Removal of micropollutants in the **Tübingen wastewater treatment plant**

Specification of the plant:

Treatment capacity	[PE]	137,500
Load	[PE]	113,000
Inflow volumes:		
▪ Dry weather flow	[l/s]	360
▪ Max. wet weather flow	[l/s]	1300
▪ Annual wastewater volume	[m^3/a]	13,077,000

KomS BW

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	Ozonation
Filtration	Multi-layer sand filter

Tübingen Universitätsstadt

Kommunale Servicebetriebe Tübingen (KST)
Nürtinger Str. 120,
72074 Tübingen

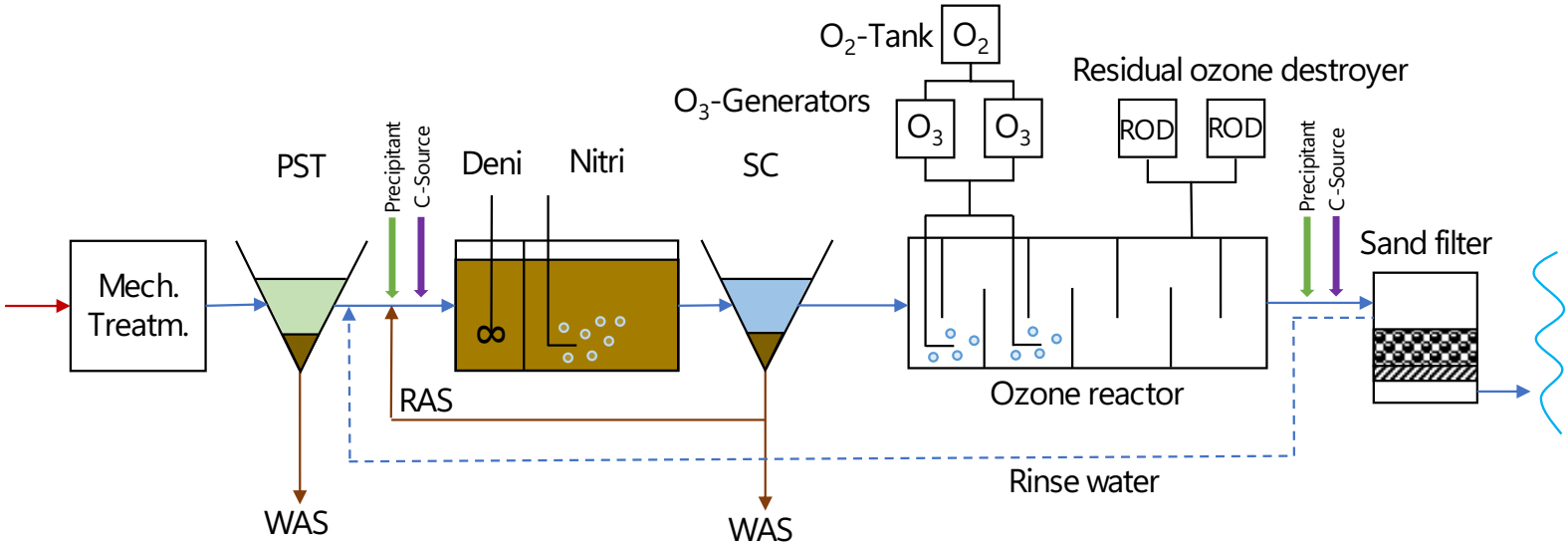

Fig. 1: Process diagram of the Tübingen wastewater treatment plant

Design of the ozone stage:

Year of commissioning of the advanced treatment stage					2022
Max. treatable volumetric flow rate	[L/s]	700	Max. ozone production	[kg O_3/h]	2 x 12
<u>Contact reactor</u>			<u>Filter</u>		
▪ Volume	[m^3]	1,100	▪ Configuration	Multi-layer sand filter	
▪ Retention time at Q_{DW}	[min]	30	▪ Filter media	anthracite (90 cm); quartz sand (70 cm)	
▪ Retention time at Q_{max}	[min]	20	▪ Number of filter cells		8
▪ Wate rdepth	[m]	6.2	▪ Total filter area	[m^2]	256
▪ Typical ozone dose	[mg/l]	k. A.	▪ Max. filter velocity	[m/h]	11.3
▪ Injection system	Diffusors		▪ Max. filter influent	[l/s]	700