

THICKENER OPTIMISATION

CASE STUDY

Our Goal:

Production capabilities were limited by the performance of their thickener system.

If production rates were increased, clarified water overflow would become dirty ("contaminated") with waste product when peak throughput rates occurred.

As a result, plant throughput rates were run conservatively to ensure water thickener overflow clarity was maintained.

Our Solution:

An automated solution to control the flocculent dosage rate was developed.

As production rates varied, the flocculent dosage would vary to ensure the correct grams of flocculent per tonne of waste were maintained.

This included developing a new algorithm to determine the dry tonnage of waste from the wet plant entering the system.

Unlocked Potential:

After the completion of the above works, the client was able to more effectively run at higher throughput rates. It was still however found that as production was increased further the flocculent plant was not able to process batches quick enough.

To overcome the constraint, Key Engineering Solutions investigated options for optimisation of the existing flocculent plant to achieve increased throughput. After some trial works, the solution became to increase the concentration of the existing flocculent system batches and reduce mixing time, ultimately sacrificing flocculent efficiency for increased capacity. This improvement allowed the client to increase their infeed rate capability from a typical 5100 tonnes per hour to 8400 tonnes per hour.



Wilson Florez

Co-founder & Director
Principal Process Control Engineer

Key Insight:

"Challenging the status quo and alleviating constrained areas it's our passion and what we enjoy the most.

Wet Plant optimisation was something we haven't done in the past but we were able to demonstrate that same de-bottlenecking principles could be applied to any process."

Key Success Factors

