GPS-X™

Dynamic Simulation of Water and Wastewater Treatment

Wastewater operations need to continuously focus on improving control processes, reduce costs, and develop benchmarking and auditing statistics. There is always an emphasis on conducting a planning and capacity analysis to be able to design and assess possible upgrades without costly consulting expenditures.

Our GPS-X™ simulator is the most advanced tool available in the market for the mathematical modeling, control, optimization, and management of wastewater treatment plants. GPS-X™ offers a user-friendly, robust, customizable, high-speed platform with calibrated models and the most comprehensive suite of unit processes. It includes leading edge simulation analysis tools, such as Process Optimizer, Sensitivity Analyzer, Scenario Manager and Statistical Analysis tools.

How can GPS-X help me?

Process Design

-Determine the impact of increased organic and hydraulic loadiing on an existing plant such as bottlenecks in the liquid or sludge line.

-Evaluate options for converting an existing plant to meet new nitrogen and phosphorus guidelines under both steady state and dyanmic conditions.

-Evaluate the effects of replacing old equipment with new and innovative technologies by modelling the potential impact on performance.

Process Operations

-Determine if an existing plant operation can be optimized. In some cases low cost retrofits can forestall the need for a costly plant upgrade while at the same time maintaining effluent quality.

-Evaluate impact of different operating control strategies such as:

- Tapered seration
- Step feed in plug flow reactors can be useful during storm flow conditions
- Reduction of dissolved oxygen set points
- Modifying was wasting rates to change SRT anddetermining the effect on effluent quality and solids handling costs
- Types of diffusers (fine bubble etc) potential cost savings under dynamic conditions.

-Impact assessment of varying internal recycle rates, anoxic zones, anaerobic zones on nitrification and denitrication and overall treatability.

-Investigate the energy cost savings of implementing dissolved oxygen control or fine tuning DO contro strategies given actual dynamic influent data.

-Evaluate the most cost-effective options for upgrading (i.e.: Re-size the reactor, install another reactor, increase the sludge handling capacity, etc.)

-Evaluate dynamic aeration costs by determining airflow requirements throughout the day as influent flow changes.

-Simulate diurna aeration costs, and optimize aeration energy used by aeration more at night when energy is cheaper.

Process Operations

-By using future organic and hydraulic loading estimates determine when the plant will need to be expanded or upgraded.

-Assess the impact of flow reduction programs such as inflow and infiltration, water conservation, pricing polices, industry pretreatment on wastewater facilites.

- Change the influent loading characteristics by reducing the hydraulic component and increasing the organic component.
- Estimate the impact on future capital plant expansions or retrofits, including the financial impact of flow reduction (cost savings in postponed plant expansions).

-Provide useful information for biosolids management plans.

-Predict the quantitites of sludge generated for plants operatin under different conditions or resulting from furure plant expansions.

-Overall plant operating costs can be assessed in conjunction with the implementation of technologies and operating strategies for reducing biosolids.

-Evaluate the effect of the addition of types of sludge handling technologies to an existing plant.

Request a demo – contact hydromatis@hatch.com

Expert Customer Support

- Whether you're looking for an online tutorial, need help from our industry-leading support team, or want to explore our custom training options, we've got you covered.

Extensive Online Resources

- Our resource library includes a wide range of videos covering the basics of our solutions, outlining new features, and an extensive list of modelling examples to help guide you.

Customized Workshop Training

- Our Hatch experts are available to lead customized online or in-person workshops to provide training, answer questions and help troubleshoot issues with user models.

Industry-leading Customer Support

- As a Hatch customer, you have access to our industry-leading support team. Our specialists will get back to you within 48 hours.

Optimization and modelling solutions

Get your hands on the market leader products for water and wastewater treatment plant analysis, design and operational support.

GPS-X | **Simu*Works*** | **Mantis.AI** | **ToxChem** | **Capdet*Works***