BETTER WASTEWATER TREATMENT PROCESSES

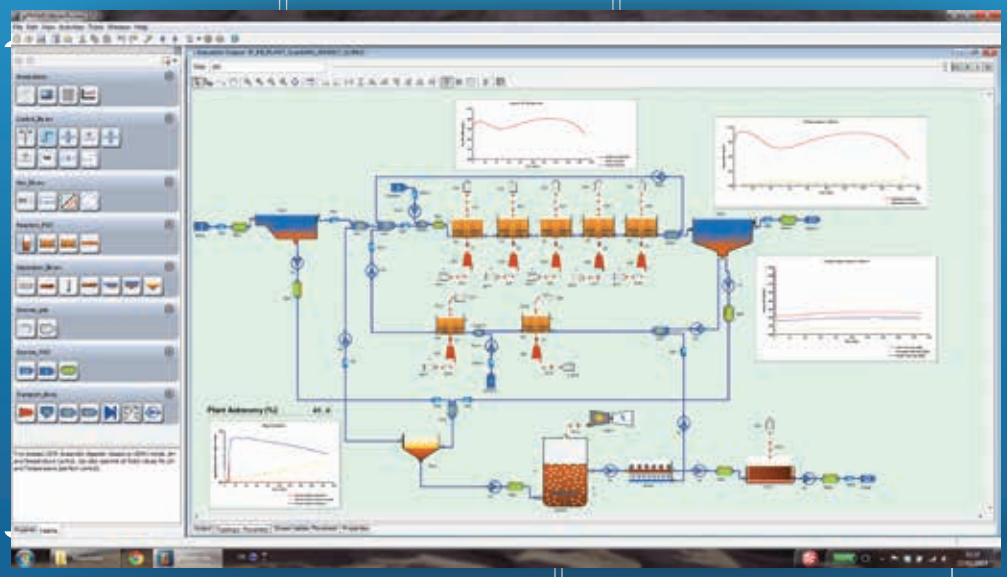
- High-fidelity models
- All key unit operations
- Steady-state and dynamic
- Advanced parameter estimation
- Advanced optimisation capabilities
- Technical support
- Customised web-based interfaces
- Interface with other software (CFD, sewer system modelling…)

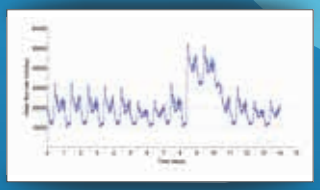
Steady-state and dynamic advanced optimisation capabilities

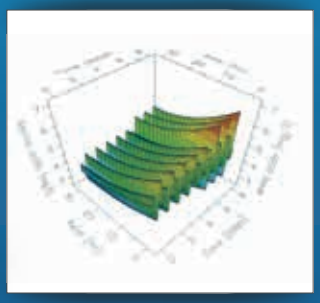
Batch and continuous processes

Liquid/gas mass transfer modelling

Biological models of different complexity







gWATER

Detailed ionic balance and pH modelling

Growing biofilm modelling and attached biomass processes

Flocculation kinetics and population balance modelling

BlueWatt's wastewater system optimisation services are based on the company's powerful gWATER modelling software and continually-evolving library of advanced wastewater system models.

gWATER's high-fidelity predictive models enable rapid exploration of the process decision space for optimisation of wastewater treatment process design and operation.

They provide accurate information for reducing energy and chemical consumption, making informed decisions about current and future plant capacity and minimising capital and operational costs.

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gWATER APPLICATIONS & BENEFITS

Maintain quality and adapt to new water purity standards

BlueWatt uses gWATER to help wastewater plants design and upgrade their processes, optimise operation and adapt to new water purity standards.

The model library contains a wide range of process units, including high-fidelity models of biological and physio-chemical treatment reactors, solid/liquid separation units and various mechanical process units such as pumps and compressors. Models can be customised for specific plants to yield accurate and reliable results in both offline and online implementations.

Reduce power and chemical consumption

gWATER's advanced optimisation capabilities provide a systematic link between pollutant load, power consumption and water quality.

Individual unit operations, process lines and whole plants can be optimised to reduce power and chemicals consumption while maintaining water quality.

gWATER models can be provided behind a customised, easy-to-use web-based interface as a decision support tool for end users on the plant.

Minimise investment costs

gWATER provides support to minimise the often steep investment cost related to the implementation of new processes, such as expensive membrane and ozone technologies to remove micropollutants.

Advanced modelling of micropollutant removal technology also benefits from gWATER's powerful optimisation capabilities, which make it possible to minimise capital and operating costs for both the new process and the complete water treatment chain.

Make accurate decisions to plan the future

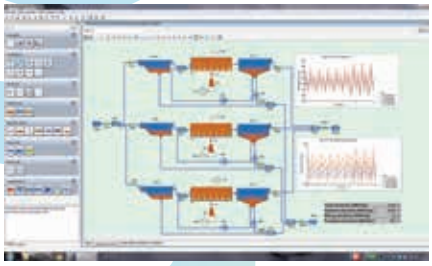
gWATER provides accurate decision support on both current and future plant capacity. Its open infrastructure makes it possible to link to third party sewer system modelling software, enabling the addition of key parameters for long term planning such as predicted population growth and sewer system development.

Improve biological process monitoring

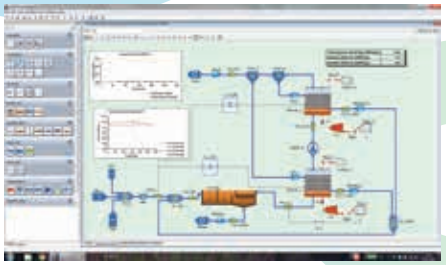
gWATER provides a robust framework for determining the best way to implement additional sensors for efficient and effective monitoring of the biological processes. Its advanced parameter estimation capabilities can estimate multiple parameters simultaneously from steady-state and dynamic data sets, as well as determine parameter uncertainty. This increases the predictive accuracy of treatment plant models, making it possible to perform meaningful optimisation and reduce the overall business risk.

Evaluate environmental impact (CO_2, others)

gWATER models enable the evaluation of environmental impact of the wastewater system in a number of ways. Robust liquid/gas two phase modelling makes it possible to, for example, estimate the quantity of CO_2 released to the environment. The availability of pump, compressor and co-generation engine and heat recovery models makes it possible to determine the complete energy balance of the plant. Environmental impact can be reduced by evaluating the design and operation of individual unit operations, or by considering the whole plant.



Multiples lines of activated sludge tanks



Two step bio-filtration process modelling

Plant-wide flow-sheet, including anaerobic digestion process

Find out how BlueWatt can make your wastewater processes better at

bluewatt-eng.com

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