knowledge transfer and dis-semination

SP 6

training AND DISSEMINATION

Ozone/AOP - Pilot Installation
Sustainable Water Use in the Chemical Industry

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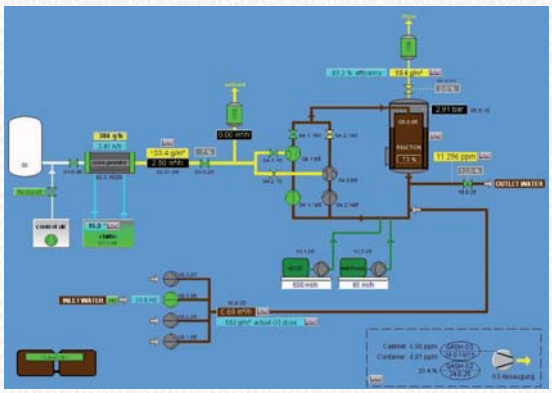
| AquaFit4Use |

The AquaFit4use project aims at a more sustainable use of water in the main water consuming industries. Through development and implementation of new, reliable and cost-effective technologies, tools and methods, a far-going closure of the water cycle in these industries is foreseen. Consequently, the intake of fresh water and the disposal of wastewater will be reduced significantly as will the burden imposed by this on the environment.

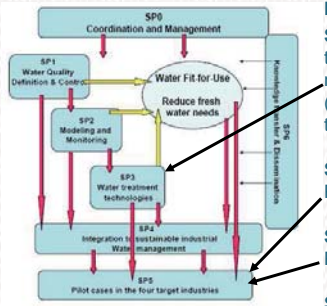
| Pilot plant - technical data |

- **» Flow: 0.7 - 5 m^3/h**
- **» Max. ozone production: 1 kg/h**
- **» Max. energy consumption: 40 KW**
- **» Oxygen is required as feed gas.**
- **» Space required (container): 3 m * 6 m (20'-container)**
- **» H_2O_2-dosing station up to 90 g H_2O_2 per m^3_{water}**
- **» Defoamer-dosing station**

Ozone/AOP- Pilot installation at Perstorp AB / Sweden:



Flow scheme of the Ozone/AOP pilot system



Responsibilities of Wedeco:

SP3.1 Evaluation of relevant treatment processes, data mining, lab test of industrial (paper, chemicals) waste water to design a pilot installation.

SP5.1
Pilot trials in paper industry

SP5.2
Pilot trials in chemicals industry.

SP6 Knowledge transfer

| Case Study - Chemical Industry |

Goal:

COD reduction in final wastewater effluent for water reuse in cooling tower; COD below 100 mg/l required.

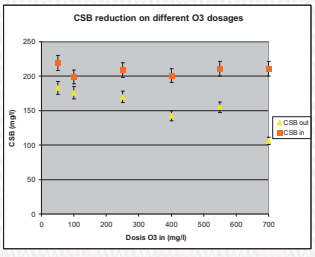
1. Existing effluent from treatment plant at *Perstorp AB*
2. Effluent of pilot Membrane-Bio-Reactor

Treatment:

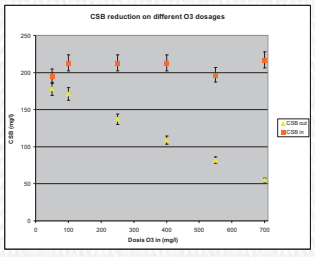
Ozone treatment (O_3-dosage: 0 - 700 mgO_3/m^3)

Ozone-H_2O_2 (AOP) (same range, surplus of H_2O_2)

Ozone test on WWTP effluent



Ozone/H_2O_2 tests on WWTP effluent



| COMPETITIVE ADVANTAGES |

- Even non biodegradable contaminants, that couldn't be degraded in the WWTP, were reduced.
- Persistent COD can be reduced below COD = 100 mg/l by combining Ozone and H_2O_2.
- Water quality is now sufficient for being reused as cooling tower water.

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