Recirculation Technologies, LLC

Your Full Service Resource For Water System Improvement

Water Manager Software

Situation

The primary purpose for an industrial water plant is to produce enough high quality water to meet the demand of the rest of the operation. When water plants are running 24/7/365, this is not an easy task. Failure will surely lead to thousands, if not millions, of dollars in increased operating cost, along with potential lost plant output.

Key process information can be invaluable to understanding and operating a water plant effectively. Yet, collecting, monitoring and using process data is frequently cumbersome and difficult – leading managers to make occasional uninformed and unproductive decisions.

RTI's *Water Manager* software is specifically designed to make the collection and use of key water plant information easier and more effective. Trending past variables, looking at various scenarios and predicting future performance through use of the software will significantly enhance decision making and results.

Water Manager: What Does It Do?

Meeting the water demand, while still optimizing costs, is the ultimate goal. Monitoring and using information can help reach that goal. Each day challenging variables impact results:

- **Inlet Water Conductivity**: varies greatly throughout the year – and directly affects throughput
- **System Operating Conditions:** which are unique to each plant site
- **Resin Capacity:** the ability of the resin to do the job over time
- **Resin Fouling Levels:** when high, affects the ability to purify water and decreases throughput
- **Throughput**: amount of water the system produces to meet the demand
- **Operating Costs**: focused on the cost of acid and caustic to regenerate each day

RTI's *Water Manager* software uses all of these variables to predict when the water plant should easily meet the demand and more importantly, when meeting the demand will be difficult. This includes identifying cost impacts as well. The output allows for developing a planned response versus a reactionary or emergency response.

Knowing that no two water plants are exactly alike, the *Water Manager* software is customized to the exact specifications for your plant by inputting the following key process data:

- **Overall system design**
    - Number of resin trains
    - The size of each resin bed
    - Train gallons per minute (gpm)
- **Regeneration protocol**
    - Acid and caustic usage
    - Regeneration time
    - Number of regens per month
- **Current water source & conductivity data**
- **Ion exchange resin background**
    - Expected resin life cycle
    - Anion type and age
    - Anion salt split capacity and levels of organic fouling
    - Cation type and age
    - Cation moisture content and levels of metals and hardness fouling

Once the data is entered, the *Water Manager* software can track inlet water conductivity trends, throughput and cost parameters, and use this data to predict future conductivity, throughput and regeneration costs based on mathematical simulation technology. This also allows for different scenarios to be run to gauge the effect of various potential actions on throughput and costs.

Most important, by understanding the potential outcomes in more detail using actual plant data as inputs, the water plant can proactively initiate steps to optimize performance – which both reduces risk and operating costs at the same time. Managers finally have an easy-to-use tool that helps guide decision making and clarifies the steps to make the water plant the most effective part of the entire operation.

Water Manager Output

Conductivity, the software looks back at the past to determine the future. Based on history, the program will show the expected and worst case conductivity for the next six months:


Throughput, based on the projected conductivity combined with the expected resin capacity from the salt split curve. In this case, with and without resin cleaning are compared:
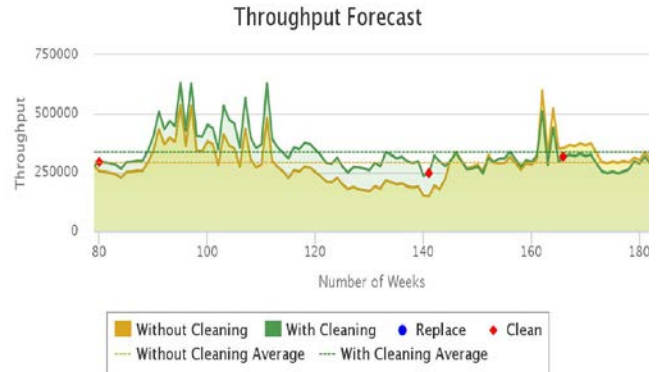
Salt Split Capacity Curve, the salt split degradation over time is calculated based on real world data and local experience:
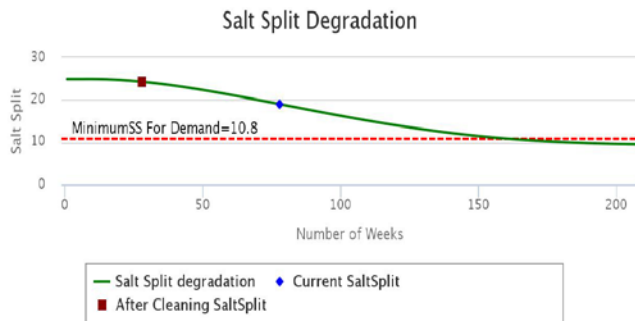
Operating Cost Analysis, the expected costs associated with predicted throughput, again here comparing with and without cleaning. The program also estimates the total savings potential of the scenarios being tested:
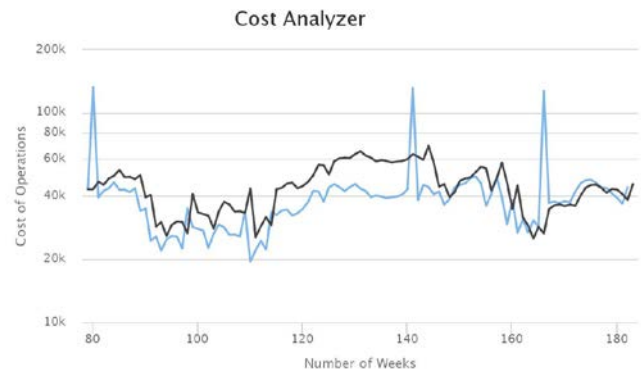
How to Get Started

- Data is generated based on your system's specifications and input into the database
- Together with you, RTI examines current and expected performance of your system
- RTI prepares a comprehensive action plan for data monitoring and performance improvement

ReStore.....Don't Replace!

Reduce Water Risk ⟩ **Improve Water Quality** ⟩ **Cut Operating Costs**

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