ADDRESS
Level 8, 99 St Georges Terrace
Perth WA 6000
PHONE
+61 (08) 9486 4036

ABN
96 095 684 389

WEBSITE
www.lanthanein.com

30 March 2023

Drilling Commenced at Murraydium Rare Earths Project in South Australia

- **Roadside Air Core drilling programme commenced in the Bordertown Block of EL6717**
- **Targeting Rare Earth Elements (REE) in the shallow Loxton Parilla Sands**
- **Same formation that hosts REEs in neighbouring Australian Rare Earths Ltd (ASX:AR3) Koppamurra Resource of 81.4Mt @ 785 ppm TREO (Total Rare Earth Oxide) and plus their exciting Frances Prospect**
- **Programme planned for up to 307 Holes**

Mr Brian Thomas, Lanthanein Technical Director commented "*We are very excited with the commencement of the roadside drilling programme at the Murraydium Project in the South East of South Australia. With the extensive community relations exercise finally complete we are now able to thoroughly investigate the exciting exploration opportunity in a region that is highly prospective for ionic clay hosted rare earth deposits. Previous work done in the region by AR3 has outlined an extensive mineralised system where shallow near surface exploration has the potential to delineate significant JORC Resources of REEs.*"

Image 1: Roadside Drilling Team on Bangham Road south of Bordertown

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The Murraydium Project is located in the south-eastern region of South Australia with EL 6717 covering an area of 872 km^2 of the Murray Basin. The region is seeing continued activity in the exploration for REE minerals with the success of Australian Rare Earths (ASX:AR3) at their 100% owned Koppamurra Project, host to a total mineral resource of 81.4 Mt @ 785 ppm TREO[1], plus other successes with Resource Base Ltd (ASX:RBX) announcing a maiden Mineral Resource Estimate of 21Mt @ 767 ppm TREO (Inferred) at their Mitre Hill Deposit in the Murray Basin in Victoria.

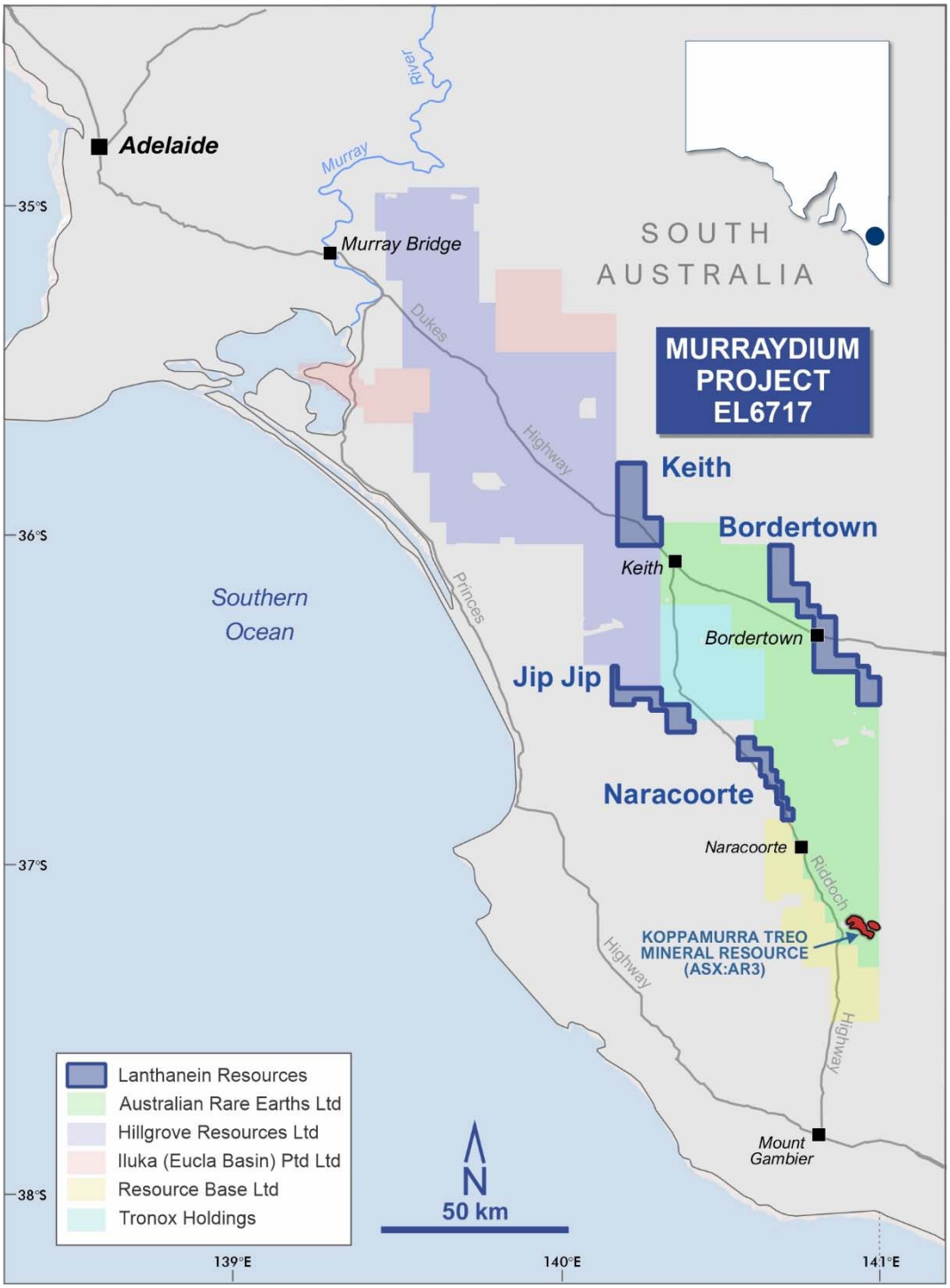

Figure 1: Location Plan of Murraydium Project

[1] JORC resource comprising 45Mt @ 835ppm TREO (Indicated) and 36Mt @ 721ppm TREO (Inferred) (4 July 2022).

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The project area forms part of an extensive Tertiary strand plain comprising a series of sandstone-dominant fluvial and beach-dune strand complexes. The sand units commonly form undulating sand ridges interspersed with low lying areas of clay, mud and sand. The Koppamurra Deposit of REE-bearing clays that contain the Yellow Tail and Red Tail deposits occurs within the lower part of the Loxton-Parilla Sand unit. The Loxton-Parilla Sand is a very extensive unit widely distributed across the southern Murray Basin. Extensive areas of Loxton- Parilla Sand are exposed at surface within the Bordertown Block where it typically forms rolling terrain of low sandy hills and ridges.

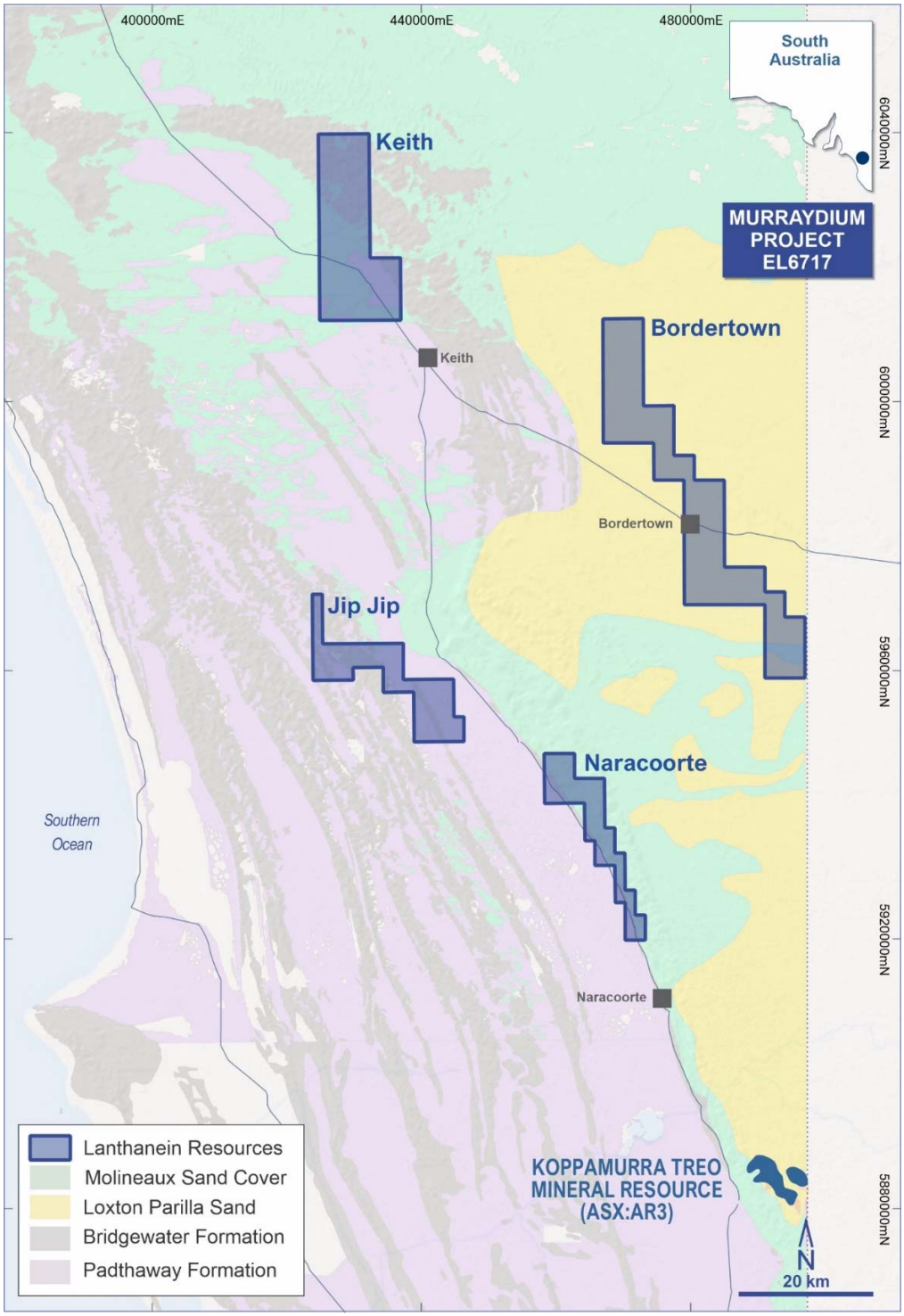

Figure 2: Plan showing extent of Loxton Parilla Sands in the South East of South Australia

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Regolith Hosted REE Deposits - Background

There are several known types of regolith hosted REE deposits globally including, ion adsorption clay deposits, alluvial and placer deposits. The development of potentially economic regolith-hosted REE deposits requires a combination of a REE enriched protolith and weathering processes that concentrate the REE in the regolith. Ion adsorption type REE deposits are the dominant source of heavy REE currently mined in the world, with all economic examples of this type of deposit confined almost exclusively to areas underlain by granitic rocks in southern China. REE mineralisation in the Murray Basin at Australian Rare Earths (ASX:AR3) Koppamurra Project is hosted by clay material interpreted to have been deposited onto a limestone base (Gambier Limestone) and accumulated in an interdunal, lagoonal or estuarine environment. The mineralogy of the clay is indicative of formation under mildly alkaline conditions in a marine or coastal environment from fine grained sediments either river transported or windblown thereby supporting this interpretation.

Mineralogical test work conducted on a clay sample from the Koppamurra Project area established that the dominant clay minerals are smectite and kaolin, and the few REE-rich minerals detected during the SEM investigation are not considered inconsistent with the suggestion that a significant proportion of REE are distributed in the sample as adsorbed elements on clay and iron oxide surfaces. Work to date suggests that the source of the REE at Koppamurra is most likely basalt associated alkali volcanics of the Newer Volcanics Province in south-eastern Australia, with the wider Koppamurra project area being considered prospective for rare earth mineralisation.

However, whilst Koppamurra clays display ionic character, and the deposit shares a number of similarities with both ion adsorption clay deposits and volcanic ash fall placer deposits, there are also a number of differences, with further work required before a genetic model for REE mineralisation at Koppamurra and the broader Murray Basin can be conclusively defined. In addition, further work is required to better define metallurgical recoveries, process flow sheets, effective mining methods, and project economics.

Image 2: Roadside Drilling Team on Bangham Road south of Bordertown with traffic control management in place

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This announcement has been authorised for release by the Directors of the Company.

For additional information please visit our website at www.lanthanein.com

LANTHANEIN RESOURCES LTD

Competent Person's Statement
The information in this report that relates to Geophysical Exploration Results is based on information compiled by Peter Swiridiuk - Member of the Aust. Inst. of Geoscientists. Peter Swiridiuk is a Technical Consultant and Non-Executive Director for Lanthanein Resources. 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 the ASX releases referred to in this report.