



PAC + Cloth filtration

Micropollutant- and Phosphorous removal

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**Dutch Innovation on Micropollutants
Removal from Municipal Wastewater
November 7th 2019 Aquatech Amsterdam**

Technology

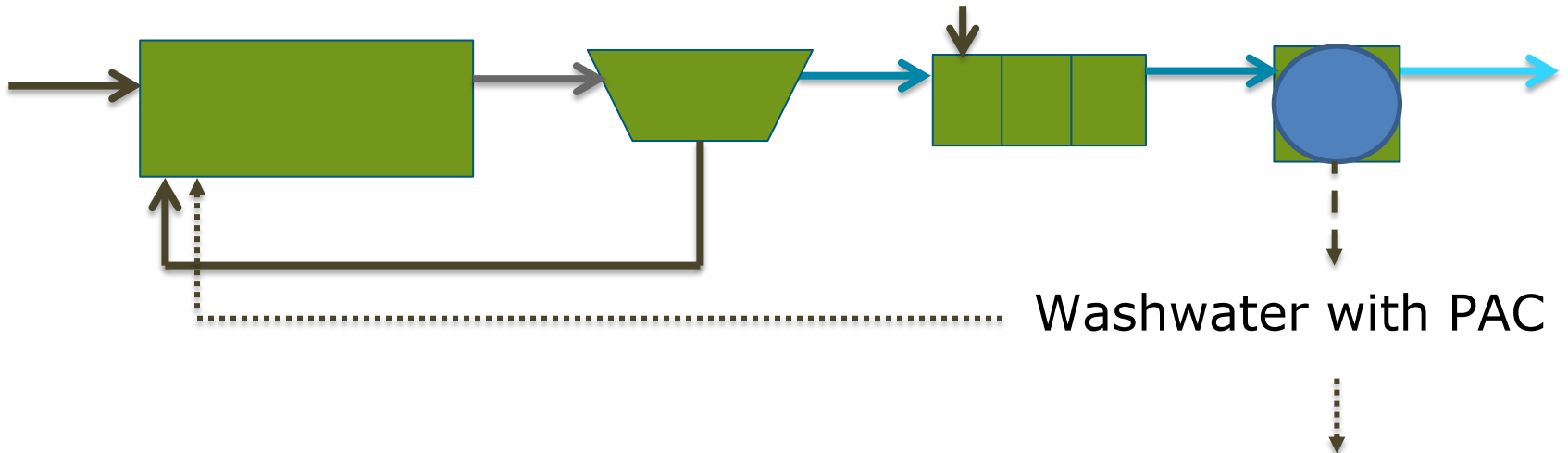
Activated
Sludge

Secondary
Settler

Contact &
Settling

Cloth
Filtration

PAC
Coagulant
Flocculant?



Technology



WWTP Lahr (Germany)

Feasibility Study

- Literature review
 - PAC + Cloth filtration = good combo → μ
- Lab-study
 - PAC recirculation is preferred
- Reference visits
 - Concept is cost-effective and robust
 - Room for improvement
- Field tests
 - More compact design is possible



Results

Criterium	Score of PAC + Cloth filtration in respect to ozonation + sandfiltration
Removal of micropollutants	0
Phosphorous removal	++
Suspended solids removal	++
CO2 footprint	+
Costs	+
Microplastics	++
Ecotoxicity	+
Antibiotic resistance	0

Further research

- Pilot tests
 - ‘Dutch wastewater’
 - Compact design
 - Loading cloth filters
 - Various PAC’s
 - No flocculant
 - Thickening of surplus PAC in washwater



Thank you for your attention!

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