KALGOORLIE-BOULDER
MINING INNOVATION HUB

PROJECT OPPORTUNITY

Coarse waste rejection

Investigating the relationship between ore grade and size fraction

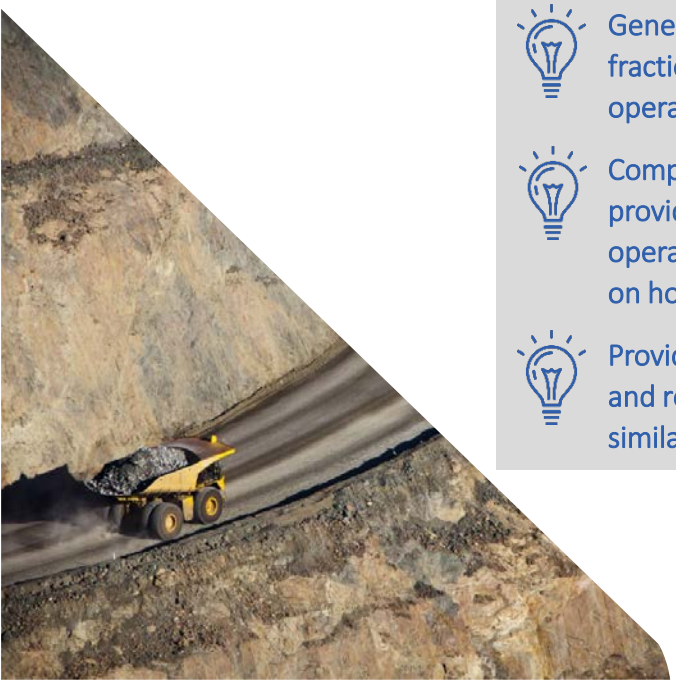
The challenge

Preferential deportment of grade by size (one of the five levers of CRC ORE's Grade Engineering®) provides a low cost approach to reject waste rock at very coarse sizes. The applicability of this technique is governed by the geology and mineralogy of the deposit. An understanding of the relationship between ore grade and size fraction across varied geological types in the region will form a fundamental platform to inform the practices of testing and implementation of Grade Engineering methodology for any given site. Such information will also provide a basis for linking grade by size with complimentary techniques such as ore sorting.

Why collaborate in this project? Collaboration provides an opportunity to inform both site and regional research as to the potential for harnessing Grade Engineering. Benefits of realising and exploiting this potential include reducing operating costs by decreasing the amount of low value processing plant feed.

Targeted outcomes

- Generate a dataset of relationships between ore grade and size fraction for gold and other metals from a range of mining operations across WA.
- Comparing responses across a variety of geological settings to provide insight on responses for different rock types from operational mines and projects to potentially allow predictions on how minerals in deposits might deport.
- Provide and enable opportunities for mining companies, METS and researchers to collaborate and evaluate/share results for similar orebodies.



Kalgoorlie-Boulder Mining Innovation Hub
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Australian Government
Department of Industry, Innovation and Science
Business Cooperative Research Centres Program
CRC ORE

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Project scope

The project will allow an initial assessment of the potential amenability of Grade Engineering for a number of sites producing data that can inform research and also form the basis of a business case for further studies for individual sites and for the region.

	Small scale test samples
Outcome for site	• Characterisation of preferential deportment of grade by size across mine / orebody • Assessment of the potential for decreasing the amount of low value processing plant feed • Generic outcomes of characterisation of other orebodies in the region with access to data via GE View database and the opportunity to collaborate in the region • Insight into the potential to utilise complementary techniques such as ore sorting
Outcome for project	• Detailed responses across region to inform further Grade Engineering™ testwork • Data and analysis across a variety of geological settings and different rock types from operational mines and projects to potentially allow predictions on how minerals in certain deposits might deport • A white paper providing de-identified data and outcomes of the analysis will be generated
Samples required	• Ten x 10 kg samples of coarse rejects or half core

The project will be funded by CRC ORE via the Kalgoorlie-Boulder Mining Innovation Hub, with sites providing samples and time for identification and collection.

Positive material responses may justify testing at a realistic scale (outside the scope of this project) to further investigate the genuine amenability of the ore to screening for gangue rejection.

What we are seeking

The Kalgoorlie-Boulder Mining Innovation Hub is seeking industry participants to investigate the relationship between ore grade and size fraction across a number of different deposit styles and commodities.

MINERS

Samples & commitment

Mining participants are asked to donate representative samples as outlined above.

Willingness to share and work collaboratively.

METS

Sample treatment & assays

Support is sought from METS companies in the region who may be able to assist with crushing, screening and laboratory testing.

METS companies are also invited to contribute insights and other potential approaches.

RESEARCHERS

Foundation & impact

Research capability to provide insight into relationships and predictions for different rock types and mineralisation styles

Researchers are also invited to contribute additional information and other potential approaches.

Cost

The cost of assaying, test work and analysis, and web portal development will be covered by CRC ORE.

Results of all testwork will be made available to each project participant in an agreed format.

Like to get involved?

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