



GROUP Water Treatment

Case Study - Flocculants

Smarter sludge dewatering with measurable cost and water savings

A Belgian Food industry site achieving higher sludge dry matter and lower water use through flocculant polymer optimisation

KEY RESULTS

Increase of sludge dry matter **15% → 20%**

Saving of tap water **2 million Liters/year**

Annual cost saving **Approx. €45,000/year**

INTRODUCTION & PROBLEM

At a large Belgian Food industry production site, OQEMA was asked to improve the dewatering of biological sludge from a centrifuge process.

The site faced several challenges:

- Poor sludge dewatering, driving high disposal volumes and costs
- Limited operational flexibility with the existing emulsion polymer
- High tap water consumption, impacting sustainability targets

The customer needed a solution that would enhance performance, simplify operations and support long-term environmental goals.

OUR SOLUTION

Following an initial consultation, OQEMA's Water Treatment experts visited the site to assess the process conditions and collect representative sludge samples.

An extensive laboratory evaluation showed that a polymer with a higher molecular weight and stronger structure would be better suited to the application. Based on these findings, Q-FLOQ WX 532 was selected to deliver improved flocculation performance and higher final dry matter content in the sludge cake.

Beyond improved dewatering, Q-FLOQ WX 532 enables direct, undiluted dosing into the centrifuge. This removes the need for clean tap water to prepare diluted polymer solutions. After a detailed on-site inspection, the optimal injection point was identified and a full-scale, long-term trial was initiated.

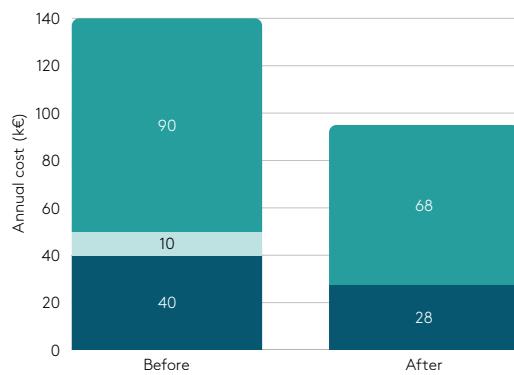
RESULTS & CONCLUSIONS

When dosed at comparable levels, Q-FLOQ WX 532 increased sludge dry matter from 15% to up to 20%, reducing total sludge cake volume by 25% and lowering disposal costs.

Undiluted, direct injection eliminated the need for clean water in polymer preparation, saving approximately 2 million litres of tap water per year. At the same time, direct dosing simplified operations, allowing operators to adjust dosage within seconds rather than waiting up to 30 minutes. The result is a more efficient, flexible and sustainable sludge dewatering process.

Cost comparison polymer optimisation

● Polymer cost ● Water cost ● Sludge disposal



Expert spotlight

"Direct, undiluted dosing allowed the customer to respond instantly to changing sludge conditions — that was the real game changer."

— Roel Vanesch, Area Sales Manager, OQEMA

Important note on the use cases presented: This case study is for informational purposes only and serves to illustrate the general areas of application for our products. It does not constitute a guarantee of specific properties or results, nor should it be understood as binding advice, a recommendation or a warranty. No guarantee of specific results: The results described in this case study refer to specific applications under certain conditions at one or more customers. We do not guarantee or warrant that comparable, similar or specific results can be achieved by using our products. Actual results may differ significantly from the example(s) shown and depend on numerous factors beyond our control. Independent testing required: Each customer is responsible for testing the suitability of our products for their specific application, taking into account all relevant technical, legal and safety requirements. This includes, in particular, conducting their own tests, complying with applicable regulations and standards, and obtaining expert advice. No consulting service: The information provided does not constitute professional, technical or legal advice and does not replace independent testing and evaluation by qualified personnel. For specific applications, we expressly recommend consulting the relevant experts. Property rights: We have not conducted any property rights research with regard to the products presented in the case studies and are not liable for any damages you may suffer in connection with the use of this case study due to any claims by owners of certain property rights.

