

Removal of micropollutants in the Achern wastewater treatment plant

Specification of the plant:

Treatment capacity	[PE]	30,200
Load	[PE]	30,000
Inflow volumes:		
▪ Dry weather flow	[l/s]	60
▪ Max. wet weather flow	[l/s]	210
▪ Annual wastewater Volume	[m³/a]	1,475,000



Process technology:

Mechanical treatment	Screen, aerated sand trap, grease trap
Biological treatment	Pre AN-tank, denitrification, nitrification, SC
Chemical treatment	Phosphate precipitation: after nitrification, in return sludge
Elimination of micropollutants	Simultaneous PAC-dosing in bio, 2 lanes
Filter	Cloth filter



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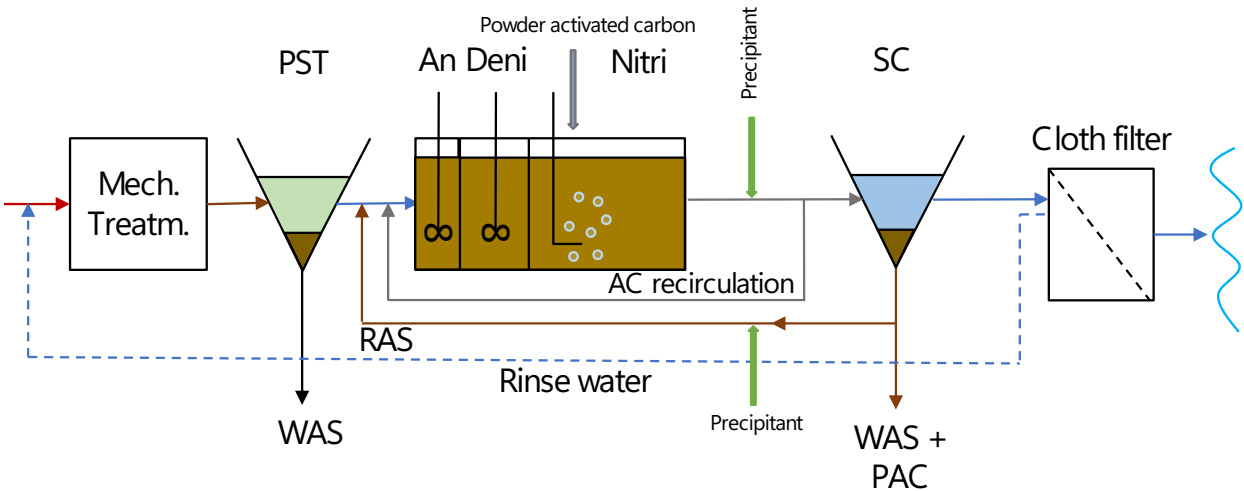


Fig 1: Process diagram of the Achern wastewater treatment plant

Design of micropollutant removal

AC=activated carbon
RI = rated inflow

Year of commissioning of the advanced treatment stage			2025
Maximal treatable flow rate	[L/s]		210
Aeration tank		Sedimentation basin/Secondary clarifier	
▪ Number basins An/ Deni/ Nitri	1/1/6	▪ Number of basins	3
▪ Volumes An/ Deni/ Nitri	[m³] 980/980/525	▪ Volume per basin	[m³] 1,056
▪ Total volume	[m³] 5,110	▪ Surface area total	[m²] 3,168
▪ Min. retention time RI	[h] 1.8	▪ Min. retention time for RI	[h] 3.4
▪ Typical PAC dose	[mg/L] 8 - 20	▪ Max. surface load for RI	[m/h] 0.72
Filter			
▪ Configuration	Cloth filter	▪ Total filter area	[m²] 135
▪ Material	Polstoff OptiFiber 14	▪ Max. inflow filter	[l/s] 210
▪ Number of filters	3	▪ Max. filter velocity	[m/h] 5.6