Case Study

Troubleshooting

CSA Mines, Cobar, NSW

A visit was undertaken by RMDSTEM to the CSA Mine to troubleshoot the performance of the milling and concentrator operations particularly with respect to:

- The operating parameters of the mill
- Ways to improve the performance of the mill
- The benefits and business impact of current metallurgical projects

The following observations were made:

1. The milling, flotation and concentrate handling circuits had more than enough installed capacity to cater for the production schedules that were planned. There were issues with equipment reliability that were impacting on production performance. However, the equipment reliability issues were secondary to issues related to ore quality.

2. Operations in the mill and concentrator were impacted significantly by the variability in ore grade and ore size in the run of mine ore. The variations caused significant interruptions to steady state operations and required the development of an operating strategy that reacts to the variations as they occur. The operating team developed a high level of expertise and managed very effectively with this approach.

3. The ore supply to the milling operations produced high-grade concentrates and high recoveries over an extremely wide range of typical operating variables. The variations caused or contributed to problems in other areas that limited overall performance.

4. Filter availability and utilisation was very low and a critical issue for operations. Concentrate production capacity could have at least doubled if both filters were available and utilised as required. The variability in feed grade and the highly variable concentrate production rate added stress to the concentrate thickening and storage capacity. This equipment needed to be made reliable and installed with a flowsheet flexible enough to allow for the process fluctuations that were experienced at the time.

5. Downtime and variable feed sizing were affecting the quantity and quality of material available for the backfill plant. The backfill plant was labour intensive. The lack of backfill meant the stope-filling program was well behind schedule and this created a ground support problem and production interruptions in the mine.

6. Tailings line integrity was a serious problem with numerous shutdowns required to repair broken lines. A number of tailing spills had occurred resulting in clean-up and environmental compliance issues as a consequence. The variability of product sizing and the stop-start nature of milling and backfilling had an impact on tailings line performance and integrity.

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