STAR Utility Solutions™ | WasteWater Manager-Control

Bioflex

Increase biological capacity – better effluent quality

Achievements

Up to **40 percent higher biological capacity** with same effluent concentrations as before

Up to **30 percent reduction in biological volume**

Up to **50 percent less total N** in the effluent

Bioflex minimizes effluent concentrations and increases biological capacity.

The improved effluent quality is achieved through optimization of the biological performance in all load situations and includes overall balance of loads and sludge distribution with optimum use of all available volumes. This focus has a win-win spin-off as energy consumption and the need for chemical dosing for denitrification and phosphorus precipitation will often decrease, and an increase of tank volumes may be postponed or even avoided depending on the load situation.

Advantages of the Bioflex

Lower capital investment: Bioflex will dramatically increase the biological capacity at the plant and as a result, the investment in tanks for biological treatment will be reduced while the same effluent quality is achieved.

Flexibility: High process flexibility in relation to changes in the actual load compared to the design load. Operational savings can be achieved through extension of the advanced online control system.

Protection: A high treatment efficiency will be reflected in the water quality in the surrounding environment. Bioflex significantly reduces the total nitrogen concentration in the effluent, which will reduce nutrient pollution in the receiving waters.

Opflex, Bioflex and Hydroflex have different focus, but work together to achieve optimal operation and use of the entire sewage system.

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WATER TECHNOLOGIES

STAR Utility Solutions™ | WasteWater Manager-Control Bioflex

Case: Ede WWTP, the Netherlands

The Ede wastewater treatment plant in the Netherlands is a BioDenipho plant designed for 300,000 PE.

The effluent quality from the plant was exceeding EU's effluent standards (10 mg N/L), and it was expected that the load would increase by approx. 20 percent.

In 2011, the **Bioflex** was installed and replaced the existing PLC-based online control system. Within a very short time, the **Bioflex** has achieved very satisfying results such as halving of the Total N concentration to a mere 6.8 mg N/l, reducing the metal dosage of AlCl by 20 percent and the planned extension of the plant was cancelled.

Achievements

Total N concentration of 6.8 mg N/l

Metal dosage of AlCl reduced by 20 percent

No plant extension necessary

Case: Daugavgrida WWTP, Riga, Latvia

The Daugavgriva wastewater treatment plant in Latvia with biological nutrient removal has been designed for 730,000 PE but is overloaded which has resulted in a poor effluent quality as a result. In particular, it was not possible to comply with the effluent demand of 10 mg total nitrogen/l. At the same time, it was expected that the future load would increase and an extension would be required. The future load of the plant is expected to be 1,050,000 PE (200,000 m³/d).

The introduction of the STAR Utility Solutions™ - **Bioflex** and a change of biological process to the BioDenitro process optimised the biological and hydraulic capacity to such a degree that an extension of the volume became unnecessary.

The wastewater treatment plant has upgraded the existing PLC/SCADA system, instrumentation and other equipment in such a way that it has become applicable for advanced control.

Achievements:

40 percent increase of the biological capacity.

For further information, please contact:

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