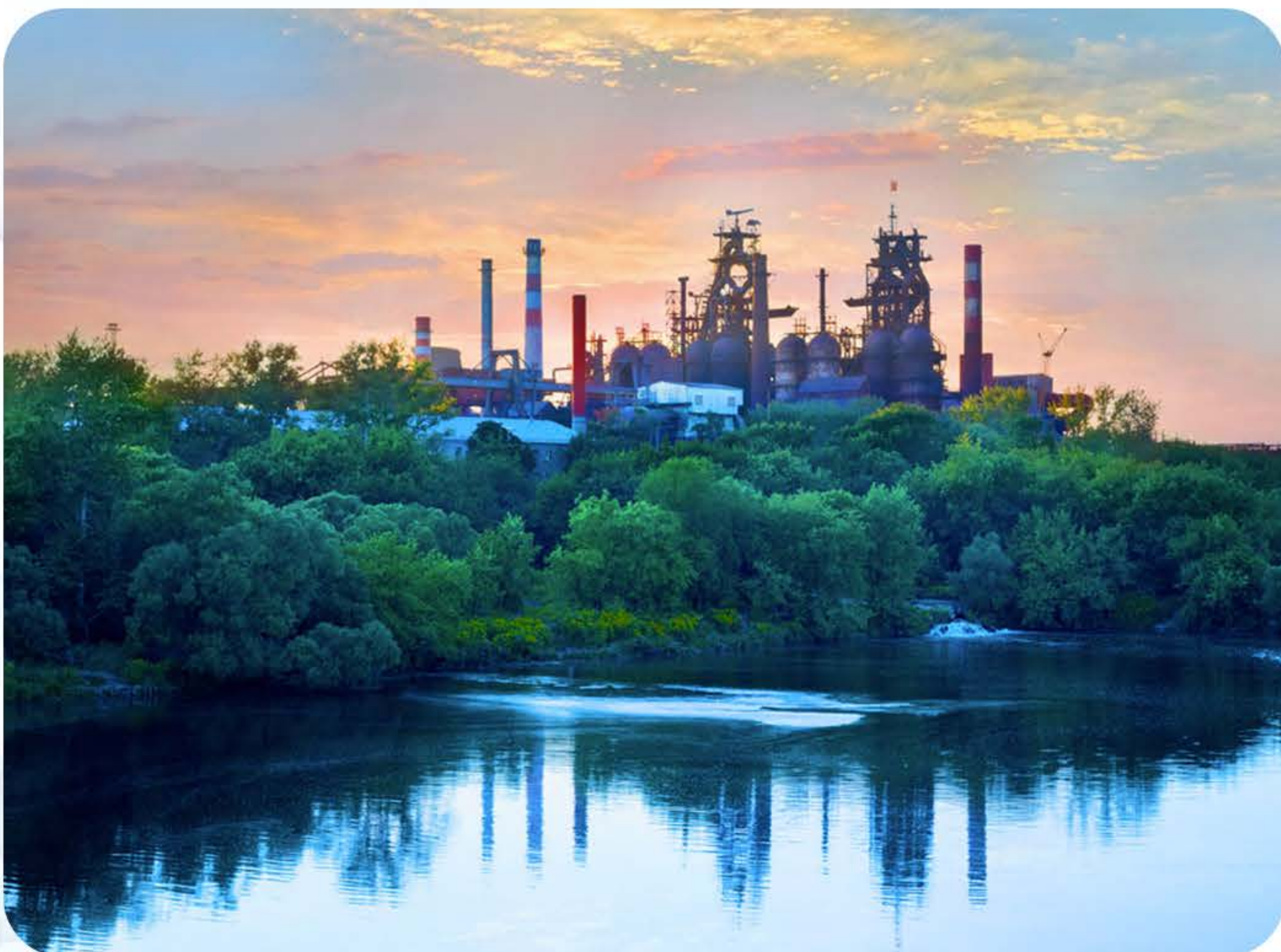




CLEARWATER

ADVANCED WATER TREATMENT SOLUTIONS

Bringing Global Chemical Water Treatment Product Technologies to Local Applications



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CLEARWATER INDUSTRIAL AN INTRODUCTION

CLEARWATER PRODUCTS : A PROVEN HISTORY

In 1994 the Ace Water Treatment brand was launched to the Australia and NZ markets. With original formulations based on technology transfer from global brands Drew Ameroid and Houseman, the Ace products quickly gained a reputation for proven performance across many industries over the years.

In 2005 the Ace Water Treatment brand was renamed Clearwater Industrial to expand to a broader market coverage. The original product technology continues unchanged. This continues to be enhanced by the regular addition of new formulations to provide on-going enhancements to our customers based on continuous R&D and attentive monitoring of results.

The market for Clearwater products continues to increase, with discerning customers accessing them via an expanding network of local distribution partners who support the products with high quality local technical services.

RAW WATER

Raw water must be treated or clarified prior to being used as makeup water in most utility processes. Clarification removes suspended solids, bacteria, and other forms of impurities to help prevent system scale, corrosion, and fouling.

The Clearwater influent treatment programs add value to the existing mechanical clarification methods through chemical enhancement. Our personnel will work hand-in-hand with your team to test and evaluate your source water during a plant survey. Your Clearwater field engineer will then select, apply, and monitor a customized treatment program to optimize your clarification system.



Coagulation & Flocculation

Coagulants destabilize the forces that keep colloidal solids apart, while flocculants cause them to agglomerate and drop out of solution. Our coagulation and flocculation solutions include both organic and inorganic chemistries.

Organic coagulants

- Polyamine and PolyDADMAC
- Melamine Formaldehyde and Tannins

Inorganic Coagulants

- Aluminum Sulfate (Alum)
- Polyaluminum Chloride (PAC)
- Aluminum Chlorohydrate (ACH)
- Ferric Sulfate and Ferrous Sulfate
- Ferric Chloride

Organic/inorganic blends

Customized blends developed to optimize performance in each application

Flocculants

- Cationic Flocculants (powder & emulsion)
- Anionic Flocculants (powder & emulsion)

Simulation and Testing Capabilities

Expertise to select product suitable for the application is essential for maximizing performance of the chemical program to produce the desired results

SERVICE AND SUPPORT

Your local Clearwater representative specializes in providing water and wastewater treatment technical services to our customers. In fact, our ability to perform these services is what separates us from the many of our competition. Our competition sells chemicals or equipment – we sell solutions and complete wastewater treatment systems.

We have a comprehensive and experienced reseller network near you to provide on-site assistance. This is in addition to our innovative water treatment chemicals, equipment and systems. We also provide installation, system start-up, maintenance and other support for to ensure the wastewater solution you choose is running effectively at your facility.

Clearwater reseller Service Technicians are trained to operate, maintain and trouble-shoot all types of water treatment equipment and systems. At Clearwater, we provide any service level you require: from as-needed emergency service all the way to contract operations seven days a week.

BOILER SYSTEMS

To ensure the optimum performance and safety of boiler and steam systems, it is imperative that corrosion and deposition be addressed proactively. The Clearwater boiler water treatment programs combine application expertise with state-of-the-art chemistries and monitoring and control systems to manage these issues and the multitude of problems they can cause.

It is designed to keep heat transfer surfaces (boilers, condensate/feedwater systems, and after boiler sections) free from deposition and corrosion and minimize carry over. Our programs can increase system efficiency, decrease plant downtime and maintenance costs, and extend equipment life.

Clearwater Industrial has the right products to overcome the above problems. Our advanced and comprehensive range of products focus on the following key areas:

- Corrosion inhibitors
- Oxygen scavengers
- Metal passivators
- Solubilizing and precipitation scale inhibitors
- pH adjustments
- Boiler descaling compounds



OPEN COOLING SYSTEMS

When corrosion, deposition and microbiological growth occur in cooling towers, heat exchangers and chilled water systems, they can lead to flow restrictions, reduced operating efficiency, higher maintenance costs and unscheduled outages.

To help maintain the reliability and performance of industrial cooling systems, Clearwater offers state-of-the-art monitoring and monitoring and control systems together with a full line of cooling water treatment solutions that work at various pH levels and with different water chemistries.

Clearwater products include an extensive range of products for open-recirculating, once through and closed loop systems to deliver:

- Cleaner heat transfer surfaces
- Control general and pitting corrosion
- Scale and deposit control
- Microbiological fouling control

The Clearwater product range includes:

- Biocides oxidising and non-oxidising
- Biodispersants
- Corrosion inhibitors
- Phosphorus-free formulations
- Scale inhibitors including terpolymer chemistry
- Multi component corrosion & scale inhibitors

CHLORINE DIOXIDE

Chlorine dioxide (ClO_2) is a highly potent, fast acting bactericide and viricide that is effective at concentrations as low as 0.1 ppm.

Chlorine dioxide does not form halogenated by-products, like toxic THM's, and is effective over a wide pH range in both hard and soft water. It will eliminate both planktonic and sessile bacteria, disinfect surfaces and rapidly destroy problematic biofilm.

These properties make it ideal for use in a wide range of water sterilisation, disinfection, environmental hygiene, industrial and process water treatment activities. It is particularly popular in the food and beverage sector, because it doesn't cause taste or taint, and for the treatment of water in buildings to prevent Legionnaires' Disease. The Clearwater range of advanced technology chlorine dioxide products delivers fast-acting, superior microbiological control in a safe, convenient form.

RECYCLING & RECLAMATION

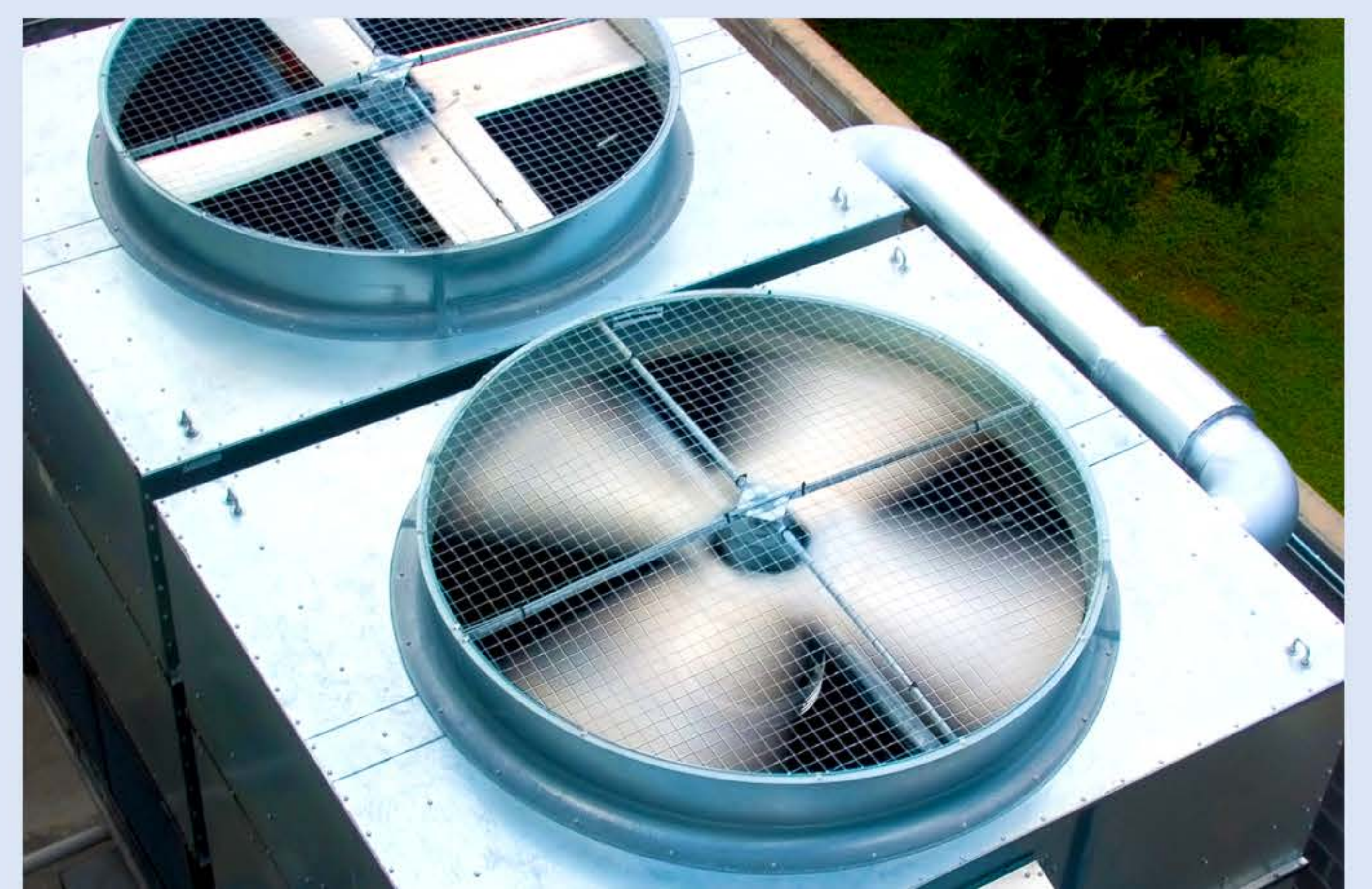
Clearwater Industrial engineers and consultants have extensive experience supporting systems for effective water recycling. When properly treated, water reuse systems provide a variety of benefits, fostering long-term sustainability.

Reclaimed water can come from a variety of sources, including the local municipality wastewater treatment plant, rinse waters for demineralizers and other plants systems, process water overflow, and blowdown from boiler or cooling systems. When properly treated and maintained, water reclamation has numerous benefits, including a reduction in raw water and sewer costs, and a positive impact on our environment.

CLOSED COOLING SYSTEMS

To ensure that such closed circuit heating systems are well maintained and operate at optimum efficiency it is essential that the correct water conditions are maintained at all times. This can be achieved using carefully selected closed circuit water treatment chemicals.

The Clearwater advanced closed loop and closed circuit treatment chemicals have been scientifically formulated to deliver significant operational benefits and performance improvements to heating systems and closed circuit systems including sea water cooling systems, closed chilled systems, low-pressure heating systems and other closed circuits that use water as a primary medium.



WASTEWATER

Clearwater Industrial can meet all of your wastewater treatment chemical needs for industrial and municipal applications. We offer everything from defoamers and flocculants to inorganic and organic coagulants and filter aids. The local Clearwater technical representatives can help you improve your treatment process, reduce costs or solve compliance problems. Through our knowledge of chemicals and equipment we can help you develop innovative solutions to meet your demanding needs.

Coagulants and Flocculants for Water Treatment

Reduce sludge volume and improve water quality. Coagulation and flocculation water treatment chemicals are used to remove iron, suspended solids, organic color, and hardness from influent water.

In wastewater treatment these clarification aids help with the removal of other contaminants such as oil, phosphate and heavy metals.

Wastewater Bioaugmentation Chemicals

Enhance biological waste treatment for environmental compliance. Controlling organic contaminants is a key objective of many wastewater treatment plants. Ensuring the healthy growth of beneficial microorganisms is critical to the efficient operation of secondary treatment systems, which are designed to remove organic contaminants.

Clearwater offers bioaugmentation products and services to support healthy and efficient microorganisms growth and performance in your wastewater system.



FOAM CONTROL

Unwanted foaming can be problematic in many commercial, manufacturing and industrial process applications, consequently it requires careful control measures to minimise or eliminate its impact. To ensure systems are well maintained and operate at optimum efficiency it is essential that the correct water conditions are maintained at all times. This can be achieved using carefully selected antifoams and defoamers.

Clearwater products are technically advanced antifoams, defoamers and foam control agents are scientifically formulated to control unwanted foam generation and are ideal for use in a wide range of process applications including wastewater and effluent treatment, steam generation, cooling water systems, distillation and fermentation processes, food processing, sugar manufacturing, paper and paperboard production, plastics, adhesives and more.

Antifoaming & Defoaming Agents

Gain control over visible foam and airborne bacteria. Industrial wastewater and process foaming conditions may cause health and safety issues for employees and others whose job requirements involve being around sumps, tanks, open trenches, aeration basins and similar areas, or equipment where foam formation may occur.

The Clearwater product portfolio consist of a comprehensive line of antifoam treatment programs to handle all your unique foaming issues.

Heavy Metals Removal

Remove mercury, lead and other heavy metals. Metals in waste streams don't naturally degrade and are toxic to aquatic life, even at low concentrations. Clearwater provides wastewater treatment programs for industrial facility operators to reduce heavy metals in waste streams to help ensure regulatory compliance. Metals that can be removed include soluble and/or particulate heavy metals, such as lead, copper, chromium, iron, manganese, mercury, nickel and zinc.

Wastewater Odor Control Chemicals

Meet odor emissions requirements and improve your public image.

Whether you process water for public consumption, treat wastewater, or run industrial processes in which water purity is essential, control of objectionable odors is a challenge that impacts the environment, the community's well-being, and the plant worker's safety and productivity.

Product Selection Services

Clearwater offers bench scale evaluations of all waste streams to our customers who are looking to improve their compliance relationship with local or state authorities. This testing may involve metals precipitation, oil and grease removal, BOD/COD removal and others including the control of odors and organics.

Pilot scale evaluations are performed when the customer requests that the technology or the chemistry be validated prior to application to the main waste stream. This is beneficial to both the customer and Clearwater as it allows the customer to evaluate the equipment or chemistry solution on a larger scale while allowing us the opportunity to fine tune the process under real conditions.

MEMBRANE MAINTENANCE TREATMENTS

With the wider usage of membranes for water treatment comes the need to protect them from deposition and fouling. If the membrane throughout is to be maintained, in addition to pre-filtration, protection against dissolved salts and organic clogging the pores is essential.

As well as a service company Clearwater Industrial is a manufacturer and supplier of a range of cost effective Reverse Osmosis antiscalants, scale inhibitors, antifoulants, dechlorination agents, biocides and RO membrane cleaners to restore performance when needed.

