

CASE STUDY

XL900 LINER OPTIMISATION

PROJECT

XL900 LINER OPTIMISATION

CLIENT

ANGLOGOLD ASHANTI



OVERVIEW

Situated in the heart of WA's Goldfields Region, AngloGold Ashanti's Tropicana Gold Mine, has been a major contributor to gold production with an impressive yield of approximately 437,000 ounces in 2023. However, production hit a roadblock when the mine encountered a harder ore body. This change brought about substantial challenges in their crushing operations, such as increased recirculation and reduced wear life of their existing crusher liners on their XL900 machines. These issues were causing an increase in operational costs, straining efficiency and productivity of the mine.

The OEM supplying their liners, was unable to offer any modifications or functional alterations to their product to adapt to the new operating parameters. Searching for a solution, AngloGold Ashanti turned to Mining Wear Parts to provide a more cost-effective and durable solution with the aim of extending shutdown intervals to 27-28 days.

PROBLEM

The customer's existing liners were unsuitable for the harder ore body, leading to heavy recirculation, a decrease in liner life, and subsequently, increased operational costs. The lack of flexibility and customisation from their OEM exacerbated the issues. Their primary goal was to identify liners with extended longevity, which could adapt to their evolving needs and eventually reduce total costs by increasing shutdown intervals.

RESULTS

≈\$1M

Annual net saving for the client across two machines

4+

Annual number of shutdowns avoided per machine due to increased liner life

70%

Longer wear life per liner on average



SOLUTION

Mining Wear Parts conducted a thorough inspection of the customer's crushing plants and observed the wear patterns of the OEM liners. Leveraging this data, we developed a 2-step solution. The first stage was to develop a custom liner profile tailored to the customer's throughput requirements. Stage 2 of our continual improvement strategy was to supplement the unique liner design with Titanium Carbide Inserts (TiC) to further enhance the liner's durability and match the customer's specific needs.

The impact of our solution is evident in the comparison between the OEM and Mining Wear Parts Liners:

OEM Liners were wearing at a rate of 13.2mm per kilotonne, with an average life of 20 days. This necessitated 14 sets a year, at a cost of \$1,026,133.60, coupled with 13+ shutdowns per machine/per year.

MWP Liners wore at a rate of 7.1mm per kilotonne, with an average life of 34 days. This required only 9 sets a year, costing \$523,053.10, with a reduction to only 9 shutdowns per machine/per year.

This resulted in a total cost-saving of approximately \$1,006,000.00 per annum across two machines, plus additional savings from reduced shutdowns. Our liners also achieved more consistent operating parameters.

Both parties are committed to continuous improvement. Therefore, Mining Wear Parts will proceed with Stage 3 enhancements to the liner design. This involves fine-tuning their liners for improved performance and further cost reductions.

BENEFITS

- Annual cost savings of over \$1 million
- Assured stock availability through customised inventory management solutions
- Reduced frequency of shutdowns per year
- Enhanced performance of the crushers
- Decrease in recirculation
- A small increase in overall throughput
- Flexibility and constant evolution to maximise 'dollar per tonne' ability and overall reduction in total cost of ownership