



- **ONE TEAM.**
- **ONE FOCUS.**
- **YOUR SUCCESS!**

Recirculation Technologies, LLC

Your Full Service Resource For Water System Improvement

Resin Lab Capabilities

Background

Large process plants depend on water that is often purified through ion exchange resins. The resins are critical for removing dissolved solids and organics from clarified water before it goes to high pressure boilers. Resins are also used to polish returning condensate. A critical question for water plant managers is this: Are the resins in my system doing their job, and how long will they be able to sustain their current performance?

Ion exchange resin performance can be affected by both the health of the resin and its fouling level, both of which affect the ability of the resin to process an adequate amount of water. Unhealthy resin and/or fouled resin will result in lower and usually off-spec throughput. It is critically important to measure the health and fouling levels of resins on a regular basis to proactively avoid prolonged periods of poor water system performance.



Before (left) and After cleaning samples in the RTI Resin Lab

There are few high quality resin labs in the US that are set up to answer those questions quickly and effectively. RTI's resin lab is particularly effective on three critical dimensions of resin analysis:

- Industry leading turnaround time for typical resin analyses, averaging less than 5 business days
- Not only measuring the current health and fouling levels of resins as received, but also measuring those same items *after test cleaning* the resin,

providing critical *new* information that will aid the water plant in performance decision making.

- Providing recommendations for action based on both the results from the analyses and over 20 years of resin testing experience.

The RTI Resin Lab is your most effective tool for analyzing resin condition and improving resin performance.

Lab Capabilities

The RTI Lab has the equipment and experience to provide water plants with the most effective and extensive resin analyses in the industry today:

- GE Sievers 900 TOC analyzer
- Panalytical X-ray spectrometer to measure metals in resins and particulates
- ASTM procedures for salt split, total capacity and moisture content



Anion resin testing in progress



Recirculation Technologies, LLC

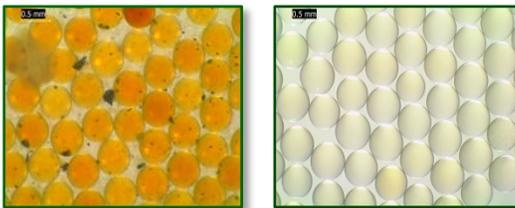
- A proprietary Run Extension Test that compares throughput potential under *field* conditions
- Additional analytical capabilities including crush testing, bead integrity visual analysis, hydrocarbon fouling tests, external particulate composition, a QAC test for polymers, microbiological contamination, and anion kinetic testing
- Lab personnel with over 45 years of resin analytical experience

- Recommendations for action:
 - o Based on the results, what is the best course of action for you to take to get the most benefit – operationally and financially – out of your resin
 - o Quantifying the benefit in terms of throughput improvement and dollars saved

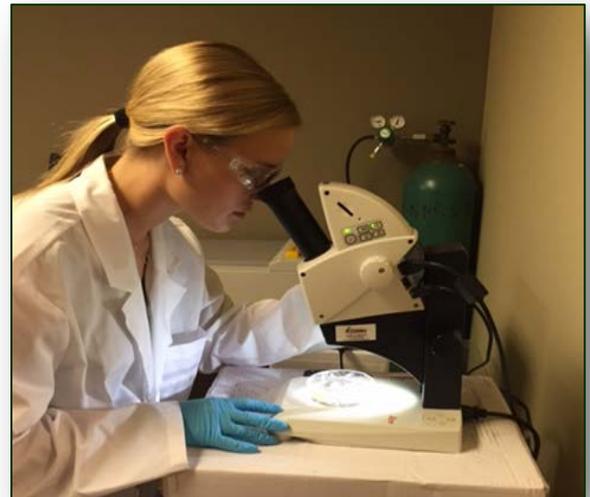
Results And Recommendations

With the RTI Resin Lab, you get more than just numbers. You also get both the interpretation of those results and recommendations for action. As a result of sending your samples to RTI, you receive:

- Industry leading turnaround time on the results, often in less than one week
- Resin results that are consistent with industry standards – and consistent from sample to sample, indicating strong quality control
- A comparison to cleaned resin, not just a report on the health and fouling levels of the current sample
- Photomicrographs that clearly show the benefits of cleaning at the resin bead level
- An interpretation of the results – a clear statement about:
 - o What the results mean to your operation
 - o How clean resin can benefit the system



Micrograph Photos: Before & After Cleaning



Superior analytic capabilities

How To Get Started

To take best advantage of this terrific resource, water plants need to push for the following:

- Regular sampling to:
 - o Establish a baseline for action
 - o Find fouling rates for proactive planning
- RTI will provide consistent and actionable recommendations based on real data
- RTI can also aid in developing sampling programs that are easy to start and maintain
 - o Reminders for action
 - o Sampling supplies
 - o EZ Samplers to facilitate sampling process

ReStore.....Don't Replace!

Reduce Water Risk

Improve Water Quality

Cut Operating Costs

Call or Contact RTI at (215) 682-7099

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