

20 May 2024

Process Development Testing Underway for Narraburra Rare Earth Project

- **Process Development Testing (phase three metallurgical test work program) is underway, including production of a Mixed Rare Earth Carbonate (MREC) product**
- **Scope was developed collaboratively by ANSTO¹ and Ausenco to underpin the Narraburra REE Project Scoping Study, including slurry testing, solid/liquid separation and impurity removal**
- **Testwork was designed to provide initial cost estimates to be used in the Narraburra REE Project Scoping Study**
- **Results from Phase three will enable a start to discussions with potential off take partners, especially the composition of the MREC**
- **Phase three follows the Second Phase of metallurgical testing by ANSTO, which demonstrated excellent extraction rates of Rare Earth Elements (REE) from composite samples representative of mining intervals**
- **Testwork is anticipated to be completed within three months, with the Scoping Study expected to be delivered during the September 2024 Quarter**
- **Phase three metallurgical testing being undertaken alongside exploration planning for GRL's 100%-owned copper and gold projects**

Godolphin Resources Limited (ASX: GRL) (“**Godolphin**” or the “**Company**”) is pleased to advise a third phase of metallurgical test work has commenced on samples from Godolphin’s 100% owned Narraburra Rare Earth Elements (“REE”) Project (“Narraburra” or “the Project”).

Phase three, which encompasses Process Development Testing being undertaken by ANSTO was developed in conjunction with Ausenco Services Pty Ltd (“Ausenco”), who are currently undertaking the Narraburra REE Project Scoping Study (refer to GRL’s announcement: 25 March 2024).

The aim of this testwork is to provide the required level of understanding of the mineral processing flow sheet to support completion of the Narraburra REE Project Scoping Study. The Process Development Testing program includes slurry testing, solid/liquid separation, impurity removal and the production of a Mixed Rare Earth Carbonate (MREC) product.

Narraburra is located 12km northeast of Temora in central west New South Wales and hosts a **Mineral Resource Estimate (MRE) of 94.9 million tonnes at 739ppm TREO², which includes a higher-grade component of 20 million tonnes at 1,079ppm TREO in accordance with JORC (2012)** (refer ASX: GRL’s announcement: 19 April 2023).

Management Commentary

Managing Director Ms Jeneta Owens said: *“The Third Phase of metallurgical testing is a critical step in completing the Narraburra REE Project Scoping Study and further highlights the Company’s commitment to the development of Narraburra which is being undertaken alongside exploration initiatives across our suite of copper and gold projects.*

¹ Australian Nuclear Science and Technology Organisation (“ANSTO”) is a statutory body of the Australian Government that provides a range of services to the resources sector, assisting with Australia’s transition to renewable energy and green technology.

² “TREO” is Total Rare Earth Oxide, La2O3 + CeO2 + Pr6O11 + Nd2O3 + Sm2O3 + Eu2O3 + Gd2O3 + Tb4O7 + Dy2O3 + Ho2O3 + Er2O3 + Tm2O3 + Yb2O3 + Lu2O3 + Y2O3.

The Scoping Study is progressing well with Ausenco’s investigations into the various process flow sheet options driving the design of the Process Development Testing (Phase 3) testwork program. This testwork program will provide the processing cost and MREC value inputs needed to complete the financial modelling step of the Scoping Study and so is the next step to understanding the economic viability of the Narraburra REE Project.

We look forward to providing updates on the progress of the Narraburra REE Project Scoping Study as the results of these metallurgical tests are received and then utilised to model the Project’s economic viability.”

Process Development Testing (Phase Three) testwork:

Phase three of metallurgical test work on the Narraburra REE Project has been designed to test the mineral processing flow sheet needed to process the Narraburra REE mineralisation. GRL expects that this testwork will provide the required level of understanding of the flow sheet to support completion of the Narraburra Project’s Scoping Study.

GRL selected two composite samples for the third phase of metallurgical test work, both of which include a 11 metre thick interval from drill holes, GNB011 (composite 1) and GNB017 (composite 2) respectively. These intervals have been selected as they are interpreted to be representative of possible mining intervals through the Project’s mineral resource. For the location of these drill holes relative to the existing Narraburra REE MRE please refer to the drill hole location map in Figure 1 below.

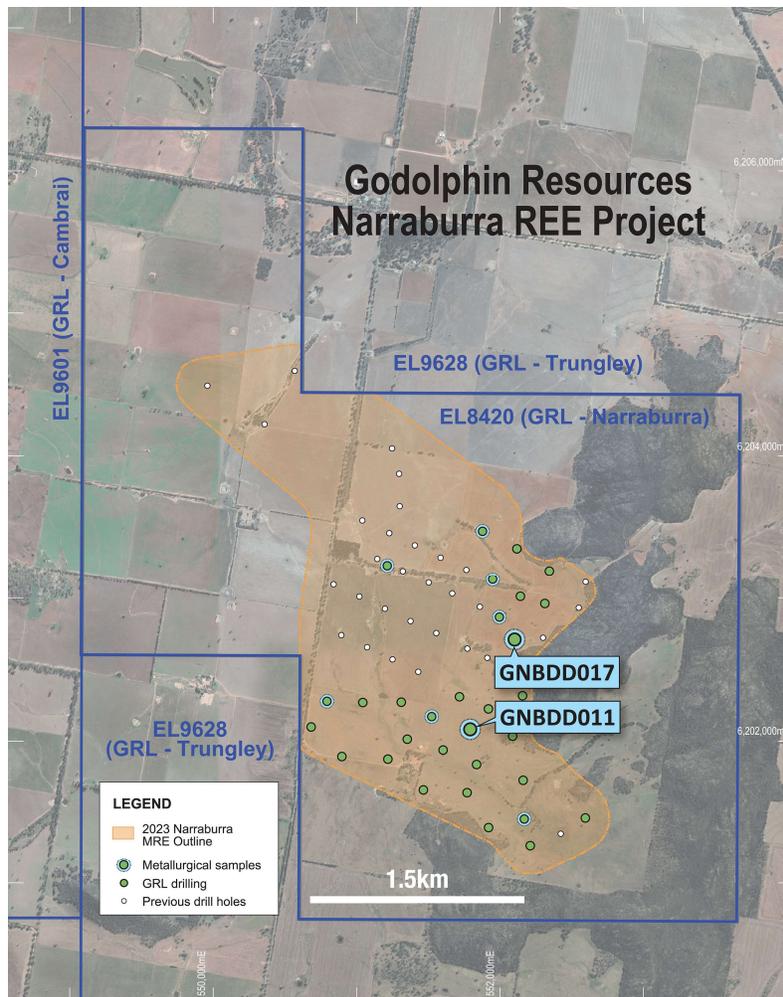


Figure 1: Location of the drill holes where the metallurgical samples have been collected from.



The Process Development Testing program includes slurry leach testing, solid/liquid separation, impurity removal and the production of a Mixed Rare Earth Carbonate (MREC) product. Slurry tests will be carried out on the primary composite to determine optimised leach conditions. Once optimised conditions are defined, an additional slurry test will be conducted on the second composite sample to establish the repeatability of results on a sample from a different location in the resource. The liquor produced from the slurry tests will be subjected to impurity removal testing, which is a critical step. Certain impurities must be removed prior to precipitation of the MREC product. Once a clean liquor is produced following the impurity removal stage, the final stage of precipitating a MREC product will be completed.

Results from Phase Three are expected within three months and will provide Godolphin with processing cost estimates to be used in the Narraburra REE Project Scoping Study, as well as an indicative MREC value. Results will also form a key component of any discussions with potential off take partners, especially the composition of the MREC product.

Project Background:

The Narraburra area was first explored in 1999 for Rare Earth Elements associated with the Devonian-aged Narraburra Granite. Narraburra is listed as a Critical Minerals Project by the Critical Minerals Office of the Australian Government's Department of Industry, Science, Energy and Resources and Australian Trade and Investment Commission. Godolphin's objective at Narraburra has been to define a bulk tonnage disseminated deposit of REE in free-digging weathered clays and weathered bedrock that would be amenable to low-cost mining from a shallow open pit. Processing would include low-cost atmospheric pressure acid leaching to recover REE, for sale to local and international customers.

To date, diamond drilling undertaken by Godolphin has intersected broad zones of REE mineralisation in clay, saprock (clay-weathered rock) and in underlying fresh rock protolith material (refer ASX: GRL's announcements: 11 November 2022 and 13 December 2022). The REE at Narraburra are hosted in clay and saprock, which is the result of weathering of REE rich host rocks. The clays and clay-weathered saprock become enriched in REE through water table effects and occur as flat lying sheets within the in-situ clay rich weathered material. The REE are contained within three well-defined layers that vary in thickness, with the layers increasing in thickness from surface towards the bedrock with the upper layer at an average 1-2 meters below surface.

The four magnet Rare Earth Elements – Nd (Neodymium), Pr (Praseodymium), Tb (Terbium) and Dy (Dysprosium) have all been identified at Narraburra. These four elements are crucial for producing high-strength permanent magnets which are used in many future-facing manufactured products notably, motors for electric vehicles, generators in wind turbines, medical devices and everyday appliances such as computer hard drives and mobile phones.

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This market announcement has been authorised for release to the market by the Board of Godolphin Resources Limited.

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About Godolphin Resources

Godolphin Resources (ASX: GRL) is an ASX listed resources company, with 100% controlled Australian-based projects in the Lachlan Fold Belt (“LFB”) NSW, a world-class gold-copper and REE province. A strategic focus on critical minerals and green metals through ongoing exploration and development in central west NSW. Currently the Company’s tenements cover over 3,500km² of highly prospective ground focussed on the Lachlan Fold Belt, a highly regarded province for the discovery of Rare Earth Elements, Copper, Gold and Base Metal deposits. Additional prospectivity attributes of GRL tenure include the McPhillamys gold hosting Godolphin Fault and the Boda gold-copper hosting Molong Volcanic Belt.

Godolphin is exploring for clay hosted REE’s in NSW, structurally hosted & epithermal gold, base-metal deposits and large, gold-copper Cadia style porphyry deposits in the Lachlan Fold Belt. Continuing to focus exploration efforts to define new targets for unlocking the potential of our East Lachlan tenement holdings and increasing the mineral resources of its advanced Rare Earth Element, Copper and Gold Projects is the key to discovery and represents a transformational stage for the Company and its shareholders.

COMPLIANCE STATEMENT The information in this report that relates to Exploration Targets, Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Ms Jeneta Owens, a Competent Person who is a Member of the Australian Institute of Geoscientists. Ms Owens is the Managing Director and full-time employee, shareholder and option holder of Godolphin Resources Limited. Ms Owens 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. Ms Owens consents to the inclusion in the report of the matters based on her information in the form and context in which it appears.

Information in this announcement is extracted from reports lodged as market announcements referred to above and available on the Company’s website www.godolphinresources.com.au.

The Company confirms that it is not aware of any new information that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Persons’ findings are presented have not been materially modified from the original market announcements.