

**KENT
COUNTY
WATER
AUTHORITY**

**CONSUMER
CONFIDENCE
WATER QUALITY**

**ANNUAL REPORT
2012**

KCWA Consumer Confidence Water Quality 2012 Annual Report

We are once again proud to present you with this year's Water Quality Report. This year's report covers all testing completed from January 1, 2012 through December 31, 2012 and fulfills both the Environmental Protection Agency (EPA) and Rhode Island Department of Health (RIDOH) requirements to provide a "Consumer Confidence Report" to our customers. This publication reflects our ongoing efforts to keep you informed about the quality of the water and services we deliver to you every day.

We remain committed to producing drinking water that meets all state and federal drinking water standards. This report includes information related to the origin of your water, what it contains, and how it compares to the quality standards set by the EPA. Be assured, the Kent County Water Authority and the professional staff are committed to providing our customers with the finest, most cost effective and reliable drinking water.

It's what's inside your water that counts and nothing counts more than your health. The Kent County Water Authority and its predecessor companies have been delivering safe, dependable water, seven days a week, 24 hours a day for 133

years. We endeavor to adopt new and better methods for delivering the best quality drinking water to you. As new challenges to drinking water quality and safety emerge, we remain vigilant in meeting these demands while continuing to serve the needs of our customers. The bottom line is it's important to understand the facts about the quality of your drinking water. As reported this year, and in previous years, our monitoring results show our system had no violations. Water delivered by the Kent County Water Authority meets or surpasses all federal and State of Rhode Island requirements. You put a lot of faith in us and we take that very seriously. Thank you for your continued confidence in the product we deliver to you.

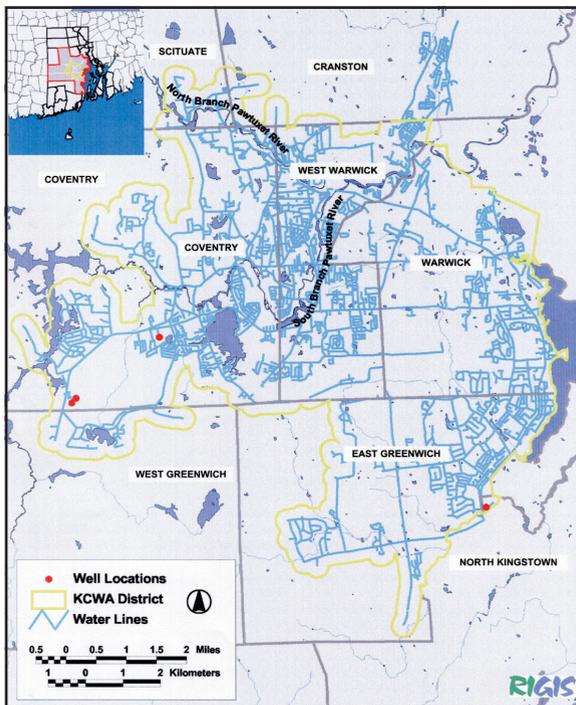
Water delivered by the Kent County Water Authority meets or surpasses all Federal and State of Rhode Island requirements.

We have learned through our monitoring and testing efforts that some regulated constituents have been detected. The EPA and RIDOH have determined that your water is SAFE at these levels. To learn more, please continue reading. We will tell you about the quality of your drinking water, its sources, and overview of the water system, its future goals, progress and more. Should you have any questions concerning this information or about your water utility, please contact our General Manager/Chief Engineer, Timothy J. Brown, P.E. at 401-821-9300 or customerservice@kentcountywater.org. Customer concerns regarding Providence Water results may be directed to the Customer Service Department of the Providence Water Supply Board at 401-521-6300.

We value your input and want our customers to stay informed about their water utility. Public participation adds value to the decision making process regarding the quality of your water and the service you are provided. If you would like to learn more about your water utility or play a part in its future, please feel free to attend any of our regularly scheduled board meetings held on the third Thursday of each month. Meeting agenda information can also be found on the Secretary of State website, <http://www.sec.state.ri.us/govtracker/>. Meetings begin at 3:30 p.m. at our office located at 1072 Main Street, West Warwick. We look forward to seeing you there!

Additional Health Information

The sources of drinking water (both tap and bottled water) include rivers, lakes, ponds, reservoirs, springs, and wells. As water travels over the land or through the ground, it dissolves



naturally occurring minerals, radioactive material and can pick up substances or contaminants resulting from the presence of human or animal activities.

All sources of drinking water are subject to potential contamination from substances that are naturally occurring or man-made such as: microbes, inorganic and organic chemicals, and naturally occurring radioactive substances. All drinking water, including bottled drinking water, may reasonably be expected to contain at least small amounts of some constituents. It's important to remember that the presence of these constituents does not necessarily pose a health risk. More information on contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline 800-426-4791 or visit the EPA web site www.epa.gov/safewater.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer who are undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly and infants can be particularly at risk from infections. These people should seek advice from their healthcare providers about drinking water. EPA and CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Water Drinking Hotline (800-426-4791).

Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask for advice from your healthcare provider.

MCLs are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day, at the MCL, for a lifetime to have a one-in-one-million chance of having the described health effects.

Licensed and Qualified Personnel

The Kent County Water Authority is licensed by the Rhode Island Department of Health as a public water supplier. To conform to regulatory requirements, operators of a public water system must also carry individual licenses pertaining to their job's specific duties in both treatment and distribution of the water supply to you. With the exception

of administrative support and customer service staff, all of our employees hold various levels of individual licenses as both treatment and distribution operators. These individual licenses must be maintained active in order to remain employed at the Kent County Water Authority. Maintaining an individual license requires participation in continuing education programs. Our employees in these capacities must attend continuing education programs, as necessary, to meet the credit requirements for licensing renewal outlined in the Rhode Island Department of Health Rules and Regulations. The higher the grade numbers the higher the level of licensing and increased number of credit hours required to renew the license. Currently, 26 of our 32 employees hold Rhode Island Department of Health licenses:

License Level	Management	Field personnel
Grade 4D	3	0
Grade 3T	5	1
Grade 3D	2	6
Grade 2T	1	4
Grade 2D	3	7
Grade 1T	2	12
Grade 1D	0	6

In addition to the Rhode Island Department of Health licensing, some of our staff also holds professional engineer licensing and certification in the electrical, mechanical, and automotive trades.

What does this mean? You can be confident that dedicated, properly trained and licensed personnel are working to provide you with clean potable drinking water meeting all of the Rhode Island Department of Health public drinking water guidelines. We are proud of the level of commitment and licensing our employees convey in their endeavor to best serve you, our customers.

Rules and Regulations

Rules and Regulations represent a method of keeping our customers informed of both the water utility and customer responsibilities concerning things like billing, maintenance, ownership guidelines and other important issues. During many of our customer service interactions, we find our customers communicating that they are unaware of their responsibilities as a customer. This can sometimes leave customers in precarious situations when a repair is required or a change in property ownership is about to occur. The acceptance of public water from the Kent County Water Authority represents a contract between the customer and water utility. Each party's responsibilities are delineated in

the applicable sections of the Kent County Water Authority Rules and Regulations. We strongly recommend that all customers periodically review the rules and regulations to keep current of each party's responsibilities and stay abreast of any changes that may occur from time to time. Please feel free to contact any of our customer service representatives anytime you have a question or concern. A copy of the Kent County Rules and Regulations is available at our main office or online at www.kentcountywater.org.

New and Improved Website

In January 2013 we launched our new and improved website www.kentcountywater.org. This is our first phase in making our website more customer friendly and interactive. The look, feel and software upgrades now make it easier to navigate and download information. More information was included to help keep our customers informed of what is in the works, various technical studies, regulatory reports and future plans for system improvements. Phase two and three website improvements come under the auspices of our Finance and Administration Department and will be focused on providing billing history information and a credit card option for the payment of bills. Please visit the website and feel free to provide your value added suggestions to customerservice@kentcountywater.org.

Refunding Bond Sale

During 2012 we received a Standard and Poor's rating of "A+" and Moody's Investor Service rating of "Aa3". This is an exceptional accomplishment that reflects strong confidence in the overall financial stability and management of the Authority. With these high ratings and prevailing low interest rates, we were able to proceed with a bond refinancing initiative relative to our outstanding capital program bond debt. The proceeds from our 2012 refunding bond sale were applied to retire our outstanding 2001 and 2002 general obligation bonds at a realized 10-year savings of \$5,443,495 over the retired issues.

Infrastructure Improvements

Kent County Water Authority distribution and transmission mains comprise a network of more than 430 miles of underground infrastructure, 8 storage tank facilities, and a multitude of pumps, wells and pressure control stations that must be continually maintained. Many of the existing water mains date back 100 years. Rhode Island General Law 46-15.6 requires that all large water suppliers implement an

infrastructure replacement program to address such things as aged and failing mains, rehabilitation of tanks and pumping stations. Each water system throughout the state is required by law to provide a funding mechanism to replace and/or rehabilitate identified components at the end of their useful life within the framework of the regulations. As you might expect, water rates have to go up in order to pay for the replacement of old infrastructure. Costs associated with these improvements are incorporated in the rate structure for your billing. The rate structure and each program is fully reviewed and approved by the Public Utilities Commission (PUC) prior to commencing work on the planned improvements. At the current PUC approved rate water costs less than a penny per gallon delivered to your home. Water is still the best bargain in town in comparison to bottled water or other utility and cable services.

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This year we replaced approximately 21,542 linear feet of water main:

- Cranston 3,538 feet
- Scituate 1,795 feet
- Warwick 5,491 feet
- West Warwick 10,718 feet

It is imperative for the continued viability of your water system and water quality to replace aging water mains, rehabilitate tanks and pumping stations and implement programs that streamline our service to our customers. Several planned projects were brought to final completion this year that replaced failing water mains, enhanced hydrant fire flow and provided better service to you. Additionally, the roadways were paved curb to curb as part of the water infrastructure projects without any municipal cost sharing. A great investment in your community without the increased tax burden.

Capital Improvements

Capital improvement projects are intrinsic components to the future of the water supply system. These types of projects are aimed at improving water quality, regulatory compliance initiatives, and supply improvements that better serve our customers.

In an October 18, 2011 ground-breaking ceremony, the Kent County Water Authority celebrated the commencement of construction on a new state-of-the-art ultrafiltration water treatment plant on Noosneck Hill Road in Coventry.



The source of water being treated by the new plant will be derived from three wells located in the Mishnock well field. For close to five decades, the Mishnock well field has been a renewable and reliable quality source for drinking water to the Kent County Water Authority customers. This well field supply continues to be a central component to our long-term strategic plan for our customer's public water service and economic growth for the communities we serve. 500 acres of contiguous land has been acquired to mitigate and protect this vital source of supply from potential contamination due to the effects of urban development.

The Mishnock Water Treatment Plant will allow Kent County Water Authority to supplement its public water supply by 2.4 million gallons per day. The new facility will employ deep bubble aeration to remove radon and carbon dioxide, oxidation, coagulation, flocculation to precipitate out dissolved iron, manganese, and humic substances, and finally ultrafiltration membranes will provide a barrier to bacterial and viral contaminants and ultimately polish the water to produce a clean pristine product to deliver to you, our customers.

The plant was designed with future growth in mind. The plant can be expanded using the existing layout and "plugging in" additional treatment filtration modules. This modular component will allow for a cost effective increased capacity of one million gallons per day in the future.



Future Growth

The wells and treatment plant will be in operation 24 hours a day to provide the most cost effective benefit to our customers. This project will significantly improve Kent County Water Authority's ability to meet the growing demand in the system associated with both residential and economic development and secure this valuable supply for decades to come.

Source Water Assessment

The Rhode Island Department of Health completed a source water assessment of the Kent County Water Authority supplies during 2003. Susceptibility to contamination was determined to be "MODERATE" according to the guidelines used by the Department of Health during the assessment. This ranking is considered to be an average ranking for the water supply. Individual groundwater recharge areas may fall into the high or extreme risk of susceptibility to contamination from land use activities. Future risk is expected to increase with continued development. Copies of this Assessment can be obtained from the RI Department of Health at 401-222-6867.

Protecting Your Watershed Protects You and Your Family

Clean, safe potable water starts at the source. Contaminants are mainly introduced to the watershed in what has been termed as point and non-point source contaminates. Point source pollution is that which can be traced to a specific source such as a factory, farm, leaking fuel tank or industrial site. Non-point source contaminants are more difficult to manage because they represent small, but cumulative contributions from each of us such as paint thinner, antifreeze and pesticides. It doesn't take long for our shelves to become cluttered with half-empty containers of chemicals. Chemicals or pollutants inadvertently put down a sink or street drain, or over application of fertilizer or pesticides sprayed around a foundation increase the occurrence of watershed contamination because they leach and travel with rainwater to the aquifers that supply your drinking water.

Responsibility in establishing future land use protection strategies, zoning and growth projections for municipalities falls squarely on each city and town through legislative empowerment in Rhode Island General Law 45-22.2-3. We cannot over emphasize that the decisions made by your municipal leaders ultimately affect the quality and overall cost of your drinking water. Public participation is key in the

protection of these sensitive drinking water sources. Your input is a critical component to the city and town land use decision-making process regarding these sensitive drinking water aquifers and critical recharge areas within your communities.

Public participation is key in the protection of these sensitive drinking water sources.

public awareness and appreciation of the vital groundwater resources in these areas. We urge you to contact your city or town council member and zoning official to see what else can be done to protect these resources. Public participation in the zoning decision making process is instrumental to protecting your drinking water resources. We think of our customers who live within these areas as the guardians of these essential resources. Your help to preserve these critical drinking water sources will be eternally appreciated by your future family and friends who must perpetually rely on them. Please contact us or the Rhode Island Department of Environmental Management at 401-222-3070 if you suspect a potential contamination concern exists.

The Pawtuxet, Mishnock and Hunt River aquifers and adjacent lands comprise the watersheds from which your water supply is drawn. As public sewer systems expand, concerns grow over groundwater aquifer depletion. Ninety to ninety-eight percent of household water use ends up down the drain. Water taken from the aquifer, that in the past was returned to the aquifer via onsite wastewater treatment systems in your yard, is now being transported out of the aquifer drainage basin via public sewers, treated to drinking water quality, and then dumped into rivers, estuaries and Narragansett Bay. This represents millions of gallons and hundreds of thousands of dollars each day. Many states are now embracing the concept of returning treated wastewater from their wastewater treatment plants to its origins in an effort to benefit the environment and keep aquifers from becoming stressed. Information on states in which this concept has been successfully implemented is available online. Take the opportunity to investigate these concepts and voice your opinion to promote this type of cost saving conservation initiative to your state representatives. We spend millions of dollars each year treating wastewater to drinking water quality. Why not put this effort to full circle resource recovery. There is no better way to recycle and conserve our most precious resource.

We have tried to make these areas more visible by installing wellhead protection signs within existing wellhead protection areas as an indicator of the proximity of your drinking water sources located in the towns of Coventry, East Greenwich and West Greenwich. We hope these signs have helped to increase

Statewide Water Use and Efficiency Rules

During 2011 the Rhode Island Water Resources Board voted to approve new water use rules based on the new authorizing legislation. The regulations require a reduction in customer use, capping it at 65 gallons per person per day. This limit includes all inside and outside water uses such as lawn and garden watering, car washing, pool filling, clothes washing, cleaning, drinking, cooking and any other water use. Some of the intervention highlights include but are not limited to:

- The retrofit installation of conservation plumbing fixtures and “WaterSense” appliances.
- Limits on the size of landscapes that require irrigation, amount of water that can be used and times for operation of irrigation systems.
- Seasonal and inclining block rate structures that increase the cost of use as consumption increases.
- Establishment of new plantings restricted to spring and fall only.
- Public education and water audits.

Many of these initiatives appear to fall under the purview and enforcement authority of city and town building and zoning officials but the water suppliers will be held accountable if targets are not met. Rate structures will have to change to comply with the adopted regulations. Increased costs and outside water use moratoriums can be expected if customer use exceed the 65 gallons per person per day cap. Lifestyle changes are necessary to comply with these mandates. Please take the opportunity to research better ways to curtail and take better control of your everyday water use. Looking for and repairing leaks, reducing the time in the shower and doing full loads in your clothes and dishwasher are all great ways to implement conservation wise strategies in your home.

Supply Deficit

We continue to look for economically feasible means to supply maximum day plus fire demands as our public water system expands. The availability and access to potable supply sources remains undefined within the state. The expressed viewpoint of the Rhode Island Water Resources Board and Rhode Island Department of Environmental Management is to curtail current residential demands as the primary methodology to provide additional supply to support future economic and residential growth. The Water Resources

Board is legislatively empowered as the agency that manages the withdrawal and use of the waters of the state with the obligation to assure drinking water is available to all Rhode Islanders for use in their daily lives. Rhode Island Department of Environmental Management is legislatively empowered to supervise and control the protection, development, planning and utilization of the natural resources of the state. The Kent County Water Authority must rely on these state agencies in its endeavor to acquire additional supplies to service the expanding service area.

The periodic shortfall many water suppliers experience in meeting current maximum day demands should not be viewed as a passing event. The news and internet is filled with reports from other states suffering similar or worsening conditions. Rhode Island water supply philosophy has become awash in a sea of innuendo that may well have a crippling effect on the long-term availability of public water supply into the next century. Discreet factors such as the acute effects of climatic change on water demand and aquifer depletion from the aforementioned expansion of public sewer systems are often discounted in resource evaluation. The ability to store large quantities of reserve capacity and recharge aquifers is increasingly necessary to transcend extended dry periods. Additional surface water reservoirs or impoundments and treated wastewater treatment plant effluent recharge are perhaps the only suitable long-term solution to this concern.

In the 1960's, the State of Rhode Island obtained 8,600 acres of land in the Big River Watershed through eminent domain. At that time this undertaking was with the specific intent of constructing a second drinking water reservoir supply, similar to the Scituate Reservoir system that currently supplies the majority of the state. To date, no action has been taken to construct this critical reservoir resource for our future needs. Over the years expansion of public water and public sewer systems throughout the state has continued to nibble away at the available safe yield of our groundwater aquifers and the Scituate Reservoir source to the point where the full capacity has been appreciably allocated under current maximum day demands. No other large drinking water sources exist within the state and demand continues to escalate in conjunction with residential and essential economic development.

Some time ago, the Rhode Island Water Resources Board completed a study to assess the potential risk of losing critical water sources of the state's major water suppliers in an attempt to identify potential supplemental emergency water sources to meet emergency demands. The assessment indicated it did not consider development of new surface water sources as part of the supplemental supply portion of the study. Conversely, loss of the Providence Water Supply

Board Scituate Reservoir source was indicated to present the largest impact on the ability to supply our customers and overall public water supply throughout the state. The assessment conclusions rely on existing local supplemental sources to provide minimum levels of service during a loss of a critical supply source; many of which will require considerable infrastructure improvements or development of alternate facilities to be effective. Based on this study, it could take months or maybe years after a catastrophic incident to construct infrastructure necessary to recover from a major failure or malevolent event on the Providence Water treatment plant and Scituate Reservoir facilities.

In an attempt to use some of the Big River Reservoir Management land for public drinking water, the Water Resources Board endeavored toward development of drinking water production wells. After years of testing and investigative work, the Water Resources Board concluded public water production wells were not economically feasible in the Big River Aquifer. Since then, the Water Resources Board has been absorbed into the department for statewide planning. In the waning days before the department transition, the General Manager expressed to us that the opinion of the board is that it was not feasible to develop ten wells that would only yield one million gallons a day based on the aquifer yield and anticipated RIDEM permit restrictions. This represents a major setback in provisioning future expanded water supply for the state. Potable water supply is perhaps the most important component to statewide economic sustainability and reservoir storage is the overall long-term cost effective solution to both drinking water and environmental viability in this state. If you are troubled by this growing concern contact your area legislative representatives to voice your opinion on development of a second reservoir supply in this area for our state.

We all need to support the Big River Reservoir initiative by conveying your concerns to your state and local representatives.

The Kent County Water Authority will continue to bring forward concerns regarding water supply within our state and present ideas for improvement and/or modification as appropriate. We urge all customers to consider the same by contacting their senator or representative to voice your concerns regarding the future of water supply in Rhode Island. Reliable and redundant supply is crucial to our future growth and well being. What other resource is available should the Scituate supply source become compromised or reaches its maximum output capacity or safe yield? A second major reservoir

source of supply is critically necessary to provide for redundant supply should a malevolent act or major catastrophe occur to the Scituate Reservoir system or its treatment plant.

We all need to support the Big River Reservoir initiative by conveying your concerns to your state and local representatives. Building the reservoir doesn't mean we must tap the resource right away, but prolonging construction of this essential resource will exponentially increase the overall future cost to construct the reservoir and also affect the future prosperity of our state.

Water Conservation

Clean potable drinking water is a finite resource. It is imperative for all of us to embrace new strategies that will work to both protect and conserve it. The impact of water conservation on supply availability has been generally understated and not well understood. Outdoor water use conservation is perhaps the most important factor to consider in your conservation efforts. Balancing the available water supply to meet both the current drinking water needs of our existing customers and the future economic development in our service area is of paramount concern. We strongly believe that this is a statewide conservation issue that demands equitable state regulatory management so that all residents of Rhode Island can equally contribute to the best use of the state's waters. Over the past several years, we have introduced several programs to promote water conservation. We appreciate our customers' participation in these programs and will continue to strengthen our commitment to this important cause. As a KCWA customer, you play a vital role in protecting and conserving our precious water resources. Your unyielding cooperation is necessary to help us continue to provide dependable service to all our customers.

On average, Kent County Water Authority customers consume approximately 8 million gallons of water each day. On hot summer days water use can more than double. Legislative mandates to reduce consumption may dictate implementation of outdoor water use restrictions on our customers to assure compliance. Legislative initiatives promoting priority water supply for economic development demonstrate the importance our state legislative representatives have placed on the impact that water supply has on the economic well-being of the state. If voluntary compliance with state mandates proves ineffective, our only recourse will be to impose a mandatory seasonal moratorium on outdoor water use until the overall demand falls in line with mandates set by the Water Resources Board. Each and every customer must take action to conserve today because inevitably every customer will be affected.

Source of Water

The Kent County Water Authority purchases approximately 90 percent of your water from the Providence Water Supply Board. This supply is treated surface water from the following reservoirs located in the central part of the state: Scituate, Regulating, Moswansicut, Ponaganset, Barden and Westconaug reservoirs. The remainder of your water is produced from our East Greenwich well located off Post Road at the Warwick and East Greenwich line. KCWA also wholesales water to the City of Warwick to supply the Potowomet section.

Water Quality Improvements East Greenwich Well

Manganese is not regulated under federal and state primary drinking water health standards. This mineral is a harmless aesthetic aspect of New England groundwater supplies that may be more noticeable to some consumers due to the use of chlorinated cleaning products. Some time ago we implemented a Manganese Sequestering Pilot Treatment Program for our Warwick/East Greenwich distribution area. The goal of this program was to attempt to eliminate the staining effects related to the precipitation of soluble manganese in the source water supply. Our engineers have reviewed the results of this pilot study along with various other treatment options and recommend some options to deal with the aesthetic quality of this water supply. Additional testing has been completed. The final report identified aeration and filtration as the best overall treatment solution for this source water. In our endeavor to provide the highest quality, most cost effective product to our customers, we intend to move forward with the design and construction of the proposed treatment system once funding is approved. Until then, we continue to advocate that you remain vigilant in following our suggestion to not use chlorinated dishwashing detergents, chlorine bleach laundry products or monthly drop-in toilet tank cleaning products that contain chlorine. These types of products tend to promote the occurrence of staining despite the interim use of the sequestering treatment regime. Certainly, feel free to contact us at 401-821-9300 or customerservice@kentcountywater.org if you have any questions about our proposed programs or would like to discuss aspects of the water supply with one of our customer representatives.

Cross Connection Control

The Rhode Island Department of Health Rules and Regulation outline mandatory and enforceable requirements concerning the installation of backflow prevention appurtenances

Kent County Water Authority Water Quality Data

The tables list all of the drinking water constituents detected during the calendar year of this report. The presence of those constituents found in the water at the time of testing does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in these tables are from testing done in the calendar year of the report. In some cases the EPA and the state may require us to monitor for certain constituents less than once per year because the concentrations of these constituents do not change frequently.

Kent County Water Authority routinely monitors for constituents in your drinking water in compliance with federal and state laws. This table shows the detection results from the numerous monitoring tests conducted for the period January 1, 2012 to December 31, 2012. The tables of "Testing Results" identify those constituents that were "detected" in both the Kent County Water Authority and Providence Water Supply sources. As authorized by the EPA, the state has implemented reduced monitoring requirements for certain contaminants to less often than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of our data, though representative, is more than one year old.

REGULATED CONTAMINANT	PERIOD	UNIT	MCL	MCLG	DETECTED	RANGE	MAJOR SOURCES	VIOLATION
BARIUM (1)(2)	2012	ppm	2	2	0.017	0.008-0.017	Erosion of natural deposits.	NO
CHROMIUM(2)	2011	ppb	100	100	5	2-5	Erosion of natural deposits.	NO
FLUORIDE (1)	2012	ppm	4	4	1.0	0.66-1.0	Erosion of natural deposits. Water additive, which promotes strong teeth.	NO
NITRATE-N	2012	ppm	10	10	3.35	1.10-3.35	Erosion from natural deposits. Leaching from septic tanks; sewage; Runoff from fertilizer use.	NO
TOTAL COLIFORM BACTERIA (5)	2012	Monthly Max %	Presence of coliform bacteria in >5% of monthly samples	0%	1%	0-1%	Naturally present in the environment.	NO
TURBIDITY (1)(4)	2012	NTU	TT	N/A	0.16	0.03-0.16	Soil runoff.	NO
TOTAL ORGANIC CARBON(1)(3)	2012	N/A	TT	N/A	1.05	0.90-1.51	Naturally present in the environment.	NO
CHLORINE FREE RESIDUAL	2012	ppm	4	4	0.48	0.35-0.48	Water additive used to control microbes.	NO
TOTAL TRIHALOMETHANES (TTHM)	2012	ppb	80	N/A	59.7	30.6-70.9	Byproduct of drinking water chlorination.	NO
HALOACETIC ACIDS (HAA5)	2012	ppb	60	N/A	28	1.1-20.1	Byproduct of drinking water chlorination.	NO
COMBINED RADIUM 226 AND 228(2)	2008	pCi/L	5	0	2.2	ND-2.2	Erosion of natural deposits.	NO
LEAD AND COPPER RULE	PERIOD	UNIT	AL	MCLG	90th PERCENTILE DETECTED	RANGE	MAJOR SOURCES	VIOLATION
COPPER	2012	ppm	1.3	1.3	0.046	0 of 32 samples was above the action level	Corrosion of household plumbing systems. Erosion of natural deposits.	NO
LEAD	2012	ppb	15	0	6	1 of 32 samples was above the action level	Corrosion of household plumbing systems. Erosion of natural deposits.	NO

Kent County Water Authority Table Footnotes

- (1) Detection level influenced by Providence Water purchases.
- (2) Reflects sampling at groundwater source before blending with purchased water from Providence Water Supply Board.
- (3) In order to comply with the EPA standard, the removal ratio must be greater than 1. Detected level is the lowest removal ratio per quarter. Range is the lowest and highest removal ratios per month.

- (4) 0.16 was the highest single turbidity measurement recorded. The lowest monthly percentage of samples meeting the turbidity limit was 100%. The average turbidity value for 2012 was <0.10 NTU.
- (5) This value refers to the highest monthly percentage of positive samples detected during the year. For 2012 KCWA collected 1,316 samples for Total Coliform Rule compliance monitoring. One sample was positive for coliform bacteria. None were positive for E. coli bacteria.

Providence Water Quality Data

Our Cranston customers receive water through a direct-metered connection to the Providence Water Supply Board. The table below represents the results of the testing performed by the Providence Water Supply Board that has been identified by Providence Water as applicable to the reporting requirements for

this area. Results shown on the Kent County Water Authority Quality Data table for lead, copper, haloacetic acids, total coliform bacteria and total trihalo-methanes are also applicable to our Cranston customers.

REGULATED CONTAMINANT	PERIOD	UNIT	MCL	MCLG	DETECTED	RANGE	MAJOR SOURCES	VIOLATION
FLUORIDE	2012	ppm	4	4	1.00	0.66-1.00	Erosion of natural deposits. Water additive, which promotes strong teeth.	NO
BARIUM	2012	ppm	2	2	0.009	NA	Erosion of natural deposits.	NO
Nitrate-N	2012	ppb	10	10	0.05	N/A	Runoff from fertilizer use; leaching from septic tanks; erosion of natural deposits	NO
TURBIDITY (1)	2012	NTU	TT	N/A	0.16	0.03-0.16	Soil runoff.	NO
TOTAL ORGANIC CARBON(2)	2012	N/A	TT	N/A	1.05	0.90-1.51	Naturally present in the environment.	NO

Water Quality Table Footnotes:

- (1) 0.16 NTU was the highest single turbidity measurement recorded. The lowest monthly percentage of samples meeting the turbidity limit was 100 %. The average turbidity value for 2012 was < 0.10 NTU.
- (2) In order to comply with EPA standard, the removal ratio must be greater than 1. Detected level is the lowest removal ratio per quarter. Range is the lowest and highest removal ratios per month.

N/A = Not Applicable

Table Unit Descriptions:

- **AL** Action Level
- **MCL** Maximum Contaminant Level
- **MCLG** Maximum Contaminant Level Goal
- **pCi/L** Picocuries Per Liter (a measure of radioactivity)
- **ppb** Parts Per Billion, or micrograms per liter
- **TT** Treatment Technique
- **NTU** Nephelometric Turbidity Units
- **ppm** Part Per Million
- **N/A** Not Applicable
- **ND** None Detected
- **HA** Health Advisory
- **MRDL** Maximum residual Disinfection Level
- **MRDLG** Maximum Residual Disinfection Level Goal

Important Drinking Water Definitions:

MCLG: Maximum Contaminant Level Goal; The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

MCL: Maximum Contaminant Level; The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

TT: Treatment Technique; A required process intended to reduce the level of a contaminant in drinking water.

AL: Action Level; The concentration of a contaminant, which if exceeded, triggers a treatment of other requirements that a water system must follow.

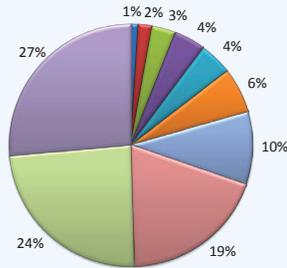
MRDL: Maximum Residual Disinfectant Level: The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for the control of microbial contaminants.

MRDLG: Maximum Disinfectant Level Goal, The level of drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Did you know in 2012 Kent County Water Authority employees

- Responded to the homes and businesses of 1,850 of its 26,600 customers in response to requests for assistance.
- Repaired 79 underground infrastructure leaks.
- Flushed 415 miles of main this year to help maintain the quality of your drinking water.
- Processed 4,248 DigSafe marking requests.
- Inspected and tested 2,338 hydrants of which 52 hydrants were either repaired or replaced.
- Recorded 109,090 meter reads.
- Prepared, printed, mailed and processed 109,090 customer bills, 18,678 delinquent notices and 14,124 shutoff/collections.
- Pumped 3 billion gallons of water to supply both domestic and fire service at less than ¾ of a cent per gallon delivered to your home.
- Traveled 230,000 vehicle miles in service to our customers.
- Replaced 4.08 miles of failing underground water mains and associated valves, services and appurtenances to improve water quality and service to you, our customers.

Allocation of Costs to Provide Water to Our Customers



- 1% Insurance: Property, Liability and Workers' Compensation
- 2% Electricity: Pumps, Wells, Tanks, Pressure Control Stations and Office
- 3% Restricted: Cash Capital for Equipment Replacement Purchase
- 4% Treatment/Service Materials: Chemicals, Replacement Parts, Gravel and Asphalt
- 4% Benefits: Life, Disability, Health, Dental Insurance and Pension
- 6% Operations: Vehicle Maintenance, Customer Records, Legal and Accounting Fees, Regulatory Commission Expense, Fuel, PILOT, Samples and Dig Safe
- 10% Payroll: Base Salary and Overtime
- 19% Restricted Bond: Debt Service for Capital Improvements
- 24% Purchased Water: Wholesale Water Purchases from Providence and Warwick
- 27% Restricted IFR: Legislatively Mandated Infrastructure Replacement Program

in both new residential and commercial buildings. The new requirements focus on “containment.” Containment will require the installation of an appropriate backflow prevention device directly after the meter in the vicinity where the water service enters the building. Rhode Island plumbing code also requires the installation of thermal expansion controls in conjunction with the backflow device installation. Our commercial customers will be receiving written notification to set up an appointment for a Kent County Water Authority representative to rectify compliance with the law and Rhode Island Department of Health Regulations. Our point of contact concerning cross connection control and metering is Tom Silva. Please feel free to contact him at 401-821-9300 with any questions you may have concerning these programs.

Meter Technologies

Metering technology continues to advance and represents a key aspect to economically providing you service. Radio frequency metering technology is now being introduced in the Kent County Water Authority service area. This technology represents the latest in digital meter registering equipment for documenting our customer’s consumption. This type of meter also provides built-in leak detection and consumption trending that can help provide the information necessary to answer customer questions on unusual or abnormal consumption related billing concerns. The existing metering technology has become obsolete and no longer supported by the manufacturer. Our goal is to eventually replace all existing meters with this type of technology, as our programs advance and the new equipment becomes more readily available for installation.

Lead Informational Statement

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Kent County Water Authority is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

A few years ago, Providence Water changed its water treatment process which altered the water chemistry to decrease the pH. After this change, it was discovered that Providence Water was unable to maintain its lead and copper testing results within USEPA and RIDOH drinking water guidelines. The RIDOH has recently notified us that several other water suppliers in the state, who receive water from the Providence Water Supply, have also failed to maintain their lead and copper testing results within the USEPA primary drinking water requirement levels. The RIDOH has asked the Kent County Water Authority to conduct annual lead and copper testing as a result of the increasing failure of other Providence Water wholesale recipients to meet the minimum standards in other communities. Please contact the Rhode Island Department of Health Office of Drinking Water Quality at (401) 222-7740 should you have any questions concerning this matter.

Shutoff For Nonpayment Continue to Rise

We have continued to see a dramatic increase in the number of delinquent accounts over this past year. Failure to make payment on your bill eventually leads to a shutoff notice and subsequent discontinuance of service. The charge for shutoff of a delinquent account is \$55.00. After payment of the delinquent amount the turn on charge is \$45.00. This amounts to an additional \$100.00 dollars added to the delinquent amount before water service can be restored to your property. It is very important that you contact us as soon as you think you may not be able to make payment within the normal 30-day grace period. At that time, we can discuss options for payment and perhaps offer a payment plan to get you through a tough period and avoid the shutoff and turn on charges. If you stay within your payment structure it will save you from the additional \$100.00 charges associated with shutoff and turn on policy.

Account Contact Information

Keeping your account contact information up to date is an important factor in our ability to communicate with you should a problem arise. Our customer service representatives will be asking for updated phone contact information as part of any interaction with our customers. As this data becomes more accurate we will move to the next phase, which will incorporate an automatic notification should a system wide problem arise that compromises the quality of your water. Feel free to contact our customer service staff at 401-821-9300

to verify your account information anytime your contact information changes. Our customer service representatives endeavor to assist you. Thanks for your cooperation.

Tips That Help You Save

Toilet leaks: Does your toilet cycle when no one is in the bathroom? Do you have to jiggle the handle to stop the toilet from running? These are all symptoms of worn or mal-adjusted components resulting in leaks inside of your toilet. We recommend testing your toilets for leaks at least once a year. The process is very simple and can save you from receiving an unexpected large water bill. Add food coloring or other non-staining dye tablets to your toilet tank. Customers can obtain free dye tablets at our office. Let the toilet stand for twenty minutes. If the water in the bowl changes color, it indicates that toilet tank water is leaking into the bowl and down the drain.

Frozen pipes: Each year we respond to hundreds of calls regarding frozen pipes and meters. Most often drafts, improperly insulated pipes or failed heaters are found to be the cause. To prevent damage from occurring, the best time to inspect and correct these situations is before the cold weather sets in. Inspect the area where your meter and plumbing is located. Look for open cracks in the foundation, poorly fitted windows and doors, missing gaskets, insulation or light entering where the wood meets the concrete. Replace gaskets, seal and insulate all suspect areas. Preventive measures are very often less costly than repairs associated with flooding and burst plumbing resultant from frozen pipes.

Monitoring Your Meter: Each meter register is equipped with a leak detection feature. On older registers it's a small triangular indicator. On the newer digital registers it's a blinking faucet that must be activated by waving a flashlight over the register. The process is simple. Make sure no one is using any plumbing fixture or appliance in the home. During this period observe the register indicator. If the triangle is rotating or faucet is flashing, in the case of a digital register, this indicates a leak. You can further investigate the source of the leak by isolating or shutting the water valve off to each toilet and appliance one at a time. Check the leak detector each time after isolating each plumbing fixture. If the detector stops you have found the source and a plumber should be able to assist you with the repair. If you have a question about this leak detection process feel free to call one of our customer service representative and they will be happy to assist in this concern.

Lawn Care and Landscaping Tips

Water usage during the summer months increases significantly. This is primarily related to outdoor water use, the majority of which can be directly attributed to lawn watering. You can effectively reduce your summer water use in the following ways:

- **Plant less lawn** - Reduce traditional grass lawns where possible. Grass requires more water than other types of ground covers. Replace lawn with drought tolerant shrubs, perennials and ground cover.
- **When to Plant Lawn** - The best time to plant grass is in the early spring or the early fall. The temperatures promote growth and the watering requirements are significantly less.
- **Grass Selection** - Select a native, drought-resistant, or low-water-use turf grass such as fescue grasses. Many varieties are available for your use that includes blends of drought tolerant varieties.
- **Plant Trees** - Trees help maintain moisture for nearby plants.
- **Odd/Even Policy** - KCWA's year round odd/even watering policy is in place to help promote conservation and even out the peak demands placed on the available water supplies. This policy does not mean that you are obligated to water your lawn every other day. Watering every other day when soil conditions do not require it can encourage shallow roots, disease and can weaken plants.



- **Water grass only when needed** - Your lawn needs only one inch of water a week to remain actively growing and healthy. Use a rain gauge to measure weekly rainfall and apply only the amount of extra water needed. Depending on the weather and type of grass, your lawn may go naturally dormant turning brown or hay like in color no matter how much you water. A good rule of thumb is to water approximately once every four to five days and use the rain gauge.
- **Best time to water** - Early morning is best. Less water is lost to evaporation and you will also reduce fungus problems with your lawn.
- **Maintain your lawn properly** - Maintain your lawn at three to four inches in length during the summer heat. During a serious, prolonged drought consider allowing lawns to go naturally dormant, because watering can actually stress the grass more by forcing it to grow under such adverse conditions.
- **Limit Fertilizer Use** - Fertilizer increases the plants thirst for water. Avoid use of fertilizers in the summer.
- **Natural Runoff** - Install cisterns or rain barrels to collect water from downspouts which can later be used for watering plants and flowers or depress your lawn 1" or 2" to capture and hold runoff from your downspouts.
- **Soil Preparation** - Preparing your soil properly is perhaps the most important aspect of a water conservative landscape. Deep cultivation with lots of organic matter such as compost, leaf mold and peat moss will enrich the soil naturally and hold large quantities of water for proper growth of the root system and plants.
- **Using Mulch** - Use of mulch around plantings helps to reduce evaporation and maintain moisture, limit heat stress and discourage weed growth.

For more information visit the URI Healthy Landscapes Program website, www.healthylandscapes.org or call (401) 874-5398.

In-ground Automatic Sprinklers are perhaps the largest contributing factor to seasonal water waste. If used correctly, in-ground sprinklers can be somewhat water efficient. Unfortunately, many systems are not set up properly, or do not contain necessary moisture/rain sensors to prohibit operation when it is not necessary. In some cases homeowners may not know how to reset the system for maximum efficiency. This results in considerable wasted water. The following general guidelines can help make your sprinkler system more efficient:

- A licensed irrigation professional should inspect and adjust your system each year.
- The point of connection is the supply line for the irrigation system. All connections, fittings and valves should be inspected for leaks and proper operation including the correct operating pressure. Excessive pressure can result in water waste and damaged parts.
- Sprinkler valves open and close to allow for operation of each zone. This is programmed into the controller and should be inspected regularly. Malfunction of these valves can also result in wasted water.
- Sprinkler heads should be checked for proper spacing and alignment, application rates and operating pressure. Move or cap sprinkler heads to avoid watering paved or non-vegetated areas.
- Look for suspicious spots in your landscape that are much greener or consistently wet and muddy. This may be due to an underground leak or other malfunction.
- Learn how to program the system and manage it in manual mode.
- Water once or twice per week. Frequent light watering events encourage disease and shallow roots.
- Water early in the morning to reduce evaporation.
- Do not over water. Use a rain gauge and strive for one inch of water per week (rainfall + irrigation = one inch/week).
- Sprinklers are best suited for grass. Drip irrigation is preferable for plants and shrubs.

Upgrade your system with conservation technology to meet current KCWA Rules and Regulations:

- Install a rain shut-off device to prevent watering when it rains.
- Install a soil moisture sensor that schedules irrigation based on soil moisture conditions.
- Consider installing a “smart” controller that schedules irrigation based on weather conditions. For more information visit the Irrigation Association website, www.irrigation.org.





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