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17 October 2022

Award of $200k EIS Funding

Drilling the Lyons Carbonatite Targets

- **Co-funded drilling for two drill holes with WA Government**
- **Two drill holes are proposed the test the outer magnetic rim of two of the larger carbonatite intrusives at Lyons**

Drill testing the Lyons Intrusive Complex and associated Carbonatite Targets will provide comprehensive geologically logged drill chips and drill core, which will be invaluable data for the understanding and testing a new model for large tonnage intrusive REE mineralised carbonatites similar in size and geophysical characteristics to the Mount Weld rare earth element carbonatite (Figure 1).

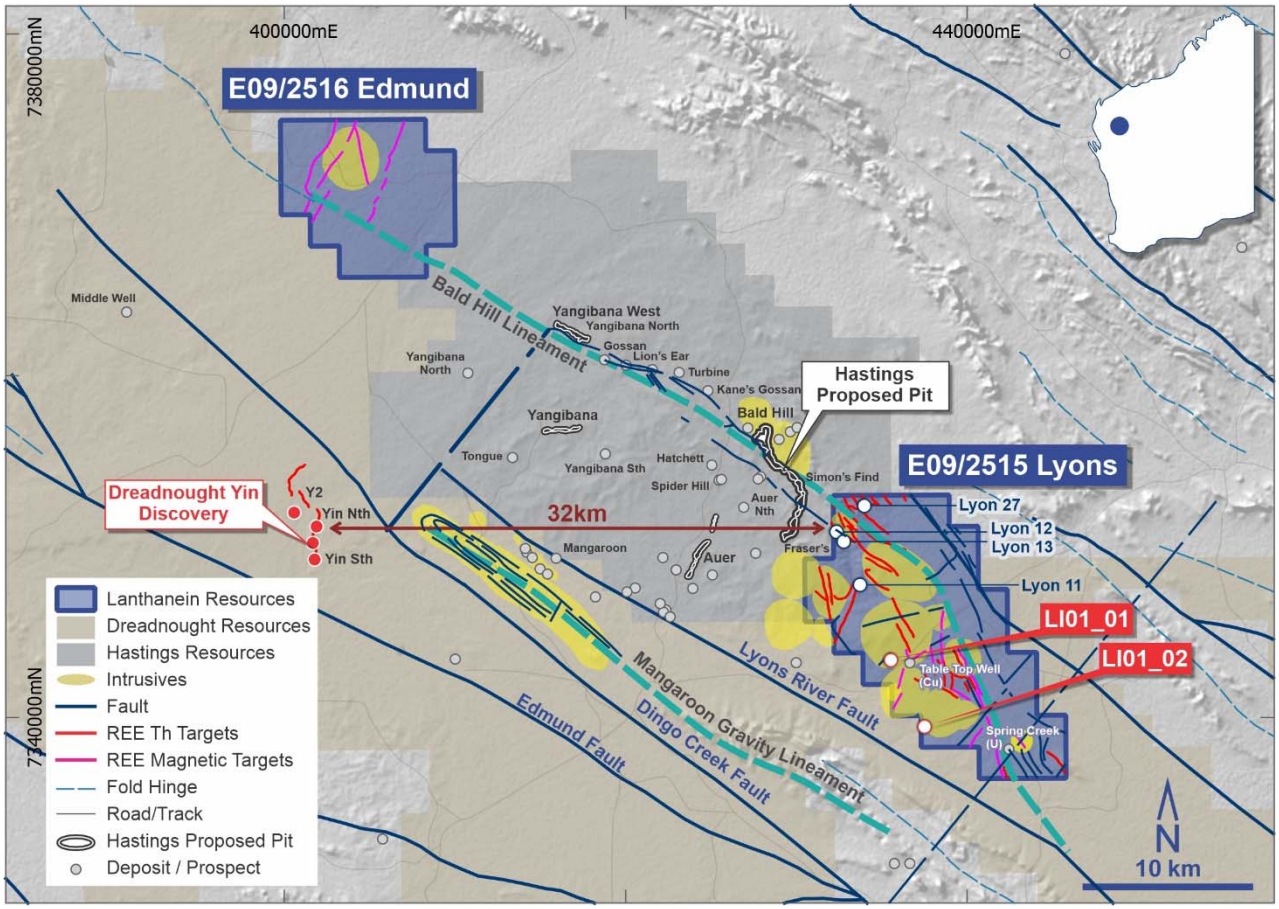

Figure 1. Lanthanein Resources Lyons and Edmund Projects showing Carbonatite Intrusive Targets located within close proximity of Hastings REE mine.

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Carbonatites are becoming increasingly important due to potential to host economic quantities of Th, U, Nb, P, Y and rare earth elements, which are strategically important for modern technology. Drilling will be critical to understanding the mineralisation potential of the modelled carbonatites, to determine width, grade, and continuity at depth and along the modelled outer magnetic rim (Figures 2 and 3).

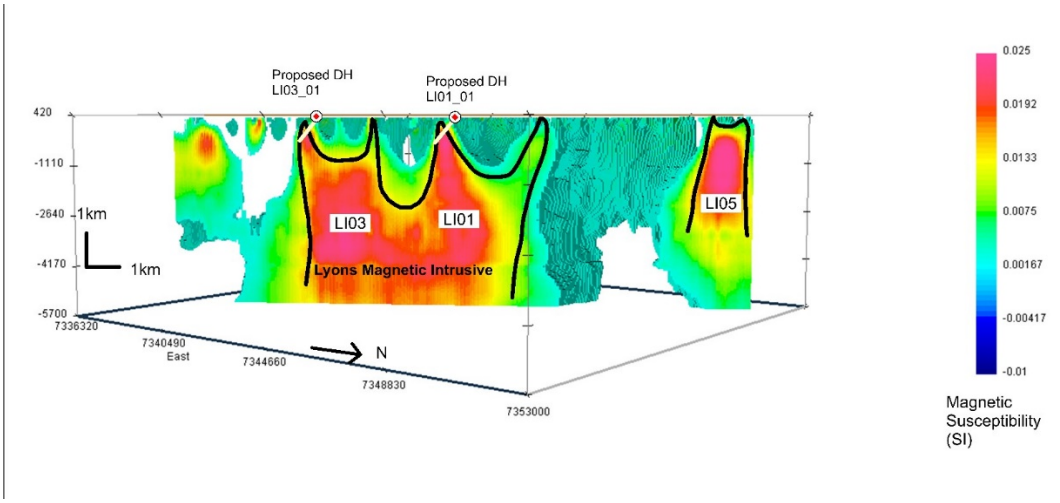

Figure 2. Lyons Block 3D Magnetic Model Cross-Section Looking Southwest showing proposed co-funded drillhole LI03_01 and LI01_01.

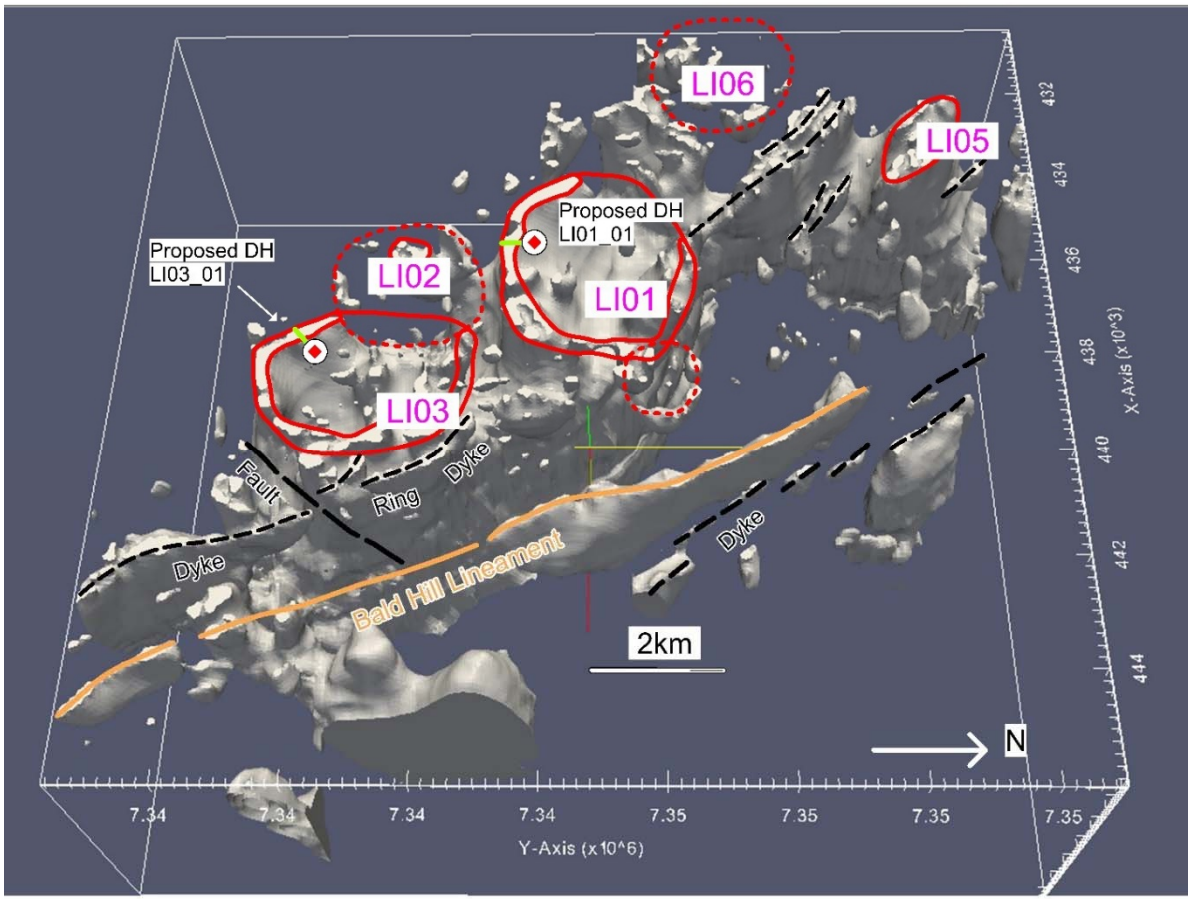

Figure 3. Lyons Block 3D Magnetic Susceptibility Model Showing Carbonatite Intrusive Targets LI01, 02, 03, 05 & 06 and Bald Hill Lineament.

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Deep drill testing to 450m using a combination of diamond and reverse circulation drilling will also provide accurate depths to the geophysical targets. Drill core logging will help to further understand potential overprinting relationships between any alteration and host rock mineralogy, particularly regarding timing of fenitic alteration (incl. magnetite and Th) that are found to be associated with the outer rim of these intrusive bodies (refer to ASX Announcement dated 10 June 2022).

Within the Lyons Block and along the Bald Hill Lineament, numerous carbonatite intrusions have been modelled from the airborne magnetics (Figure 3) with a similar dimension to the Mt. Weld carbonatite. Two drill holes are proposed the test the outer magnetic rim of two of the larger carbonatite intrusives including LI-03 at 3km diameter and LI-01 at 4km diameter.

Independent consultant and expert on carbonatite intrusives, Franco Pirajno, has reviewed the geophysical modelling, rock sampling results and proposed drill sites. Franco will evaluate results from the co-funded drilling programs. He is currently adjunct Professor at the Centre for Exploration Targeting (University of Western Australia).

The ironstones discovered at the Lyons Project (refer to ASX Announcement dated 21 March 2022), like the Yangibana ironstones, are unique to REE deposits globally due to the high proportion of neodymium and praseodymium in the total rare earth oxides, with rock chips from Lyons containing up to a 58.8% Nd:Pr ratio (Nd_2O_3+Pr_6O_{11} content of TREO) (refer ASX release 21 March 2022).

A systematic field sampling program of 134 rock chip samples completed by the Company returned a peak result of 8.01% TREO. Of note, 54 samples returned potentially economic REE grades of >0.1% combined Nd_2O_3+Pr_6O_{11}, and 31 samples greater than 1% TREO (refer ASX release 21 March 2022).

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

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

Competent Person's Statement:

The information in this report that relates to Geophysical Exploration Results is based on information compiled by or compiled under the supervision of 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.

The Company confirms that it is not aware of any new information or data that materially affects the information in the original reports, and that the format and context in which the Competent Person's findings are presented have not been materially modified from the original reports.