

Miscellaneous Applications



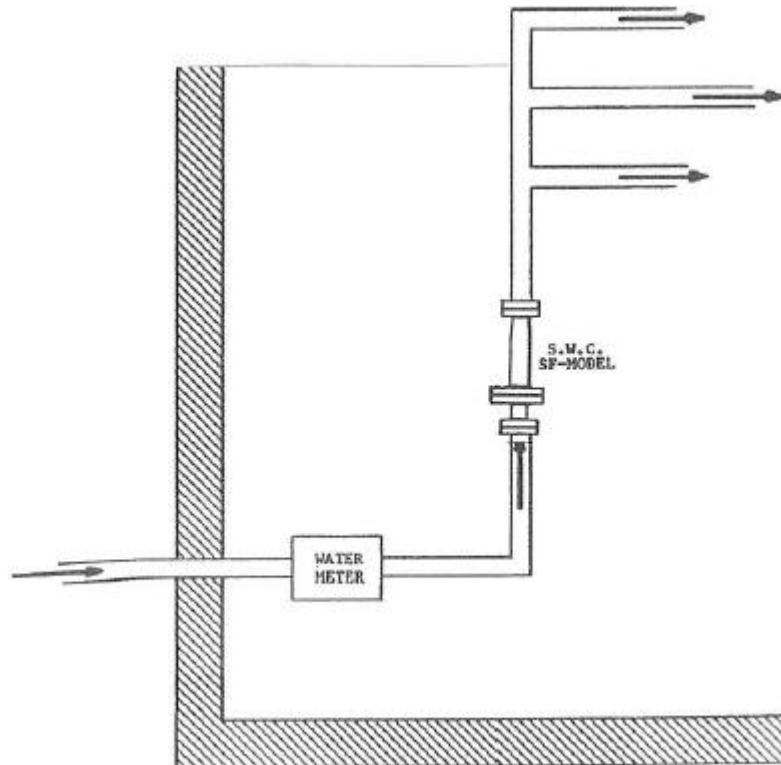
MAIN LINE INSTALLATION

SIZING AND LOCATION

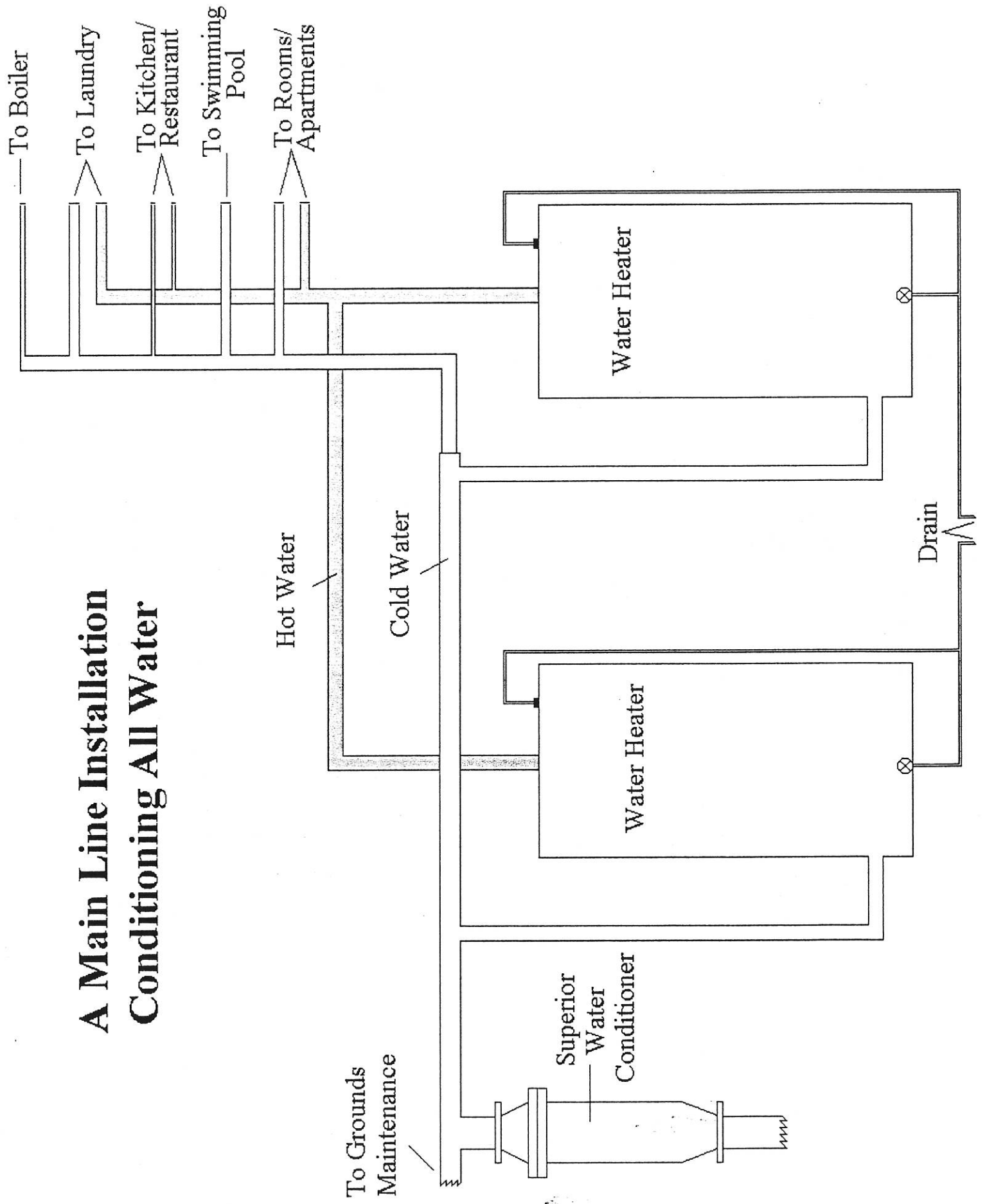
Check the flow rate of the water at the city water meter during the peak load. The water meter readings should be taken at intervals of five minutes and should be recorded during the entire length of time required to cover the peak period. From these readings the maximum flow rate in GPM can be determined.

On a well water source, sizing should be determined by the maximum capacity of usage. Install Superior on the outlet of the pressure tank.

Any recirculating water within the plant must be treated separately.



A Main Line Installation Conditioning All Water



WATER DISTILLER

GENERAL DESCRIPTION OF EQUIPMENT

Water still for the production of distilled water

SIZING AND LOCATION

Size according to maximum flow rate at peak period and install in a vertical position in the raw water inlet prior to the distiller.

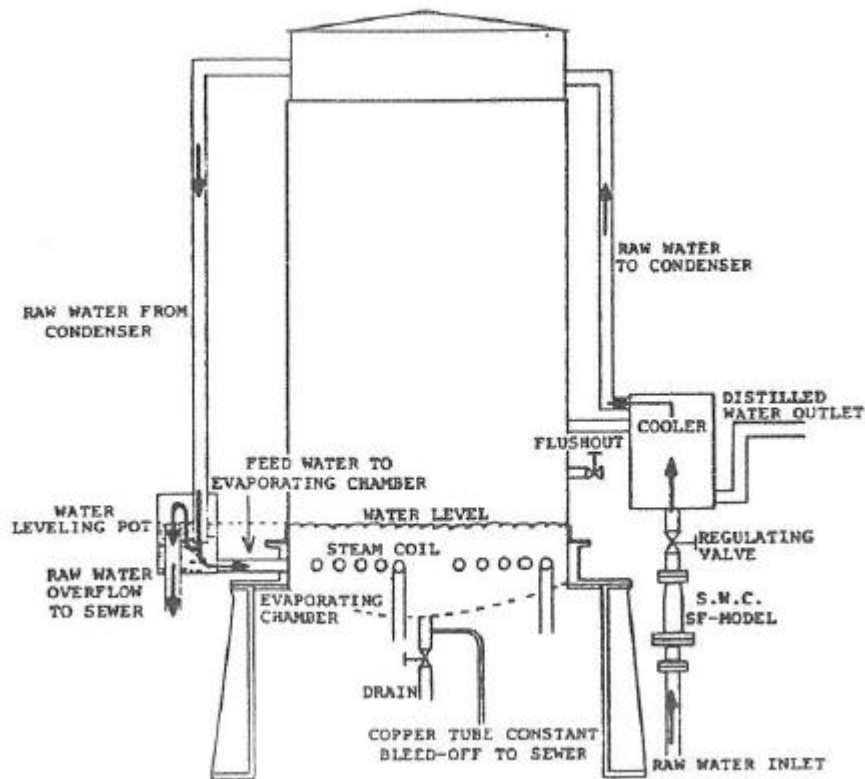
OPERATING PROCEDURES

During the descaling period, regulate the amount of bleed-off to at least double that of the rated capacity of the still. The evaporation chamber should be flushed out daily from the lowest point at the end of each run and opened weekly to remove the loosened scale.

After the clean-up period, the bleed-off can be reduced to slightly in excess of the rated capacity of the still.

Continue to flush the evaporating chamber daily at the end of each run.

Caution: Use ONLY on systems which have large drain and flushing capabilities.



BENEFITS TO SWIMMING POOL APPLICATIONS

Reduces pool maintenance

Saves up to 50% in chemicals, including chlorine

Reduces lime/scale build-up in heater (therefore less energy is consumed)

Reduces the lime/scale at the water level

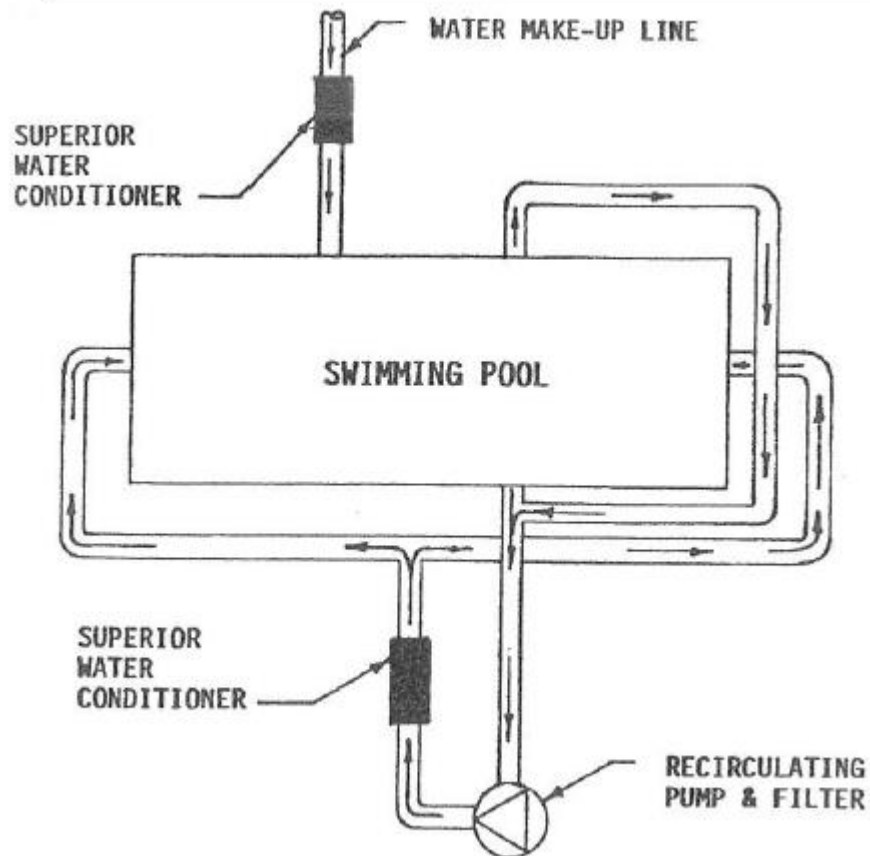
Reduces the turbidity (cloudiness or murkiness) of the water

Better transfer of heat in heater

Less restriction (water is moved easier by the pump)

Water flows through the filter with less resistance (water is wetter)

Non-polluting and chemical-free



AGRICULTURAL APPLICATIONS

SURFACE TENSION of water is reduced, allowing greater resistance of foreign particles – result is better soil penetration.

ROOT GROWTH is deeper, as water is distributed at lower soil levels.

LESS EVAPORATION occurs due to faster soil penetration.

WATER CONSUMPTION is reduced because of deeper penetration, reduced evaporation, and easier absorption.

SCALE FORMATION on sprinkler nozzles is minimal, resulting in longer intervals between servicing.

CLEAN-UP of nozzles and equipment service, if ever required, will be easier because residue will be softer and easier to remove than on equipment using untreated water.

NOTE: Since there are countless variations in both soil and water, it is not always possible to attain the same results under different conditions. The above are some of the things that can be expected under normal conditions. Efficiency of the system will vary, depending on soil conditions and other site variables.

SUPERIOR SOLVES PROBLEMS IN ISRAEL

The Superior Water Conditioner has applications all over the world, including the following installations in Israel.

PLASTIC PLANT

Plastro Gvat, a plastic plant, produces plastic pipes for irrigation and agricultural use. The plant uses a closed loop cooling system to cool their equipment. Chemicals and softening equipment were used to control scale build-up, but they still had to acidize the vacuum pumps and extruders every two weeks, which meant closing down the plant.

Water hardness was 400ppm (approximately 23 grains/gallon) with total dissolved solids of 700ppm.

In August 1979 a Superior RT-3000 was installed on their cooling system and all chemical use was discontinued. Since that time, there were no shutdowns until November 1981. At that time it was discovered that the customer had strayed from the recommended maintenance procedures. Rather than monthly drainage and replacement of the system's water, nine months had passed since the system was last drained. Upon return to the recommended maintenance procedures, scale again began to dissolve.

In April 1981 they installed four RT-1500s on new cooling towers for the injection machines. They are so pleased with the results that Superior Water Conditioners are now standard equipment on current and future cooling tower systems.

AGRICULTURAL SETTLEMENT

The Plastro Gvat factory is part of the Kibutz Gvat, an agricultural settlement of about 200 homes. Because of the good results shown in their plastic factory, the people in the settlement decided to use Superior on their two 100-horsepower steam boilers used for cooking, hot water, etc. Two RT-1250K models were installed in June 1981. Prior to the Superior installation, they used a water softener and were adding some chemicals to control corrosion. Their pipes were lined with scale.

When Superior was installed, existing scale began to dissolve. In fact, Superior worked so well that drain valves had to be installed downhill to remove loosened scale.

After two months, the boilers were opened and were 85% free of scale. It took half a day to remove all the mud and fallen scale from the boilers. Since the Superior installation, no chemicals have been added and the water has not been softened. In October, they installed three RT-1500K models and four RT-1000K models in their hot water system.

Prior to Superior, they used the two boilers a few hours every day during the "rush hours." Since Superior, one boiler is done the job even in their winter season, when they require more heat and hot water.

Within six months, they received a 70% return on their investment in fuel savings alone! Because they no longer use chemicals, they have actually saved even more.

The Kibutz is very happy with their results and, like other satisfied Superior users, they have been spreading the Superior story.

BOWLING GREEN SCHOOL DISTRICT

Jim McCray, Director of Buildings and Grounds at the Bowling Green Schools in Bowling Green, Ohio has had success with Superior in his schools.

In December 1980, Jim installed a Superior model RT-3000K on the hot water supply line for one of his schools. Their water is very hard, about 120 grains hardness.

By March 1891, Superior was dissolving scale and improving conditions. The existing scale was coming off the sides of their dishwasher and settling to the bottom. One of the employees commented that she was seeing metal now that she had never seen before, and she had been there for over eleven years.

This installation was not the first for Jim. He had installations in several of the nine schools he takes care of, treating hot water heaters, boilers, and domestic water systems. Prior to the Superior installation, they had to replace a water heater in one of his schools, costing about \$7,000, because scale had caused it to fail. They have found that by using Superior, they can increase the life of the heaters and reduce maintenance costs.

At another school where they don't have an automatic dishwasher, the employees in the kitchen said that the first few days after Superior was installed, they had to learn to do dishes all over again. They couldn't believe the difference in the water and the small amount of detergent that was required.

Eventually, as money allows, Jim plans to have a Superior installed on every boiler because it keeps the coils clean, reduces burn-outs, eliminates acid cleaning, lengthens the life of the equipment, and reduces expensive maintenance costs.

AHWATUKEE: HOUSE OF THE FUTURE

The Ahwatukee House, located in Scottsdale, Arizona, is a house of the future offering a blend of the latest technology and creative concepts in living. The house is designed by the Frank Lloyd Wright Foundation at Taliesin West in Scottsdale, with Charles Schiffner as the architect and Presley Development Company of Arizona as the builder. The ideas of tomorrow are here today in this “home of dreams,” with many of its features available today.

Through the efforts of Professional Reps of Arizona, the local Superior reps, the Ahwatukee House selected to use Superior Water Conditioners® for the complete treatment of all water-related equipment to control and eliminate lime scale and corrosion build-up. Superior units were placed in several locations throughout the house, as follows.

MAIN WATER LINE

Uses an RT-1250AK to protect valves, pipes, and water meter.

ROOF-TOP SOLAR COLLECTORS

Uses three RT-500K units to control scaling in the very sensitive collector tubing. The system operates with continuing efficiency, making maintenance or periodic replacement due to liming or scaling unnecessary.

PLUNGE POOL

Has two units installed, an RT-1000K on the fill line and an RT-2000K on the recirculating lines to control lime build-up in the lines and equipment and reduce cleaning on the side walls.

CHILLED WATER AIR CONDITIONING SYSTEM

All recirculating water in the chiller system is passed through an RT-1500K on every pass to control lime build-up and assure good valve function.

Billing
6921 Moorfield Court
Fort Wayne, Indiana 46816

**JIFFY
WASH**

Shipping
6611 Bluffton Road
Fort Wayne, Indiana 46819
219/747-9031

July 9, 1996

SUPERIOR MANUFACTURING DIVISION
MAGNATECH CORPORATION
2025 S. Calhoun
Fort Wayne, Indiana 46802

Attention: Mr. Charles Sanderson, President
Mr. Henry Hoevel, Consultant

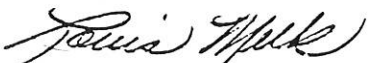
MAGNATECH FILTRATION SYSTEM, INSTALLED JANUARY 1995

Before this unit was installed, especially during the colder months of December-March, freezing conditions caused damage or broken water mains in several locations close to our business. One year we had three breaks all within one block of our business location. Every year for the past 25 years this has been a normal part of winter. Each time this happens heavy rust and other foreign materials enter our water system and plug our filter screens in our three water heating units. Depending on the number of washers that are running at the time, the cold water valve screens gradually fill with rust until the machine will no longer fill. When this happens we have no alternative but to close and disassemble our equipment, clean and reassemble. Can you believe that these problems always happen when we are extremely busy, or at our peak times. Plus customers get very upset when we tell them we have to close. There have been times after everything has been cleaned, we still have a couple of machines that will stop because of the remaining rust and dirt that is still in our water lines. Throughout the years it has been an ongoing occurrence for mains to give way to winter conditions. Early every spring the water department comes to flush the fire hydrants in our area. This is very important in the event of a fire. However, instead of opening the valve part way on the hydrant, they open it full blast. Guess what? All the heavy rust and foreign material at the bottom of the main are churned up like a milk shake and now flow into residential homes and businesses throughout the area. Each year it's like an accident waiting to happen. If it sounds like I'm complaining, I know that I'm not alone. A friend of mine, who owns a laundry, told me recently the City was working on a main close to him. He had to shut down until the repair was completed. After several hours the water was turned on and his customers had been waiting to use the machine, the water was coming in all machines and suddenly the water stopped, customers complained, he checked his water lines, water was still coming into the building, but not the machines. Next he removed one of the cold water control valves from the machine, took it apart, and guess what? It was full of tar. The rest of the day he spent cleaning out water valves on the remaining machines that were in use. What would have happened if the tar went through the control valves and onto the clothing. I would rather not think about it!

Our Magnatech Filtration System has eliminated many of our greatest fears: heavy rust and minerals. The bad feeling is, we never know when it will happen again, but when it does we do not have to close the business to clean our filters in our equipment and chase our customers away.

I would like to thank you both for the peace of mind you have given us, plus all the extra work and aggravation you have saved us. Please feel free to use our comments with anyone who may be interested in your system. If it would be to your customers' advantage, please feel free to bring them by and see your system in operation at our location.

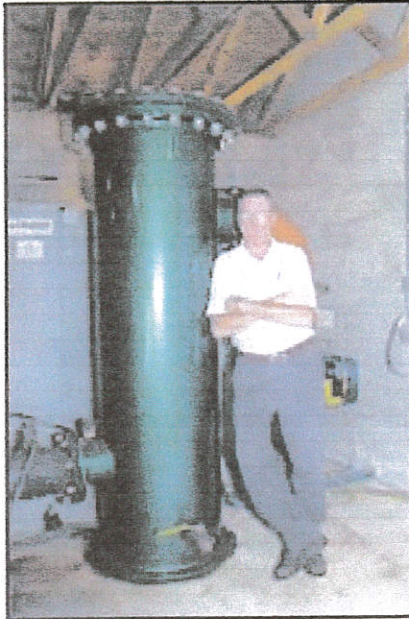
Most sincerely,



Louis Meek, Owner

The following excerpts are from "Good news for the environmentalist, the magnetic water conditioning system" an article written by Matt McClure published in the August 7, 2002 edition of Nuvo magazine.

If you're searching for some good news on the environmental front, turn off CNN and take a look in Indy's own backyard. Actually, make that Brickyard, as in the Brickyard Crossing Golf Course. Three years ago, Brickyard Crossing installed a magnetic water conditioning system. According to IUPUI professor Dr. Ingrid Ritchie, who has researched magnetic water conditioning, the Brickyard Crossing's magnetic system enabled the golf course to reduce the application of fertilizer and water to its links by 71 percent, from 27,619 pounds per year to 8,132 pounds per year. The application of less fertilizer and water provides an obvious environmental benefit, and it also cuts costs. Ritchie estimates a cost savings of 62 percent.



Jeff Stuart, the superintendent at Brickyard Crossing, says he's "very much satisfied" with magnetic water conditioning.

"We've been very much satisfied with the system," says Jeff Stuart, the superintendent at Brickyard Crossing. Stuart notes that, in addition to the cost savings and environmental benefits, the magnetic system has eliminated the dry and wet spots on the course – a big plus for golfers.

Problem: scale

Magnetic conditioning reduces the build-up of scale within pipes carrying hard water. Scale – a rock-like, white-to-gray substance – accumulates wherever you find hard water that is heated. If you don't soften the water in your home, you probably have scale visible on your shower heads and water taps, and perhaps even on your tea kettle. Removing scale can provide quite challenging, as it grips surfaces as fiercely as barnacles to a lobster boat.

In a home appliance such as a washing machine, the accumulation of scale adversely affects the product's efficiency and longevity. In industrial applications – boilers and cooling towers, for example – scale can pose similar problems, only on a much larger scale, so to speak. Traditionally, chemicals like sulfuric acid have been used to remove scale in industrial applications. The downside to this practice involves the hazards associated with draining extremely toxic chemicals into the sewer system, as well as the danger faced by the workers who handle the chemicals.

Solution: magnetic conditioning

Magnetic conditioning offers a non-chemical method for preventing scale. The operating principle behind the magnetic technology involves the interaction between a magnetic field and ions. The magnetic field increases the frequency with which ions of opposite charge collide, which ultimately causes the scale formed to be non-adherent, and therefore a non-problem.

Magnetic conditioning devices vary in size. For a light commercial application, such as a coffee maker, the magnetic device measures the size of a roll of quarters. In contrast, a cooling tower might require a magnetic device as large as a VW bus.

Dr. Ingrid Ritchie and Robert Lehnert, both professors at IUPUI, published a study that supported the efficacy of magnetic water conditioning. "The results of our study demonstrated that magnetic water conditioning does affect the chemistry of the water," Ritchie says. "The bottom line: The magnetically treated water visibly resulted in less scale – about half as much – than water that was not treated."

In discussing the environmental and cost-saving benefits of magnetic conditioning, Ritchie cites a Department of Energy study released in 1998. The study included a life-cycle comparison between traditional lime-softening treatment and magnetic water treatment for a hypothetical industrial boiler. "The comparison showed that magnetic conditioning would result in reduced pollution and a life-cycle cost savings of \$2,759,000," Ritchie says. "The payback for the equipment is less than one year for this hypothetical facility. The actual savings at a given facility will vary, depending on the individual applications and conditions."

Clearly, then, magnetic water conditioning represents a win-win for business and environmental interests. Backed by Ritchie's extensive research, magnetic devices likely will become standard equipment on a wide range of applications and machinery: water heaters, irrigation systems, heating and air-conditioning units, cooling towers – the list goes on and on. The end results will be increased energy efficiency and decreased pollution. If you're concerned about the environment, savor this rare instance of good news.

ALTON COMBUSTION COMPANY

10812 NORTH / 100 EAST
OSSIAN, INDIANA 46777

December 28, 1990

Mrs. Beth A. Hill
Director of Public Relations
Kemtune, Inc.
2015 South Calhoun Street
Fort Wayne, Indiana 46857-1325

Dear Beth:

We have been a customer of Kemtune for over 10 years and have purchased a total of nineteen (19) Superior Water Conditioners to date.

The applications vary from water heaters, steam generators, and high pressure boilers, however, each installation has performed extremely well even under severe conditions.

The PB-50 unit that we installed in the feedline of a used boiler at the Casad plant two years ago was recently inspected and found to be clean with the bare tubes visible in some areas.

Prior to the installation of the Superior Water Conditioner, the boiler was badly scaled with the tubes almost bridged. A thin piece of paper could be slid between the tubes two years ago, but now the scale has been reduced to a fine coating that allows your fingers to be placed between the tubes.

As I am sure you are aware, boiler scale reduces heat transfer considerably due to the insulating qualities of the deposits, and when the stack temperatures are gradually reduced, it is positive proof that less heat is going out the chimney with more of the heat being transferred into the water to produce steam.

To my knowledge all nineteen (19) units are working successfully and we will continue to buy more if and when the need arises.

By the way, the source of water at the casad plant is from a well, and is 42 grains hard with high contents of sulfur and iron.

Mrs. Beth A. Hill
December 28, 1990
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Chemical treatment has been totally discontinued and the water softeners have been disconnected at all Superior Water Conditioner installation sites.

Very Truly Yours,

A handwritten signature in cursive script that reads "Ray Herman".

Ray Herman
President

BENEFITS OF SUPERIORIZED® WATER **As Reported for Domestic Use**

Superiorized® water provides more complete saturation, faster and deeper penetration of the H₂O molecule into fabrics and other washable materials.

Benefits of Superiorizing® water prior to an ion exchange water softener:

- Better and more complete backwash
- Better brine transfer
- Reduces salt consumption
- Excellent backup if softener fails
- Reduces surface tension – better wash and rinse
- Causes soft water to be less corrosive
- Controls any potential for scaling

Some of the applications include:

- Irrigation of lawn and shrubbery
- Washing the car, windows, shower doors, etc.
- Dishwashers (reduces spotting)
- Laundry (better wash and rinse)

Other applications for scale control:

- Water heaters – better heat transfer, less energy
- Dishwashers – heating element and spray nozzles
- Humidifiers – media stays cleaner longer, cleans easier
- Ice makers – more production and less service calls
- Coffee makers – reduce leaning, hotter coffee
- Swamp coolers – better air flow through water curtain
- Mist sprayers – finer mist spray, nozzles stay cleaner, replace nozzles less often
- Geothermal heat pumps – more efficient, less maintenance and requires less energy

Pretreatment benefits for other water quality improvement equipment:

- Filters – helps to prevent packing and channeling
- Softeners – reduces salt consumption, provides better backwash/rinse and more efficient ion exchange
- Reverse osmosis – keeps membrane cleaner longer, produces a higher yield and less water to the drain