

21 September 2023

## MUNDI MAGNETOTELLURIC SURVEY COMMENCES

### HIGHLIGHTS

- Magnetotelluric (MT) survey underway to define the shallowest part of the crustal-scale Curnamona Conductor at Mundi
- Two-week survey to produce 1D and 2D inversion models at explorable depths
- Advanced 3D modelling to be undertaken in collaboration with the University of Adelaide and the Mineral Exploration Cooperative Research Centre (MinEx CRC)
- Survey supported by NSW Government New Frontiers Exploration Program grant

**Strategic Energy Resources Limited** (“SER” or “the Company”) is pleased to announce the commencement of a Magnetotelluric (MT) survey at the 100% held Mundi Project in New South Wales. The Mundi Project is a large-area, conceptual greenfield exploration project spanning over 200km<sup>2</sup> of the Curnamona Province, located approximately 115km NNW of Broken Hill. The Curnamona Province is a known iron oxide copper-gold (IOCG) mineral province with the potential for other mineral systems, such as Broken Hill Type Pb-Zn-Ag. The Project area has no known basement outcrop and very limited previous exploration.

**Commenting on starting of the MT program, SER Managing Director, Dr David DeTata said:**

*‘The Mundi Project exemplifies SER’s strategy of science-driven exploration undercover in frontier locations across Australia. The project was initially identified through the review of precompetitive data and with the support of a \$50,000 NSW Government New Frontiers Exploration Program grant, SER will complete a surface based geophysical program that is expected to define a target or multiple targets for follow-up drill testing’.*



Figure 1: MT survey underway at the Mundi Project

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## THE MUNDI PROJECT

A large-scale conductivity anomaly was initially identified in the lower- to middle-crust beneath the Curnamona Craton by the 55km-spaced Australian Lithospheric Architecture Magnetotelluric Project (AusLAMP), led by Geoscience Australia. The anomaly was further resolved in the upper crust beneath the Mundi Plain in far western NSW by the 2km- to 4km-spaced Curnamona Crustal broadband MT transect (CCMT), undertaken in 2017<sup>1</sup>. A "finger"-shaped conductor identified in the CCMT, which is closest to surface at station CC56 (Fig. 2 and 3), has strong similarities to MT conductivity anomalies that have been demonstrated to be associated with IOCG mineralisation in South Australia's Gawler Craton<sup>2</sup>. This conductive anomaly, known as the Curnamona Conductor (CC), is the focus of SER's current MT survey (Fig. 3).

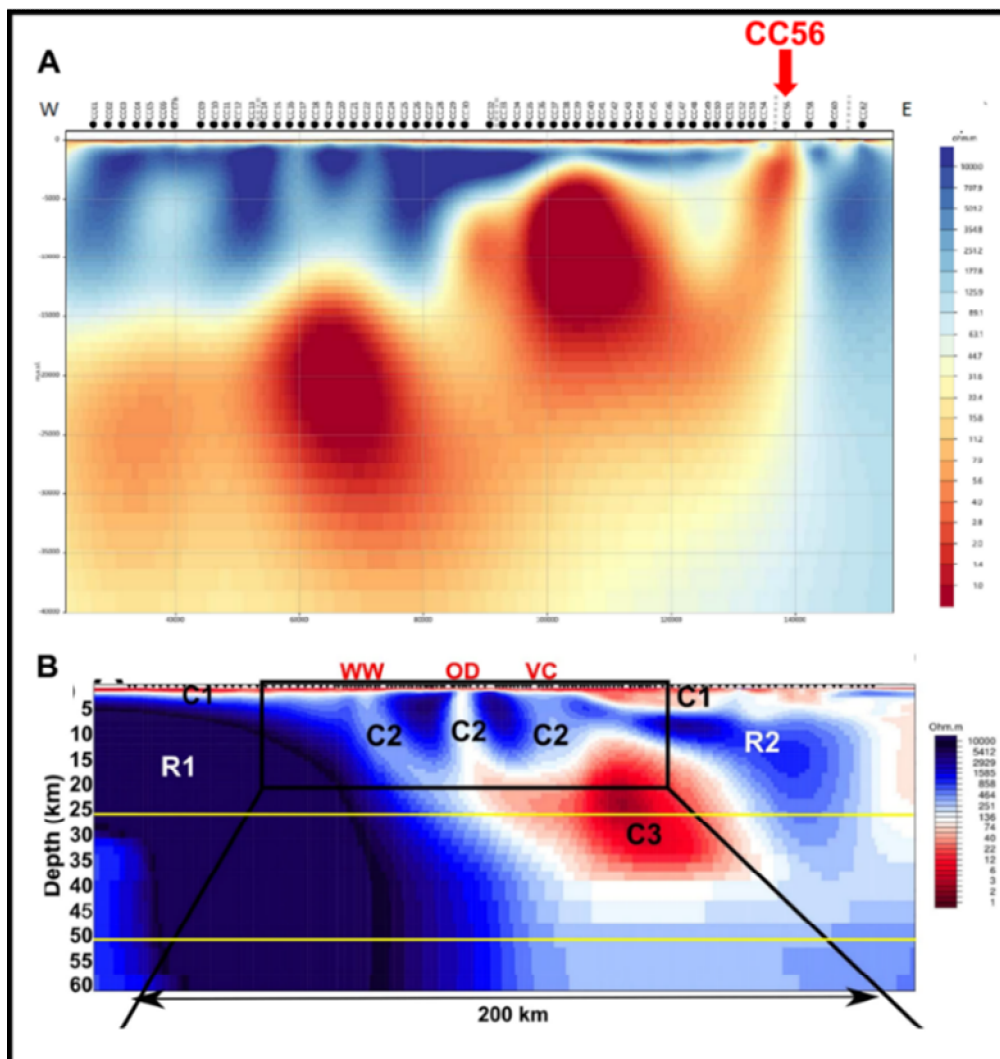


Figure 2: (A) 2D resistivity model to a depth of 40km of the CCMT that crosses the Mundi Plain from Kay et al. (2019). (B) 2D resistivity model to a depth of 60km across the Gawler Craton from Heinson et al. (2018). Note the similarity between feature, **C2 under Olympic Dam (OD)** and the feature under station **CC56 of the CCMT**, which lies within SER's Mundi Exploration Licences. Similar features are also present beneath **Wirrda Well (WW)** and **Vulcan (VC)**.

<sup>1</sup> Kay, B., Heinson, G., Robertson, K., Thiel, S., 2019, Lithospheric architecture in the Curnamona from MT. In Gilmore, P.J. (compiler), 2019, Uncover Curnamona 2019: Symposium Presentations. Geological Survey of New South Wales Report GS2019/1007.

<sup>2</sup> Heinson, G., Didana, Y., Soeffky, P., Thiel, S., Wise, T., 2018, The crustal geophysical signature of a world-class magmatic mineral system. Scientific Reports, 8:10608, p6.

The CC is interpreted to represent a major zone of deformation, metasomatism and fluid flow within the crust. SER's interpretation of the CCMT model places the shallowest portion of the CC within Palaeoproterozoic rocks in the immediate footwall of the west-dipping Stanley Fault (Figure 3). The Stanley Fault juxtaposes Neoproterozoic lithologies against Palaeoproterozoic units and is considered to represent a potential fluid conduit and controlling structure for an IOGC mineral system, analogous to that seen near Broken Hill at Copper Blow. Although not discounting the potential for other mineral systems, such as Broken Hill Type Pb-Zn-Ag, SER considers that the Stanley Fault is similarly prospective for IOGC mineralisation.

## MAGNETOTELLURIC SURVEY DESIGN

SER's MT survey was designed primarily from the available geophysical data, interpreted within the geological framework of the NSW Seamless Geology. In addition to interpreting the resistivity models developed from the CCMT by Kay et al. (2021), SER has also integrated and interpreted available magnetic, gravity and AEM data over the proposed survey area.

SER's 95-station MT survey covers the shallowest portion of the CC anomaly with stations spaced 400m apart along four east-west oriented lines 4km to 5km apart. All four lines are designed to cross both the Stanley Fault and CC anomaly, to resolve the relationship between the two features.

The survey will provide high quality data over both the high (500-2000Hz) and low (0.1-1Hz) frequency ranges, where low natural signal is often encountered, and a series of 1D and 2D inversion modelling will be undertaken on the data. The data will improve our understanding of the nature and geometry of the shallowest expression of the CCMT anomaly and is expected to define a target or targets for structurally controlled IOGC mineralisation within 500m of the surface.

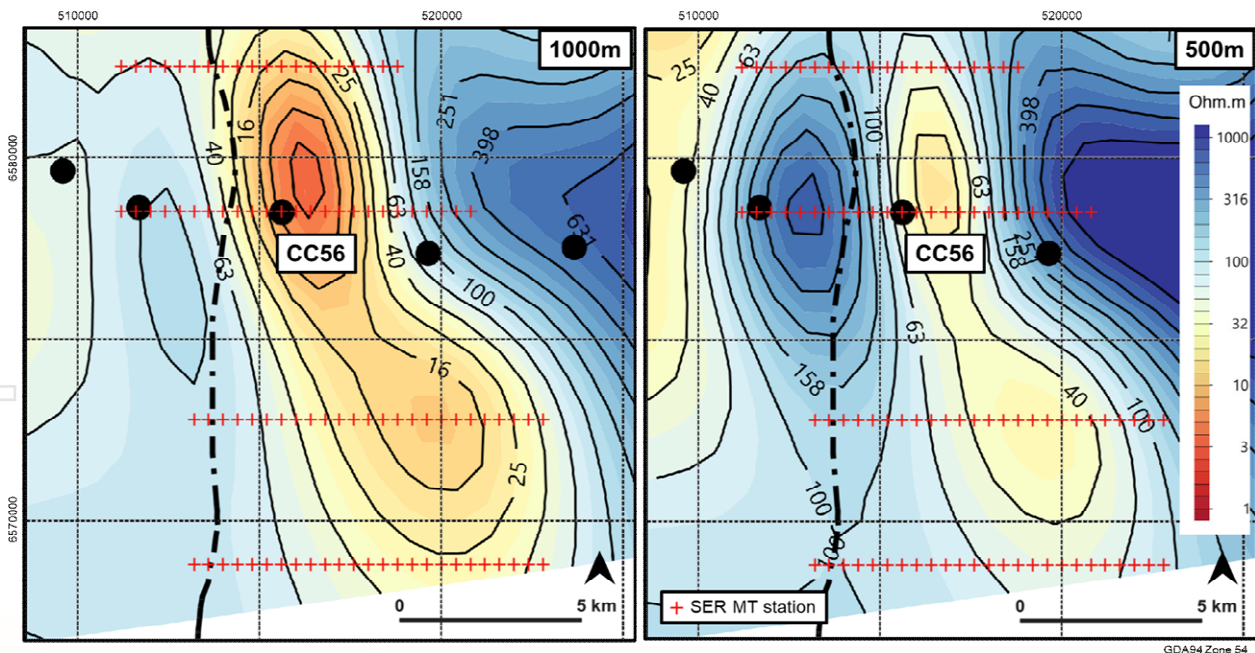


Figure 3: 1000m and 500m depth slices across the 3D resistivity model of Kay et al. (2021), showing the location of SER's planned MT stations relative to the CC anomaly at 1000m and 500m depth and the interpreted location of the Stanley Fault at top of basement (heavy dashed line). CCMT stations are shown as black dots, with CC56 labelled. Resistivity images courtesy of Graham Heinson, University of Adelaide. Fault location from NSW Seamless Geology Version 2.1 (2021).

## ADVANCED MODELLING IN COLLABORATION WITH MinEx CRC

The survey design was undertaken in collaboration with Professor Graham Heinson from the Electrical Earth Imaging Group (University of Adelaide). Professor Heinson is the principal author of the Gawler Craton study, a key contributor to the CCMT survey, and a global leader in the use and interpretation of MT data for mineral exploration. The data from the survey will undergo a series of 3D interpretations; and will also be integrated with the 20km station-spaced Curnamona Data Cube MT model as part of a SER sponsored PhD project under the umbrella of the MinEx CRC<sup>3</sup>.

The survey commenced on 16 September and is anticipated to be completed in early October, with processed data and initial modelling expected in November.

SER's Mundi MT survey is partially supported by a \$50,000 grant from Round 5 of the NSW Government's New Frontiers Exploration Program.

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

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### About Strategic Energy Resources

Strategic Energy Resources is a specialized undercover mineral explorer and project generator focused on discovery in the Greenfield frontiers of Australia. Our science driven, expert technical team leverage collaborations with government and private partners in our search for the next major mineral deposit.

<sup>3</sup> [MinEx CRC Program 3: National Drilling Initiative: Investigating Crustal Anomalies in the Curnamona-Mundi Mundi Region Using an Integrated Geophysical Approach.](#)