

# Decolourization with Ozone

## Wastewater treatment at Büttenpapierfabrik Gmund

The Büttenpapierfabrik Gmund GmbH & Co. KG is located in the Bavarian Alps, situated at the picturesque lake Tegernsee. The paper mill, a traditional family owned company founded in 1829, is specialized in manufacturing of luxurious text & cover papers with a production capacity of approx. 5000t per year. 100 employees are working in 3-shift operation at 225 days per year, producing wood-free coloured papers and cardboards.

### Project Motive

The implementation of a wastewater treatment system should result in a considerable reduction of fresh water consumption.

The fresh water used at Gmund is coming from a spring with excellent water quality. After paper production, the wastewater should be reused as process water for production purposes, and then be conducted into the regional purification facilities.

**"Xylem was considered as the right partner for the Paper Mill"**

In the end, it should return to the natural cycle having reached the high quality of drinking water again.

### Project Details

The project was supported by the Bavarian Authority (Bayrisches Landesamt für Wasserwirtschaft) and nominated for the Bavarian Environmental Protection Award in 2002.



The system totally meets the clients' expectations for treatment results and operational flexibility. As a result of the successful combination of filtration and ozone treatment the fresh water consumption of the Mill could be reduced by 50% - which is equivalent to 60.000 m<sup>3</sup>/year.

Xylem with its brand WEDECO was considered as the right partner for the Paper Mill due to its extensive experience in wastewater treatment and ozone applications.

In 2001 the ozone system, consisting of an ozone generator with a maximum production capacity of 3 kg/h from air, an introduction system and two reaction tanks was installed.

The main purpose of the ozone treatment is colour removal and an average ozone dosage of 80g/m<sup>3</sup> leads to an extensive decolourisation of the wastewater.

#### Results of wastewater treatment:

- » Absorption of >90% of filterable substances
- » Extensive decolourisation by ozone treatment (80 g Ozone/m<sup>3</sup> wastewater)
- » Water reuse for production purposes
- » Considerable reduction of specific water consumption from 28 to 14 m<sup>3</sup> per ton of paper
- » 50% reduction of fresh water consumption

#### Ozone system components:

- » Two reaction tanks with volume of 4,5 m<sup>3</sup>/tank
- » Ozone generation from air
- » Ozone injection by pump injection system
- » Ozon production capacity: 3 kg Ozone/h
- » Max. Ozone dose: 100 g Ozone/m<sup>3</sup>h at 30 m<sup>3</sup>/h



Pressure disk filter



Ozone system

