

BW CONTROLLER

PROCESS CONTROL SIMULATION

Whole Plant - Control System Simulation

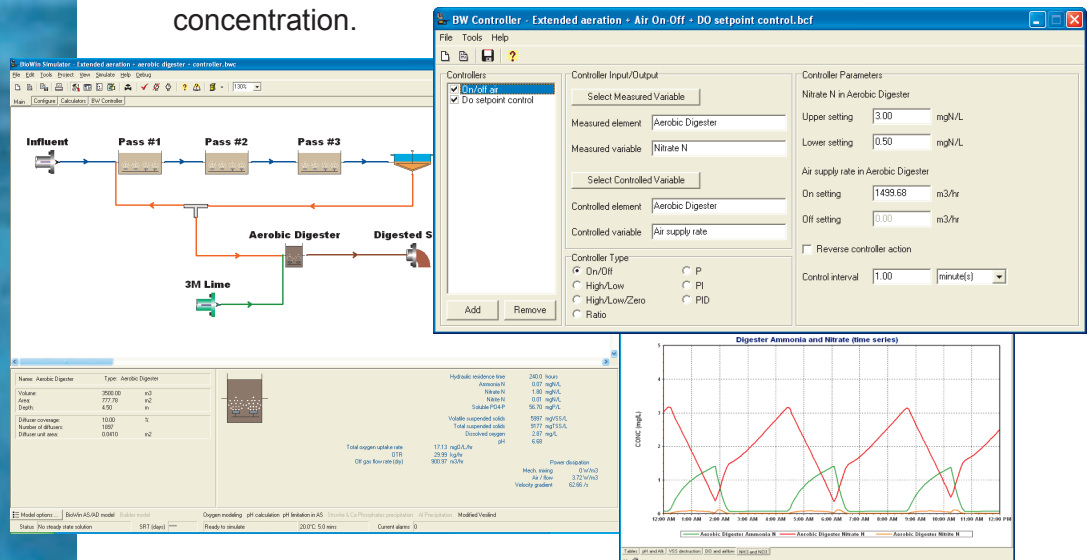
BW Controller™ is a new and powerful application designed and developed by EnviroSim to be used in conjunction with BioWin to address complex process control issues.

Engineers can now evaluate recent improvements in online measurement technology effectively and explore and develop more sophisticated, innovative, and feasible control systems for wastewater treatment.

BW Controller provides an extra level of sophistication for your BioWin simulations without increasing the complexity of using BioWin.

Empower the dynamic whole plant capabilities of BioWin to simulate advanced process control strategies beyond BioWin's built-in control facilities; for example:

- ☐ Controlling air flow rate in reactors based on effluent ammonia concentration.
- ☐ Control of internal recycle flow rate based on effluent nitrate concentration.



- ☐ Control mixed liquor suspended solids concentrations by adjusting wastage flow rate.
- ☐ Using pH measurements to adjust air flow to control nitrification, denitrification and anammox sidestream N removal systems.
- ☐ Change chemical dosing rates based on influent and effluent flows or concentrations.
- ☐ Adjusting on/off aeration periods to control alkalinity/pH levels.

Modeling Power and Precision

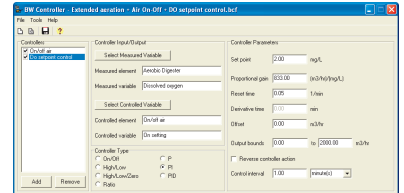


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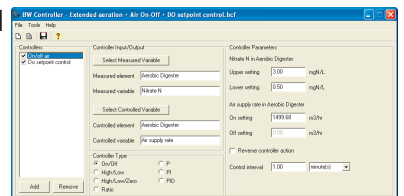
Standard Control Types

- ☐ On/Off control - to maintain a measured variable between upper and lower setpoints.
- ☐ High/Low/Zero control – similar to On/Off control, but with three settings.
- ☐ Ratio control - manipulated variable and measured variable are kept at a constant ratio to each other.
- ☐ Proportional (P) feedback control.
- ☐ Proportional-Integral (PI) feedback control.
- ☐ Proportional-Integral-Derivative (PID) feedback control.



Flexibility in Operations

- ☐ Multiple controllers - use as many controllers on a plant as you require.
- ☐ Cascade control - use the output of one controller as an input to another controller.
- ☐ Any BioWin output variable (state or calculated) can be assigned as the measured control variable.
- ☐ A wide range of manipulated variables including:
 - ☐ Flow (wastage, recycle etc.).
 - ☐ Air and power supply rates throughout the plant.
 - ☐ Chemical feed.
 - ☐ Fractionation and composition of influent streams.
- ☐ Flexible control interval options.
- ☐ Integrates seamlessly into BioWin.



Approach

BW Controller runs as a separate Windows application, and links to BioWin. This means you can choose to add this analysis to any BioWin configuration or continue to use BioWin (with its variety of embedded control features) without being forced to worry about control issues.

Created by process engineers...for process engineers.

THE ENVIROSIM TEAM

Contact the experts at EnviroSim for all your modeling and simulation needs, be it software, training or process evaluation! Join the Club!

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