ASX ANNOUNCEMENT
31 May 2022

MACHINE LEARNING MODEL UNCOVERS HIDDEN TARGETS ACROSS ISA UNDERCOVER INITIATIVE

HIGHLIGHTS

- The Deep Learning Model performs lithological interpretation of basement geology using geophysics to identify potential IOCG style deposits
- Multiple new drill targets across Isa Undercover Initiative identified for follow-up
- Project funded by Geological Survey of Queensland grant
- Majors move alongside SER at Isa North

Strategic Energy Resources ("**SER**" or "**the Company**") is pleased to provide an overview of research undertaken to develop a deep learning-based model to interpret basement geology from geophysical data. The aim of the project was to uncover previously unidentified Iron Oxide Copper-Gold (IOCG) drill targets within the Isa Undercover Initiative region (Fig 1). The research was conducted by Caldera Analytics (Caldera), a leading Machine Learning and Data Analytics Company based in Melbourne and funded entirely by a Geological Survey of Queensland (GSQ) Collaborative Exploration Initiative (CEI) grant[1].

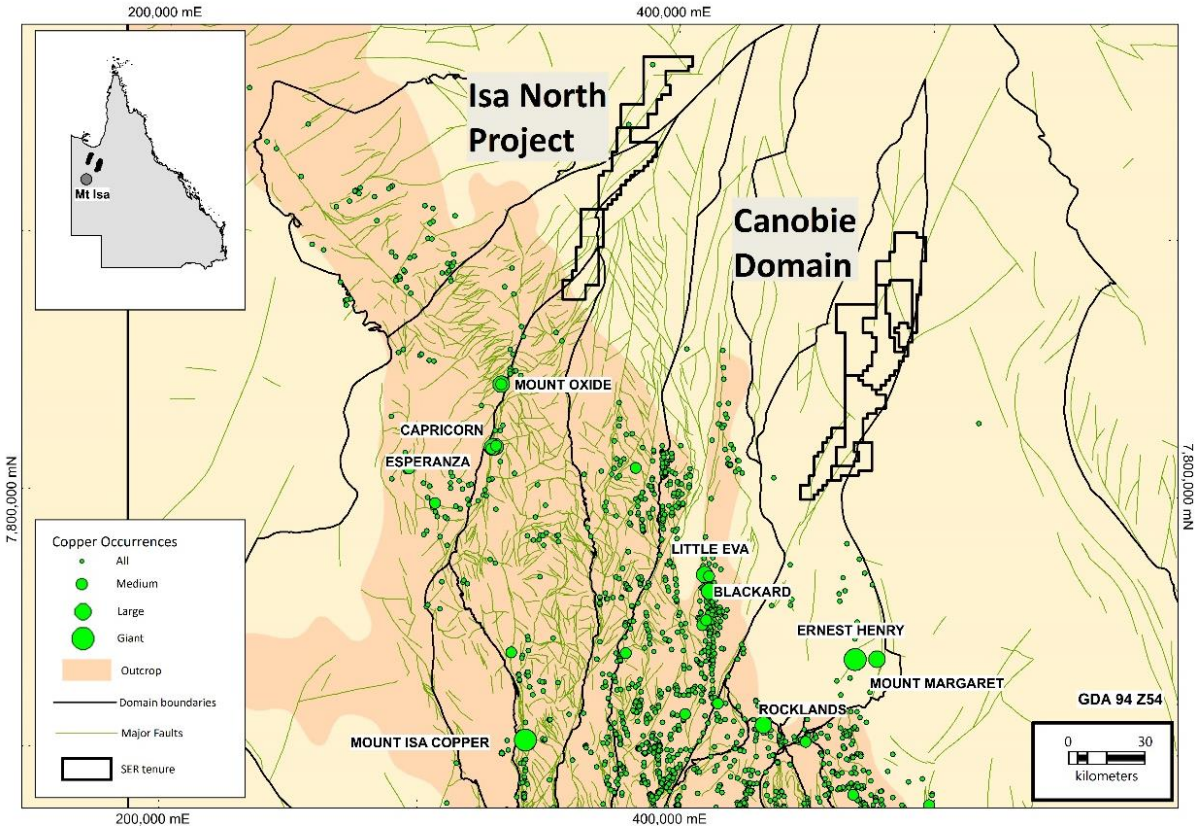

Figure 1: The location of Isa North and Canobie Domain projects with SER's Isa Undercover Initiative.

[1] Queensland Government - CEI recipients and reports, Round 5, 2021

DEEP LEARNING MODEL PREDICTS KEY LITHOLOGY GROUPS CRITICAL TO THE IDENTIFICATION OF IOCG STYLE DEPOSITS

The Isa North and Canobie projects are located along undercover extensions of known mineralised terrains, under significant amounts of younger sedimentary cover. As cover thickness increases and the number of nearby drill holes decreases, the uncertainty of geological interpretations at depth rapidly increases.

Caldera and SER designed and built a Machine Learning Model capable of classifying basement lithology based solely on ground gravity and aero-magnetic surveys. This Model has the potential to remove interpretational bias, quantify the uncertainty of an interpretation and ultimately be used to identify IOCG drill targets. This Model forms the basis of "live geological interpretation", whereby the Model can adapt and change as more data is acquired through geophysical data collection or drilling.

Geophysical Inputs

The key geophysical inputs were gravity and magnetics. The Machine Learning Model incorporated the existing Infinite Slab Bouguer Anomaly grids, derived from the ground gravity surveys of Australia, and the Total Magnetic Intensity Reduced to Pole (TMI RTP) grids derived from the aero-magnetic surveys of Australia from the project areas and the wider Mt Isa Succession. After a comprehensive historical data compilation, 47,253 additional ground gravity surveys were added into the existing state-wide ground gravity database. Additional types of geophysics were considered as inputs but were ultimately excluded due to their lack of continuous coverage or lack of applicability to basement interpretation."

Training Datasets

The Machine Learning Model was then trained on known drill hole data that intersected basement or mapped geological units from the exposed basement of the Mt Isa Inlier. The North West Minerals Province Data-Driven Mineral Exploration and Geological Mapping project (Cole et al, 2020[2]) provided the main source of data along with company annual reports and training points derived from the mapped solid geology of the Mt Isa Inlier, where the basement is exposed at surface. Highly experienced geologists classified the training data into the lithological groups outlined below.

The input data was then used to train a Model to predict six key lithology groups, one of which was hydrothermal magnetite, a key element of magnetite IOCG deposits. The six groups were chosen based on a combination of geophysical constraints and the resources available for data quality assurance. The key lithology groups were identified as:

1. Felsic Intrusives - Granites to granodiorites
2. Mafic Intrusives - Diorites to ultramafics
3. Mafic Dykes - Linear magnetic lithologies corresponding to dolerites
4. Other - A composite group consisting of sedimentary, metamorphic and volcanic lithologies
5. Hydrothermal Magnetite - Areas where high Fe geochemistry levels are present that are hydrothermal in origin, highly IOCG prospective
6. Metamorphic Magnetite

The performance of the Deep Learning Model was then subjected to rigorous validation testing before application to the Isa North and Canobie projects. The result is a series of new targets that are data-driven and bias-free and are accompanied with probabilistic outputs from the machine learning Model.

[2] Cole, David et al. 2020 NWMP Data-Driven Mineral Exploration and Geological Mapping

MACHINE LEARNING MODEL PREDICTS THE LOCATION OF MULTIPLE NEW DRILL TARGETS ACROSS THE ISA UNDERCOVER INITATIVE

Machine learning targets were generated for the Canobie and Isa North project areas where the probability of hydrothermal magnetite was above 40%. These targets were then assessed in a qualitative fashion, based on the hydrothermal magnetite probability, uncertainty, and possible false positives (mafic intrusive and metamorphic magnetite). The images below indicate the location of the drill targets with the project areas (Fig. 2). Each target is accompanied by a probability value and measurement uncertainty which is not shown.

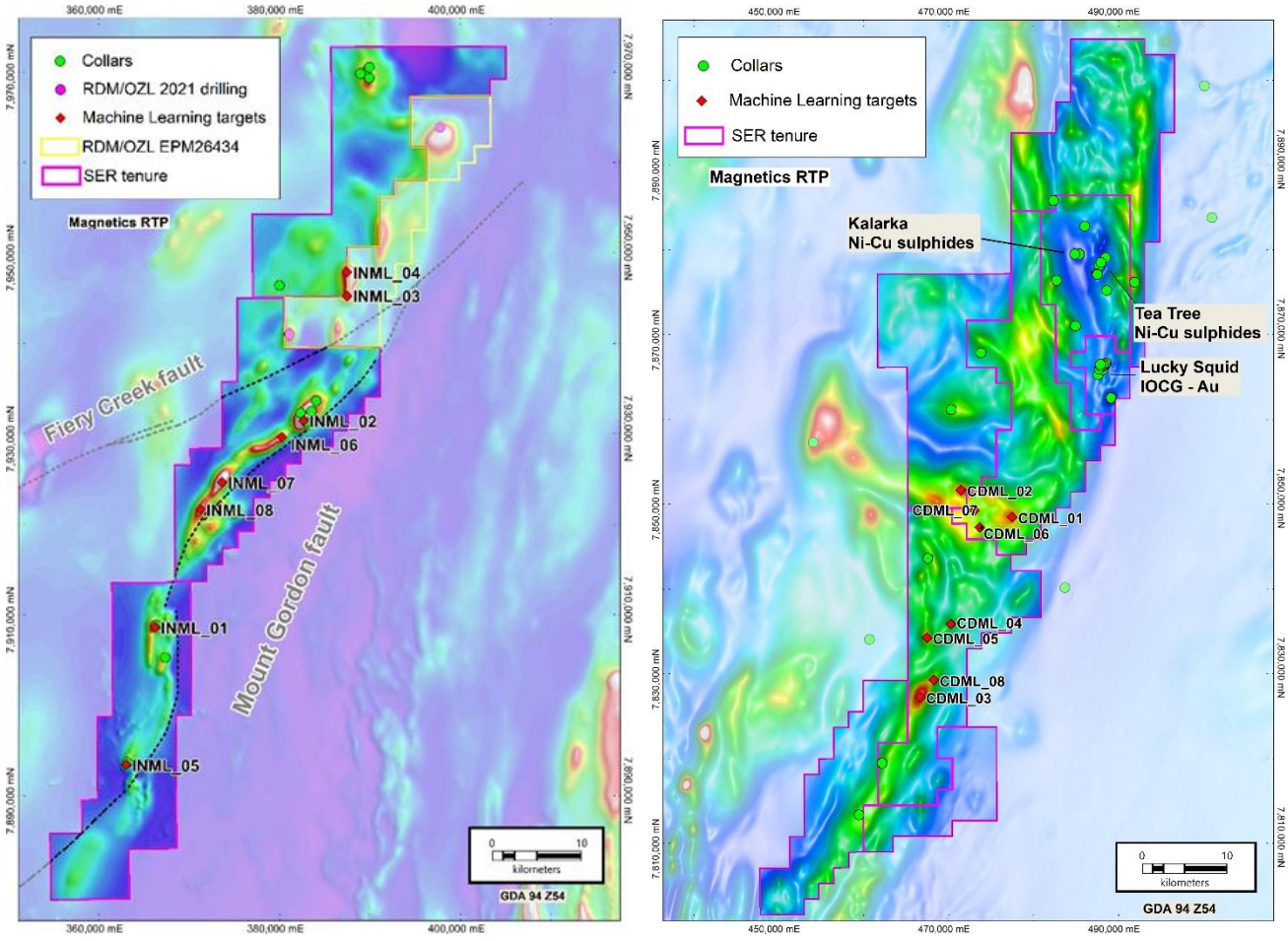

Figure 2: Machine Learning (ML) generated drill targets over Magnetic Reduced to Pole images across the Isa North (IN) Canobie Domain (CD) project areas.

MAJORS MOVE ALONGSIDE SER AT ISA NORTH

The Isa North Project was secured from Newcrest in May 2021. Since then, the project area has attracted the interest of two major mining companies with Rio Tinto (ASX:RIO) lodging a tenement application for ground to the immediate south of the Isa North Project area in October, meanwhile last week Fortescue Metals Group (ASX: FMG) applied for six exploration licences to the immediate west of Isa North (Fig. 3). SER's strategy of securing undercover extensions of known mineralised terrains continues to gain the attention of major mining companies.

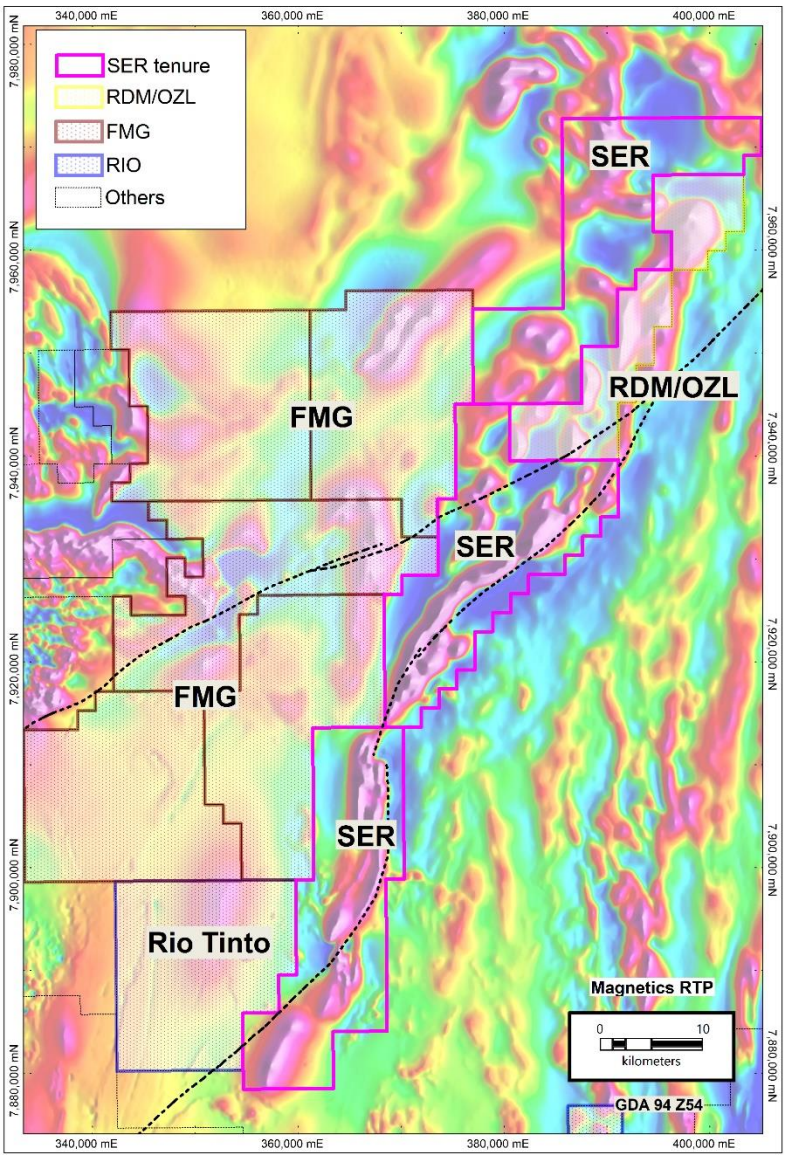

Figure 3: The Isa North Project area indicating the recent exploration licence applications by Rio Tinto and Fortescue Metals Group.

SUMMARY

This ground-breaking research has shown the potential of a Deep Learning Model to predict basement lithology using gravity and magnetic geophysics. The result for SER is several new targets, generated free from interpretational bias that are prospective for IOCG mineralisation. These targets will then be ranked alongside traditionally derived targets. The project has also generated highly ranked targets which are coincident with existing SER targets generated via traditional geoscientific methodologies which, once tested, will be used to validate the machine learning results. Furthermore, as additional geophysical data sets are collected, the Model will be re-run, providing revised geological interpretations across a region.

Strategic Energy Resources and Caldera Analytics would like to acknowledge the support of the Queensland Government and the Geological Survey of Queensland.

This announcement is authorised by the Strategic Energy Resources Limited Board.

For further information please contact:

Investors
Dr David DeTata
Managing Director

T +61 3 9692 7222
E info@strategicenergy.com.au
W www.strategicenergy.com.au

Media
Jonathan van Hazel
Citadel-MAGNUS

T +61 411 564 696
E jvanhazel@citadelmagnus.com

- END -

About Strategic Energy Resources

Strategic Energy Resources (ASX: SER) is a specialised undercover mineral explorer and project generator focused on discovery in the greenfield frontiers of Australia. Our expert technical team is driven by science and leverages collaborations with government and private partners to assist in our search for the next Tier-1 mineral deposit.

SER is actively exploring our large tenement package in the undercover extensions of the world-class Mt Isa Province in northwest Queensland, the Cobar Basin and Lachlan Fold belt of New South Wales and the emerging East Tennant region in the Northern Territory.