



*WASTE WATER TREATMENT PLANT  
OF THE CITY OF OGULIN*



*OGULIN  
REPUBLIC OF CROATIA*





Construction of the Wastewater Treatment Plant of the city of Ogulin was financed from a loan that the Republic of Croatia received from IBRD for the Inland Waters Project for improvement of water supply, drainage and protection from flood.  
The Commisioner was the company Hrvatske vode.

WWTP was designed in two phases, first phase for 7.500 PE (population equivalent), and the second phase for 15.000 PE.

Only the first phase was completed (7.500 PE).

Total contract value without VAT was **4.100.000,00 EUR.**

The contract included design, supply and install of the complete WWTP.  
Administrative procedure (obtaining of the construction permit) was completed for both phases.

Second phase will be executed if the population number increases. Entire surroundings (fencing, plateaus, roads) as well as all connections were constructed for both phases.

Since the treated wastewater from the city of Ogulin IS discharged in karst sinkhole and very high demands for quality of the discharged water (in order to protect the drinking water source located downstream of the outlet), tertiary treatment (membrane system) was foreseen by the design.

#### Executed structures:

The following structures were executed: office building, power transformer station, power generating unit, inflow pumping station and retention basin with sedimentation overflow, discharge into karst sinkhole, pressure pipeline, mechanical treatment facility with chambers for sludge draining, blowers and electrical circuits, pressure-gravity pipeline, inlet equalisation basin, SBR reactors for biological treatment, outlet equalisation basin, membrane facility, disinfection facility, outlet measuring shaft, sinkhole arrangement, reconstruction of the access road, construction of inflow and connection collector, connection to power network, parking lot, one-way road within the WWTP area, foot paths, pavement of surfaces around the facilities

#### Wastewater treatment procedure:

##### *Mechanical treatment*

Biological treatment (use of activated sludge with simoultaneous aerobic sludge stabilisation, operative system with SBR reactors)

##### *Membrane treatment*

Flow capacity 60 l/sec.

Excess sludge is transported into cyclones (2 pcs) where it is additionally compacted, to minimize its storage volume.



The project was executed by the Joint venture Hidroelektra Niskogradnja d.d. (leading partner) and HST-Hydrosystemtechnik from Meschede, Germany (partner).

Main designer of the wastewater technology and equipment supplier was the company HST. The designer of the membrane treatment phase was the German company GWT-Georgi Wassertechnik.

Hidroelektra Niskogradnja d.d. executed all civil engineering works and coordinated all participants in the project.

Commencement of construction works was in March 2011 and all works were completed in June 2012.

Photos from the time of execution:



MECHANICAL TREATMENT



MEMBRANE TREATMENT



OFFICE BUILDING





PUMPING STATION



SBR BASINS AND OTHER FACILITIES



