

Removal of micropollutants in the Pforzheim wastewater treatment plant

Specification of the plant:

Treatment capacity	[PE]	250,000
Load	[PE]	171,196
Inflow volumes:		
▪ Dry weather flow	[l/s]	750
▪ Max. wet weather flow	[l/s]	1,560
▪ Annual wastewater Volume	[m³/a]	16,389,280



Process technology:

Mechanical treatment	Fine screen, sand and grease trap, primary clarifier
Biological treatment	Pre-denitrification, nitrification, 2 lanes, secondary clarifier
Chemical treatment	Phosphate precipitation: simultaneous and post
Elimination of micropollutants	Separate PAC stage (Ulmer process)
Filter	Cloth filter



Eigenbetrieb Stadtentwässerung
Pforzheim
Hohwiesenweg 45
75175 Pforzheim

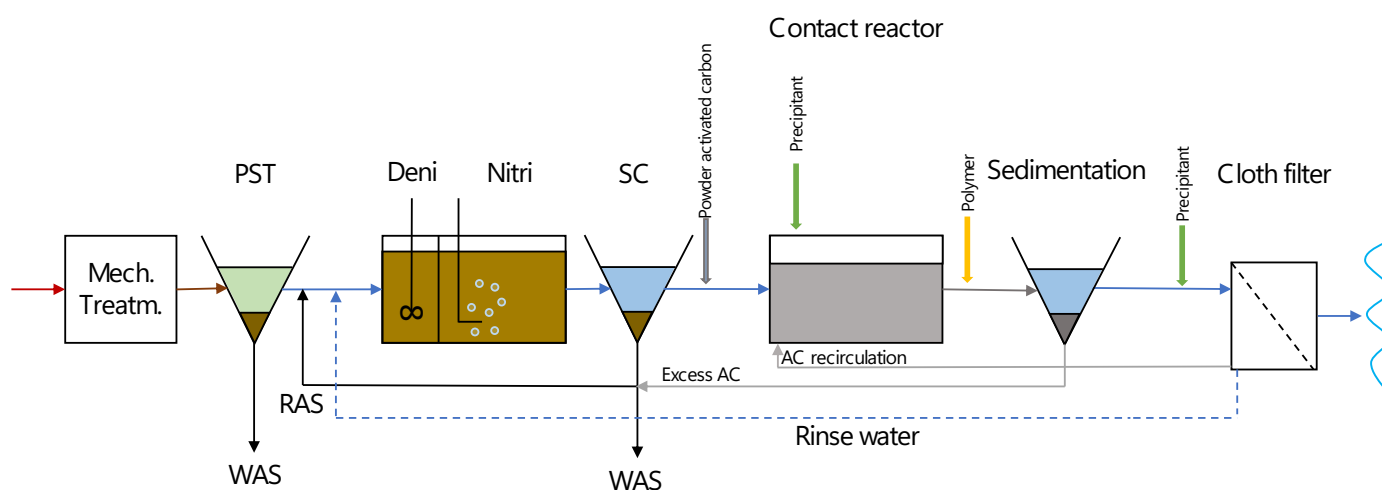


Fig. 1: Process diagram of the Pforzheim wastewater treatment plant

Design of the micropollutant removal stage:

AC = activated carbon
RI = rated inflow

Year of commissioning of the advanced treatment stage		2020		
Maximum treatable flow rate [L/s]		800		
Contact reactor		Sedimentation basin		
▪ Number of basins	2 * 3	▪ Total volume	[m³]	5,980
▪ Volume of basins	[m³] 240	▪ Total surface area	[m²]	1,520
▪ Total volume	[m³] 720	▪ Min. retention time for RI	[h]	2.0
▪ Min. retention time for RI	[min] 30	▪ Max. surface load rate for RI	[m/h]	2.0
▪ Typical PAC dosage	[mg/l] 7.5			
Filter				
▪ Configuration	Cloth filter	▪ Total filter area	[m²]	360
▪ Material	OptiFiber pile cloth	▪ Max. inflow filter	[l/s]	800
▪ Number of filter cells	4	▪ Max. filter velocity	[m/h]	8