

# Monalco Ore Crusher Maintenance:

## 1) Context

- The drop in ore prices from \$110/ton to \$55/ton has significantly reduced Monalco's profitability, despite the high quality of deposits. The company's cash-flow from operations will be negative if we drop below our breakeven of \$50/ton. The maintenance of the ore crushers are one of the major annual expenses and they are forecasted to grow from \$30 mm in 2022 to \$45 in fiscal year 2023. The business unit is targeting a 20% reduction in the annual maintenance of the ore crushers. Evidence suggest that excess wear is responsible for 80% of current work requests.

## 2) Criteria for success

- Analyze the crusher maintenance data to deliver a recommendation that reduces expenses of annual crusher maintenance at least 20%.

## 3) Scope of solution space

- Create a recommendation to optimize the current maintenance schedule of ore crushers. Recommendations can include the purchase of additional crushers to eliminate running equipment beyond the recommended capacity of 50 tons per day.

## 4) Constraints on solution space

- Maintenance must occur at least every 50,000 tons subject to OEM guidelines.
- The reliability engineering team must approve changes to the protocol.
- Maintenance must minimize downtime in ore processing, preferably done during periods of reduced demand.

## 5) Stakeholder to provide key insights

- Chanel Adams-Reliability Engineer
- Jonas richards-Asset Integrity Manager
- Bruce Banner- Maintenance SME
- Jane Steer- Principal maintenance
- Fargo Williams- Change manager
- Tara Starr-Maintenance SME

## 6) Key Data sources

- T3000 DCS (historian)- Sends raw streaming data on crusher performance
- Ellipse- maintenance records
- SAP- state of equipment logs