APPLICATION OF THE MULTI-SENSOR CORE LOGGER FOR PETROPHYSICAL ANALYSIS AND GEOPHYSICAL MODELLING

MINEX CRC PROGRAM 3
National Drilling Initiative

PHD PROJECT
University of South Australia

PREREQUISITES AND INTERESTS
Geophysics, petrophysics, geology

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The Multi-Sensor Core Logger (MSCL) is a petrophysical logging system, originally developed for soft rock O&G applications, for measuring accurate co-located data downhole. The instrument can measure a suite of petrophysical properties including gamma density, P-wave velocity, magnetic susceptibility, resistivity, natural gamma, spectrometer measurements for quantitative colour and x-ray fluorescence for overall rock composition. Upcoming deployment of the Mobile Petrophysical Laboratory (MPL), comprising a containerised MSCL which is nationally deployable and self-contained, aims to facilitate broad scale collection of petrophysical data for mineral exploration applications on a national scale.

Data collected by the MPL will provide a vast opportunity for collaborative research into the application of petrophysical data to improve geophysical models, geological interpretations and overall understanding of the subsurface. Research may focus on, but is not limited to, methodology development to measure petrophysical properties on non-core media such as chips using the MSCL instrument, improving workflows for geophysical modelling using data from the MSCL, or petrophysical characterisation and geophysical modelling of key target areas within a NDI region.