



POLYMER REDUCTION

AQUALTER Polymer Reduction Case Study France

At Mainvilliers, *HydroFLOW*® optimisation reduced polymer use by 19.7%, while matched testing showed improved centrate quality and drier cake.

19.7%

Polymer Reduction

€12.3k

Projected Annual Savings

10 mos

Projected Payback

50%

Lower Centrate Suspended Solids

⇒ BEFORE & AFTER

● BEFORE

- Untreated cake was damp and putty-like
- Cake dryness was 18.31%
- Centrate suspended solids were 80 mg/L

● AFTER

- ✓ Treated cake was granular
- ✓ Cake dryness increased to 20.68%
- ✓ Centrate suspended solids fell to 40 mg/L



BEFORE

Untreated cake was damp and putty-like



AFTER

Treated granular sludge cake

OVERVIEW

AQUALTER evaluated *HydroFLOW*® for sludge dewatering at the Mainvilliers wastewater treatment plant serving Chartres Métropole. Three centrifuges operated at the site, allowing treated and untreated dewatering lines to be compared while polymer consumption, cake dryness and centrate quality were assessed.

CHALLENGE

The operator wanted to reduce polymer consumption while maintaining cake dryness and centrate quality.

- Polymer is an ongoing cost in mechanical sludge dewatering.
- Reducing polymer can compromise sludge flocculation and cake dryness.
- Centrate quality needs to be maintained with low total suspended solids.

SOLUTION

A *HydroFLOW*® i190 was tested at two positions on the centrifuge line. The upstream position on the 140 mm PVC pipe produced better performance and was selected as the preferred configuration.

UNIT TESTED

1 × *HydroFLOW*® i190

INSTALLATION POSITION

140 mm PVC line upstream of polymer pump



INSTALLATION

i190 on the polymer feed pipe



SITE

Mainvilliers sludge centrifuge



SITE

Centrifuge and centrate outlet

RESULTS

19.7% Less Polymer

Optimisation reduced polymer use by 19.7% while maintaining good final product quality.

Drier Cake in Matched Test

At equal settings, treated cake was 20.68% dry versus 18.31% for the untreated line.

Lower Centrate Solids

Suspended solids were 40 mg/L treated versus 80 mg/L untreated at equal settings.

Lower Centrate COD

Centrate COD was 173 mg/L treated versus 255 mg/L untreated in the matched test.

Projected Annual Savings

At 19.7% less polymer, the report projected annual savings of €12,316.

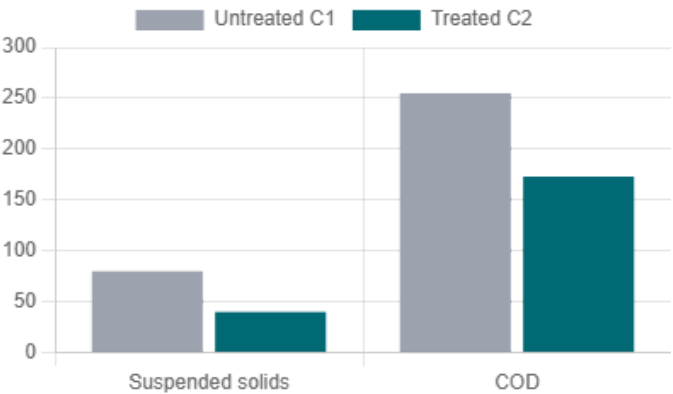
Three Units Purchased

Chartres Métropole purchased three *HydroFLOW*® P150 units in May 2021.



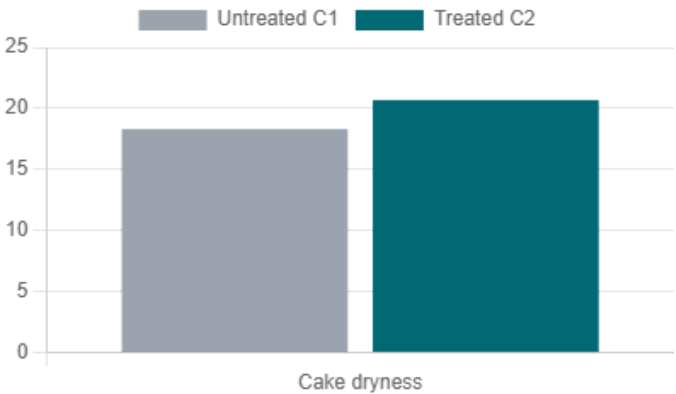
GRAPHS

Centrate Quality at Equal Settings



Untreated centrifuge 1 versus treated centrifuge 2 at matched operating settings.

Mainvilliers Cake Dryness (%)



Matched operating settings: treated C2 versus untreated C1.

KEY TAKEAWAY

Summary

At Mainvilliers, *HydroFLOW®* reduced polymer use by 19.7%, with projected annual savings of €12,316. Testing also showed drier, granular sludge cake and lower centrate suspended solids and COD.

19.7%

LESS POLYMER

50%

LOWER SUSPENDED SOLIDS

€12.3k

PROJECTED ANNUAL SAVINGS

HYDROPATH

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