Reliable solutions for wastewater of sugar mills

The purification of wastewater from sugar mills causes certain problems. The wastewater is highly BOD-loaded and at the same time high volumes occur within a small timeframe during the sugar processing campaign. In Germany reliable methods for the purification of this highly loaded wastewater have been developed since several decades.

In summer 2002 three lagoons of a sugar mill on the Philippines were equipped with 17 floating FUCHS OXYSTAR Aerators (four of them to be seen on the photo). These aerated lagoons have a total volume of approx. 45,000 m³. Upstream, the wastewater is treated in several anaerobic lagoons having approx. the same total volume. Within these anaerobic lagoons a BOD-reduction of approx. 60 % can be achieved. Downstream, there are three polishing ponds (total volume of approx. 36,000 m³) for the purpose of sludge settlement. The effluent is discharged into the river or used for the irrigation of the sugar cane fields.

At the beginning of the campaign the incoming wastewater gets piled up and aerated at the same time. Afterwards the lagoons operate in a continuous flow mode with a total hydraulic retention time of approx. 7.5 days. The BOD-effluent concentration has to be permanently kept below a threshold of 50 mg/l. The threshold for the TSS concentration is 90 mg/l.

The characteristics of the raw wastewater are: max. flow rate of 500 m³/h, BOD of 1,000 mg/l and TSS of 270 mg/l.

The above described purification process has different advantages:

- aerated lagoons are complete and low-priced systems
- they can be integrated very well into the surrounding area
- FUCHS OXYSTAR Aerators have a robust construction and are almost maintenance-free
- aeration and mixing is achieved with the same machine
- circulating flow patterns are formed at the lowest power requirement
- no spray water occurs and therefore, no odour problems happen
- there is no need for big fan stations and compressed air pipes
- effluent requirements can be kept constantly

For more than 35 years Fuchs Company has been equipping aerated lagoons for wastewater of sugar mills, pulp and paper industry, textile factories, municipalities and many other industrial applications.