

# ***PAC + Cloth Filtration***

*Micropollutants and Phosphorus*

*Results pilottest*

Arnoud de Wilt

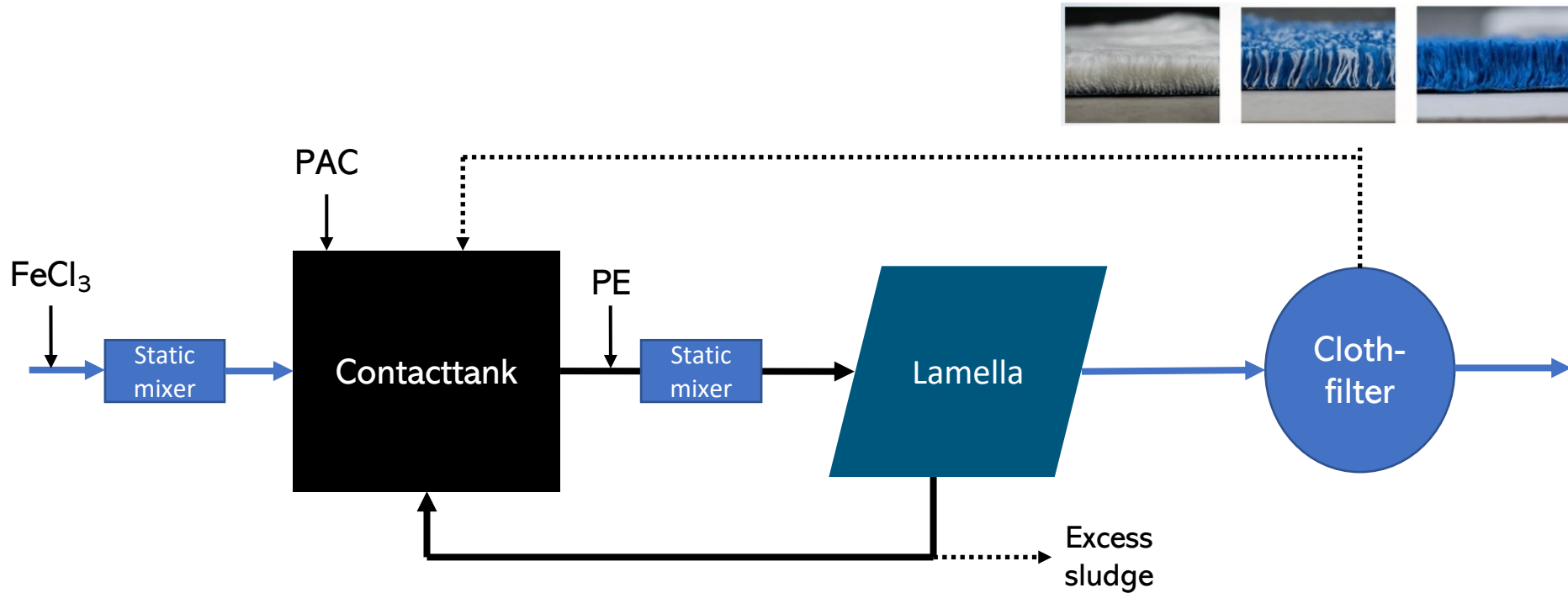


# Post-treatment PAC technology



WWTP Lahr, Germany

# 1<sup>st</sup> time in the Netherlands



# Pilot WWTP Vinkel

- 5 – 15 mg PAK/L
- 5 m<sup>3</sup>/h



## Consortium “PAK+Doek”



WATERSCHAP  
Hunze en Aa's



stowa







Inlet

Contact  
tank

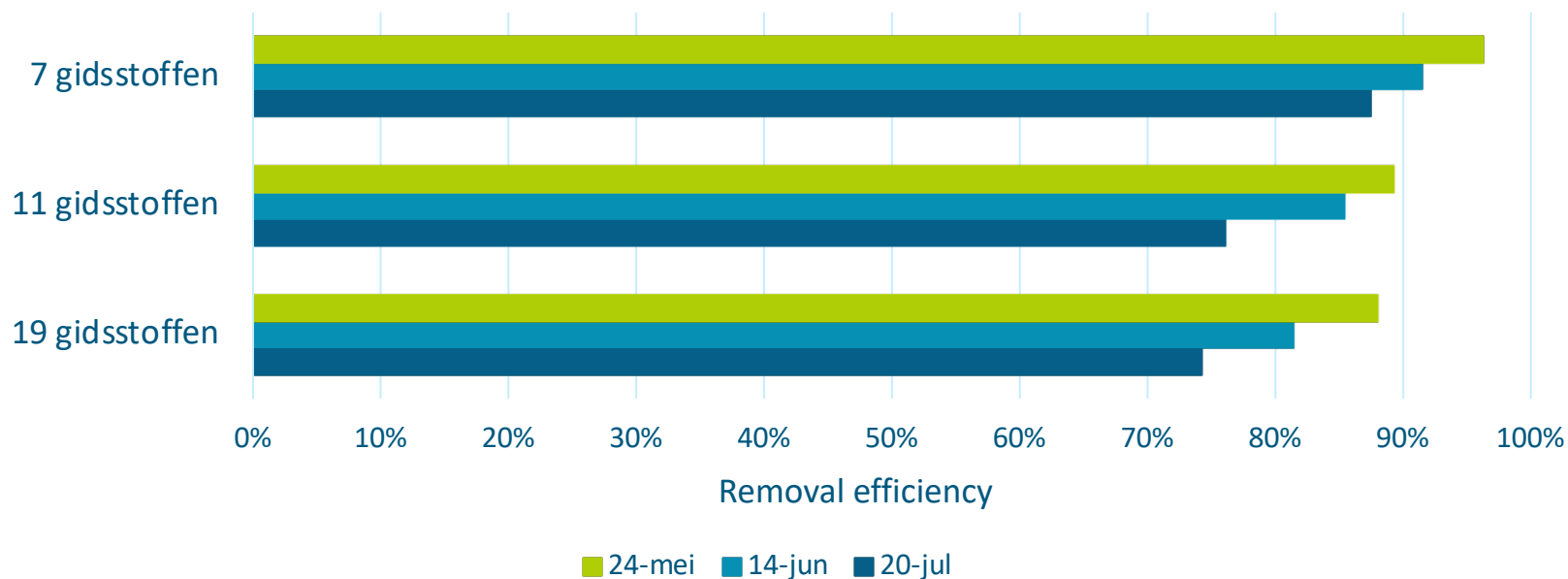
After  
Lamella

Outlet



# Micropollutant removal

@ 10 mg PAC/L

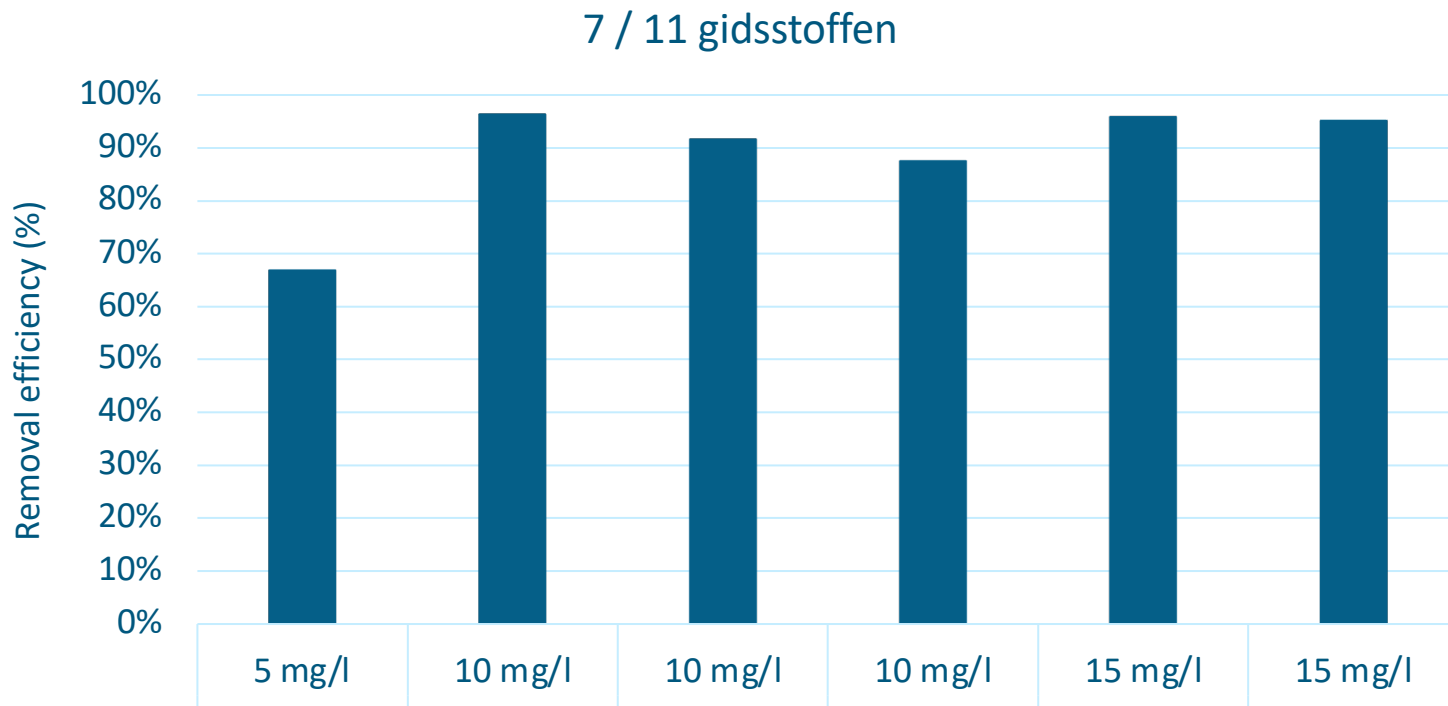


*Total concentration micropollutants (19 gidsstoffen)*

- 24 mei 16 µg/l
- 14 jun 22 µg/l
- 20-jul 9 µg/l

**Royal HaskoningDHV**

# Micropollutant removal

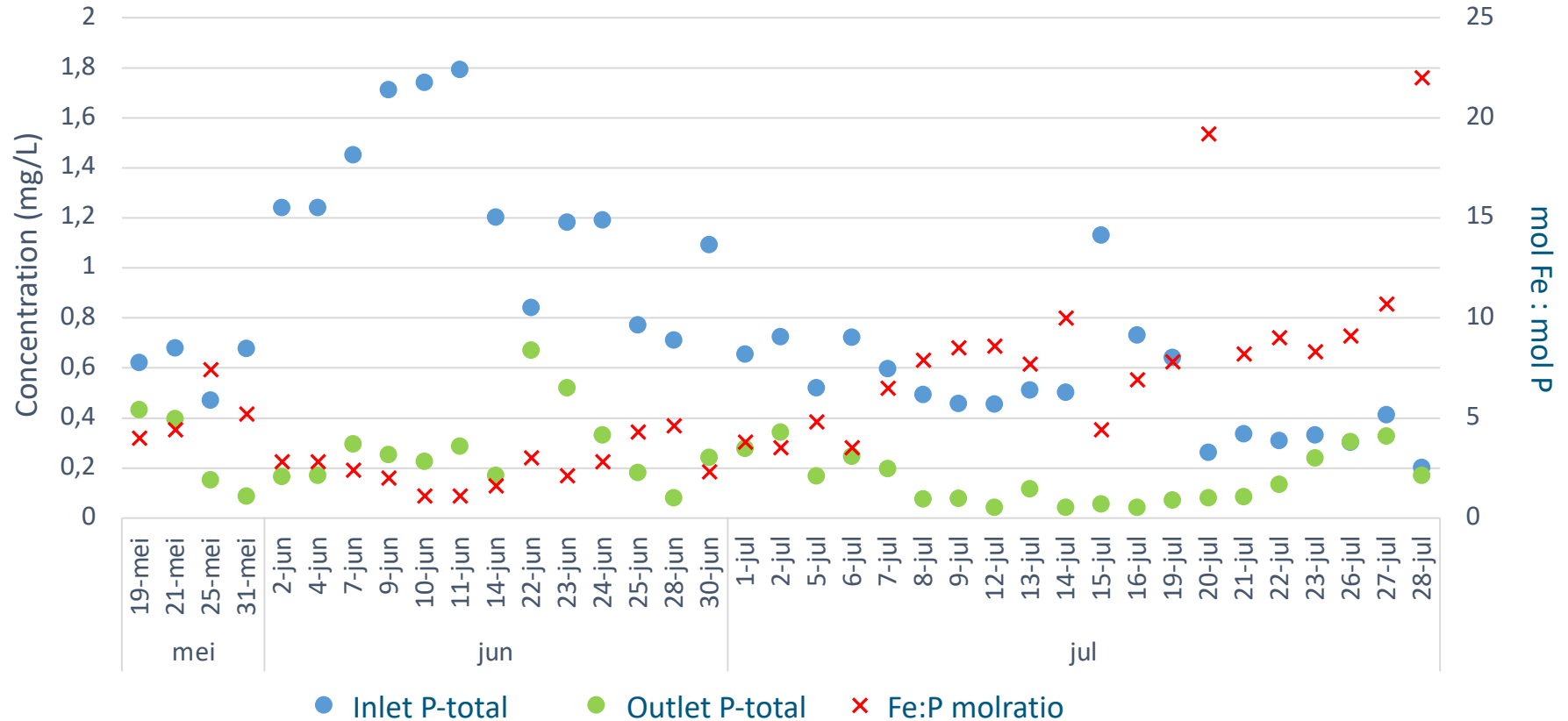


# Ecotox-screening

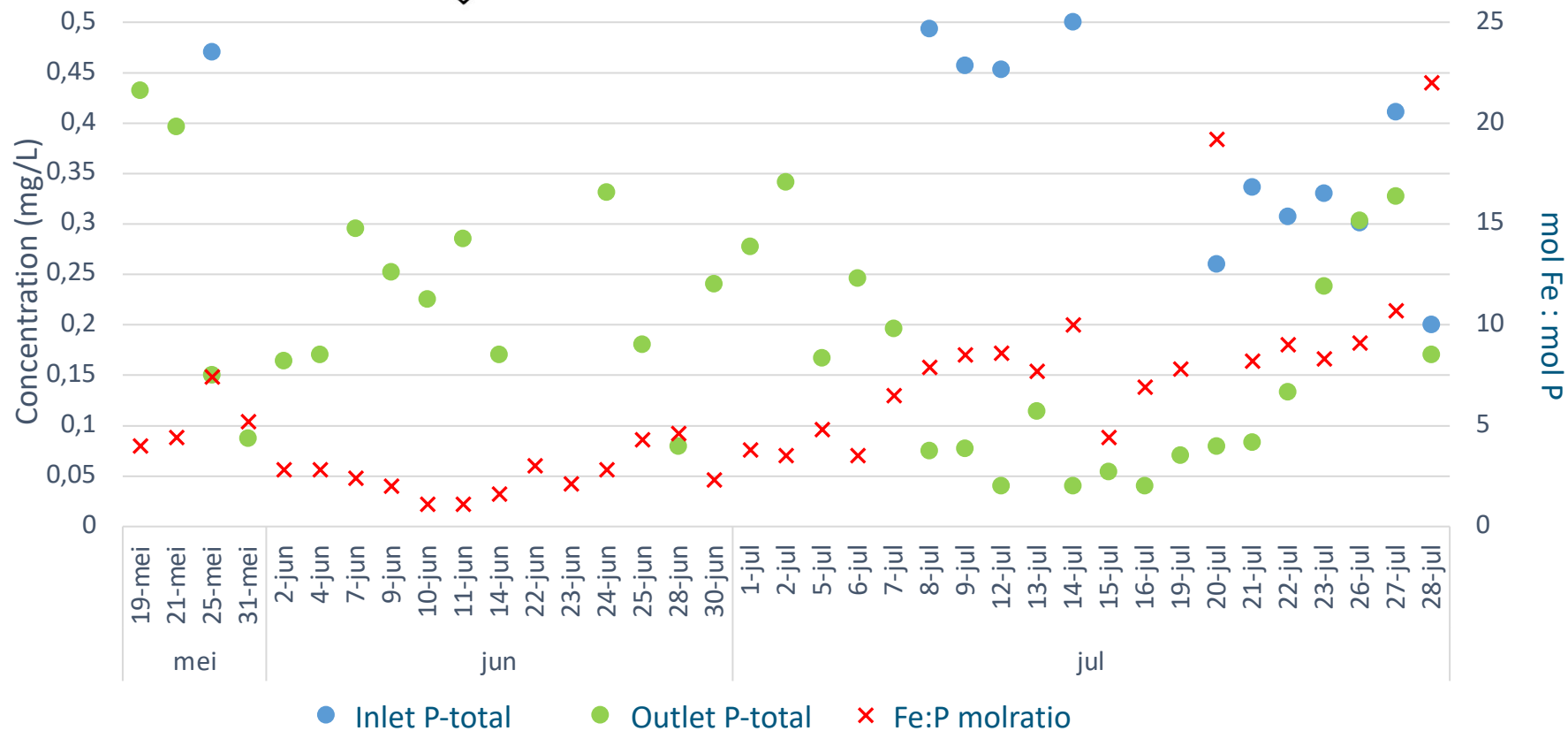
		Estrogenicity CALUX (ng estradiol eq/l)	Glucocorticoïde CALUX (ng dexamethasone eq/l)	PAH CALUX (ng benzopyrene eq/l)	Xenobiotics CALUX (μg nicardipine eq/l)	Daphnia Immobility (NOEC <sub>i</sub> )	Microtox (EC <sub>f,20</sub> )
10 mg PAC/L	Inlet	1,6	59	57	43	10,2	<4,6
	Outlet	0,12	7	9,9	15	33,4	7,7
15 mg PAC/L	Inlet	1,3	38	280	54	39,5	5,5
	Outlet	0,045	<2,0	11	8,3	70,1	>31,5



# P-removal



# P-removal





**Thank you for your attention!**  
**Thanks to all consortium partners!**

***Arnoud de Wilt***  
***Arnoud.de.wilt@rhdhv.com***



**Tackling Micropollutants in Wastewater**  
**Approaches on Implementation and Innovation in Europe and The Netherlands**



**Rijkswaterstaat**  
**Ministry of Infrastructure**  
**and Water Management**

**November 3 and 4 2021**  
**Aquatech Amsterdam**

