

# Federal Environmental Agency (Umweltbundes amt)

for people and the environment

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Busse GmbH  
Ralf-Peter Busse  
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Date: Berlin, 23 July 2004

Revised by:

Phone, direct dialling:

Reference number: III 3

(Please always quote!)

## **German Environmental Foundation Projects (Deutsche Bundesstiftung Umwelt, DBU); Membrane Technology in Decentralised Waste Water Treatment**

Dear Mr Busse,

referring to our letter of 13 June 2000, we would once again like to refer to the particular importance of membrane waste water treatment technology for the improvement of water protection as well as for resource-saving drinking water management.

The solutions developed by your company employing microfiltration in house treatment plants and other decentralised small treatment plants have proven to be successful after extensive testing and examination through numerous applications in Germany and abroad for many years.

While ensuring the retention of all kinds of germs and bacteria, membrane activation also results in a considerable improvement of the treatment performance of small plants to the performance levels of conventional central large treatment plants.

The result is treated waste water, the hygienic parameters of which easily meet even the EU stipulations for bathing water quality standards.

The high reliability of the germ barrier and the possibilities of applying membrane technology in more or less "pressureless" treatment even allow such technology to be used in decentralised small treatment plants in drinking water protection zones or EU protection zones under the FFH directive.

Over the past years, additional performance improvements have been achieved in the development of the membrane activation methods, including nitrogen degradation, phosphate elimination and sanitisation, all of which surpass currently applicable legal requirements to be met by small treatment plants.

Moreover, the aspect of the recovery of waste water and its processing, so as to obtain water fit for use is becoming an increasingly important issue on an international level.

From the outset, we have agreed to the reuse of recovered water from membrane plants for irrigation or for use as flushing water for toilets. As confirmed by you, many customers already use this feature which has become a purchase deciding factor in countries with low drinking water resources.

We would like to emphasise the proven high level of safety of the plant concept developed by you. The strategy of accessible installation in frost free areas has the effect that operators and users of the plants are given an opportunity for optimum control of the functioning of the plant by visual inspection, that any unnoticed passage of untreated waste water due to a malfunctioning of the plant can be eliminated, and – especially noticeable – that the plant can be subjected to professional maintenance independent of frost and other weather features.

The provision for professional maintenance by means of a maintenance contract for the plants has proven a successful approach that ensures a sustained compliance with the legally required processing values at a reasonable price.

The long-term security of compliance with the processing values is owed to the features of the membrane activation method which warrants passage through the membrane only when an intact biocenosis is in place, i.e. failure of the biological components (contamination, poisoning, necrosis) will lead to an occlusion of the microfiltration pores within a few hours due to microorganisms' secretion of mucus.

Depending on the system, such a state will cause an alert to be issued to the operator/user who then has the opportunity of contacting repair services within the period available for temporary storage of the waste water.

In contrast to conventional small treatment plants, these characteristics of the membrane activation method ensure that no poor quality or untreated waste water will pass through the plant unnoticed or due to negligence, effectively rendering official waste water quality checks superfluous.

As Federal Environmental Agency (UBA), we repeatedly notice the international importance of your product at international trade fairs and environmental exhibitions where at the stand of the German Ministry of the Environment we also present your small membrane water treatment plant as a German high tech development in the environmental sector.

We notice from the level of enquiries that internationally no comparable technical solution in the small treatment plant sector seems to exist and that this technology is capable of fulfilling even the more demanding requirements of environmental protection.

We would like to pledge to you our continuing full support of and professional advice for the research project currently undertaken in your company with support from the German Environmental Foundation (DBU) investigating the application of membrane technology in achieving a complete water cycle in intensive fish farm plants.

We wish you success with this project.

Kind regards,  
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Dir. and Prof. Dr. Jürgen Hahn