

# Waste Water Reuse



**The Installation:** municipal waste water producing 2000 to 4000 m<sup>3</sup> of treated water per hour. The treated water was discharged to the sea and bacteria count should be the same as bathing water requirements, less than 1000 CFU/100ml for *E. Coli* and less than 10000 CFU/100ml of total *Coli*.

**The Problem:** the system used for water disinfection was a UV system which carried out several problems due to the high turbidity of the technical water, high fouling of the system, which lead to high disinfection inefficiency. Also the running cost was very high regarding energy costs, lamp replacement and maintenance of the system.

**The Solution:** a 250 liters per hour DCW generator was installed to replace the disinfection method (UV).



**The Results:** The start doing of Neuthox was around 7 ppm of free available chlorine. The free available chlorine at the far point of the system was 0,2 ppm to achieve virtually zero bacterial count. As the UV system only provides disinfection in one point of the system, a higher dose (7 ppm) was injected in the system for cleaning of organic load and biofilms that might be in the piping system. With time this dosing has been decreasing.

The plant is reusing part of the water (14m<sup>3</sup>/hour) for flushing/cleaning purposes and irrigation, saving money on the incoming water that was used before. Payback time of the system is around 2 years.

### **The Benefits:**

- **Safety**
  - no need to mix or dilute hazardous chemicals
  - environmental friendly solution
- **Efficiency**
  - elimination of biofilms and inactivation of pathogenic microorganisms including Legionella species, and nil or low bacteria counts
  - creates a longer-lasting residual than traditional chlorination, often at a lower dosage
  - right dosage, no more no less – corrosion is reduced
- **Cost reducing**
  - the system is fully automatic and only requires minimal operator attention
  - no need for transport, handling or storage of chlorine gas or hypochlorite