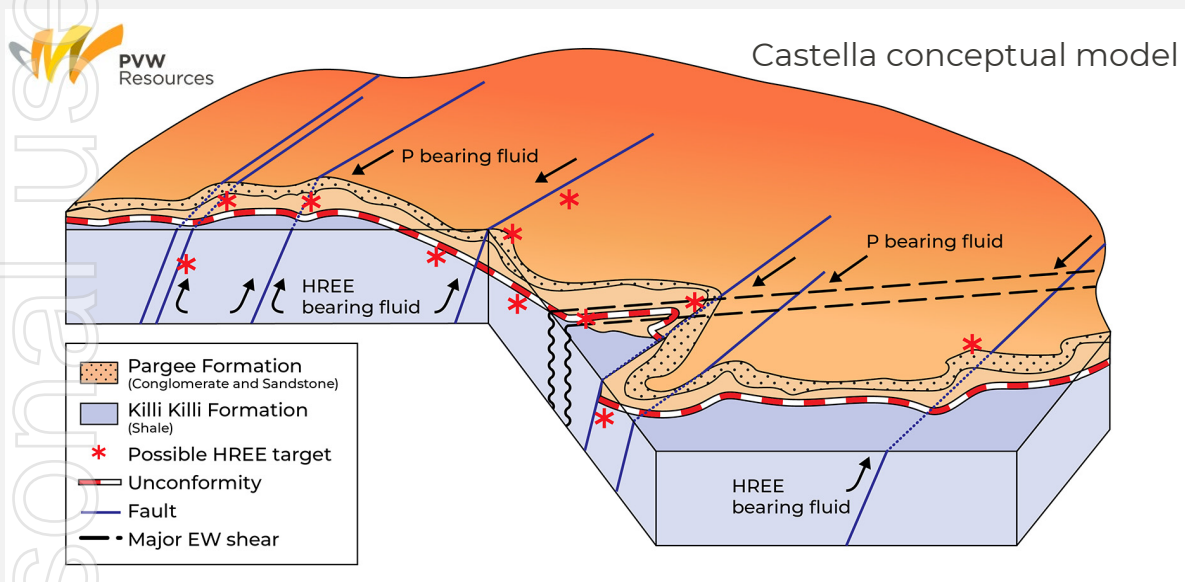
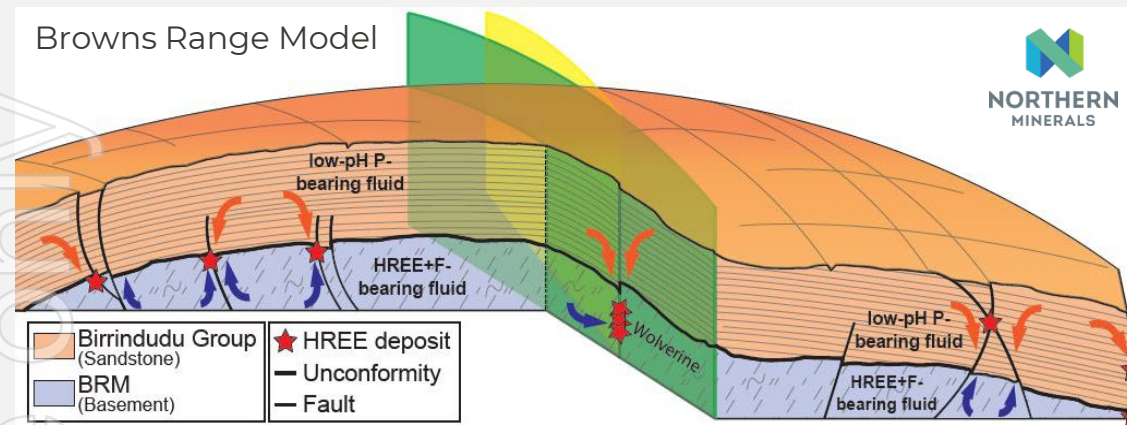


Mineralisation dominated by xenotime – an yttrium rare earth phosphate mineral (Y(HRE)PO₄)

- ▶ This style of REE mineralisation has no known links to magmatism
- ▶ Mineralisation predominantly structurally controlled occurring within steep faults that transect the unconformity. Some deposits also appear to have a component of lithological control e.g. at Watts Rise-Castella
- ▶ Mineralisation can occur within older “basement” rocks e.g. Wolverine or younger overlying sandstones e.g. Watts Rise-Castella, Dazzler
- ▶ Dating of xenotime mineralisation at Browns Range by Nazari-Dehkordi gave ages between 1.64 Ga and 1.60 Ga
- ▶ Consistent with previous dating results of Vallini et al, 2007 (at Killi Killi/Castella) and Morin-Ka et al, 2016

ersonal use only

HYDROTHERMAL UNCONFORMITY RELATED REE (“HURREE”)



- ▶ Nazar-Dehkordi et al, 2018 proposed leaching of HREEs from Browns Range Metamorphics
- ▶ P-bearing acidic fluids from overlying sandstones of Birrindudu Basin in fault zones near the unconformity
- ▶ Fluid mixing of P and HREEs in a low-Ca environment enabled extensive xenotime precipitation
- ▶ Temperature of ore formation estimated to have been between 150° C and 350° C – consistent with unconformity uranium deposits
- ▶ Faulting and/or fault-reactivation related to doming at Browns Range and possibly similar near Castella/Watts Rise (magnetics indicate large granite to south and west). Evidence of brittle re-activation of ductile zones in Killi Killi Fmn
- ▶ Source of HREEs at Watts Rise-Castella unclear – Killi Killi Fmn and/or Pargee Sandstone?

HURREE – MINERALISATION AND ALTERATION STYLE



Xenotime mineralisation at John Galt (ASX:NTU)



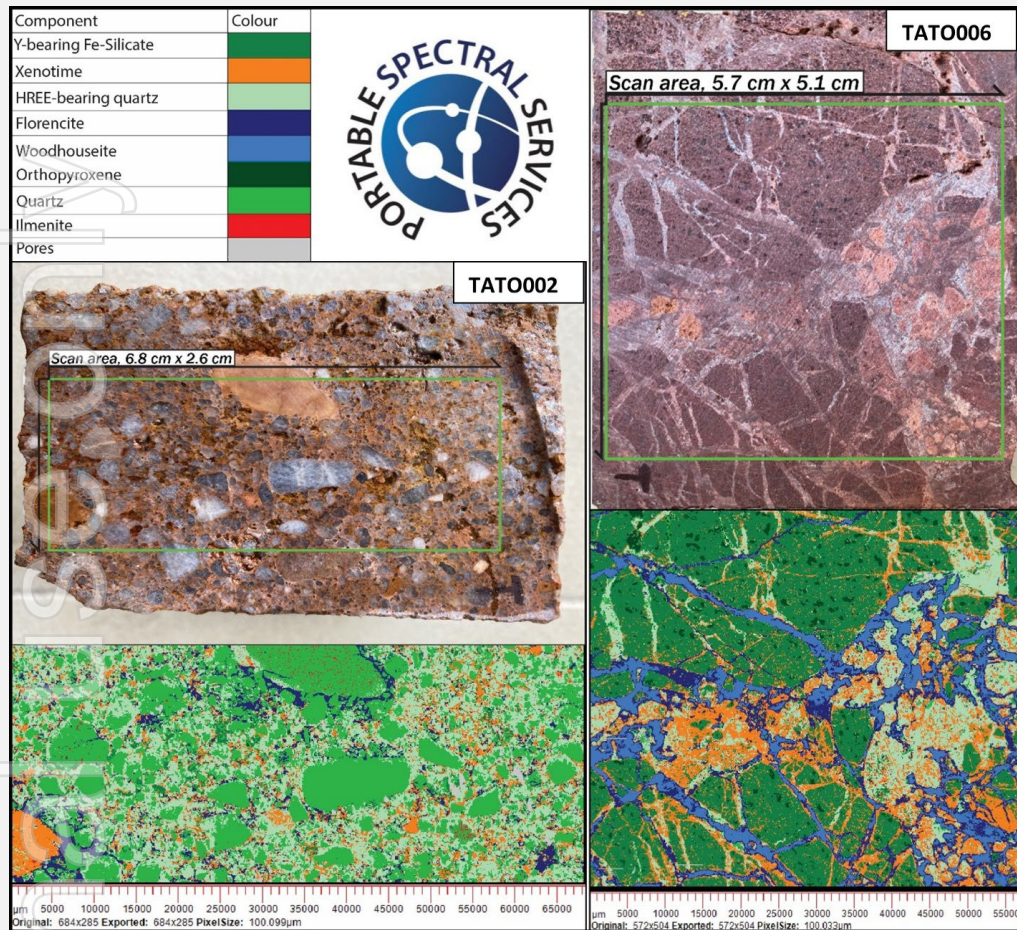
Pargee Sandstone hosted mineralisation at Castella prospect (12.45% TREO)



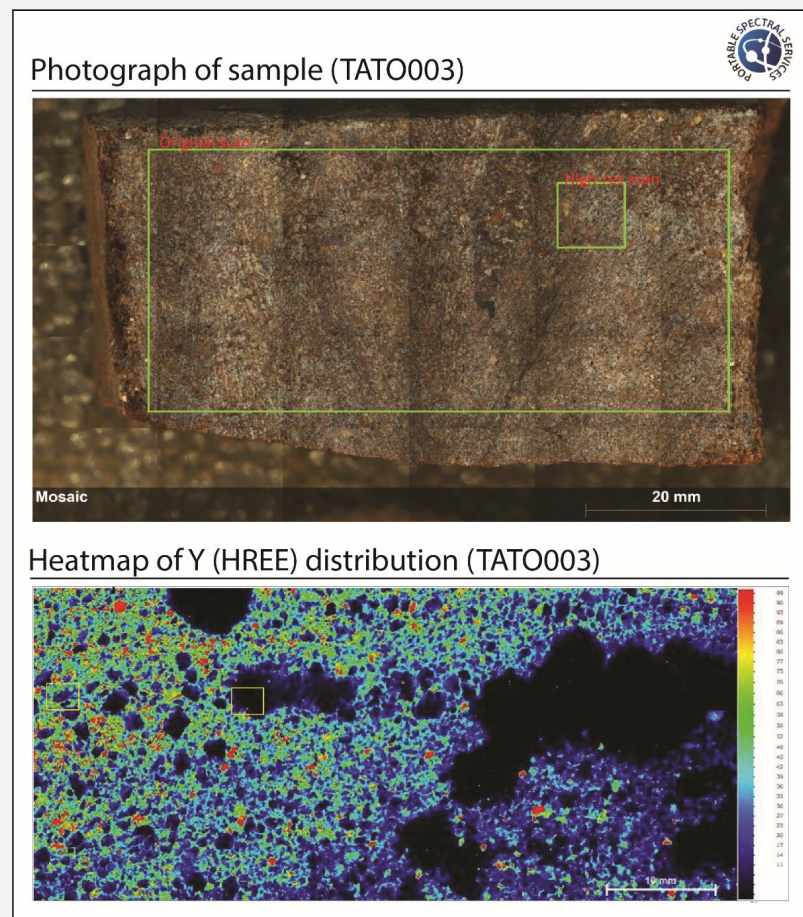
Drill core from Wolverine, Browns Range (ASX:NTU)

- ▶ Different styles of alteration , veining and brecciation
- ▶ Widely dispersed sericite-illite alteration up to 20m from mineralised structure
- ▶ Strong silica-hematite alteration within main mineralised structures
- ▶ Brecciation styles from crackle through to chaotic
- ▶ Lower grade “disseminated” style mineralisation – no obvious structural control, probable lithological control

HURREE – MINERALISATION AND ALTERATION STYLE



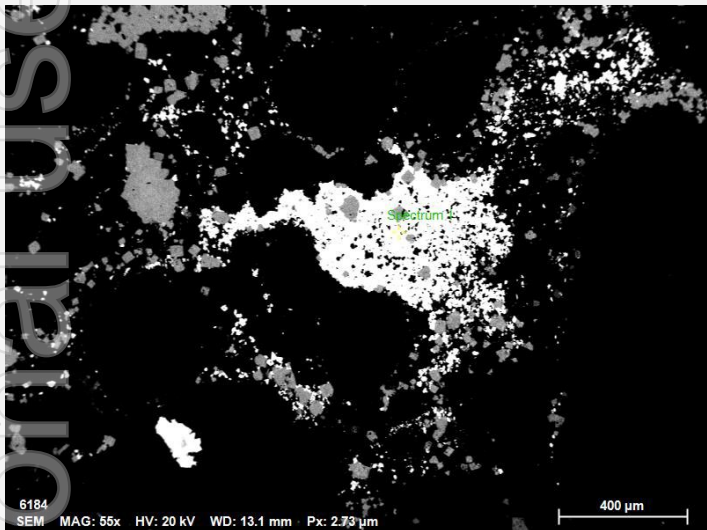
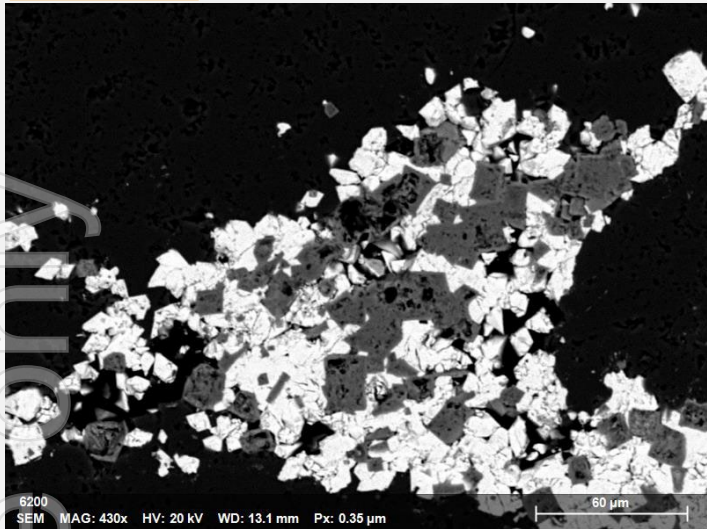
- ▶ Castella-Watts Rise – less brecciation observed but strong association with hematite alteration
- ▶ Disseminated style mineralisation in Pargee Sandstone – coarse grained/gravel/conglomerate units (TATO002, 003)
- ▶ Breccia hosted mineralisation in Killi Killi Formation (TATO006) – evidence of zonation with xenotime inner and goyazite outer zone



Tornado micro-XRF images of mineralisation from Pargee Sandstone – conglomerates (TATO002) and Killi Killi Fm (TATO006)

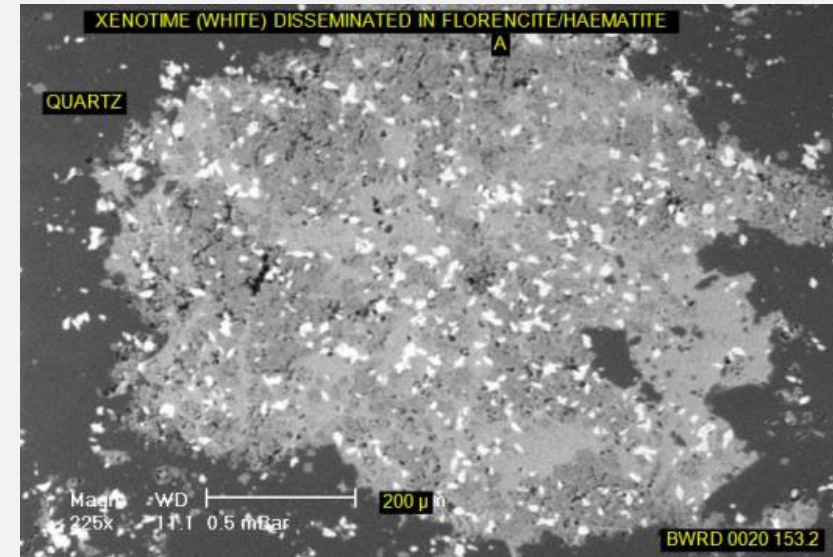
Tornado micro-XRF image showing Yttrium (xenotime) distribution within Pargee Sandstone

HURREE – SIMPLE REE MINERALOGY

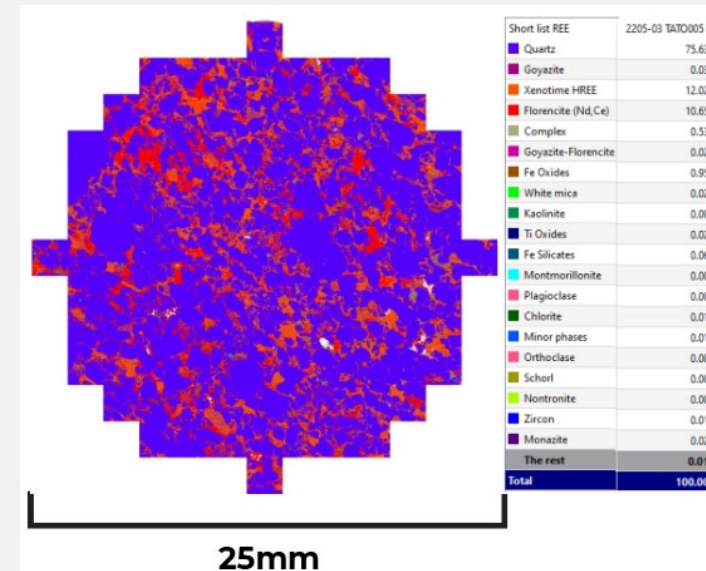


- ▶ Xenotime dominant with lesser florencite (light rare earth aluminium phosphate)
- ▶ Exceptionally high HREE:TREO ratios (up to 89%)
- ▶ Xenotime has many textural forms – disseminations/net textures (10-30 microns) and clusters, matrix infill within breccias, vein selvages, massive aggregates (up to 800 microns) within veins
- ▶ Light rare earths attributed to florencite (-Ce/Nd)
- ▶ Simple mineralogy means simpler processing

SEM images from Castella samples (xenotime – white, florencite – grey, quartz – black)

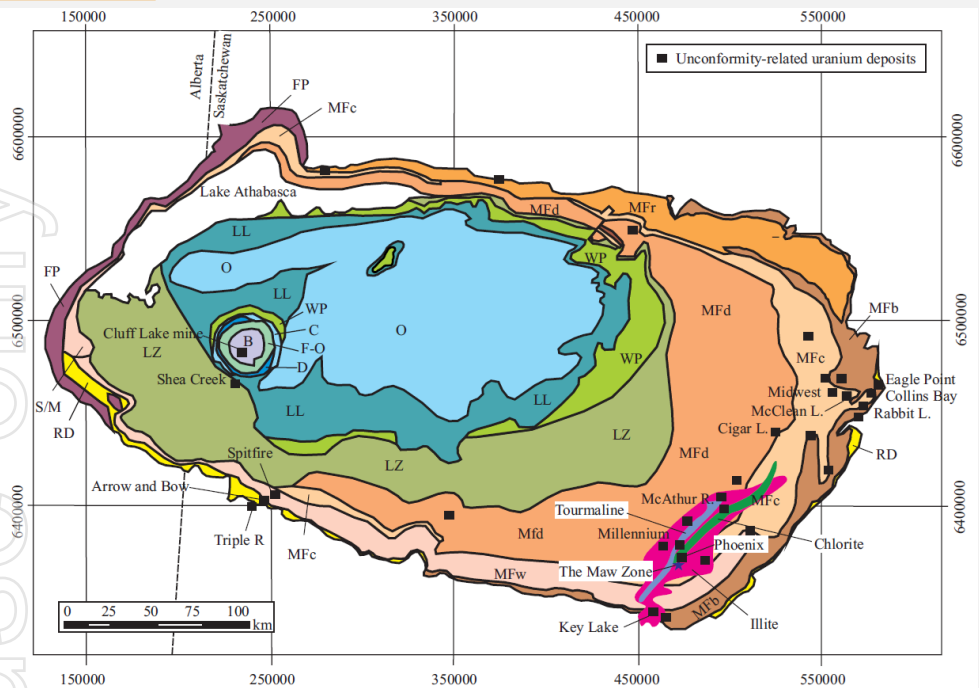


SEM image from Wolverine (Browns Range ASX:NTU) samples (xenotime – white, florencite – grey, quartz – black)



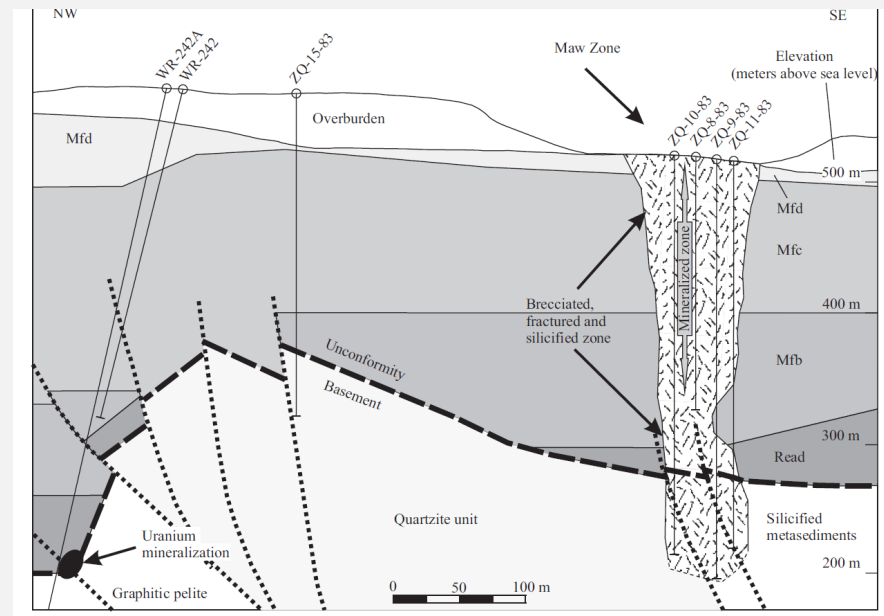
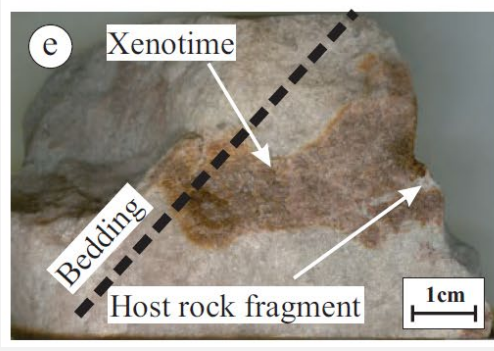
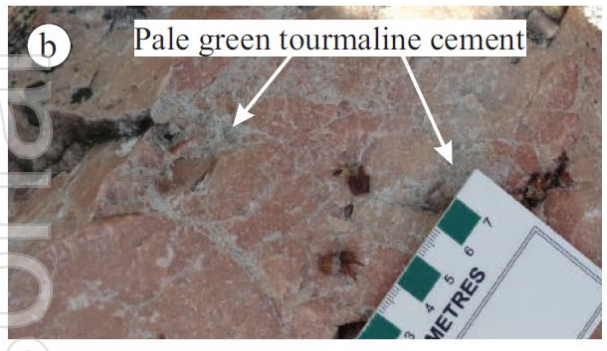
Micro-XRF image of mineralisation from Pargee Sandstone, Castella Prospect

OTHER EXAMPLES OF UNCONFORMITY RELATED REE



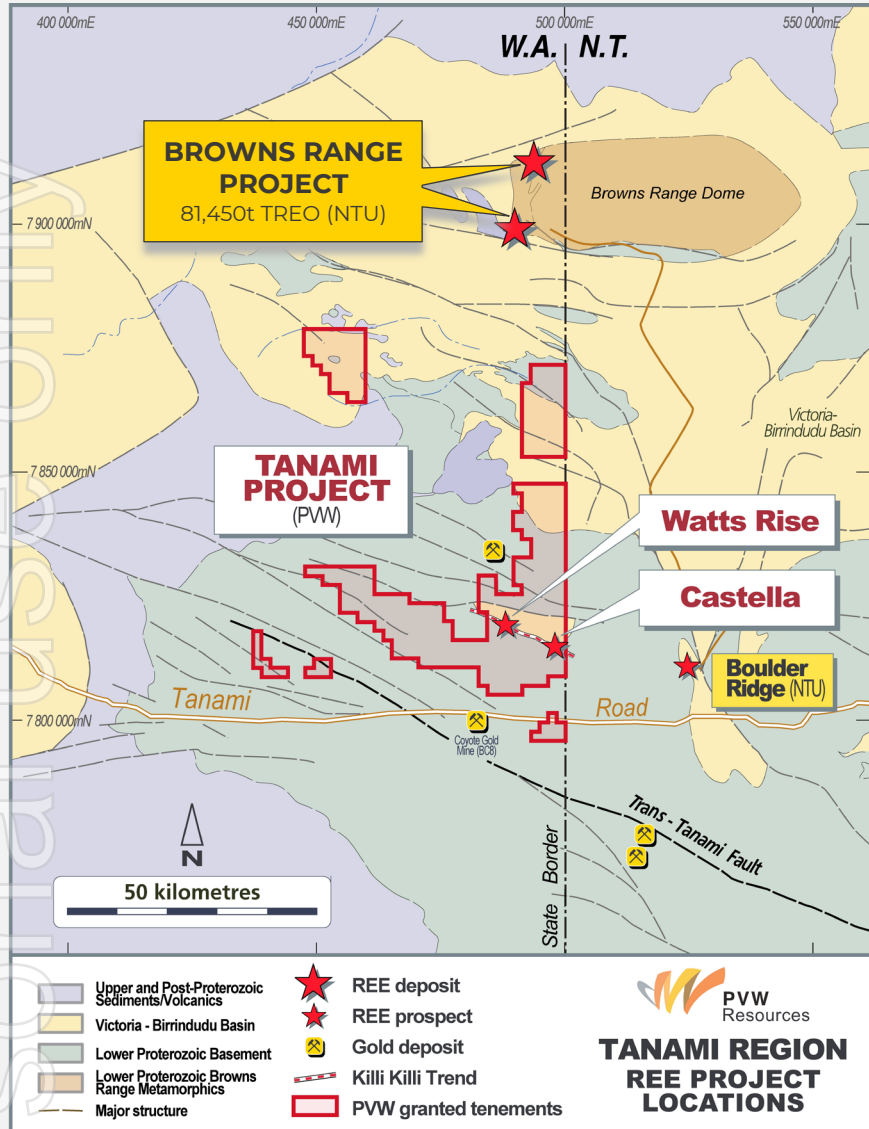
Maw Zone in the Athabasca Basin, Canada¹

- ▶ Xenotime deposit hosted in brecciated sandstones (Athabasca Group) – above the unconformity ie. equivalent to Gardiner or Pargee Sandstone
- ▶ Associated with silicification, hematisation and tourmalinisation
- ▶ Elevated concentrations of REEs (light and heavy) common in unconformity-related uranium deposits in the Athabasca Basin
- ▶ Pre-NI 43-101 resource estimate of 462,600t @ 0.21% Y₂O₃



¹ – sourced from Rabiei et al, 2017

TANAMI – AN EMERGING HEAVY RARE EARTHS PROVINCE



- ▶ Northern Minerals' Browns Range Project, ~90km to the north of PVW's project. Recently updated resource of 81,450t TREO (88% HREO)
- ▶ PVW'S Tanami Project ~1,270km² area with historical REE and gold results – but minimal modern exploration
- ▶ Potential for extensive hydrothermal unconformity-related rare earth mineralisation identified along the 18km Watts – Castella trend
- ▶ Contact/unconformity between the Pargee Sandstone and the Killi Killi Formation is highly prospective for this style of mineralisation
- ▶ Several other HRE prospects and xenotime occurrences in the region in similar geological settings e.g. Boulder Ridge (NTU), Mt. Mansbridge (RMX)

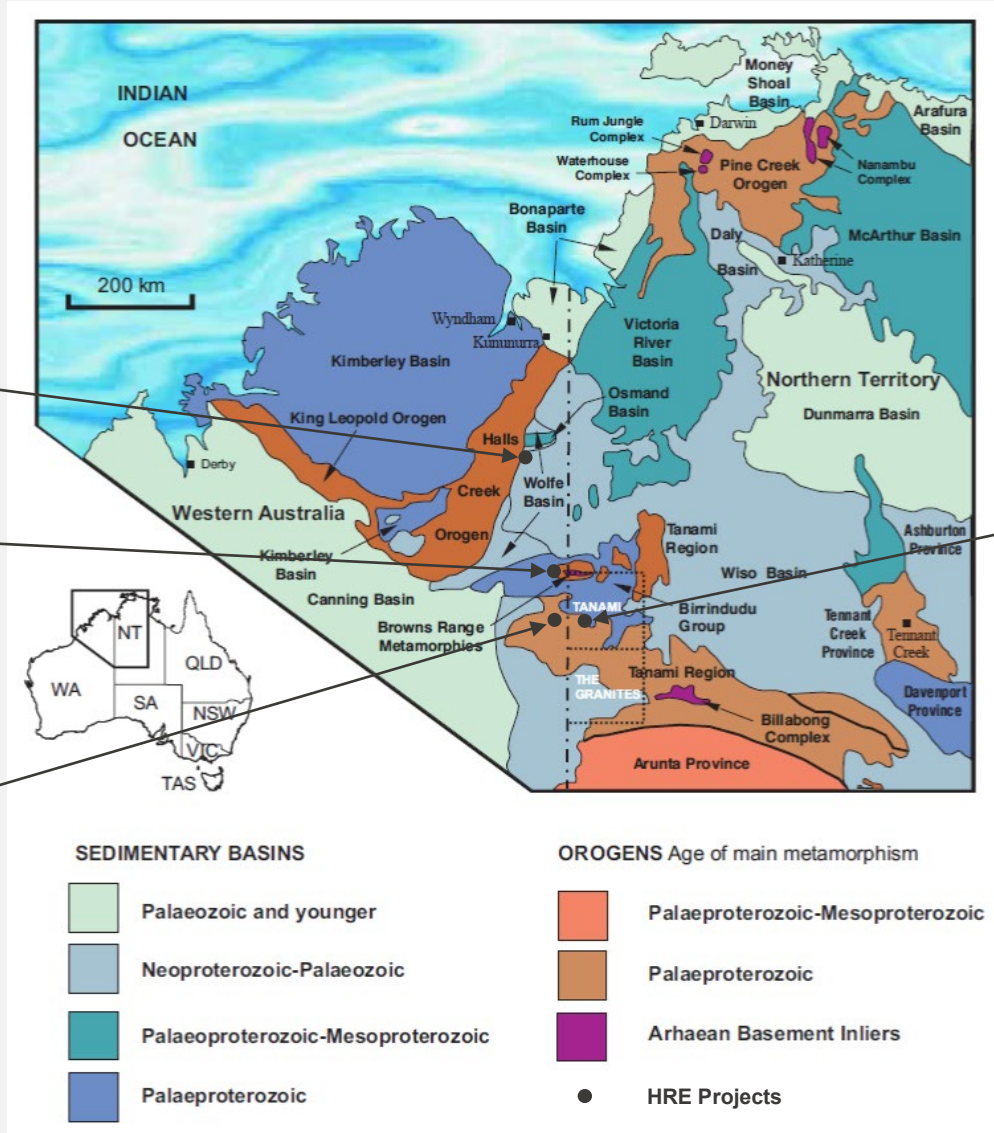
REGIONAL GEOLOGICAL SETTING OF THE TANAMI

- ▶ 1970-80s exploration focused on unconformity-uranium. PNC discovered rare earths (xenotime) in late 1980s at Area 5 (Browns Range)

John Galt
(ASX:NTU)

Browns Range
(ASX:NTU)

Watts Rise – Castella
(ASX:PVW)



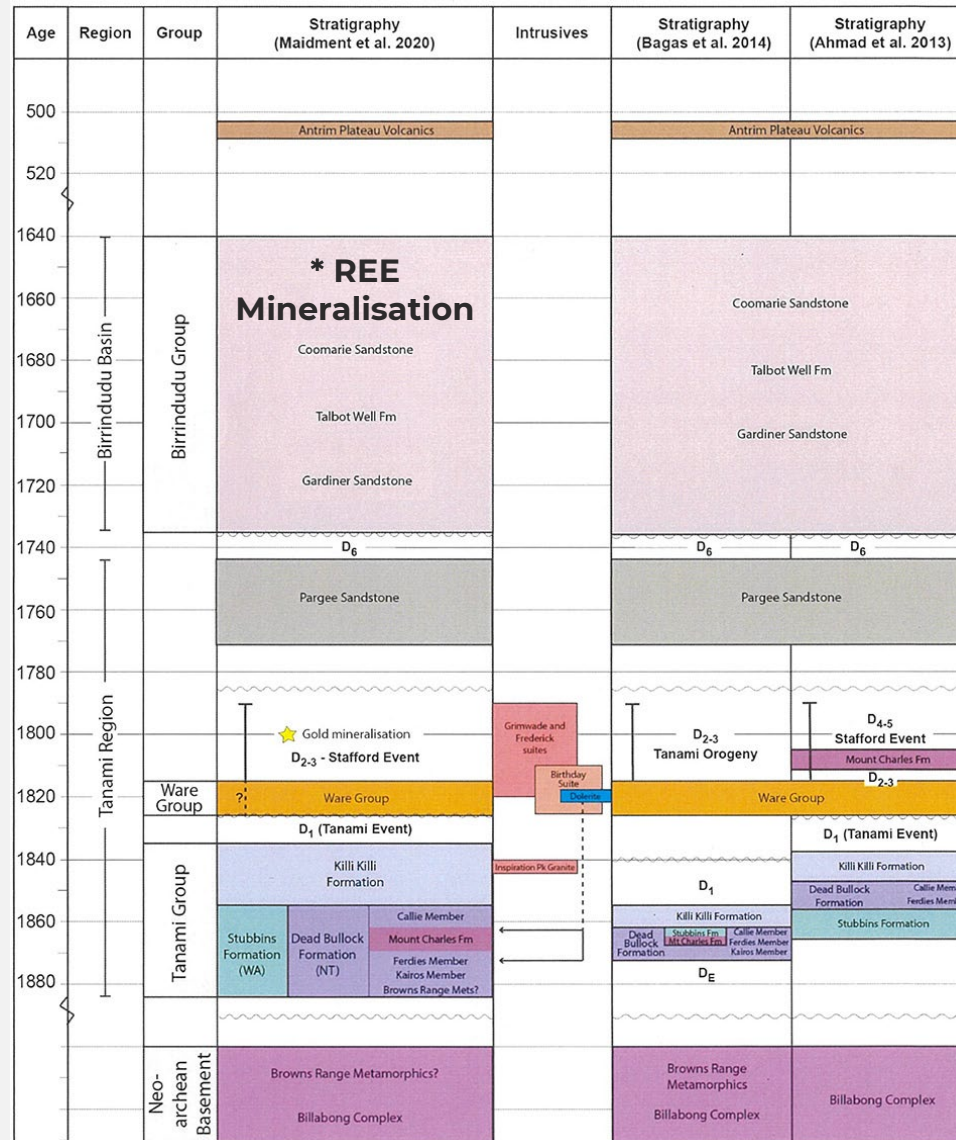
- ▶ Xenotime mineralisation occurs across a large area of Northern Australia – in particular around the margins of the Victoria-Birrindudu Basin

Boulder Ridge
(ASX:NTU)

Source: Hendrickx et al, 2000

TANAMI STRATIGRAPHY

- ▶ Browns Range Metamorphics (ca. 3-2.5Ga) – meta-arenites and arkoses with gravel and conglomerate units
- ▶ Killi Killi Formation (<1840Ma) – thick turbiditic sequence of sandstone, siltstone and shales
- ▶ Pargee Sandstone (ca.1758-1700 Ma) – interbedded conglomerate, quartz arenites, minor siltstones



- ▶ Xenotime mineralisation at Browns Range mostly occurs within the Browns Range Metamorphics (minor in Gardiner Sandstone)
- ▶ Xenotime mineralisation around 1.62Ga (no known magmatic activity around this time)
- ▶ Xenotime mineralisation at Watts Rise-Castella mostly occurs within the Pargee Sandstone but also the Killi Killi Formation

Source: NTGS, Bagas et al, 2008



THREE KEY INGREDIENTS FOR UNCONFORMITY RELATED REE

PVWs Tanami Project has the right ingredients:

1 Unconformity

The right stratigraphic setting

Unconformity between the Pargee Sandstone and the Killi Killi Formation at Castella and Watts Rise is analogous to the unconformity between Gardiner Sandstone and Browns Range Metamorphics at Browns Range.

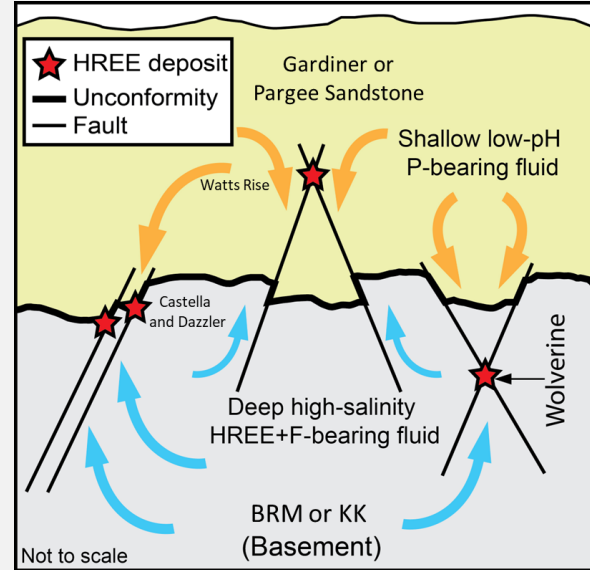
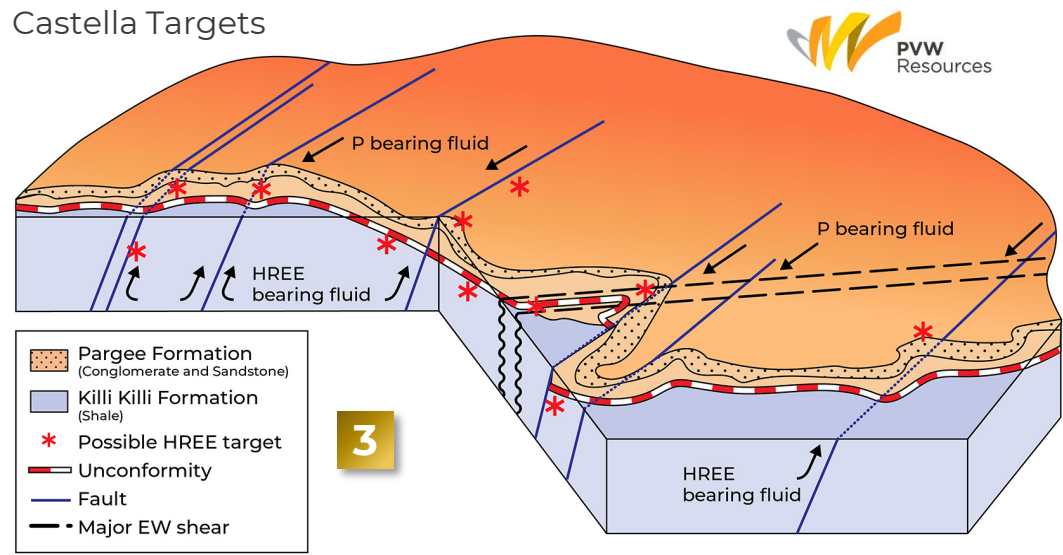
2 **Castella Prospect**
22TARC002 - 2m @ 6,496 ppm TREO

The right style of mineralisation

Surface mineralisation and mineralisation seen in RC drilling includes HREE in Xenotime, confirming the right mineralogy.

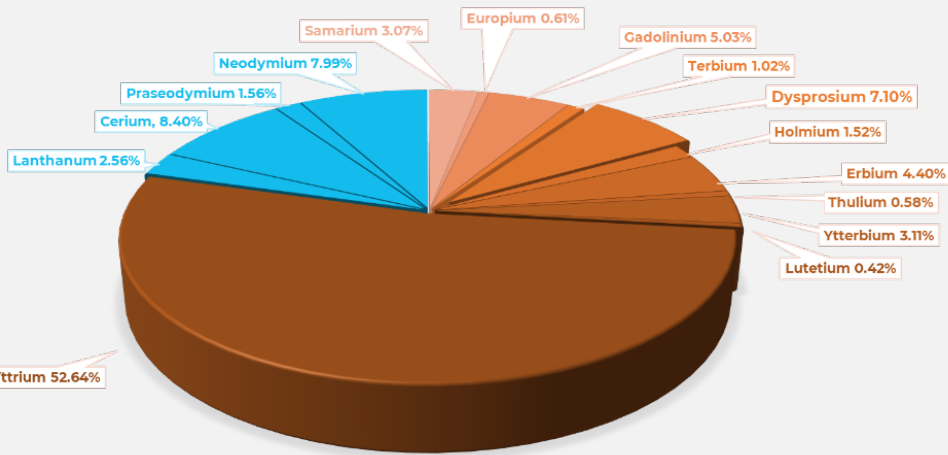
3 Fault
 Major EW shear

Structures (faults and folds) are present, offsetting and deforming the unconformity. The Pargee Sandstone and Killi Killi Formation both host mineralisation with breccia zones linking the two.



IT'S XENOTIME!

- ▶ Mineralogy study has confirmed heavy rare earths at Castella-Watts Rise are related to the rare earth mineral xenotime
- ▶ Heavy rare earths comprise on average 80% of TREO for samples >1% TREO
- ▶ Dysprosium and Terbium around 7% and 0.7-1% respectively (comparable with Browns Range)
- ▶ Met sighter testwork completed on 5 x 20kg samples
 - Ore sorting upgrade to 7.16% TREO at 87.3% recovery
 - Mag sep – 81.2% recovery and 50.1% mass rejection

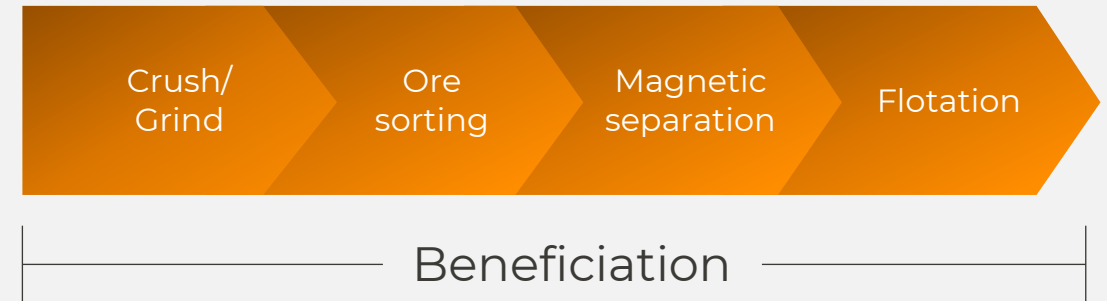


Pie chart showing average distribution of TREO for five metallurgical samples (average grade of 4.2% TREO and 80% HREO)

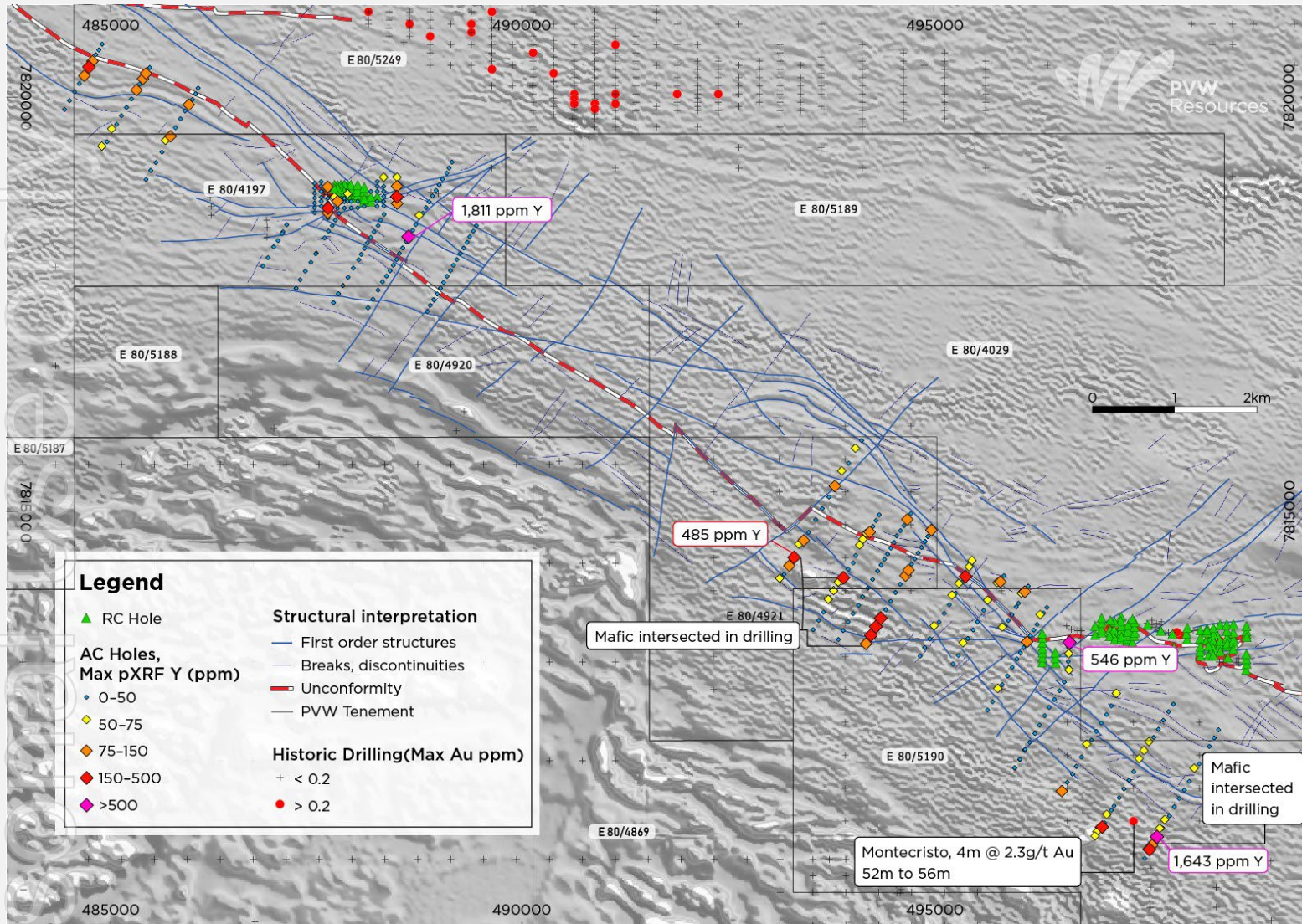


Northern Minerals Limited Browns Range Pilot Plant

IMO Sights Metallurgic Testwork



MAIDEN DRILLING PROGRAM - REGIONAL REE TARGETS

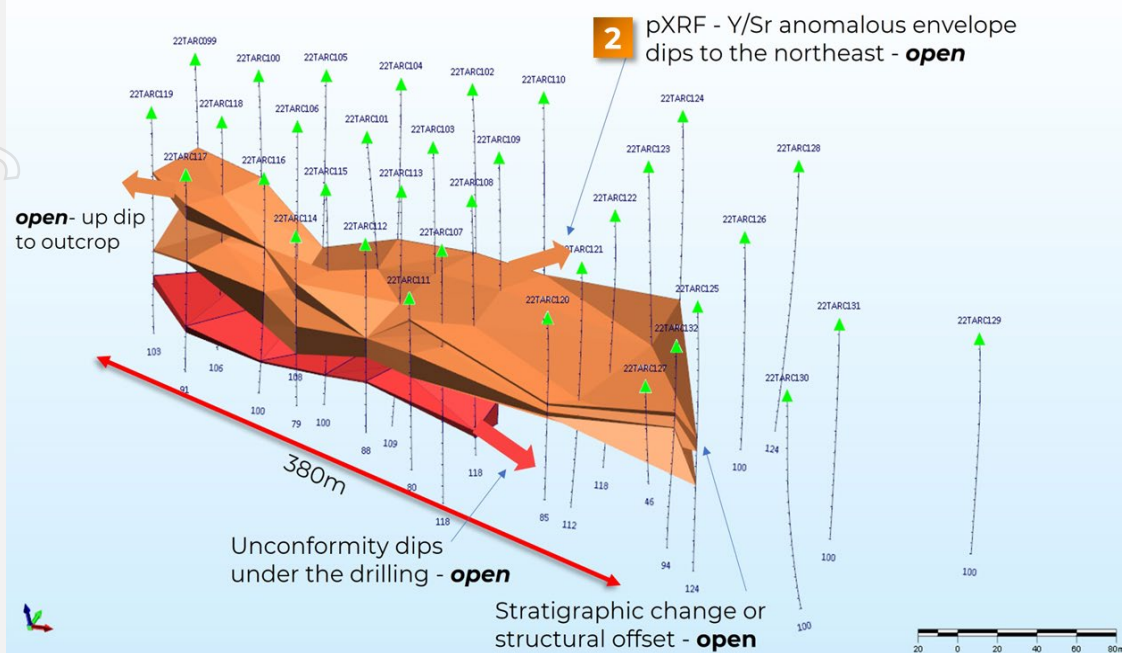


2022 program completed

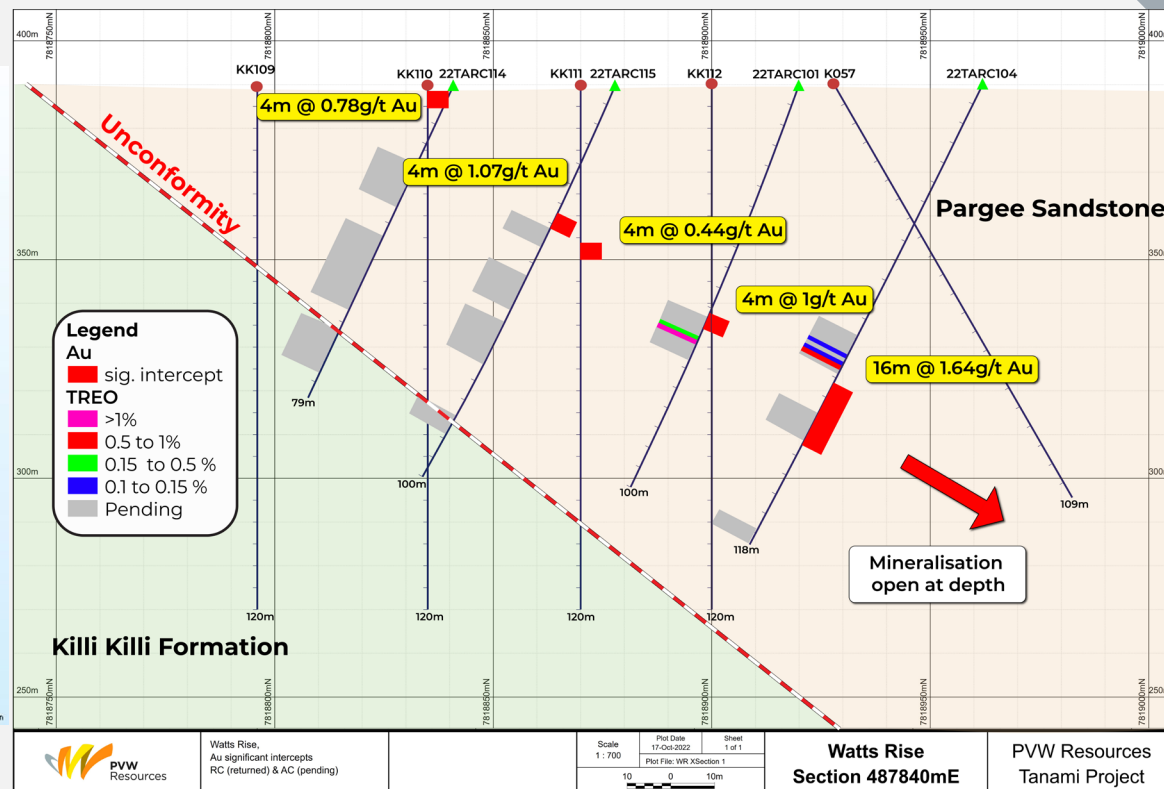
Initial program of 10,727m of RC drilling, 16,206m of air-core completed, targeting REE and gold mineralisation:

- ▶ Encouragement from RC drilling at Castella and Watts Rise, with stratiform/structural REE mineralisation in Pargee Sandstone and breccia style mineralisation in Killi Killi Formation
- ▶ Regional air-core drilling indicates widespread Yttrium anomalism (pXRF results only) – in Killi Killi Fmn and Pargee Sandstone
- ▶ REE assays returned for 66 RC holes – pending for 66 RC holes
- ▶ **Gold / REE assays pending for all regional air-core drilling**

WATTS RISE/CASTELLA – ONE OR TWO MINERAL SYSTEMS?



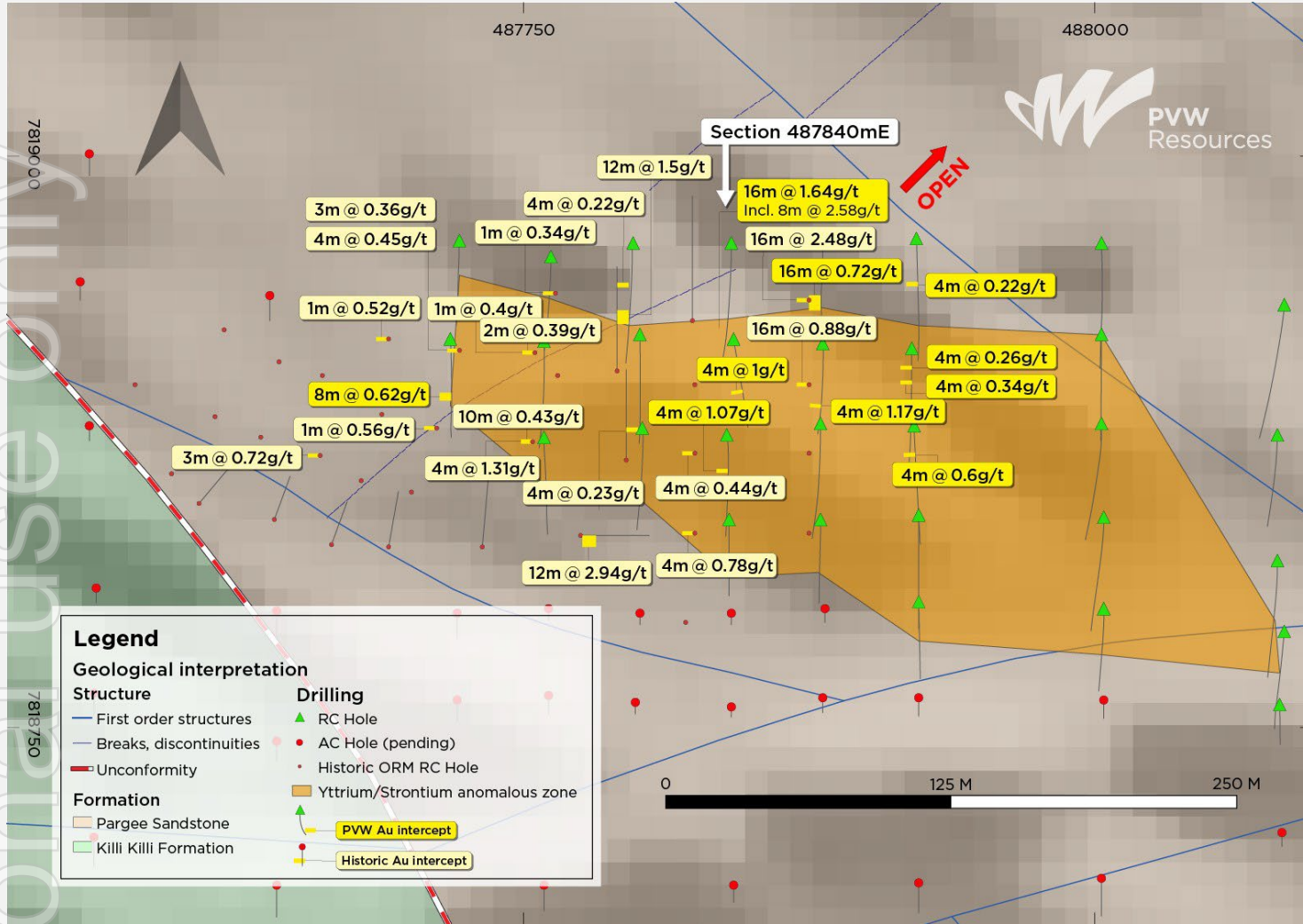
Watts Rise oblique view of the Y/Sr pXRF anomaly and unconformity



Gold and REE mineralisation proximal

- ▶ Rock chips up to 8.94g/t Au at Castella and 8m @ 2.58g/t Au from recent RC drilling at Watts Rise (in Pargee Sandstone)
- ▶ Gold mineralisation proximal but not coincident with REE mineralisation. An inverse relationship at the drill metre scale
- ▶ Pargee Sandstone post-dates (1700-1750Ma) main Au mineralising event of the Tanami (ca 1800Ma)
- ▶ Uranium associated with gold mineralisation at Watts Rise. Gold mineralisation known to occur in unconformity-related uranium deposits of the Athabasca Basin, Canada e.g. Cluff Lake

WATTS RISE – REE and Au

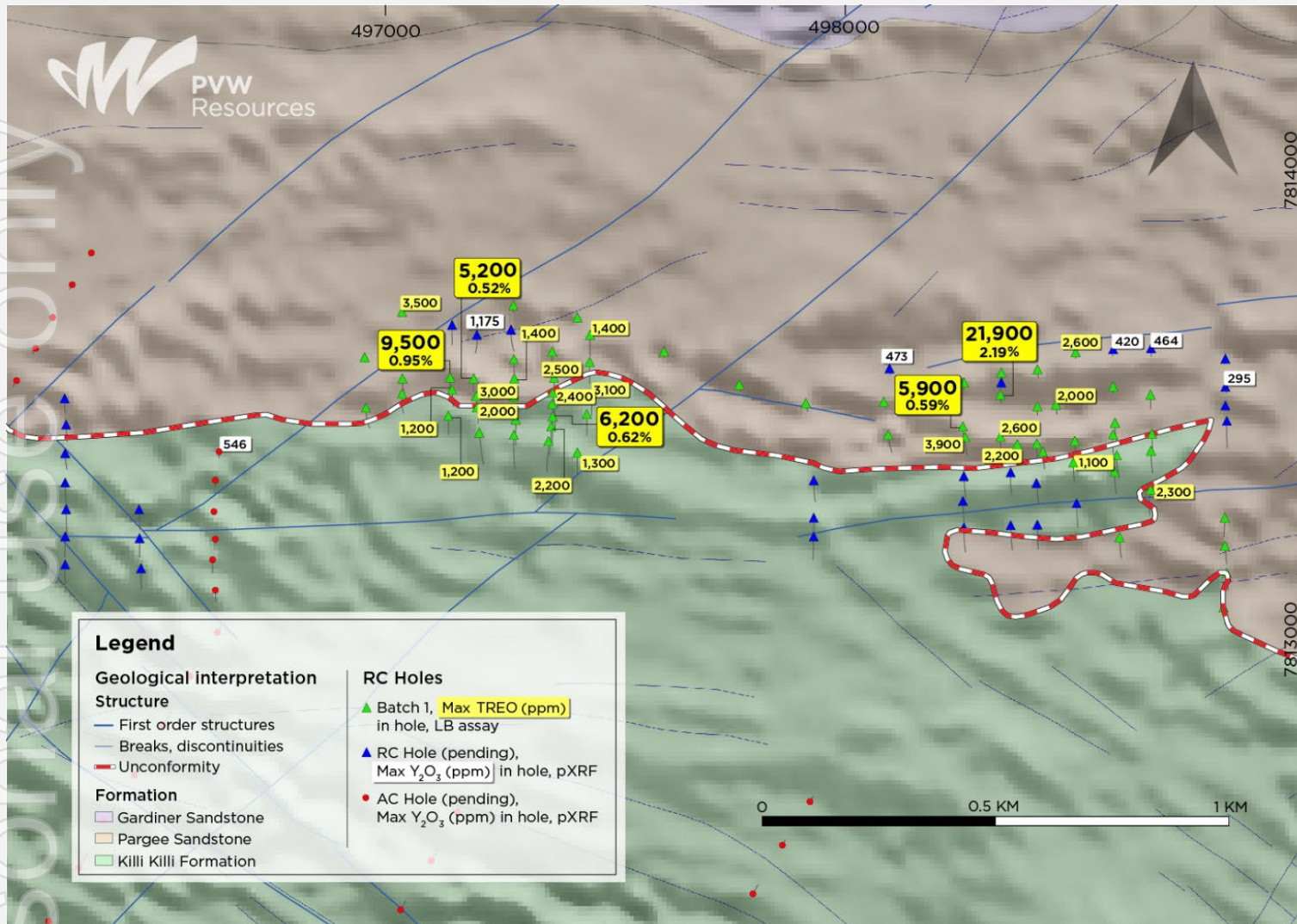


RC drilling shows early encouragement

- ▶ Pargee Sandstone hosted REE and Au mineralisation at Watts Rise.
- ▶ RC drilling results include:
 - **2m @ 0.80% TREO** (579 ppm Dy₂O₃, 5,001 ppm Y₂O₃) (22TARC101)
- ▶ Excellent gold drilling results at Watts Rise include:
 - 22TARC104 – **16m @ 1.64 g/t Au** from **76m including 8m @ 2.58 g/t Au** from 80m
 - 22TARC102 – **16m @ 0.72 g/t Au** from 64m including 4m @ 1.66 g/t Au from 76m
 - 22TARC103 – **4m @ 1.17 g/t Au** from 64m
- ▶ Coherent zone of yttrium and strontium anomalism over 380m strike within Pargee Sandstone

All historical Tanami Project exploration drilling results refer to ASX:PVW, Third Prospectus Appendix A - Independent Geologists Report, Appendix 1.

CASTELLA – WIDESPREAD MINERALISATION IN INITIAL DRILLING



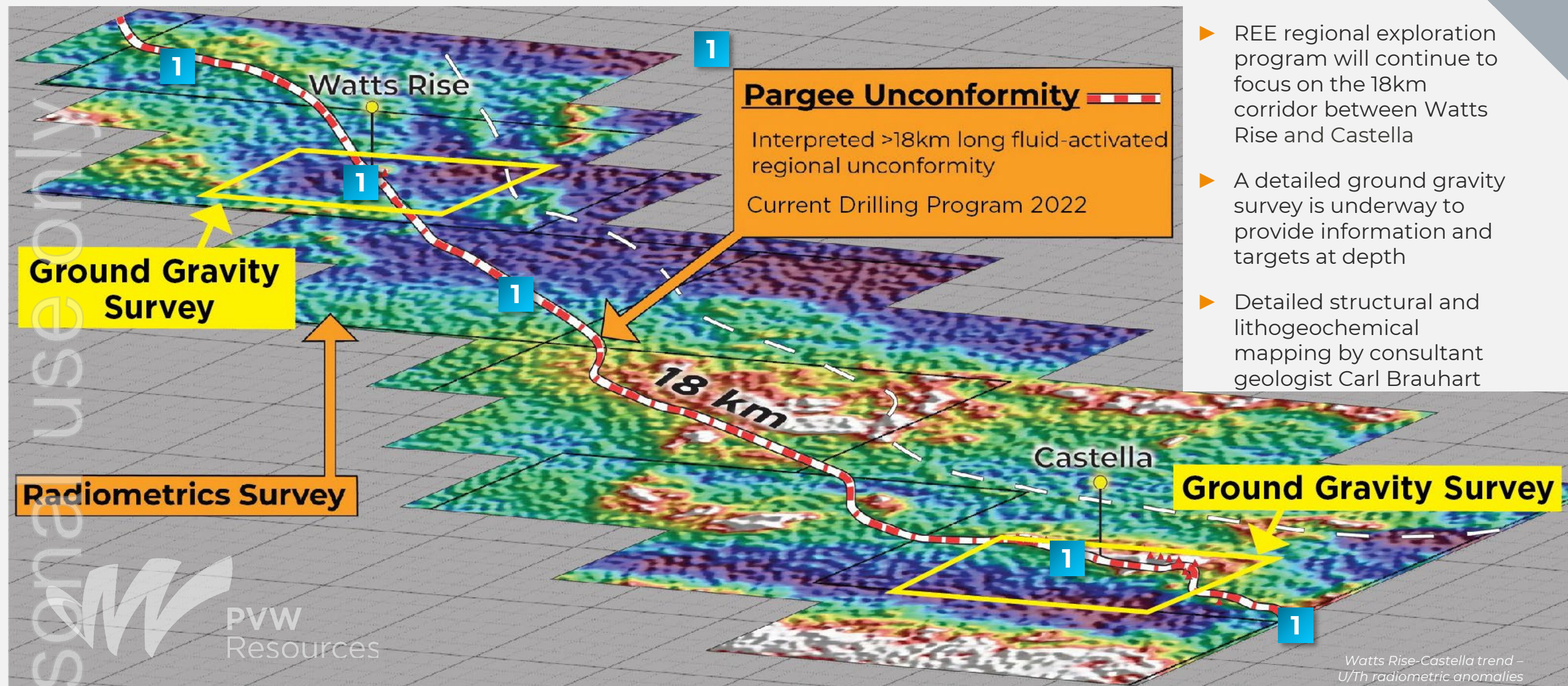
Castella RC results confirm surface REE mineralisation

► Assays returned show some high grade TREO, with modest widths. Best results to date:

- 22TARC002 – **2m @ 0.65% (6,496 ppm)** TREO (296 ppm Dy₂O₃, 2,347 ppm Y₂O₃) from 3m, **including 1m @ 0.95%** (9,530 ppm) TREO from 3m
- 22TARC053 – **1m @ 2.19% (21,865 ppm)** TREO (1,228 ppm Dy₂O₃, 11,810 ppm Y₂O₃) from 2m
- 22TARC005 – **4m @ 0.38% (3,803 ppm)** TREO (210 ppm Dy₂O₃, 1,343 ppm Y₂O₃) from 2m, **including 2m @ 0.52% (5,202 ppm)** TREO from 4m

► Significant TREO results over the unconformity, in stratiform beds within Pargee Sandstone, and in breccia zones within Killi Killi Fmn below the unconformity

GEOLOGICAL SETTING CONFIRMED – NEXT STEPS



- ▶ REE regional exploration program will continue to focus on the 18km corridor between Watts Rise and Castella
- ▶ A detailed ground gravity survey is underway to provide information and targets at depth
- ▶ Detailed structural and lithogeochemical mapping by consultant geologist Carl Brauhart

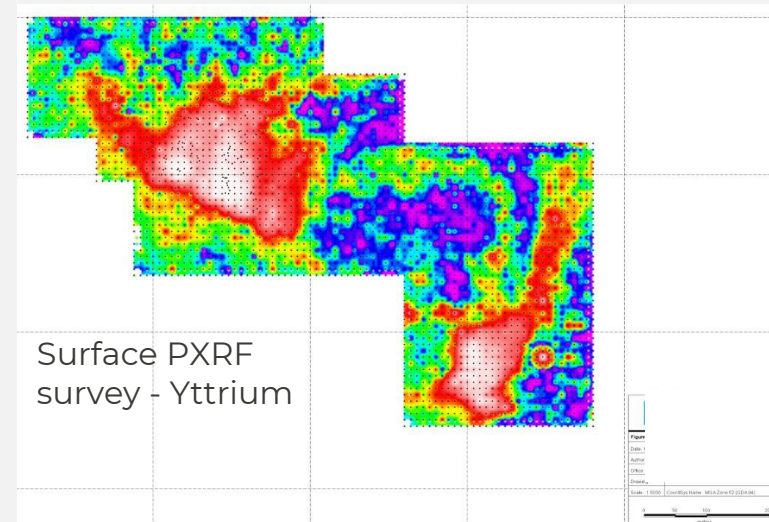
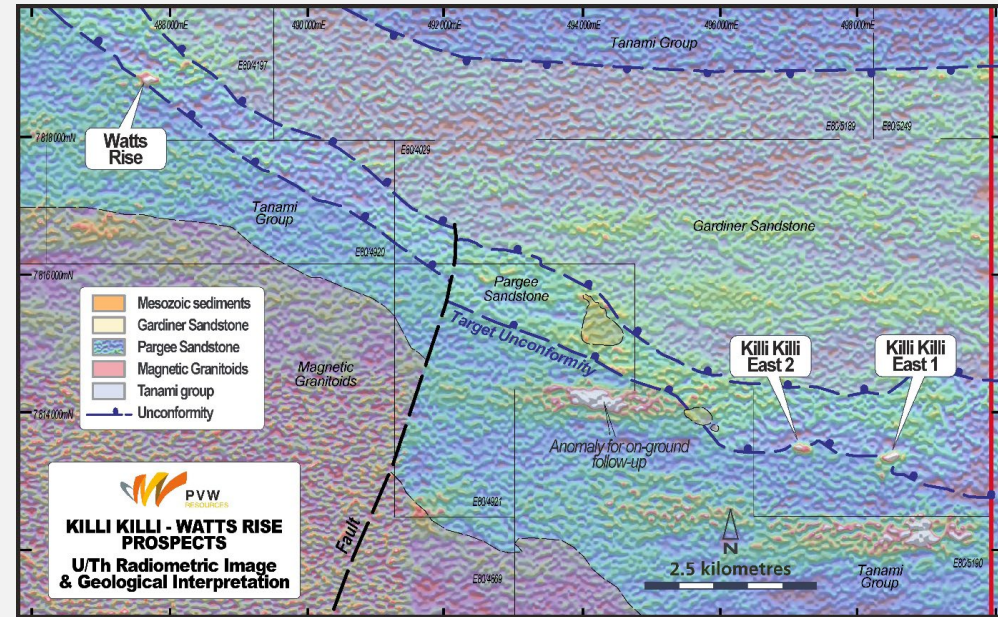


HYDROTHERMAL UNCONFORMITY RELATED REE



Exploration methodologies – what works

- ▶ Airborne radiometrics – uranium channel when outcropping – lots of false positives
- ▶ Aeromagnetics – importance of defining controlling structures
- ▶ Detailed ground radiometrics (scintillometer) – honing in on drill targets
- ▶ Portable XRF – surface geochemistry surveys focused on measuring Yttrium – cost effective, detailed. Drill sampling selection – yttrium (phosphorus, uranium, strontium)
- ▶ Mineralogy – early understanding of what REE minerals you have
- ▶ (Airborne hyperspectral – alteration detection)



HYDROTHERMAL UNCONFORMITY RELATED REE

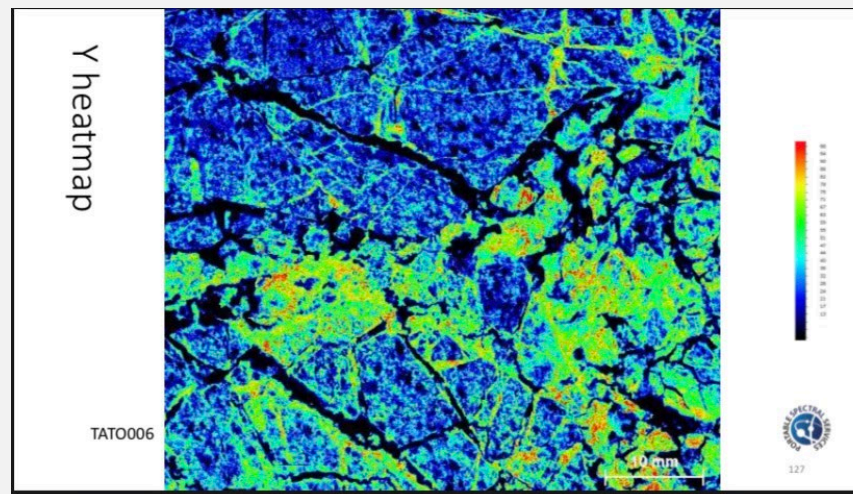


Exploration challenges

- ▶ Structurally controlled deposits can have a small areal footprint –200-300 metres strike length, 10-20m wide (similar to unconformity-related uranium deposits)
- ▶ Limited geochemical dispersion halo – particularly in the Tanami
- ▶ No direct geophysical detection method other than radiometrics (ineffective when undercover)
- ▶ Portable XRF usage – REE mineralogy needs to be understood
- ▶ Assaying methods – Sodium peroxide/lithium metaborate fusion methods. Expensive. Difficult to obtain appropriate HRE CRMs
- ▶ Limited research and literature on this style of mineralisation



RC Drilling at Castella Prospect



Micro-XRF image showing Yttrium (xenotime) distribution within Killi Killi Fmn breccia

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PVW
Resources

THANK YOU



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