

A green circular badge with a white border containing the text 'INDUSTRIAL SOLUTIONS' in white, uppercase, sans-serif font.

INDUSTRIAL  
SOLUTIONS



## Practical Report Butcher shop

# Lusts of the flesh

*Through the intelligent combination of modern management and ecological thinking a provincial butchers shop has been turned into a much sought after domestic slaughterhouse. But managing the increased volume of wastewater is not always simple...*





**Report: Hans-H. Goedereis**  
**Photos: Uwe S. Meschede**



# WASTE

from **33** pigs and  
**4** head of cattle per week...



A slaughterhouse in the Niedersachsen rural district of Rotenburg made contact with us in the spring of 2000. Per week, the slaughterhouse processed some 23 - 25 pigs and 1 - 2 head of cattle. In the main season even up to 33 pigs and 3 - 4 head of cattle.

The problem: the slaughterhouse is and will not be connected to the public sewerage system; since 1992 the owner has operated a biological filter plant for 27 PT with a preliminary treatment volume of 15,000 litres. This plant was, however at no time in a position to treat the wastewater satisfactorily. An investigation by the Technical University Hamburg in 1996 determined a treatment performance of 40 %. There was no removal of nitrogen. Even various attempts at conversion by the manufacturer of the biological filter plant showed no improvements...



*Hidden between wide fields and minute farms in the area of North Germany the previously small butcher's shop developed into a noteworthy domestic slaughter-house sought after by customers from a wide area.*

In 1999 an engineer office attempted to improve the system. Thus, for example, an additional buffer tank with a capacity of 1,000 litres was installed in order better to cope with the surge loading. The preliminary treatment stage was also expanded to 9,000 litres.

The problem of this case lies clearly in the composition and amount of the wastewater. Thus slaughtering takes place only once or twice a week.

Blood and nitrite pickling salt are not disposed of separately. The use of strong cleaning agents is equally unavoidable. The COD concentration in the inflow varied between 1,100 and 2,200 mg/l, NH<sub>4</sub>-N was about 110 mg/l. The water consumption varied between 2 and 7 m<sup>3</sup>/day.

**Here we saw a challenge for the AQUAMAX® ...**

The service firm used 3 of the existing tanks in order to install the AQUAMAX® wastewater treatment plant: the first tank with 9,000 l capacity as preliminary treatment stage, the second tank with ca. 7,000 l capacity as buffer tank and the third tank with some 11,000 l capacity was equipped as AQUAMAX® SBR plant. Using the AQUAMAX® technology conversion was simple: the buffer pump and the AQUAMAX® were simply suspended from above into the tank. Modification work on the existing tanks was barely necessary.

*The keeping of his own animals guarantees the discriminating clientele first-class meat and sausage quality. Modern stall and grill systems here ensure animal management to suit the individual animals and an economic production process.*







*Master butcher Miesner can now once again concentrate completely on his real work: the management of his modern business and - last but not least - the production of first-class meat and sausage products.*

The AQUAMAX® 29-53 Z from the firm of ATB, Vlotho, was employed. The plant was designed for 30 PT. ATB provided the plant free for this trial.

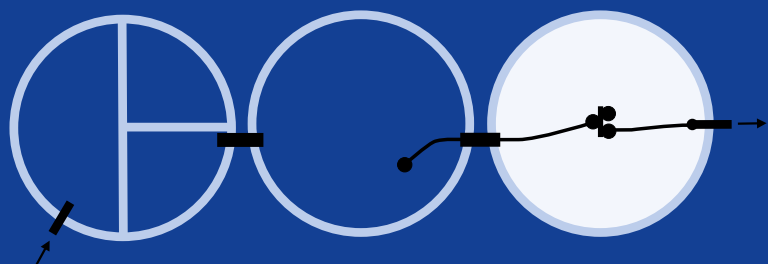
Commissioning took place on 17.07.2000; the plant was seeded using 100 litres of activated sludge.

Already after 3 weeks the plant achieved COD concentrations below 150 mg/l in the outflow. Up to the completion of the investigations the COD could be reduced to 60 - 80 mg/l and the NH<sub>4</sub>-N down to < 1.0 mg/l. Referred to the high inflow concentrations (COD ca. 1,450 mg/l, NH<sub>4</sub>-N ca. 110 mg/l) pickling salt, cleaning agents and blood, the treatment performance was nevertheless over 95 %.

Finally an examination of the wastewater was undertaken by the rural district of Rotenburg: COD 40 mg/l, BOD<sub>5</sub> < 3 mg/l, ammonia 0.42 mg/l.

## The butcher shop project at a glance:

<b>Owner</b>	Butcher shop Miesner
<b>Project management</b>	Abwasserservice Goedereis
<b>Implementation</b>	Plant technology ATB GmbH Installation Abwasserservice Goedereis
<b>Peculiarities</b>	1.000 - 2.000 mg COD/l in the overflow; pollutant load corresponds with 60 - 120 PT; 2 - 7 m <sup>3</sup> inflow per day
<b>Cost of plant technology</b>	Ca. 8.000,- € (Retrofitting)
<b>Commissioning</b>	July 2000
<b>Required treatment performance</b>	COD < 150 mg/l BOD <sub>5</sub> < 40 mg/l NH <sub>4</sub> -N < 10 mg/l
<b>Overflow values</b>	COD < 50 mg/l BOD <sub>5</sub> < 5 mg/l NH <sub>4</sub> -N < 1 mg/l



# And a lot more examples of industrial solutions ...



*A lot more examples of our industrial solutions with detailed facts, data and information are available for free in the download section of our website.*

***Load now directly from here the experience reports and industrial solutions you need:***


## **Quick, directly & straightforward: Write your price offer easily on your own!**

With the AQUAcalculatorPRO you are able to calculate your individual, decentralized wastewater treatment plant for up to 100 m<sup>2</sup> per day - quickly and easily. Whether for the food or beverage industry, for tourism and gastronomy, municipalities or other applications: The AQUAcalculatorPRO is fast and reliable with individual SBR wastewater treatment plant calculations.

**Begin now:**



**ATB WATER GmbH**  
Südstraße 2  
D-32457 Porta Westfalica  
Telefon: +49 5731 30230-100  
Telefax: +49 5731 30230-30  
E-Mail:  
Website:

 ATB Water GmbH

 [linkedin.com/company/atbwater](https://www.linkedin.com/company/atbwater)