BAF – Biological Activated Filtration

Description:

Biological Activated Filtration (BAF) uses sessile microorganisms in order to remove organic compounds (BOD, COD) and nitrogen from wastewater and polluted surface water.

Clay based beads allow the growth of different organisms in an upstream operated reactor system. As nutrients are usually present in the water only air for oxygen supply has to be injected. Here, the uniform distribution of air and water is the key-factor.

Nitrification is going along with carbon-removal, at lower reaction time. The two processes can be implemented in one single reactor or can be splitted in two separated filter stages. For denitrification, a separate, anoxic filter (without process aeration) is used. A carbon source as a virgin wastewater stream or dosage of an external carbon source is required. Then, a final BAF could be used for final polishing, degrading remaining organic compounds.

Our know-how in this field is based on various references and a PhD-Thesis by our process responsible. References include municipal wastewater treatment, effluent polishing as well as a pretreatment of highly loaded surface water.

Advantages:

► Safe treatment system for both water and wastewater applications.

► High removal efficiency.

► Compact design.

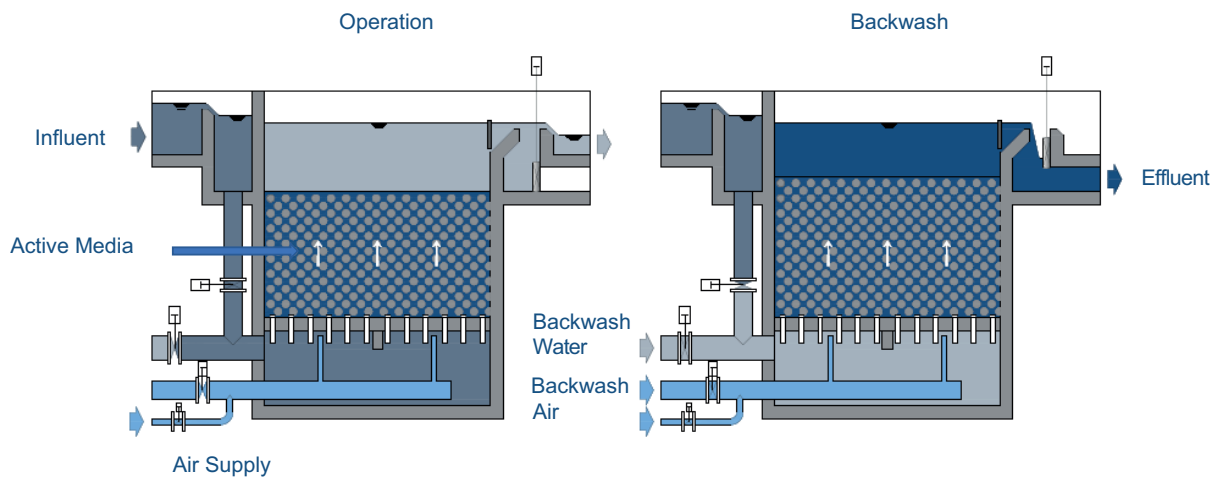► More than 10 references for BHU.

Post-Treatment by Biolgical Activated Filtration and subsequent Denitrification Filtration

Technical data:

► Volume flows between 100 and 1,000 m³/h for each system.

► Space requirements < 50% compared to conventional activated sludge systems.

► Removal of organic compounds by up to 95%.

► Removal of nitrogen by up to 90% per system.

Biological Activated Filtration

Operation   Backwash

Influent

Active Media

Backwash Water

Backwash Air

Air Supply

Effluent

Denitrification Filtration

Operation   Backwash

Influent

Active Media

Backwash Water

Backwash Air

Air Supply

Effluent