Buckman™
Chemistry, connected.

# The Influent Clarification Equation

A guide for water treatment solution providers on evolving environmental conditions and chemical innovations.

# Navigating New Conditions Under Environmental Scrutiny

In influent water clarification applications today, service providers are feeling squeezed on both sides:

In the push to protect municipal and groundwater supplies, many facilities are being compelled to supplement by **drawing from lower-quality sources** (e.g., rivers, lakes, greywater) in order to keep supplies in water-stressed regions reliable.

That shift means teams have to account for heavier solids, more organic contaminants (often including mollusks), and persistent algae in the influent.

At the same time, they're under **tightening environmental mandates**, pressured to reduce effluent, maximize water reuse, and manage solid waste responsibly. Tougher disposal rules and higher costs mean minimizing volume and toxicity of sludge, while remaining accountable for every pound of chemical used.

Fundamentally, customers expect cleaner water and lower waste. But with dirtier source water, traditional treatment methods require an increasingly aggressive approach to chemistry.

"For the first time in the survey's 21-year history, survey participants listed watershed/source water protection as the sector's top challenge."

*- AWWA State of the Water Industry survey*[1]

# More Contamination, More Chemicals

Most providers deal with increased solids and bio-contamination in influent with more chemistry. Alum coagulants, chlorine-based oxidizers, caustic pH neutralizers, and mollusk controls are layered together in an endless cycle.

But it's tough to get this mix right, as each step can undermine the next.

Alum only works well in a tight pH window. Add chlorine too soon and it oxidizes the very flocculants you're trying to form, cutting clarification performance. Operators then chase the chemistry—adding caustic to fix pH or dechlorinators to mop up excess oxidant.

It's a finicky, ongoing cycle where chemicals are applied not just for water clarity and safety—but to counteract the negative side effects of each other.

## Case in Point: Weather Changes Intensify the Chemical Spiral

This cycle isn't just theoretical. A recently published study[2] illustrates how quickly chemistry can escalate:

- In 2023, a single weather event drove natural organic matter up by **more than 67%.**
- Alum doses at two nearby water facilities nearly **doubled** in response.
- Added to two decades of incremental increases due to brownification, dosing has now climbed **4–8x** higher than at startup.
- Each increase created new side effects—higher disinfection byproducts, more $CO_2$ emissions, and added costs.

# More Chemicals, More Consequences

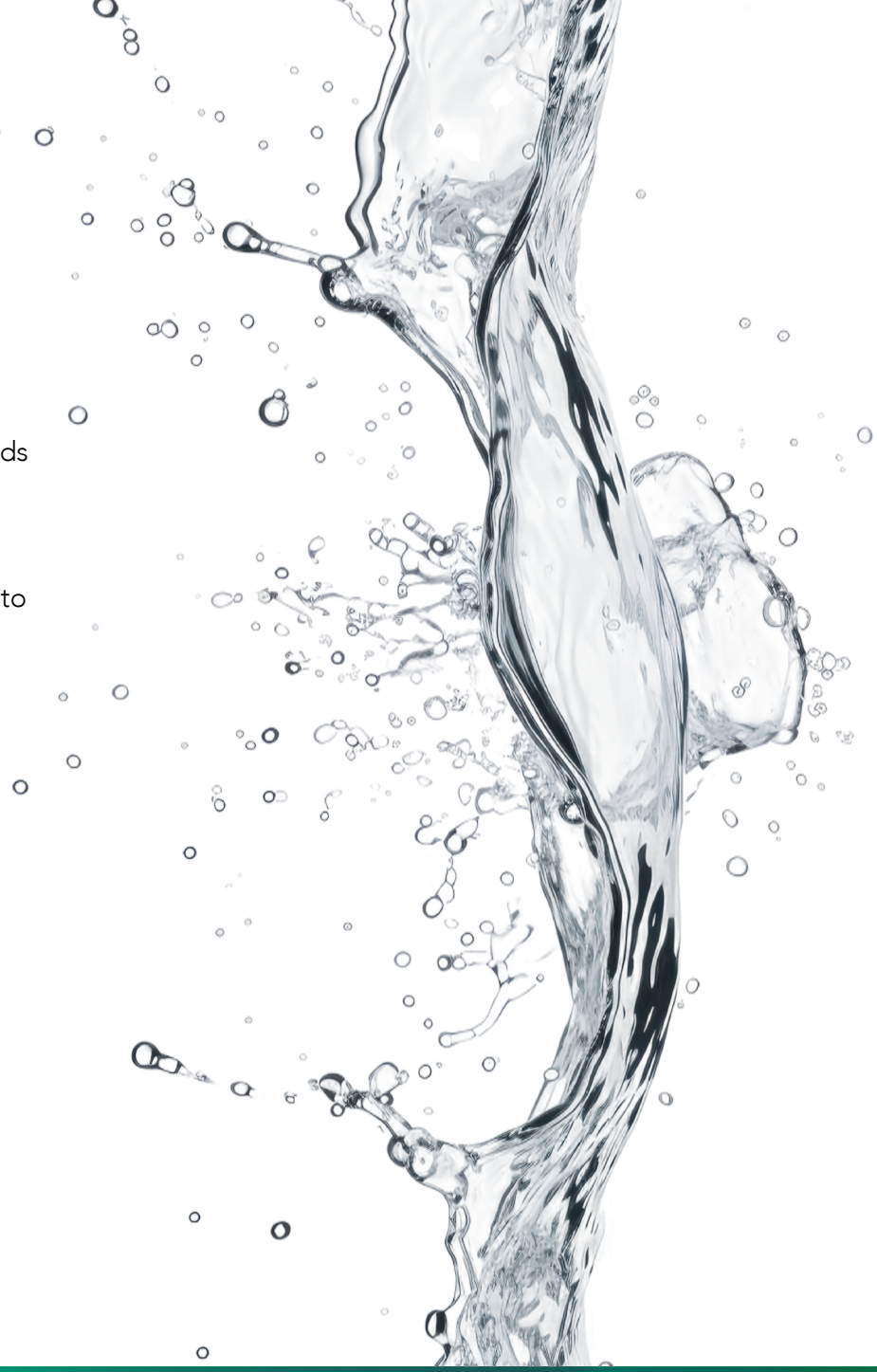
All this chemical stacking can lead to:

**Higher Sludge Volume**
Increasing alum and chlorine means more sludge—thousands of extra pounds to dewater and haul, at rising landfill and transportation fees.

**Rising Inventory and Labor Costs**
The more complex the program is to manage, the more teams are required to handle and store caustic chemicals, perform manual interventions, and shut down for cleanings.

**Asset Corrosion**
Caustic chemicals eat away at infrastructure, shortening basin and pipe life and causing visible damage to plant surfaces.

Influent clarification doesn't have to be a constant balancing act of single-purpose chemistries.



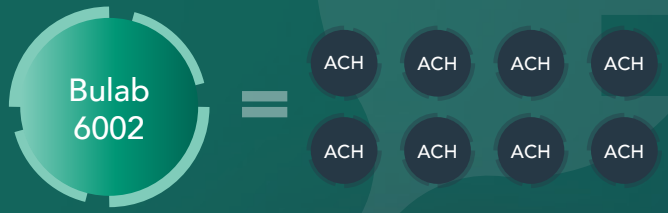
# Rewrite the Influent Clarification Equation

Instead of fighting fouling downstream with caustics in constant counterbalance, tackle algae and biological contaminants upstream, with fewer chemicals at reduced quantities.

**Bulab 6002 from Buckman is a high-performance algaecide and coagulant in one.**

- It knocks out algae and water contaminants faster and earlier in the process than chlorine, while delivering comparable clarity results to ACH—but at smaller dosages.[3]
- This means better results with surface/grey waters—without having to do the heavy alum and chlorine pushes that add sludge and trigger additional chemistries downstream.[4]
- It also doesn't cause pH shifts, eliminating the need for neutralization with caustic chemicals.
- And, it's a more effective molluscicide than chlorine, acids, or sacrificial filters—essentially offering **three-in-one value** in applications where zebra or quagga mussels have been a problem.

~1 ppm of Bulab 6002 can offset 4-8 ppm of ACH.[5]



# The Power of Chemical Consolidation

With the simple addition of Bulab 6002 to the chemistry program, water treatment providers can:

**Accelerate clarification through multi-function chemistry.** With its low-dose, dual-function efficacy and broad pH stability, Bulab 6002 empowers providers to disrupt the typical chemistry cycle—reducing the need for excessive alum, oxidizers, and neutralizers.

**Simplify SOP with fewer, safer steps.** Consolidating chemistries with Buckman allows reduced handling and usage of caustics, improving operator safety and better protecting system assets. All while managing fewer shippers and tying up less capital in containers and inventory.

**Optimize outcomes customers care about.** With a simple jar-test pilot, providers can show clarity gains and chemical reductions within weeks. They can then scale and connect those results to critical business KPIs and environmental goals, such as reduced waste and sludge weight, fewer blowdowns/ shutdowns of filtration systems, and less acidic stress on basins.

# Deliver Simpler, Safer, Smarter Clarification

With Bulab 6002 as a part of your influent clarification program, you'll better control contamination upstream, so you can clarify water with fewer chemicals at reduced quantities.

That means increased efficiency, operational savings, and safety for everyone involved—differentiating your services in a way that customers appreciate and competitors can't match.

And, as a domestic manufacturer with decades of industry leadership, Buckman provides local supply and expertise to help you get fast results.

Want to learn more or start your pilot?
**Contact Buckman today.**

**Need better data insights in order to optimize operations and drive smarter decisions?**
**Learn more about Buckman's Ackumen™ digital platform.**

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[1]"State of the Water Industry 2024: Source water protection takes center stage." American Water Works Association.
[2]"Climate-Driven Increases in Source Water Natural Organic Matter." Swinamer, et al. Environmental Science & Technology journal. 2024.
[3]Always read and follow label instructions.
[4]Using WSCP as a replacement or addition to other chemistries is up to the treater.
[5]Based on industry usage and experience.