



**ASTRA**  
International Inženjering d.o.o.

 **hidroinženiring**



**Project: Design and construction of the Waste Water Treatment Plant in Hum na Sutli, (Ref list item 45)**

**Purchaser and End User : Humkom d.o.o., Hum na Sutli**  
**Supervision: Hršak&Hršak d.o.o., Zagreb**



In January 2011 Consortium: Astra International Inženjering, Zagreb – Hidroinženiring, Ljubljana – Niskogradnja Hren, Donja Stubica signed the contract for design, equipment delivery, construction, putting in operation and guarantee maintenance of the mechanical and biological waste water treatment plant, with the capacity of 2,000 equivalents biological treatment and 4,000 equivalents for mechanical treatment and sludge dehydration for the settlement of Hum na Sutli. The system treats waste water of the municipal sewerage system and industrial waste water. Hydraulic capacity is 40 m<sup>3</sup>/hour



**INLET PUMPING  
STATION WITH FINE  
SCREEN**



**MECHANICAL TREATMENT PLANT – SAND & GREASE TRAP**

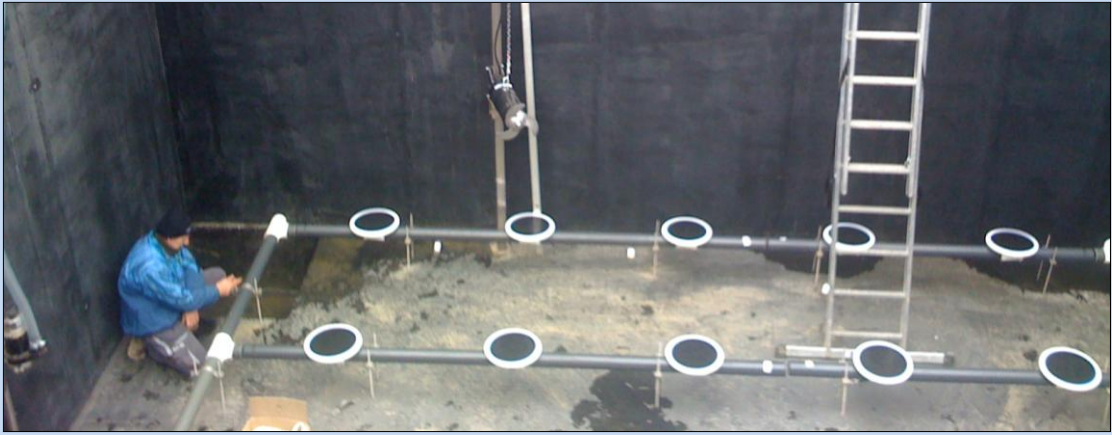


**EQUILIZATION TANK WITH MECHANICAL TREATMENT PLANT**

The set terms are in accordance with the international FIDIC regulations. The Project is partly financed from the EC General Budget OP IPA 2007-2013, and from the municipality Hum na Sutli.

The Client is the city municipal services Humkom.

The subcontractors were companies BDF Servis, Hum na Sutli for electrical installation works, and Hamowa Hidro, Karlovac for mechanical works.

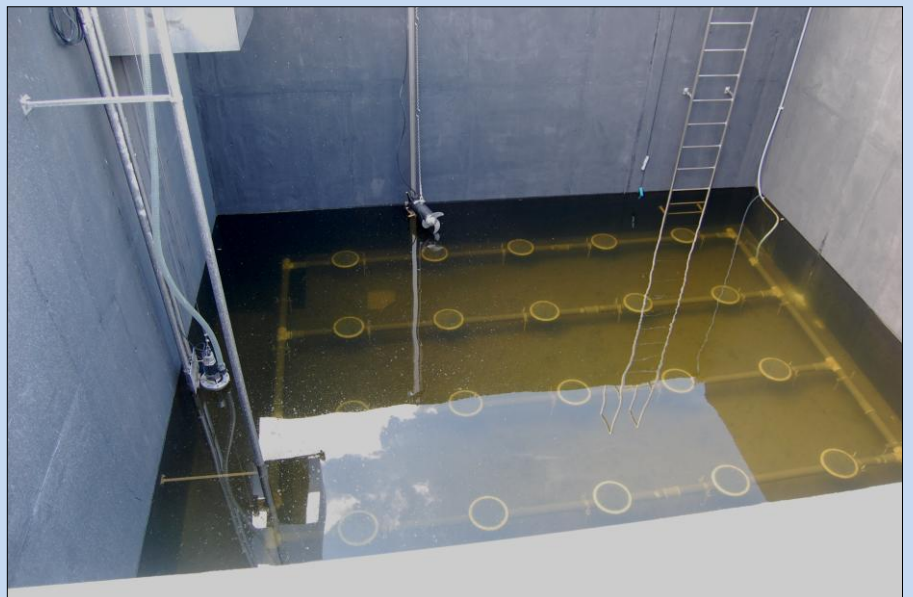


**INSTALLATION OF AERATORS**



**SBR TANKS**

**SLUDGE STABILISATION  
TANK**



The project comprises of the following facilities:

- Inlet pumping station with fine automatic screen with press
- Compact mechanical treatment: sand and grease trap.
- Equalization tank with septic receiving station.
- Biological treatment plant based on SBR (Sequence Batch Reactor) technology
- Sludge stabilization tank
- Sludge dehydration plant
- Air filtration system
- Sampling station
- Power supply, instrumentation and control system
- Laboratory equipment and instrumentation



**BLOWER ROOM**

**TECHNOLOGICAL WATER FACILITY**



Design and other activities necessary for obtaining location and building permits' amendments ended in April 2011, when the construction work began.



**DEHIDRATION PLANT WITH FILTER PRESS**

The majority of construction and installation work was completed by the end of November 2011, when start up and testing commenced. Provisional acceptance was performed in March 2011 and use permit was issued. 365 days' guaranty period started in March 2012.



**LABORATORY**

The technological requirements on the limit effluent values of the treated sewage water (in accordance with Ordinance on emission limit values for waste water – Official gazette 87/2010) were:

- BOD<sub>5</sub> < 25 mg O<sub>2</sub>/l
- COD < 125 mg O<sub>2</sub>/l
- Suspended solids < 60 mg/l

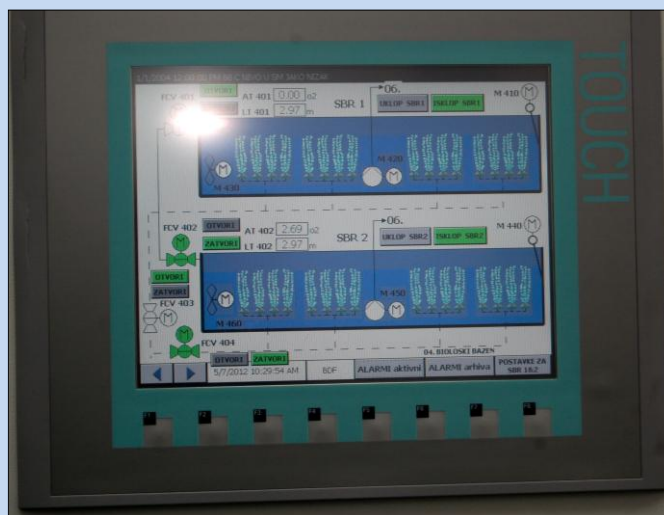
Those values are successfully achieved.



**AIR FILTER**



**DIESEL – GEN SET**



**TOUCH SCREEN ON CONTROL PANEL**