

Do You Have An Effective Water Treatment System?

Versatile Fluid Management Products & Systems To Effectively Meet The Needs Of Any Industry & Application

- Control Scale Deposits
- Bacteria
- Corrosion
- Algae
- Colloids

In All Fluid Based Systems

Potable Water, Process and Waste Water Treatment & Conditioning

PROTECTION FOR NEW EQUIPMENT

TWT provides new equipment with the ability to enhance the product features and benefits

TREATMENT FOR EXISTING EQUIPMENT

Retrofit existing equipment to improve its operating efficiency and life cycle

ENHANCE PRODUCT LINE

Enter new markets and broaden customer satisfaction

CUSTOM DESIGN

Let TWT, Inc. custom design a fluid management system to meet any industry specific application

- Residential
- Commercial
- Industrial

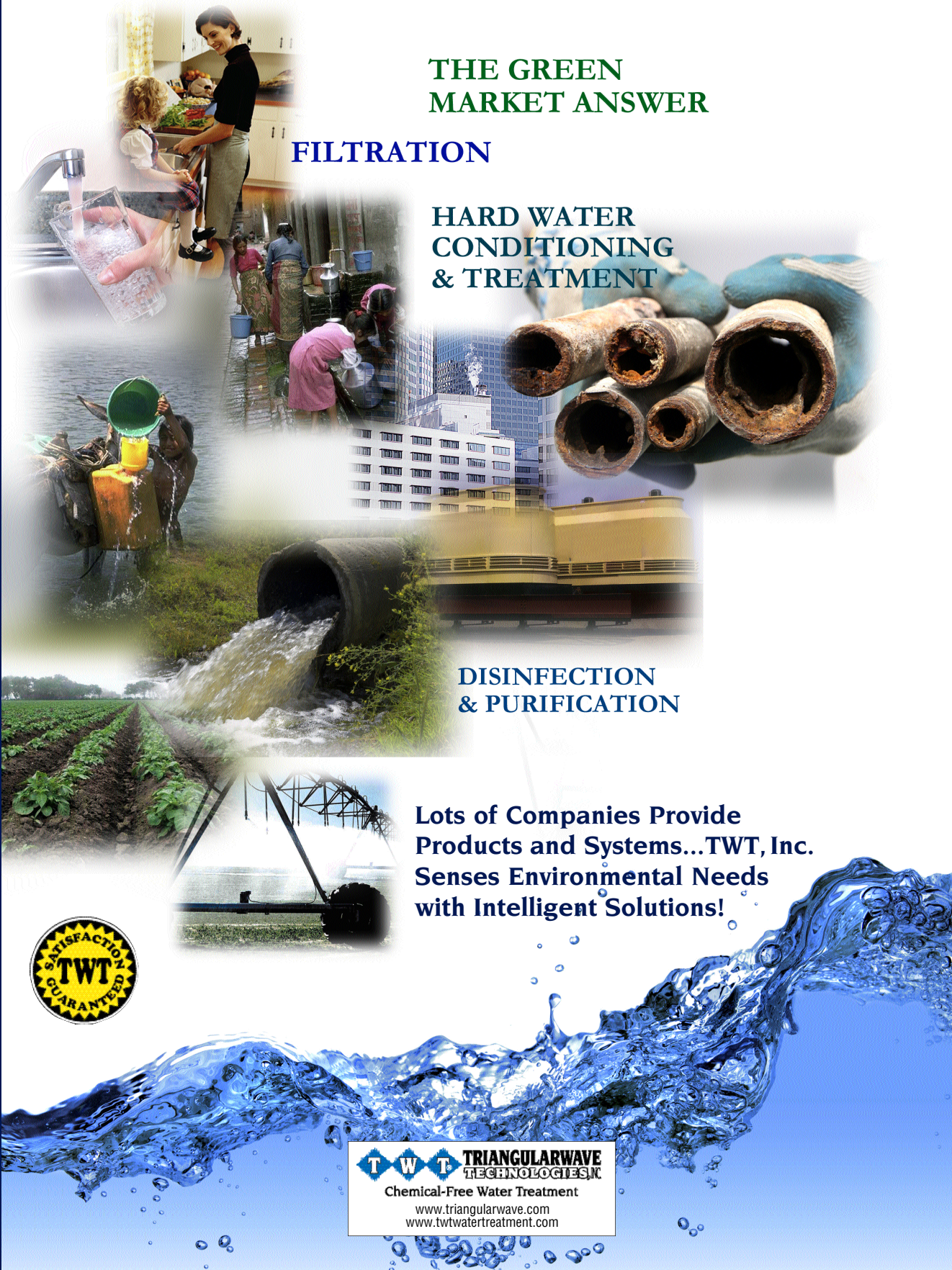
THE GREEN MARKET ANSWER

FILTRATION

HARD WATER CONDITIONING & TREATMENT

DISINFECTION & PURIFICATION

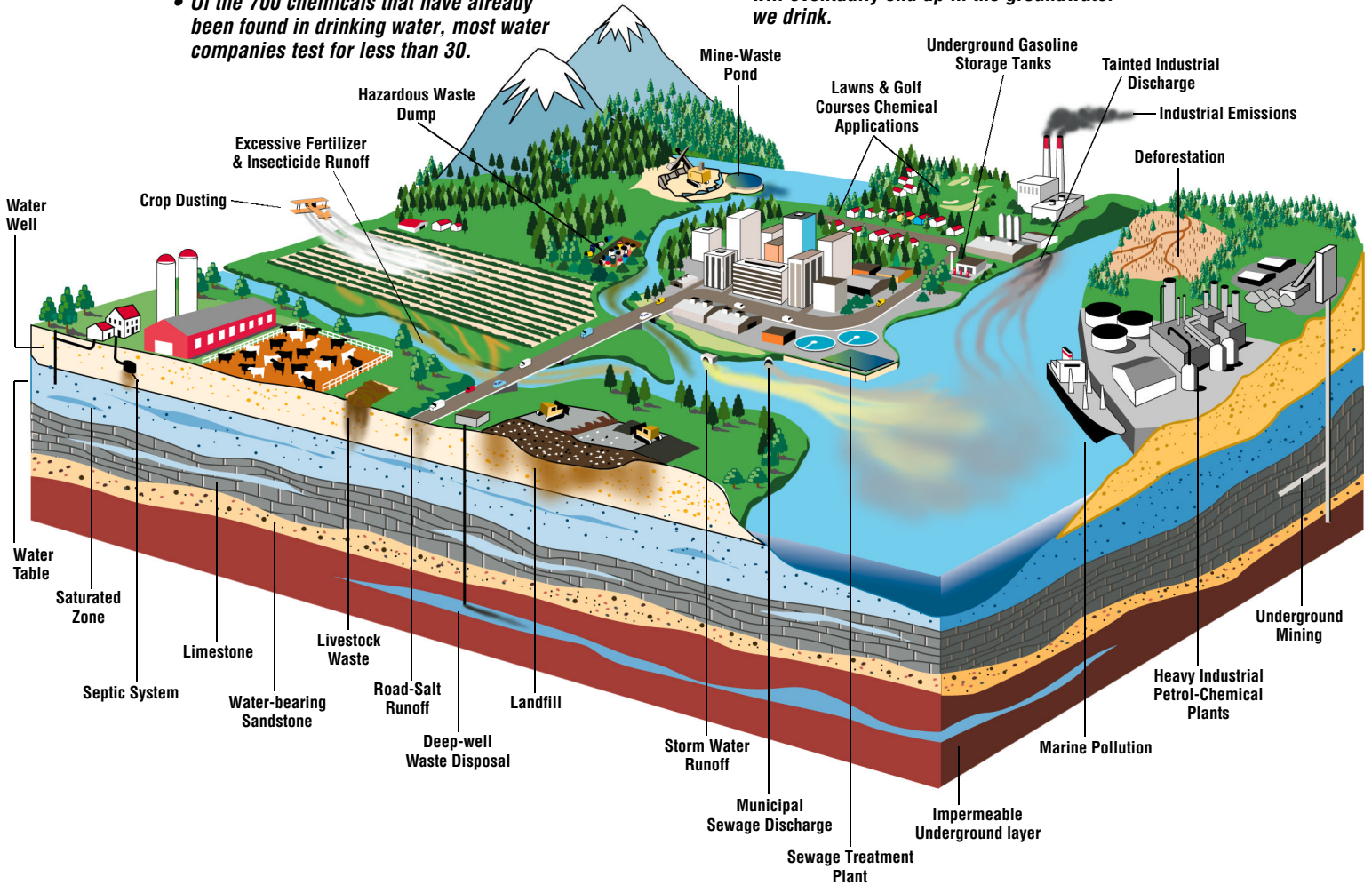
Lots of Companies Provide Products and Systems...TWT, Inc. Senses Environmental Needs with Intelligent Solutions!



WHAT IS IN OUR WATER?

Over 500 billion pounds of hazardous chemical waste are improperly disposed of every year.

- Every day, 50 billion gallons of liquid hazardous waste are disposed at 26,000 disposal sites, 85% are located above aquifer. Some chemicals, such as TCE are too toxic, a single gallon can contaminate a years worth of drinking water for 3800 people.
- Every year, 100 billion gallons of liquid hazardous waste are absorbed into groundwater supplies.
- Of the 1,000 EPA Priority waste sites in the U.S., less than 20 have been cleaned up since the EPA's inception.
- Of the 700 chemicals that have already been found in drinking water, most water companies test for less than 30.
- This much we know... If we put toxic chemicals into or on the ground, they will eventually end up in the groundwater we drink.



Federal, State, and Local authorities will do their best to bring us the best water possible. But, they cannot undo all damage to our water sources that has taken decades of ignorance and abuse to inflict

At our manufacturing facility, we have pioneered the advanced design of fluid management products to meet the needs of residential, commercial, and industrial applications. Triangularwave manufacturing expertise is reflected in our efficient engineering design team. Our technical test department is meeting the ever changing requirements of the fluid management environment. Our unique capabilities and design

expertise have successfully solved a wide variety of problems for a wide variety of customers. The TWT fluid management systems and filtration media provide a bacteriostatic environment, and are designed to remove chlorine, lead, volatile organic chemicals, hydrogen sulfide and sulphur, herbicides, pesticides, chemical fertilizer residues, trihalo-methane, and many other pollutants. These filters remove odor and restore the taste and clarity of municipally treated water.



THERE ARE THREE BASIC CAUSES OF WATER/FLUID RELATED PROBLEMS

■ Scale

- Problems:
- Loss of heat transfer efficiency
 - Flow restriction in pipes and frozen valves
 - Back pressure increases energy needed to pump
 - Reduced reaction vessel capacity
 - Localized corrosion
 - Visible surface scale objectionable

■ Adverse Water Chemistry

- Problem:
- General corrosion

■ Biofilm

- Problems:
- General corrosion
 - Biocorrosion (both general and local)
 - Sludge
 - Disease and odors
 - Bacteria, Algae, Fungus, etc.

■ The End Results of Water Problems

- Wasted water • Ruined equipment • High energy costs
- Productivity losses • Product contamination or quality problems • Disease and odor in the cooling water environment

■ Materials That Deposit on Equipment and Cause Water/Fluid Problems

Materials may be animal, vegetable, mineral, or corrosive water chemistry. The sources of the materials include: pollution, wind borne dirt, bacteria, algae, chemical additives, and process components themselves. Some of the materials can grow; such as bacteria, algae, fungus, etc

■ Treatment

Scale, Adverse Water Chemistry & Biofilm Can Cost You Money!

Untreated fluid used in boilers, hot water systems, cooling towers and other fluid related equipment contains dissolved salts, gases and traces of many minerals and metals. These elements are the direct cause of scale buildup in pipes and equipment. If left untreated, scale buildup can increase fuel costs, repair and ongoing cleaning costs, downtime and may eventually result in significant equipment replacement.

The bottom line is that if the problem-causing materials are controlled, then 85% to 90% of the problems are eliminated. Treatment options include removal and control.

- Removal involves physical or chemical cleaning, filtration, ion exchange, softening, demineralization, reverse osmosis.
- Control involves adding chemicals or ozone, or electro-magnetically conditioning the water.

■ The Importance of Clean Water

Clean water is essential for human well-being and survival, agriculture, and industry. When water is consumed or absorbed with harmful contaminants or in insufficient quantities, human condition can deteriorate through malnutrition, sickness, disease, miscarriage, and death.

■ The earth is abundant in water but only 1% of the earth's water is drinkable.

97% of the earth's water is in oceans and seas and contain intolerable levels of salt. While various desalination technologies exist, no cost-effective high-throughput method is available. The remaining 2% of the earth's water is frozen and not readily accessible.

Drinkable water comes from two sources: Surface water at lakes, reservoirs and rivers which supply most major cities, groundwater from wells that access underground geological formations such as aquifers which is used by smaller communities. While pristine water is usually clean, regulatory agencies monitor over 100 dangerous water contaminants which can come from rain runoff over hazardous waste, naturally occurring sources of contaminants, water treatment chemicals, and pollution from residential consumers, industry and agriculture.

Water is generally classified into two groups...surface water and ground water:

■ Surface Water

Surface water is just what the name implies; it is water found in a river, lake or other surface impoundment. This water is usually not very high in mineral content, and many times is called soft water even though it usually is not. Surface water is exposed to

many different contaminants, such as animal wastes, pesticides, insecticides, industrial wastes, algae and many other organic materials. Even surface water found in a pristine mountain stream possibly

contains giardia or coliform bacteria from the feces of wild animals, and should be boiled or disinfected by some means prior to using or drinking.



■ Ground Water

Ground water is water trapped beneath the ground. Rain that soaks into the ground, rivers that disappear beneath the earth, and melting snow are but a few of the sources that recharge the supply of underground water. Because of the many sources of recharge, ground water may contain any or all of the contaminants found in surface water as well as the dissolved minerals it picks up during its long stay underground.

Due to the different characteristics of ground and surface water, it is important that you know the source of your water. Of the 326 million cubic miles of water on earth, only about 3% of it is fresh water, and 2% of that is frozen. Only 1/2 of 1% of all water is underground; about 1/50th of 1% of all water is found in lakes and streams. The average human body is about 70% water. You can only survive five days or less without water.

■ Hard Water: What is hard water?

Waters that contain dissolved minerals, such as calcium and magnesium above certain levels are considered "hard water" because water is considered a "solvent", i.e., over time it can break down the ionic bonds that hold most substances together, it tends to dissolve and gather up small amounts of whatever it contacts. For instance, in areas of the world where rock such as limestone, gypsum, fluor spar, magnetite, pyrite and magnesite are common, well water is usually very high in calcium content, and therefore considered "hard".

Hard water is the most common problem found in the average home. Hard water is water that contains dissolved hardness minerals above 1 grain of hardness per gallon (GPG*) or about 17 parts per million of hardness.

■ What are hardness minerals?

Calcium, manganese and magnesium are the most common.



Scale Encrusted Scale Pipes



Pounds of Scale Removed from a Hot Water Plumbing and Heating Systems

■ How do you measure hardness?

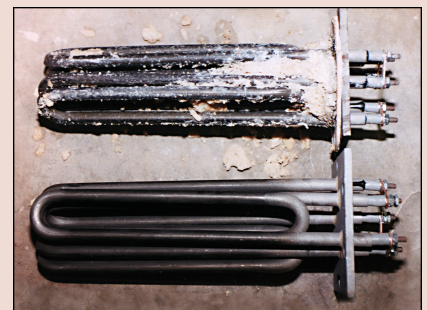
Parts per million or grains per gallon are the most common unit to measure hardness. One part per million (PPM) is just what it says: out of one million units, one unit. Grains, or grains per gallon (GPG) is a weight measurement taken from the Egyptians; one dry grain of wheat, or about 1/7000 of a pound. It takes 17.1 PPM to equal 1 GPG.

■ Why should hard water concern me? Problem

For many uses, it would not matter. For instance, to put out fires, wash the mud off the streets or float your boat, water would have to be pretty hard to cause a problem. But for bathing, washing dishes and clothes, shaving, washing your car, and for most commercial and industrial uses, as well as others, hard water is not as efficient or convenient as soft water.

For instance:

- You generally use only 50% as much soap cleaning with soft water or with water where the effects of hardness have been neutralized, as you do with hard water.
- Hard water and soap combine to form "soap scum" that can't be rinsed off, forming a "bathtub ring" on all surfaces and leaving unsightly spots on your dishes, fixtures, etc..
- Soap scum will remain on your skin even after rinsing! It will clog the pores of your skin and coat every hair on your body. This serves as a home for bacteria and causes diaper rash, minor skin irritation and skin that continually itches.
- When hard water is heated, the hardness minerals are re-crystallized to form hardness scale. This scale can clog your pipes and hot water heater, causing premature failure, and necessitating costly repairs or even replacement.
- For many industrial uses, the hardness minerals interfere with the industrial or commercial process, causing inferior product.



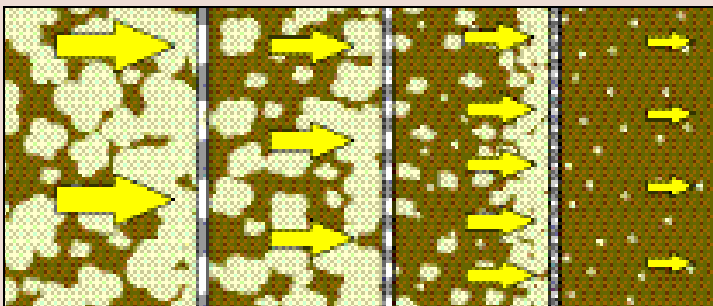
Scaled Tube Bundles Above

*Grains per gallon

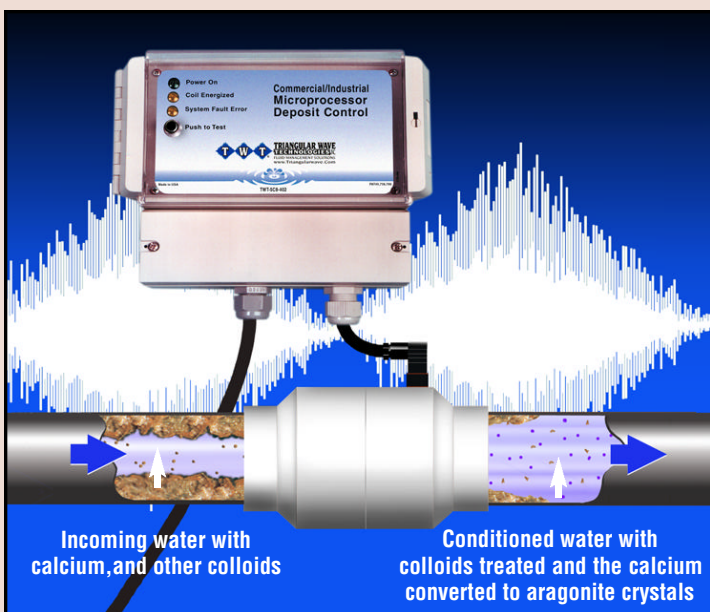
TWT, Inc. is focused on providing a complete selection of top quality water treatment, purification and conditioning solutions to discriminating consumers who demand the very best in water quality. Our mission is to provide you, the consumer, with direct access to premium water treatment technology solutions for you in your residential, industrial and commercial applications.

Triangulawave Technologies, Inc. products and systems provide technologically advanced methods for water and fluid management that are both efficient and cost-effective. Components and subsystems chosen from across the range of treatment methods can be combined in different configurations to provide custom solutions specific to any industry, site or application.

TWT, Inc. offers a full range of products & systems designed to address fluid problems wherever fluid flows. From patented deposit control technology to pre and post filtration, ionization, iron removal, disinfection, and ultraviolet purification treatment and conditioning, TWT has the versatile, efficient, cost-effective methods to solve your fluid management problems end to end.



The First Step in achieving clean water is a filtration system that effectively removes particulate matter and similar debris.



The Second Step in achieving clean water is the TWT Chemical-Free Deposit Control Technology (hard water problems solved easily)

The Third Step in achieving clean water is the TWT Ultra Violet, Ionization and/or Ozone Disinfection & Purification Technology. The output water is thus disinfected and offers exceptionally high quality for human consumption and use.

The Fourth Step in achieving clean water is a post filtration system if necessary and/or required.

- Controls scale, bio-film & corrosion
- Enhance operating efficiency & life-cycle of equipment
- Saves water & energy
- Protect new equipment: TWT provides new equipment with the ability to enhance it's features and benefits
- Treatment for existing equipment: Retrofit existing equipment to improve its operating efficiency and life-cycle

HOW TO CHOOSE THE RIGHT SYSTEM: Choosing the right system depends on these things...

- The water treatment requirements dictated by the base water quality and environmental factors found in your geographic location.
- The levels of chemical/biological contaminant's found in your personal water source as revealed in an independent water quality test.
- The pipe size and material of the water pipe feeding your home, office, facility or processing equipment.
- The minimum amount of water measured in gallons per minute (GPM) necessary to satisfy your peak water usage.
- Power/Current source available in your part of the world.

At TWT we feel the simplest way to choose a system depends on your personal situation. Home/office and facility owners with well water have different water treatment requirements than users who rent an apartment in a city. People with municipal water may choose to rely on a scaled down system that meets their current needs, while people drinking untreated ground or surface water need to fully account for all aspects of water treatment in order to guarantee the purity of their water. Contractors and architects building large projects or facilities managers responsible for maintaining expensive H.V.A.C. equipment have unique water treatment requirements as well. If you need guidance choosing the right system, contact us.

LOOKING FOR A CUSTOM SYSTEM SPECIFICATION?

- Regardless of the size of your home/facility, or your budget, TWT has the right water treatment products at the right price that will enable you to get the quality water you deserve.
- For clients managing a household or office who are looking for a custom system tailored to a specific set of requirements, TWT offers a **FREE CUSTOM SYSTEM SPECIFICATION**. Designing and implementing custom integrated "All-in-One" systems is one of our specialties, so if you are looking for a comprehensive custom water treatment solution for your home/office or facility, you have come to the right place.
- For clients with moderate water usage requirements, TWT can guide you in selecting the right combination of Point-of-Use products (Counter Top, Under Counter,...) to ensure that all of the water you drink, wash with and cook with is safe for your consumption.

In order to ensure the greatest level of performance and satisfaction in your work with the TWT products & systems, we recommend that you review Frequently Asked Questions and Alphabetical Listings of Topics on the TWT website. You may also contact our engineering staff, who will be pleased to work closely with you to determine the optimal application and installation for your industry specific needs.

- All products & systems are shipped with easy to follow installation and application guidelines.



Triangularwave Technologies, Inc. (TWT®)

TWT® THE SMART TREATMENT SOLUTION

Enter new markets, introduce new products, manage customer expectations and add more dollars to their bottom line!

TWT The Environmentally Friendly "Green Market" Solution!

See these technologically advanced products, systems and methods for yourself— Visit www.triangularwave.com www.twtwatertreatment.com

The Triangularwave Technologies, Inc. team consists of a diverse group of bright individuals with years of experience, who combine their talents as a team, revolutionizing the way water/fluid management products & systems are engineered, designed, distributed and installed.

Don't Wait...Contact us today for a free consultation and for information on what TWT system will meet your industry specific application and treatment needs.

Value Added Technology



TWT makes sense from an operational, economical and safety point-of-view.

Thank you, The team at TWT, Inc.



No Matter How Tough The Job...TWT® Has The Solution

TWT® The Ultimate in Water Treatment & Conditioning

The green way

