

Penzberg

Sewage Treatment Plant Wastewater Disinfection



Regierungsbaumeister
SCHLEGEL



Client

Kläranlage Penzberg GmbH

Period

2002 - 2003

Project Cost

500.000 €

Abstract

A UV-irradiation unit was built in order to disinfect the biologically treated wastewater discharged from Penzberg sewage treatment plant. Disinfection was considered as the stage following the secondary treatment and preceding the discharge measurement, parallel to the existing discharge channel. The UV-irradiation proceeded by application of 160 low pressure radiators, installed in 2 channels. Two irradiation units (the so-called banks) were provided for each channel. In order to save energy costs, the irradiation intensity could be controlled and adjusted to the wastewater under treatment by connection or disconnection and power regulation of the units. The quartz thermowells of the radiator were equipped with an automatic cleaning system. Wastewater disinfection corresponded fully to the requirements for bathing waters' hygienic and microbiological quality standards, defined by EC Directives.

The entire disinfection unit, including the switch gear, was installed in a construction consisting of a reinforced concrete tank with a superstructure made of sheet steel, being adapted to the other plant units. An additional lifting system was provided for wastewater disinfection in the outlet section of the plant.

Scope of Service

pre-design, design, approval design,
execution design, preparation of tender
documents, construction supervision, site
supervision

planning of structural framework
technical equipment

safety and health protection

Technical Data

Capacity	50,000 PE
$Q_{t,min}$	approx. 120 m ³ /s
$Q_{t,max}$	890 m ³ /s
$Q_{m,max}$	1,780 m ³ /s
Filterable solids	< 10 mg/l
Transmission	> 60 % per cm
Minimum UV-irradiation dose	500/J m ²
Nominal power of UV system	43 kW
UV-irradiation with 160 low pressure radiators	