Q&A CRC-P Grant

"The CRC Program supports industry-led collaborations between industry, researchers and the community."

Research will focus on a number of areas including community acceptance of ISR as a mining technique, establishment of environmental risk mitigation strategies, mineral characterisation, lixiviant system design/optimisation and fluid flow modelling.

Research into these areas will lead to better environmental outcomes, improved economic results and improved social license.

Australian Government
Department of Industry, Innovation and Science

Business Cooperative Research Centres Program

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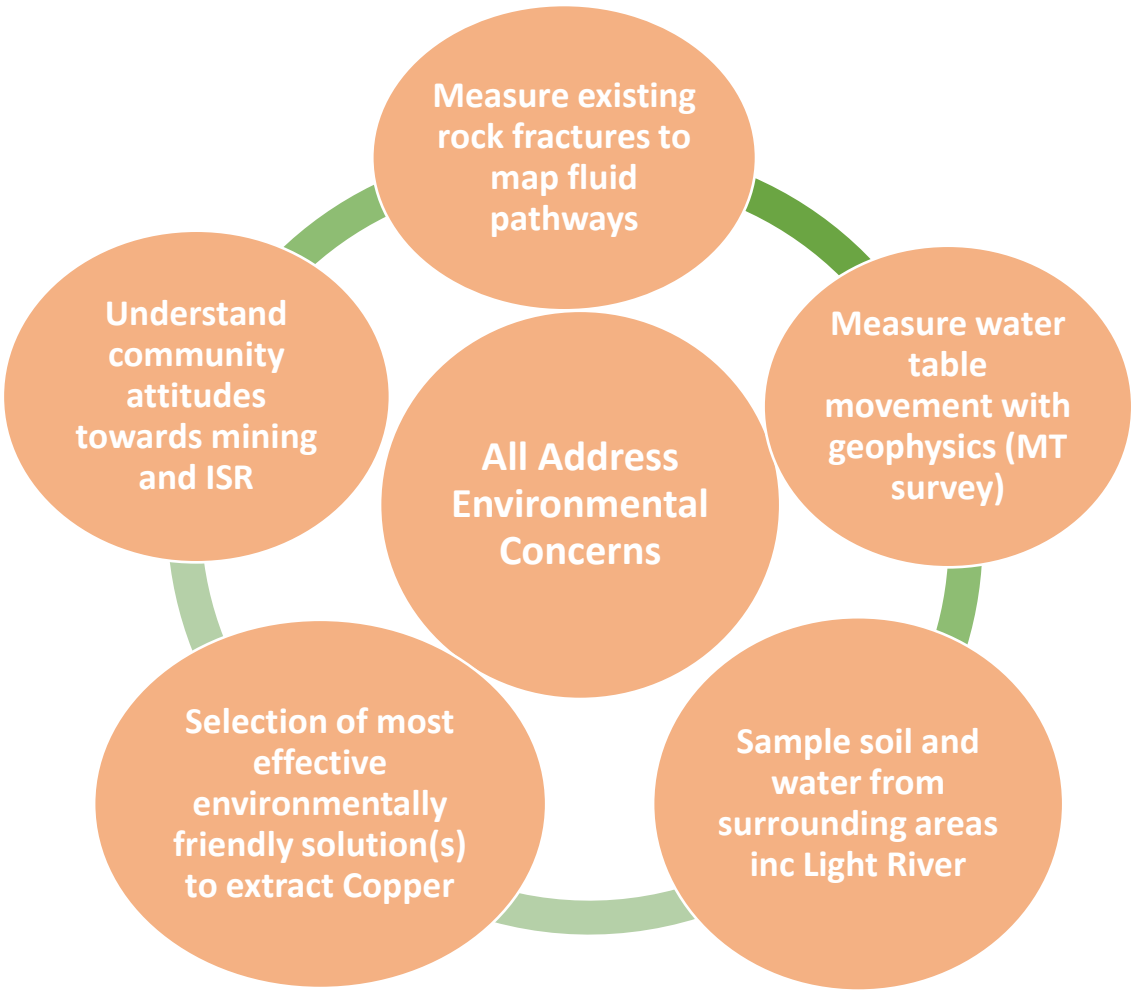

WHO ARE THE RESEARCH PARTNERS?

CSIRO (Commonwealth Scientific Investigation and Research Organisation)

Minerals – Dr. Laura Kuhar;
Mineralogical and hydrometallurgical testing and characterisation of existing core samples then lixiviant (benign solutions) screening for the most effective copper extraction.

Land & Water – Dr. Jason Kirby;
Baseline monitoring of surface and groundwater quality chemical parameters and will utilise Uni of Adelaide geophysical data to assist groundwater monitoring & management.
Development of an Environmental Report card (digital) to enable synthesis of complex chemical and biological data on overall water quality health, for both community and regulators.

Land & Water – Dr Tom Measham;
Qualitative focus groups conducted on how residents may accept ISR as a viable mining alternative then building on perceptions of the mining heritage to clarify how a renewed mining industry aligns with Kapunda's core values.

The University of Adelaide

Mining Engineering – Prof Peter Dowd & Ass Prof Chaoshui Xu;

3D fracture modelling of existing rock mass to identify fluid and therefore lixiviant flow paths. This geological model of fluid access will give evidence of potential copper extraction.
Subsequent 3D MT surveys will be used for long term monitoring of impact. This will improve environmental measurements, accuracy of potential recoverable grades and improve economics.

Geophysics – Prof Graham Heinson – National AuScope MTR facility

Geophysical studies to better map fluid/lixiviant flow paths with Magnetotellurics (MT).
MT is a passive geophysical method which uses natural time variations of the earth's magnetic and electric fields to measure the electrical resistivity of the sub-surface.
Initially sensors will be left for a day or two on the ground to get baseline measurements. But during the actual FRT they will be laid to continuously monitor fluid flow over a number of sites (approx 50).

An image of an MT sensor

What are the Commonwealth Government expectations of this grant?

- Education sessions in schools, TAFEs and tertiary institutions on In-Situ Recovery to complement existing STEM curriculum focus
- Demonstration that ISR is a technically and economically viable alternative to conventional mining methods for the recovery of copper and gold in many settings
- ISR operation will significantly reduce surface disturbance and lower environmental impact, earning greater acceptance and support from key stakeholders
- Environmental Report Cards are transparent and ensure both trust and confidence.
- Community understanding and acceptance that ISR is low impact and environmentally friendly.
- Regulators and governments accept this is a smarter way to mine.
- Assist South Australia to reach is Copper Strategy target of 1 million tonnes of Copper/year by 2030.
- ISR Symposiums will have been run extensively, promoting the technology within industry and research organisations.
- Placing Australian institutions at the forefront of ISR research internationally which will help institutions to attract research projects to Australia.
- Creation of a new segment of the mining industry for Copper ISR
- Kapunda has Australia's 1st demonstration ISR Copper mine
- Findings from the Kapunda project being applied to other potential "stranded asset" sites within SA
- Improved Magnetotellurics (MT) for mapping surface fluid flow, over time
- Accurate fracture modelling leads to better resource estimation in ISR projects