

Minerals for an Electric Future

ASX: LNR
lanthanein.com



LANTHANEIN
RESOURCES

The logo features a stylized atomic symbol with three blue and green orbits and a central blue nucleus, surrounded by small blue dots. The text 'LANTHANEIN' is in a bold, blue, sans-serif font, and 'RESOURCES' is in a smaller, blue, sans-serif font below it.

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COMPETENT PERSON'S STATEMENT

The information in this presentation that relates to Exploration Results for the Lady Grey, Lyons, Mt Clere and Koolya Projects is based on and fairly represents information and supporting documentation prepared by Mr Thomas Langley, a technical consultant to and Non-Executive Director of Lanthanein Resources Ltd. Mr Langley is a Member of the Australasian Institute of Mining and Metallurgy and the Australian Institute of Geoscientists. Mr Langley has sufficient experience that is relevant to the styles of mineralisation and types 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 Langley consents to the inclusion in the report of the matters based on the information in the form and context in which it appears. Additionally, Mr Langley confirms that the entity is not aware of any new information or data that materially affects the information contained in any ASX releases referred to in this report.

The information in this report that relates to Geophysical Results for the Gascoyne, Mt Clere and Murraydium Projects is based on information compiled by Mr Peter Swiridiuk a Member of the Aust. Inst. of Geoscientists. Mr Swiridiuk is a Technical Consultant and Non-Executive Director for Lanthanein Resources Ltd. Peter Swiridiuk has sufficient experience which is relevant to the type of mineralisation and type of deposit under consideration to qualify as Competent Person as defined in the 2012 Edition of the Australasian Code of Reporting Exploration Results, Mineral Resources and Ore Resources. Peter Swiridiuk consents to the inclusion in the report of the matters based on the information in the form and context in which it appears. Additionally, Mr Swiridiuk confirms that the entity is not aware of any new information or data that materially affects the information contained in any ASX releases referred to in this report.



BRIAN THOMAS
Technical Director

Brian is an experienced Director and Corporate Executive with significant domestic and international resources management experience



DAVID FRANCES
Non-Executive Chairman

David is an international executive of 30 years with a track record transacting, discovering, funding, developing and operating assets in Australia and Africa



PETER SWIRIDIUK
Non-Executive Director

Peter holds a BSC (Hons), DipEd, MAIG. Peter has over 32 years' experience exploring for copper, gold, diamonds, coal and base metals.



ANEES SABET
Non-Executive Director

Anees is an established businessman with a track record of identifying and developing resource projects. He is the founder and CEO of Syndicate Minerals Pty Ltd



THOMAS LANGLEY
Non-Executive Director

Thomas has a BSc Geology and a MSc Economic Geology with a focus on discovery of company making projects, and environmental and resource economics. MAIG, MAusIMM

Capital Structure

Shares on Issue	1,289,811,905
Options	223,250,011
Performance Rights	32,211,538

Share Price	\$0.006
Market Capitalisation	\$7.74m
Cash/Scrip EV	~\$1.25m \$6.49m

ESG Roadmap

2023/24 has seen Lanthanein progress with ESG integration throughout the company's governance, risk management and operational policies and processes throughout the financial year.

Our top developments include:

- Stakeholder engagement is a key priority for Lanthanein and will remain to be front of mind with continuous engagement taking place with Lanthanein's Community Representatives
- Environmental and heritage avoidance surveys continue to be conducted with Traditional Owners and area/environmental experts
- ESG risks and opportunities are now embedded into the Board Risk Management framework, ensuring the Board has complete and continuous oversight of current, new and emerging risks

FY 2022/23	FY 2023/24	FY 2024/25
<ul style="list-style-type: none">- ESG data collated and baseline created.- Identification of stakeholders and register created.- Material topics identified- ESG roadmap creation- Review of governance policies- ESG embedded in company risk management framework- Published first annual ESG report	<ul style="list-style-type: none">- Continuous development of disclosures aligned with WEF- Integration of the TCFD recommendations- Ongoing stakeholder engagement- Continuous review of ESG material topics and priorities- Published second annual ESG report	<ul style="list-style-type: none">- Ongoing stakeholder engagement- Continuous review of ESG material topics and priorities- Creation of ESG strategy- Materiality review- Broadening of ESG reporting scope to incorporate GRI- Publish third annual ESG Report

Project Profiles

Lyons and Edmund

- Gifford Creek, Gascoyne
- Ironstones and Ferrocarnatite Hosted REE's

Mt Clere

- Murchison
- LCT Pegmatites, Carbonatites and Sedimentary Uranium

Lady Grey

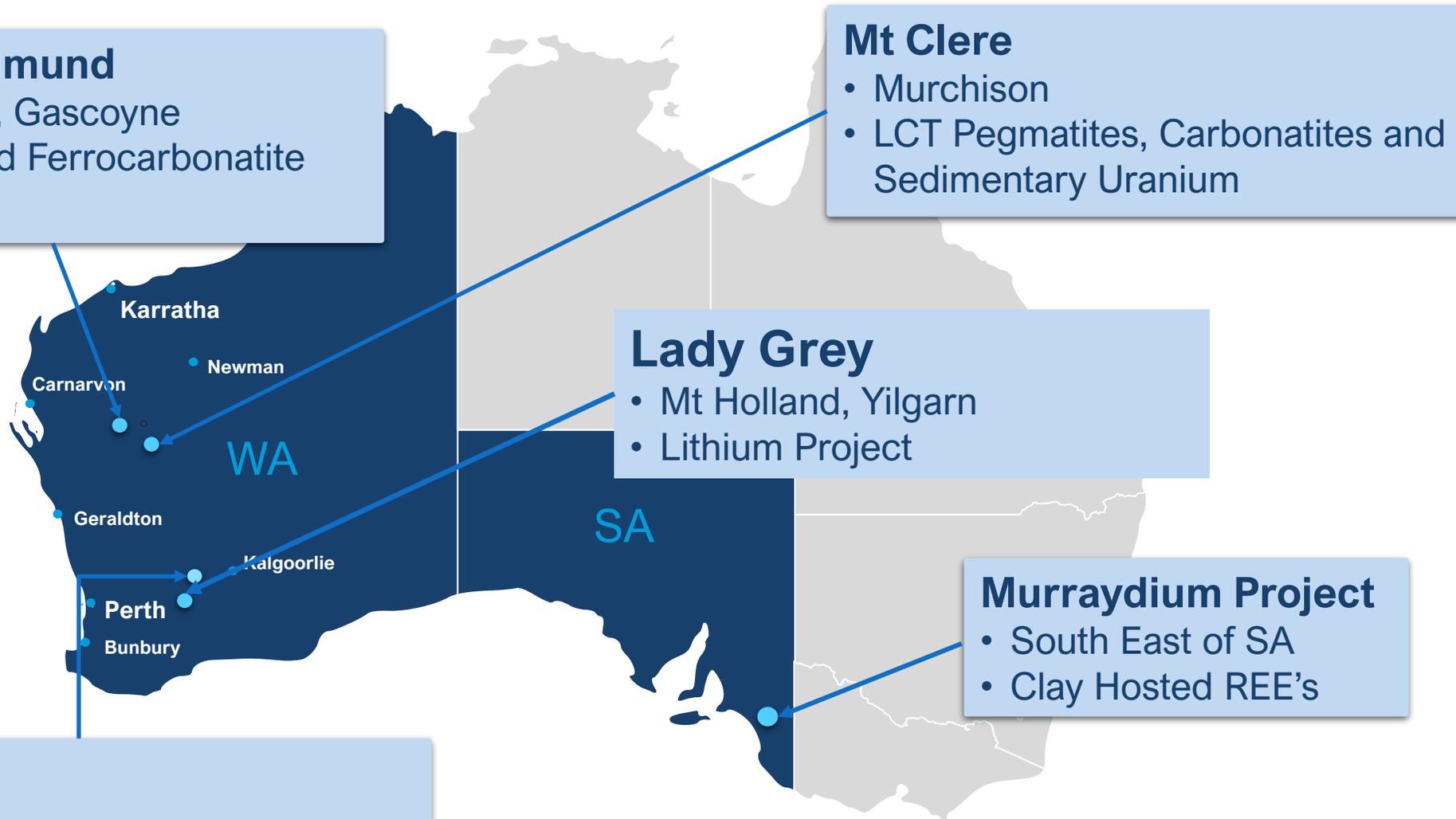
- Mt Holland, Yilgarn
- Lithium Project

Murraydium Project

- South East of SA
- Clay Hosted REE's

Koolya

- Koolyanobbing, Yilgarn
- Kaolin and Halloysite (HPA Feedstock)



Lady Grey Lithium Project

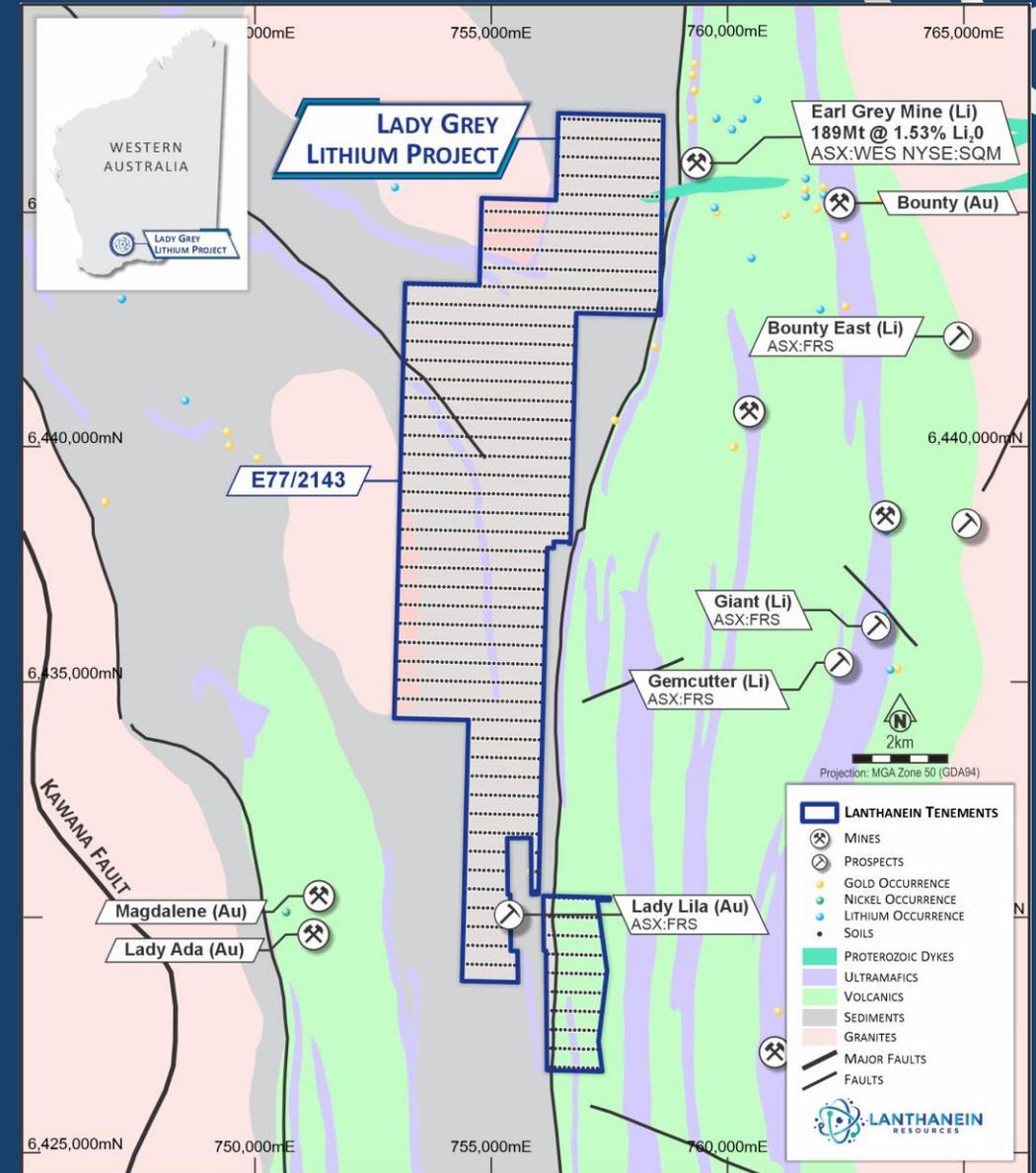


- Highly prospective acquisition of the Lady Grey Lithium Project directly adjacent to Covalent Lithium's (SQM/ Wesfarmers 50/50 JV) Earl Grey Mine, 189Mt @ 1.53% Li_2O *
- Tier 1 Location of granted tenure with ~ 18km of strike along Forrestania Greenstone Belt with proven world class lithium potential
- Earl Grey open pit is located 400 metres directly to the east of Lanthanein's tenement boundary
- Located ~365km due east of Perth, Western Australia, approximately 5 hours from Perth by road via the Great Eastern Highway

*(Comprising 66Mt @ 1.58% Li_2O Measured, 106Mt @ 1.52% Li_2O Indicated, and 17Mt @ 1.11% Li_2O Inferred)

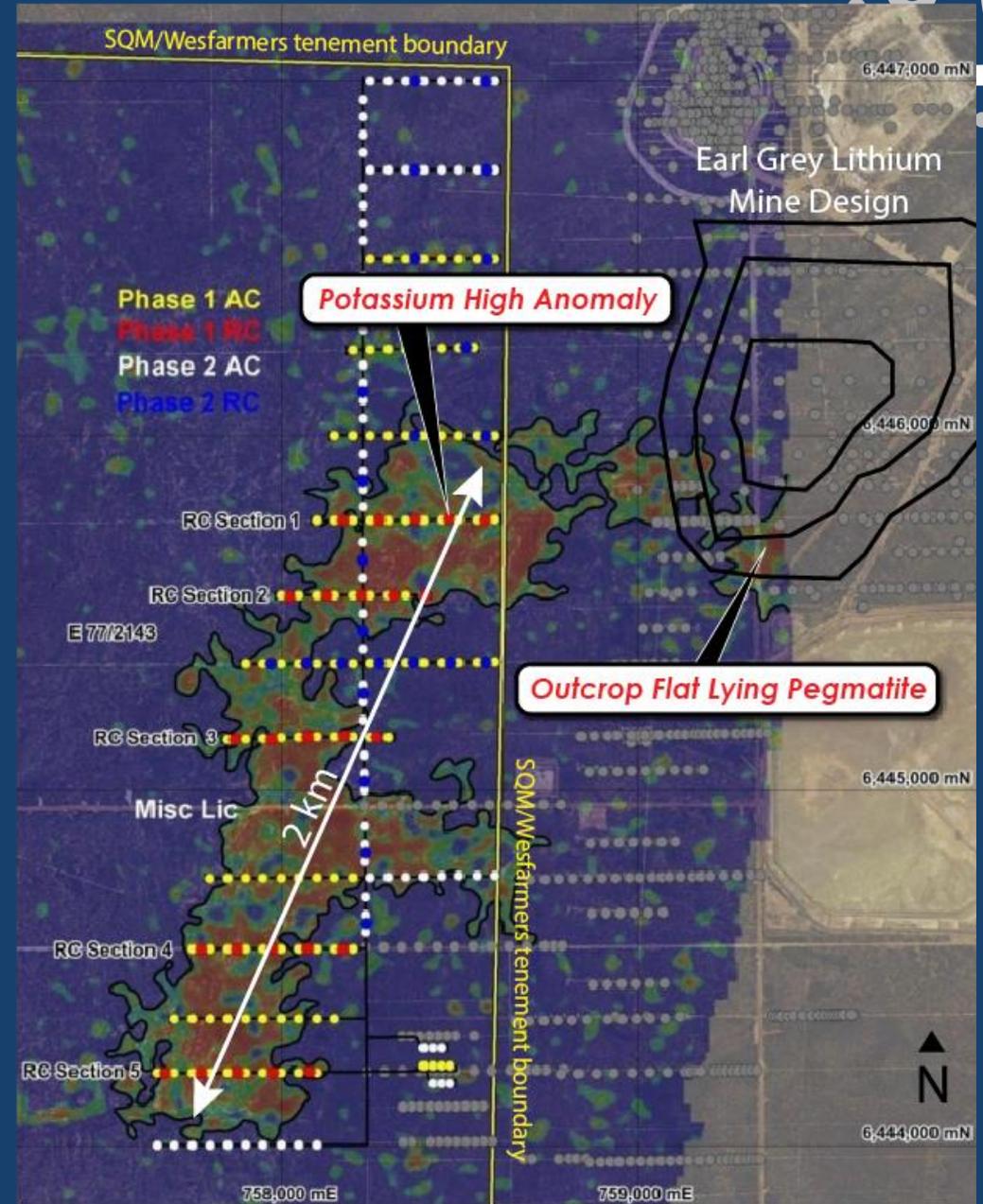
Lady Grey Lithium

- Lady Grey Lithium Project is situated within Exploration Licence E77/2143 covering ~77sqkm
- Located on the Southern Cross - Forrestania Greenstone Belt - proven Tier 1 lithium mining district
- Farm In Joint Venture to earn up to 70% of the project
- Neighbours are major miners / developers
 - Covalent Lithium (Wesfarmers-SQM 50/50 JV) – 189Mt @ 1.5% Li_2O at the Earl Grey Mine (Earl Grey pegmatite)
 - IGO acquired WSA's high grade nickel mines at Flying Fox & Spotted Quoll, and are exploring for lithium
 - Historic Bounty gold mine that produced ~1.3Moz gold



Lady Grey Lithium

- Earl Grey pegmatite sill is exposed only in the south-western corner of the Earl Grey deposit
- The sill dips gently northward, sub-horizontally under the historic Earl Grey gold mine
- Covalent Lithium's pegmatite is thickest against the western fault, thinning to stringer mineralisation along the eastern side of the deposit
- Indicates that the direction of injected pegmatite intrusion is most likely west to east
- Interpretation and planning underway to target zones of potential pegmatite accumulation and associated lithium mineralisation



Lady Grey Lithium

- Historical geochemical data indicates the presence of rare element pegmatite(s)
- Anomalous results include elevated Ta (up to 391 ppm), Sn (up to 116 ppm) and rock samples returning elevated Li (up to 298 ppm), Cs (up to 46 ppm), Rb (up to 1463 ppm) and Ta (up to 783 ppm)*
- Quartz sub-crop and float in the general area of the elevated soil and rock geochemistry may represent 'quartz cores' commonly present in complex zoned rare-element pegmatites
- 2km long high >0.3% K radiometric signal - priority drill target
- Mapped continuation into Lanthanein tenure of the Split Rocks Unit host to the Earl Grey pegmatite

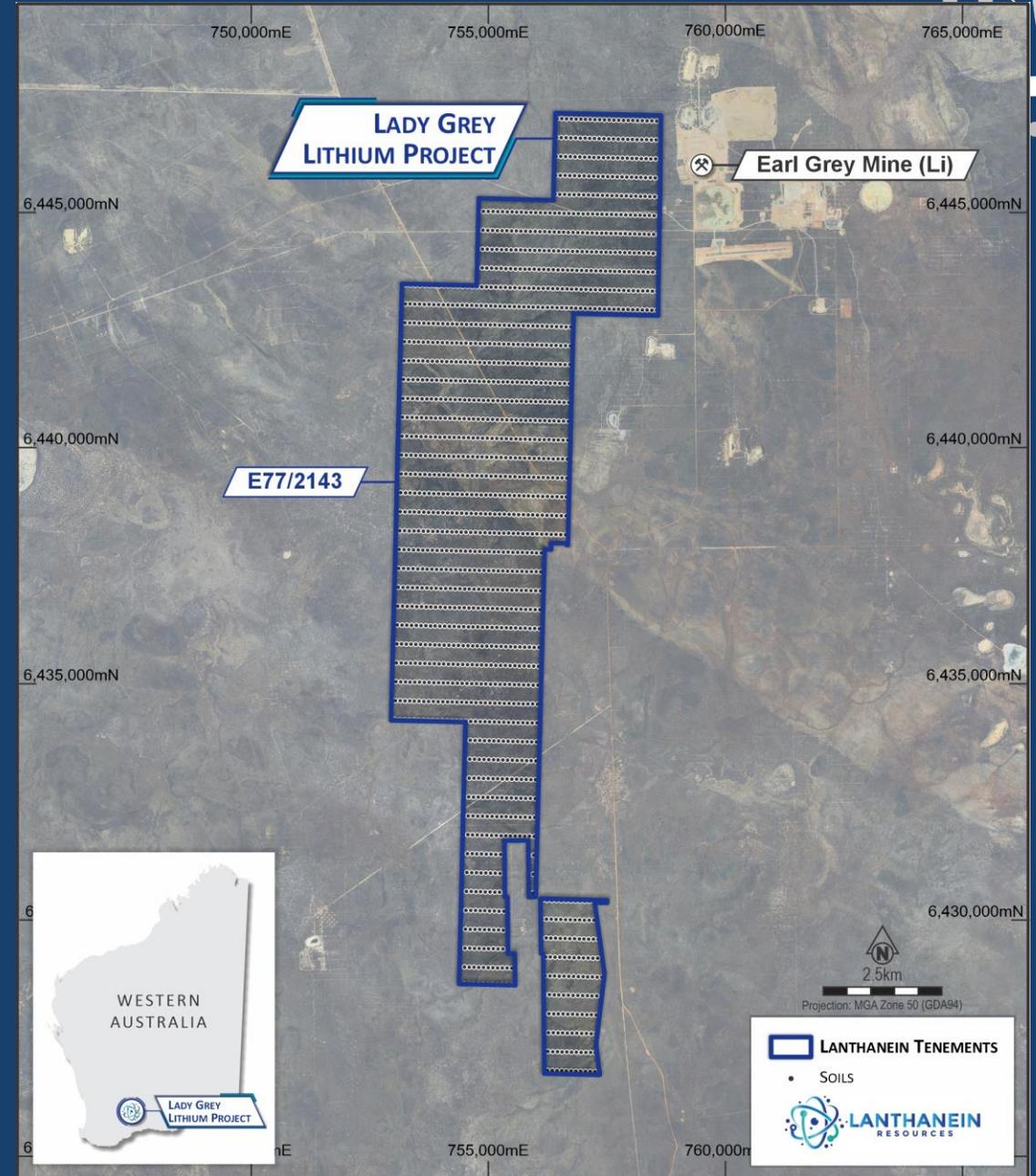
*ASX:LNR – 6th December 2023



Lady Grey Lithium

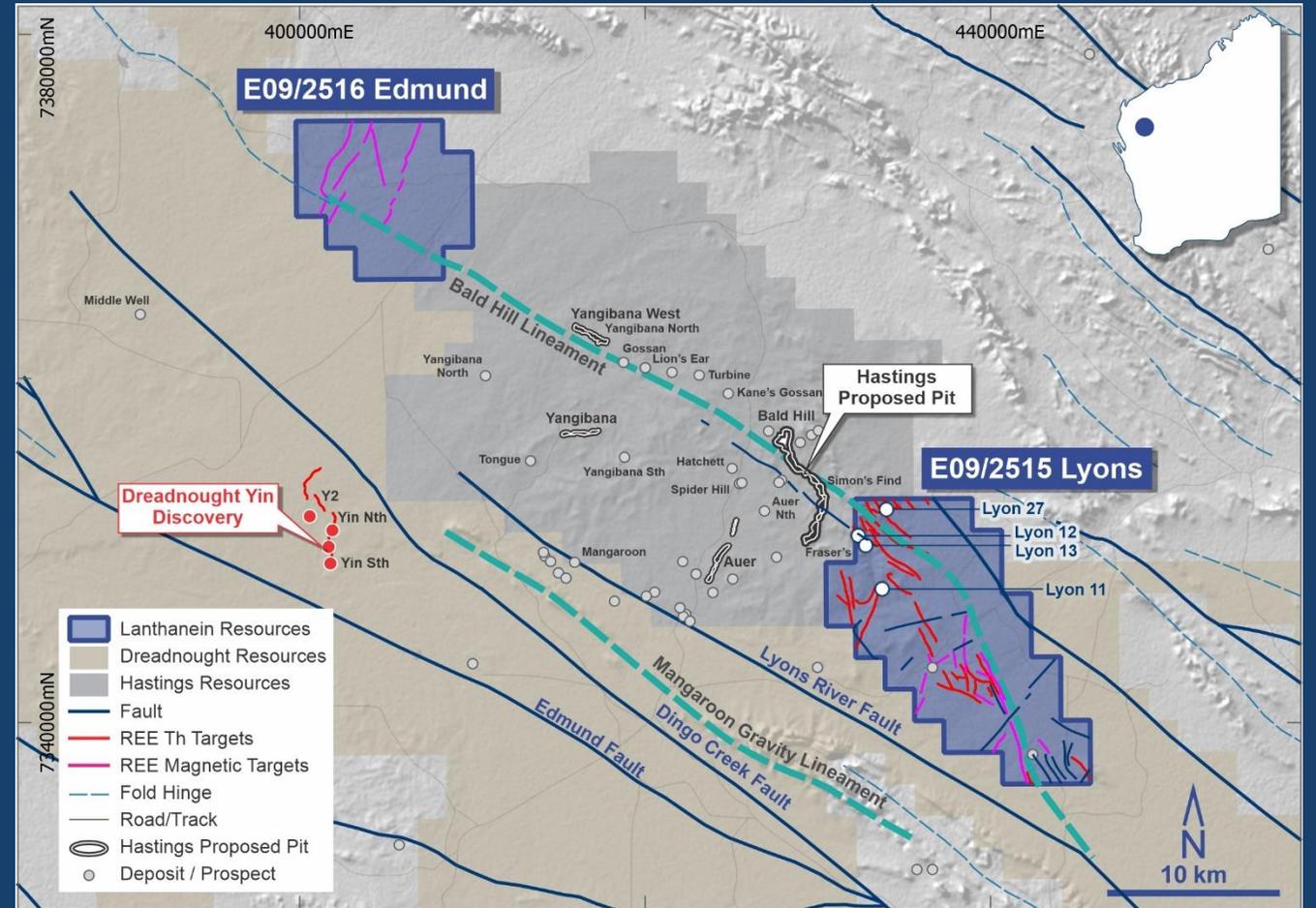
Programme for 2024

- Extensive soil geochemistry program across the full tenement utilising existing historical grid lines where possible
- Approved POW in place for 193 Aircore and 50 RC drillholes in northeast corner immediately adjacent to Earl Grey
- Heritage clearances for expanded drill programs
- Drilling late March early April 2024
- Strong news flow through to late 2024



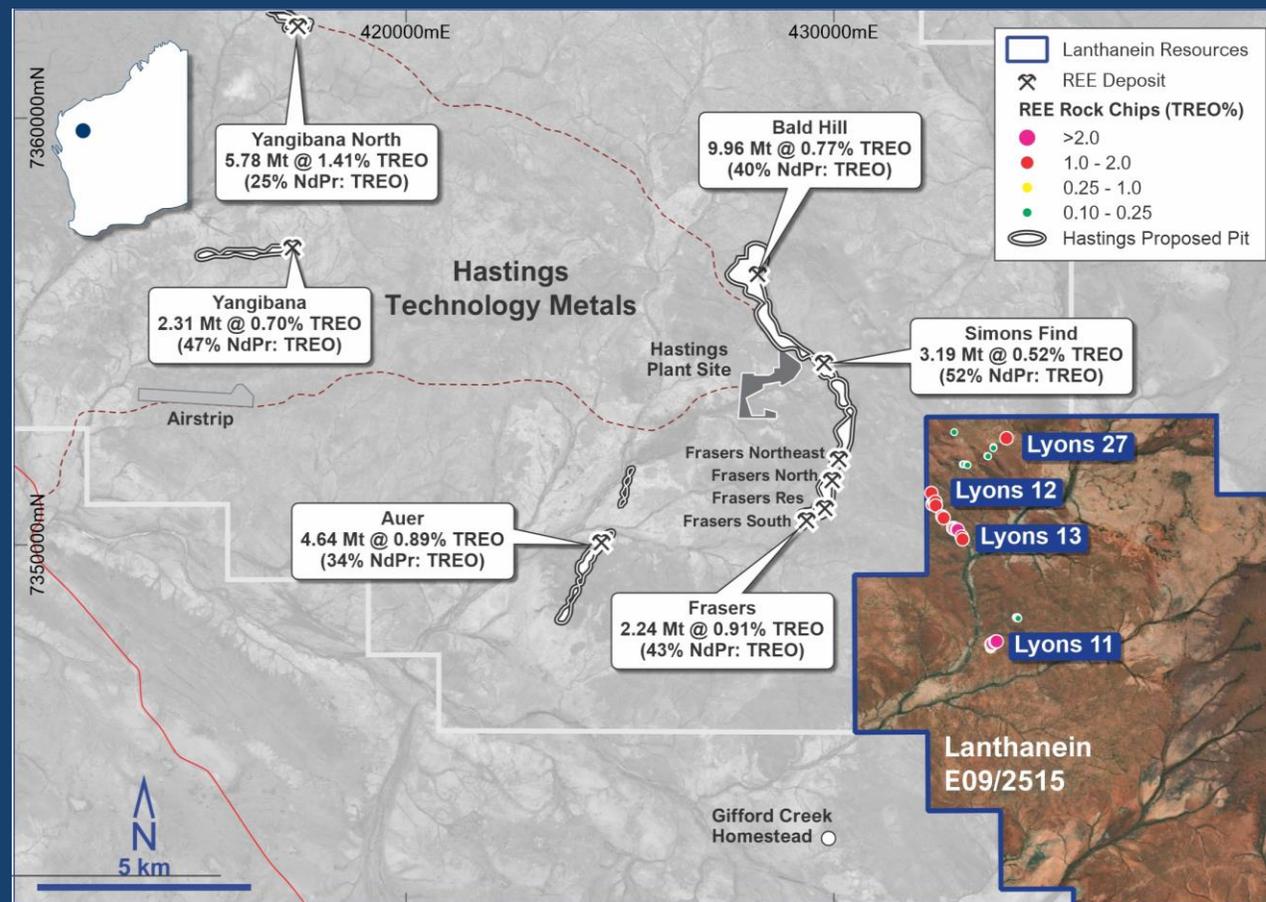
Gascoyne REE Project

- REE's hosted in the Yangibana Ironstones within the Durlacher Supersuite Rocks
- Source of the REE's is from the Gifford Creek Ferrocarbonatites which have been intruded along the Bald Hill Lineament
- Hastings Technology Metals is developing the Yangibana REE Project, Australia's next REE Mine which is less than 2km away
- Close proximity to Dreadnought's Yin and Sabre Rare Earths discoveries.
- Lyons and Edmund Project areas both on the Bald Hill Lineament



Gascoyne REE Project

- Northern Lyons Prospects are immediately adjacent to Hastings Technology Metals (ASX:HAS) world class Yangibana REE Project
- Hastings REE's hosted in the same ironstones derived from Gifford Creek Ferrocyanatites present in the Durlacher Supersuite rocks that host the Lyons Prospects
- Mineralogical and metallurgical characteristics of REE's hosted in Lyons ironstones identical to Hastings resources.
- Combined Nd/Pr is 37% of TREO



Yangibana - JORC (2012) Proved and Probable Reserve Jan 2023

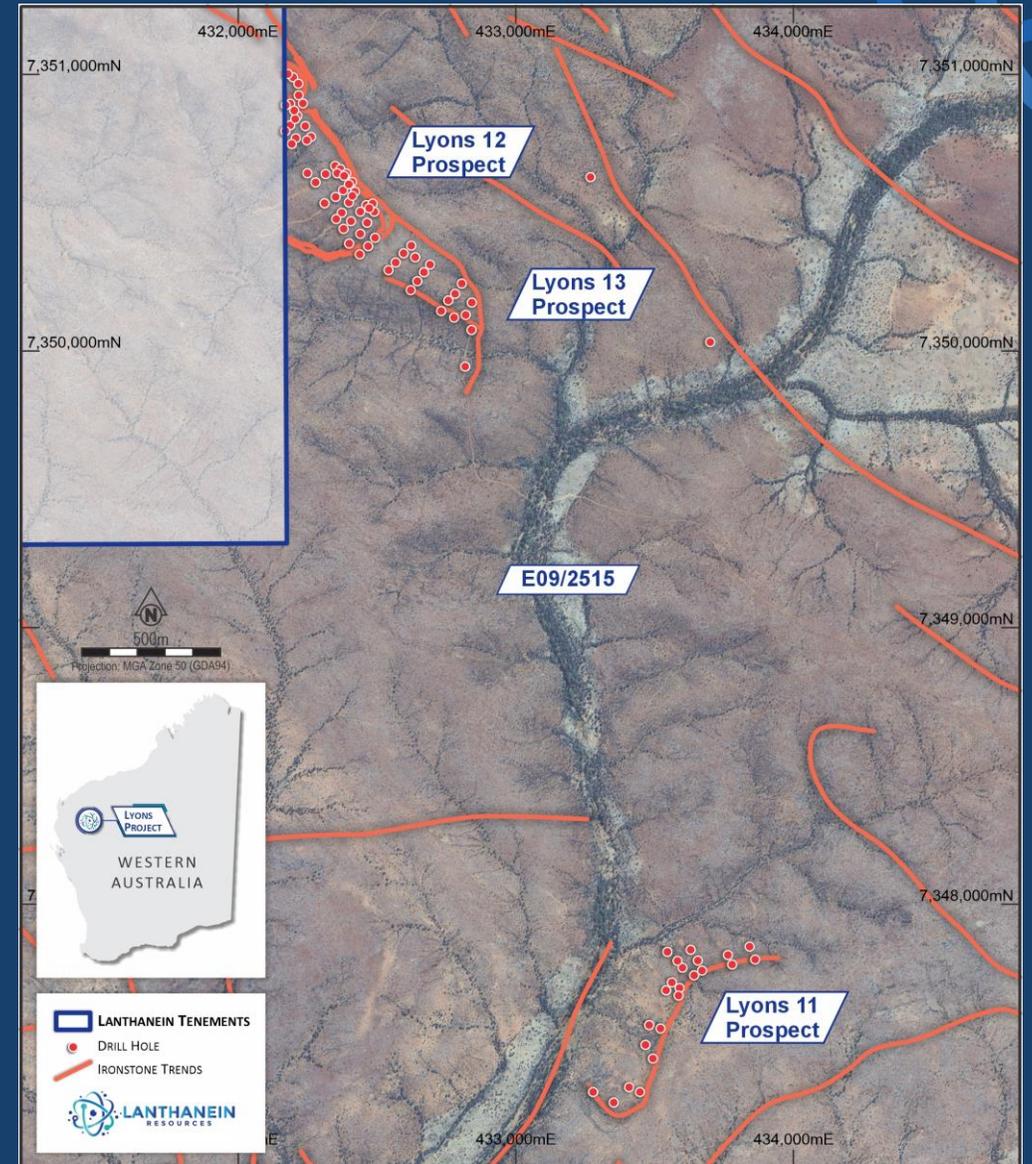
Category	M Tonnes	% TREO	% Nd ₂ O ₃ +Pr ₆ O ₁₁	TREO t
Proved	4.89	0.95	0.37	46,700
Probable	16.03	0.88	0.32	141,435
TOTAL	20.93	0.90	0.33	188,135

Gascoyne REE Project

- 14,000 metres of drilling over the past 18 mths on Lyons
- Discovery and resource infill drilling at Lyons 11, 12 & 13 prospects
- Initial Inferred Mineral Resource Estimate completed (ASX Release 25th October 2023)
- Exploration drilling on additional ironstone and carbonatite targets defined on Lyons EL

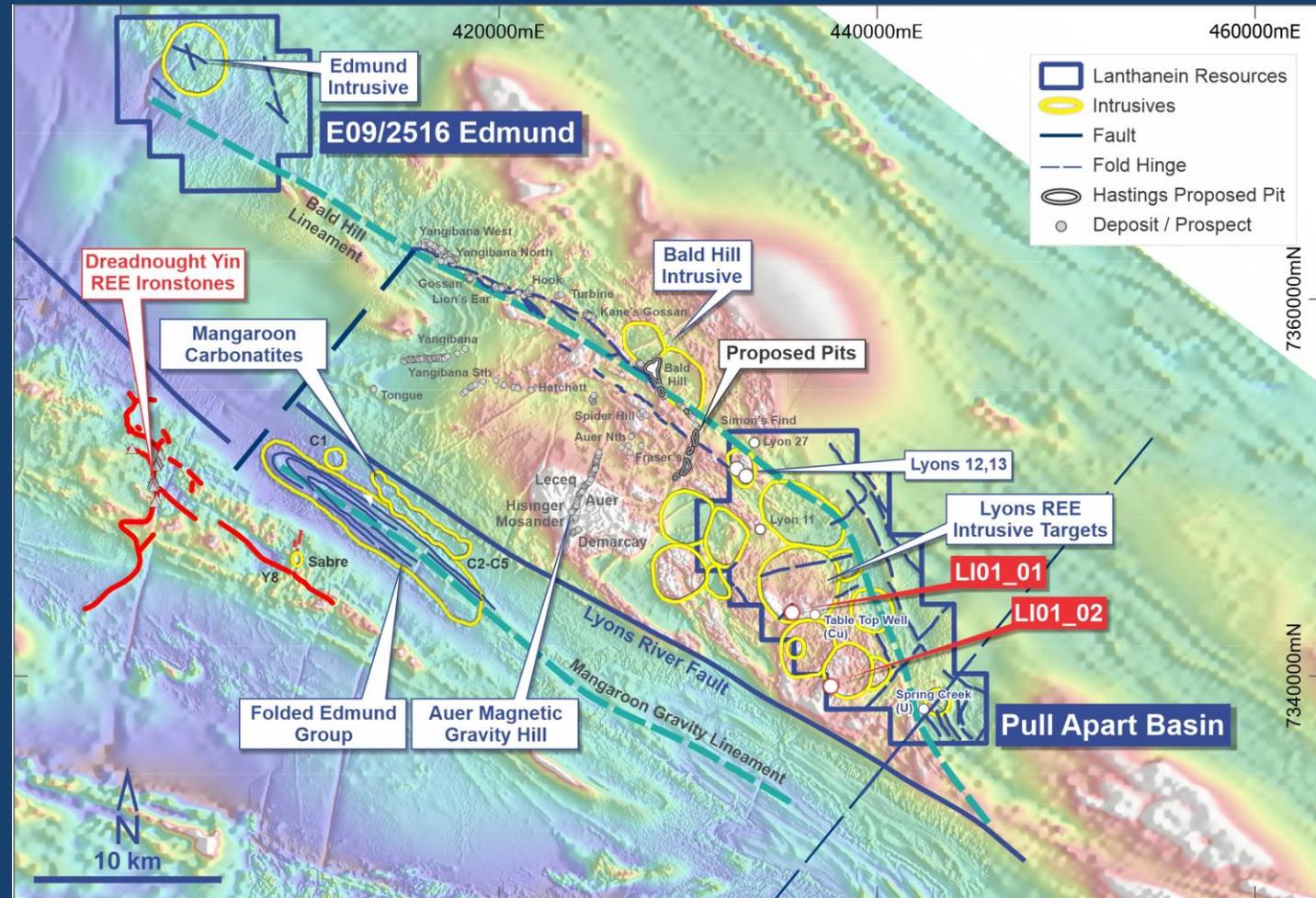
Area	Tonnes (Mt)	TREO (%)	NdPr (%)	Nb ₂ O ₅ (%)	TREO (t)
Lyons 12 & 13	0.69	0.33	0.15	0.23	2,266
Lyons 11	0.30	0.32	0.10		670
Total	0.99	0.32	0.13		3,221

The Company confirms that all material assumptions and technical parameters underpinning the mineral resource estimates continue to apply and have not materially changed. The Company confirms that the form and context in which the mineral resource estimates are presented have not been materially modified.



Gascoyne REE Project

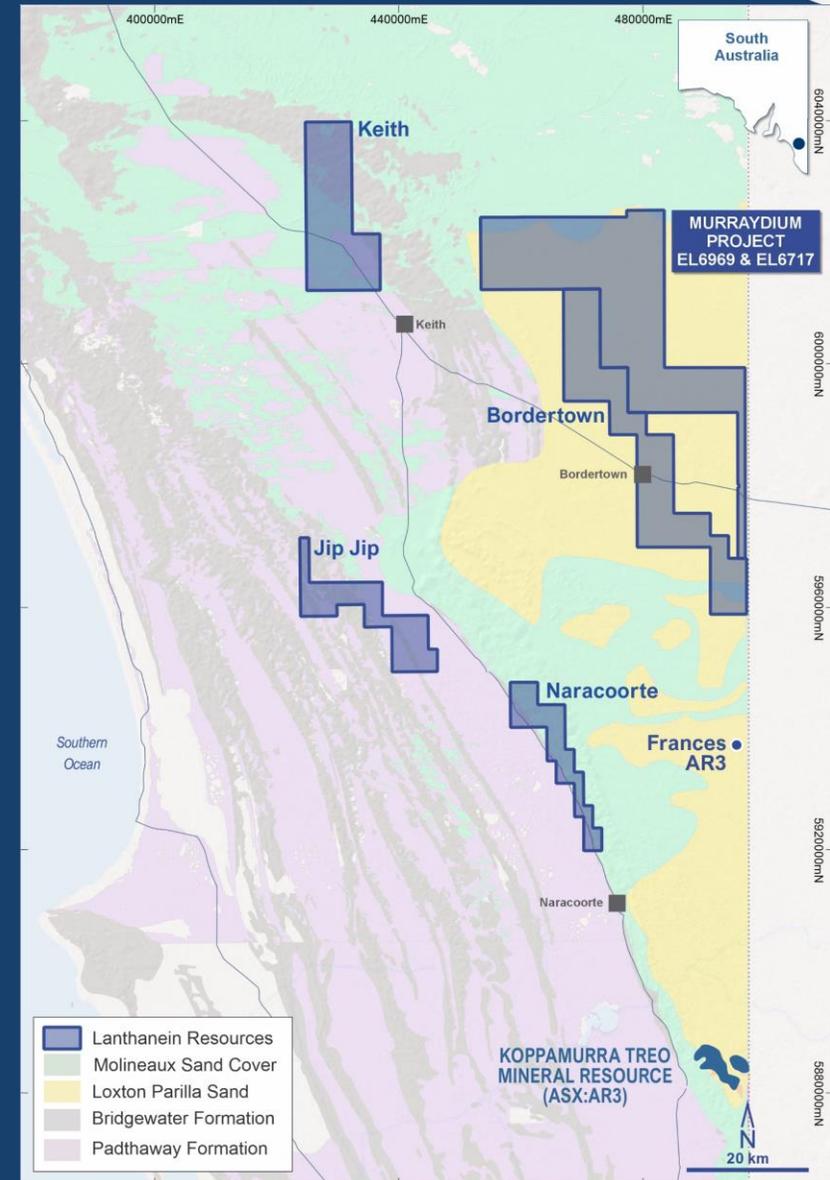
- Regional magnetics and radiometrics have defined ferrocarbonatite targets under cover on Lanthanein's Lyons EL
- Ferrocarbonatites the source of the REE rich ironstones on Lanthanein and Hastings ground



Murraydium REE Project

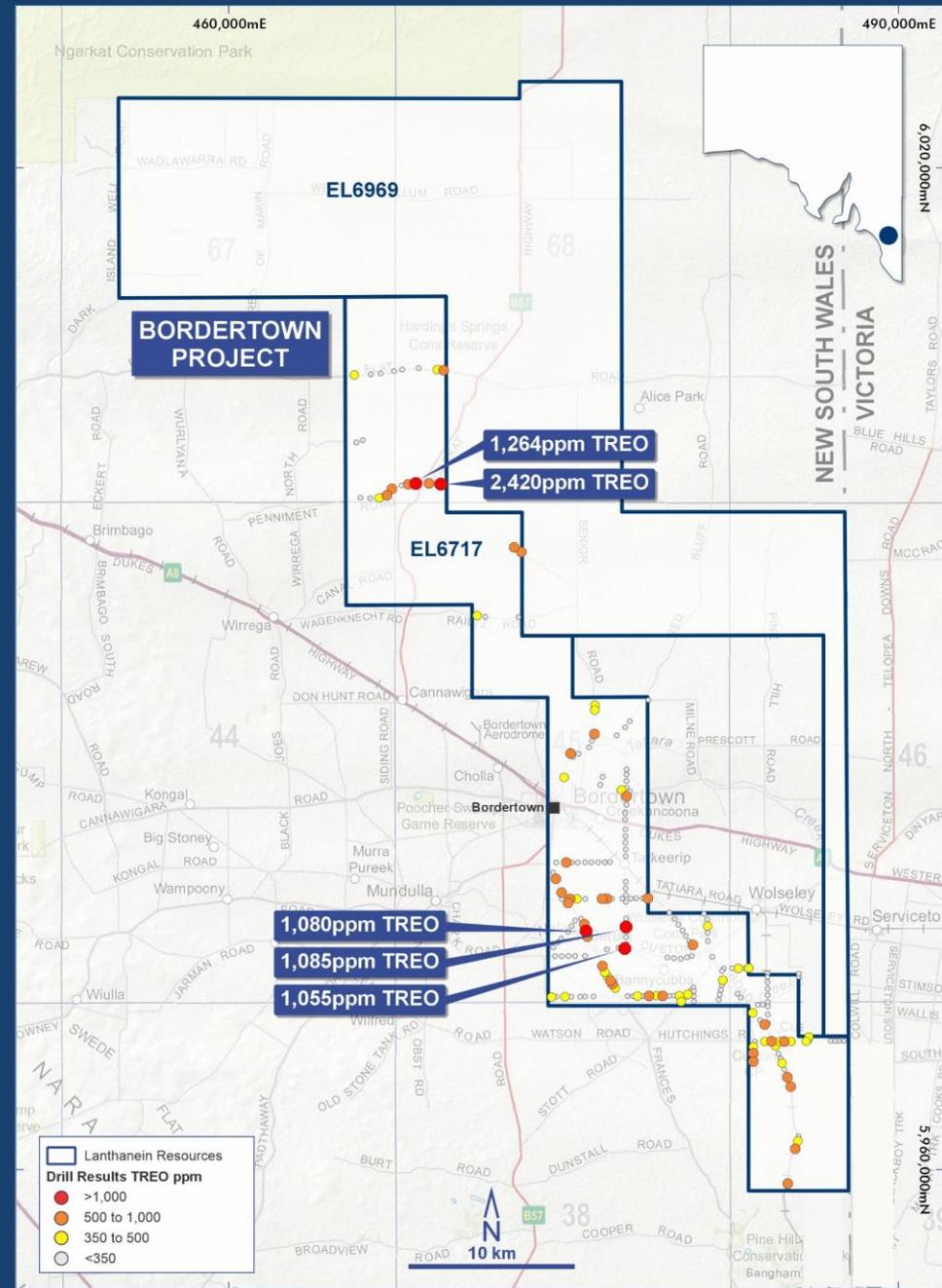
- Targeting Ionic Clay hosted REE's in the South East of South Australia
- Australian Rare Earths (ASX : AR3) have a REE Resource at Koppamurra on neighbouring tenement
- Koppamurra Resource and new AR3 prospect Frances hosted in the same Loxton Parilla Sands as present on Bordertown Block
- Conducted an extensive community relations programme with stakeholders in the Bordertown Block in advance of drilling

Koppamurra Mineral Resource Estimate – September 2023										
JORC Category	Tonnes Mt	TREO ppm	Magnet Rare Earths							
			Pr ₆ O ₁₁		Nd ₂ O ₃		Tb ₄ O ₇		Dy ₂ O ₃	
			ppm	% TREO	ppm	% TREO	ppm	% TREO	ppm	% TREO
Measured	0.8	747	33	4.4	122	16.4	3.3	0.4	19	2.5
Indicated	98	716	32	4.4	122	17.0	3.3	0.5	18	2.6
Inferred	88	709	32	4.5	121	17.0	3.2	0.4	18	2.5
Total	186	712	32	4.5	121	17.0	3.2	0.5	18	2.5



Murraydium REE Project

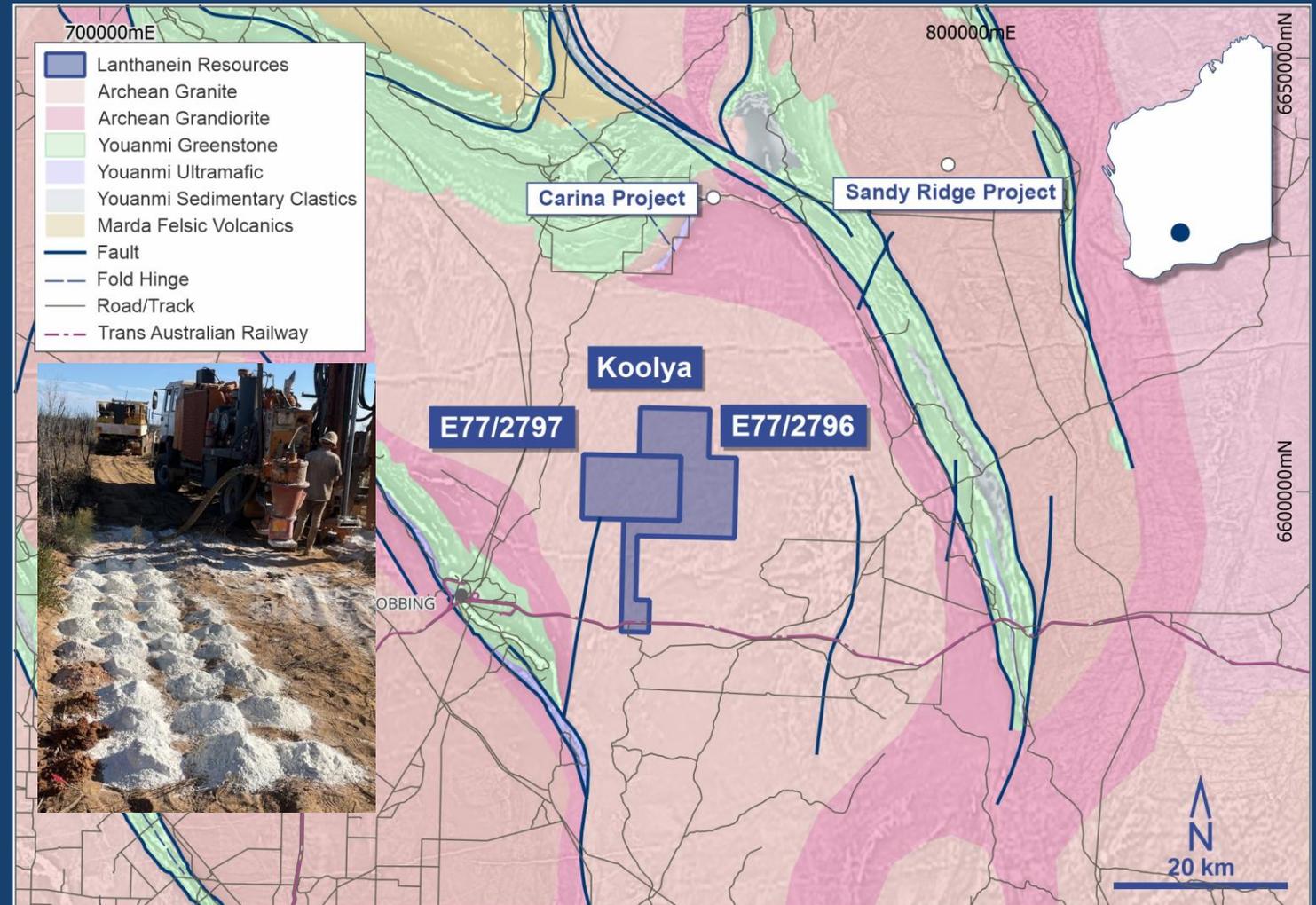
- Shallow (<20-30m) roadside reconnaissance Air Core drilling on Bordertown Block drilled in 2023 following the extensive community consultation process
- Over 40 holes with grades of 500-2,240ppm TREO with majority >20% Nd/Pr*
- New exploration licence recently granted adjacent to peak values on northeast border of Bordertown Block



*(ASX:LNR – 5th October 2023)

Koolya Kaolin Project

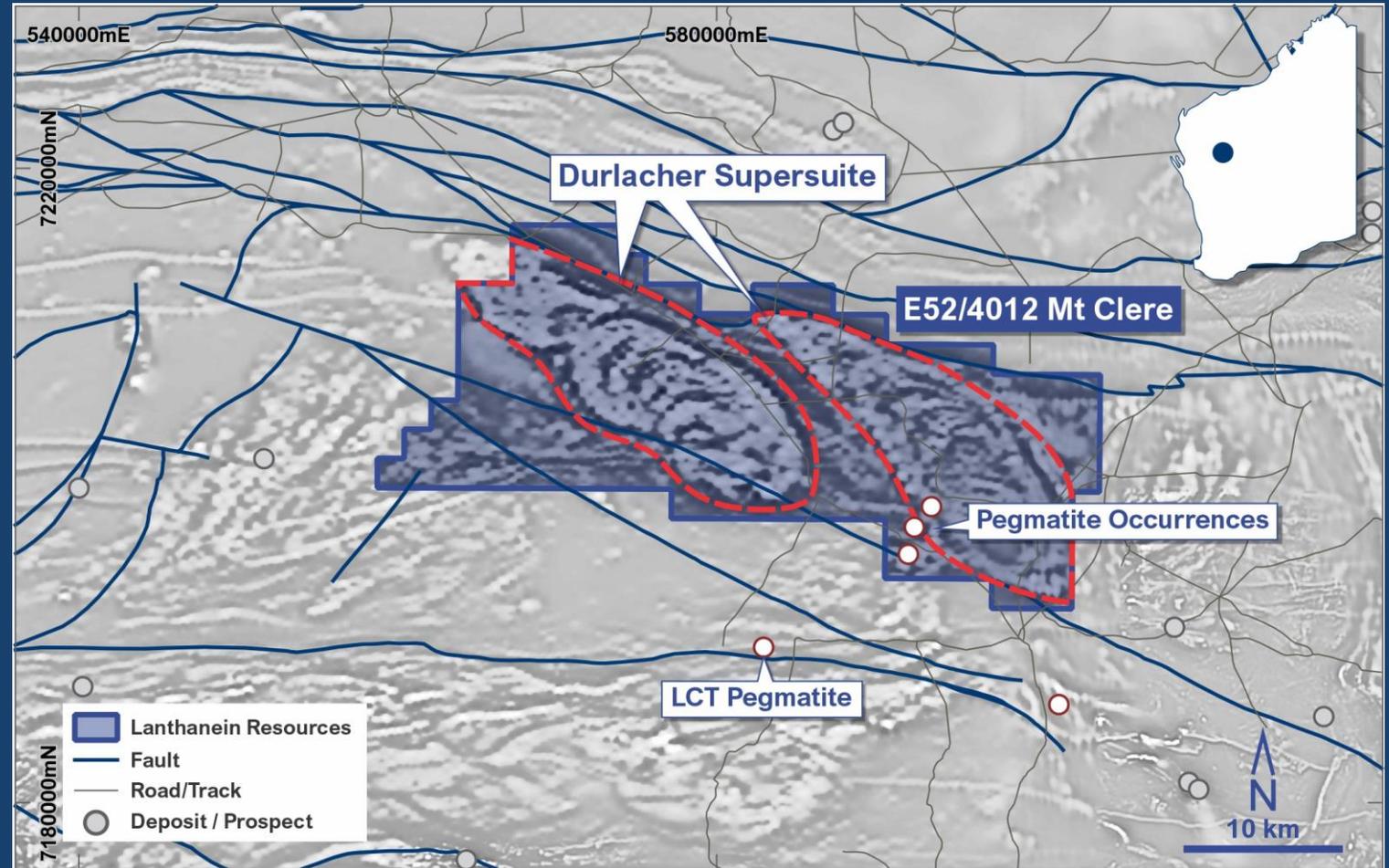
- Air core drilling has confirmed a kaolinised granite host to bright white kaolin clay and high purity alumina (HPA) feedstock halloysite
- Anomalous Rare Earth values of up to 1,220ppm TREO*
- Tenure supportive for large scale development with no competing land ownership, pastoral lease or freehold farmland
- Excellent infrastructure with Trans Australian Railway allowing bulk transport up to 5,000t per train



*(ASX:LNR – 11th April 2023)

Mt Clere REE and Lithium Project

- Targeting REE's in Durlacher Supersuite sequence of rocks, the same host rocks as Yangibana and Lyons
- Lithium potential in LCT Pegmatites in the southeast of the tenement
- Emerging rare earth province highlighted by Krakatoa ASX: KTA discovering ion adsorption clays enriched in REE's to the west of Mt Clere
- Currently collating data from historical sedimentary uranium exploration



The Opportunity / Investment Thesis

- **Emerging Lithium and Rare Earth Elements Explorer**
- **Lady Grey Project immediately adjacent to the operating Earl Grey Mine (189mt @ 1.53% Li₂O) at Mount Holland run by Covalent Lithium (SQM/Wesfarmers 50/50 JV)**
- **Gascoyne Project is adjacent to Hastings Technology Metals (ASX:HAS) established reserves at Yangibana, the next world class REE mine now under construction with a downstream pathway to production with an investment in and concentrate offtake deal with established REE player, Neo Performance Materials (TSX:NEO)**
- **Murraydium Ionic Clay Hosted REE Project adjacent to Australian Rare Earth's (ASX:AR3) established Koppamurra resource**

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