Nicholasville Water Department

KY0570315

Water Quality Report for January 1-December 31, 2021

Manager: **Scott House**

517 N. Main Street

Phone: **859-885-6974**

Nicholasville, KY 40356

Meetings: City Hall

CCR Contact: **Scott House**

Water - Essential for Life

Meeting Dates and Time: Every Other Monday 5:00 PM

Phone: **859-885-6974**

This report is designed to inform the public about the quality of water and services provided on a daily basis. Our commitment is to provide our customers with a safe, clean, and reliable supply of drinking water. We want to assure that we will continue to monitor, improve, and protect the water system and deliver a high quality product. Water is the most indispensable product in every home and we ask everyone to be conservative and help us in our efforts to protect the water source and the water system. **This report will not be mailed, but is available upon request by calling 859-885-6974.**

We are pleased to present this Annual Waster Quality Report. The main source of water for Nicholasville customers is surface water from the Kentucky River (Pool #8). This report is designed to inform the public about the quality of the water and services provided on a daily basis. Our commitment is to provide our customers with a safe, clean, and reliable supply of drinking water. The following is a summary of the systems susceptibility to contamination, which is part of the complete Source Water Assessment Plan (SWAP), and is available for inspection at the Water Treatment Plant. An analysis of the susceptibility of the Nicholasville Utilities water supply to contamination indicates that the susceptibility is generally low, however non-point source pollution, or "people pollution", can impact source water quality. With each rainfall, herbicides, pesticides, fertilizers, animal wastes, and household chemicals are washed from impermeable surfaces and into storm drains, ditches, sinkholes, or streams that flow into the Kentucky River. Please report any activity that might jeopardize the source water supply.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects may be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and may pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include: Microbial contaminants, such as viruses and bacteria, (sewage plants, septic systems, livestock operations, or wildlife). Inorganic contaminants, such as salts and metals, (naturally occurring or from stormwater runoff, wastewater discharges, oil and gas production, mining, or farming). Pesticides and herbicides, (stormwater runoff, agriculture or residential uses). Organic chemical contaminants, including synthetic and volatile organic chemicals, (by-products of industrial processes and petroleum production, or from gas stations, stormwater runoff, or septic systems). Radioactive contaminants, (naturally occurring or from oil and gas production or mining activities).

In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water to provide the same protection for public health.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer 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 about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

Some or all of these definitions may be found in this report:

Maximum Contaminant Level (MCL) - 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.

Maximum Contaminant Level Goal (MCLG) - 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.

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

Maximum Residual Disinfectant Level Goal (MRDLG) - the level of a 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.

Below Detection Levels (BDL) - laboratory analysis indicates that the contaminant is not present.

Not Applicable (N/A) - does not apply.

Parts per million (ppm) - or milligrams per liter, (mg/l). One part per million corresponds to one minute in two years or a single penny in $10,000.

Parts per billion (ppb) - or micrograms per liter, (µg/L). One part per billion corresponds to one minute in 2,000 years, or a single penny in $10,000,000.

Parts per trillion (ppt) - one part per trillion corresponds to one minute in 2,000,000 years, or a single penny in $10,000,000,000.

Parts per quadrillion (ppq) - one part per quadrillion corresponds to one minute in 2,000,000,000 years or one penny in $10,000,000,000,000.

Picocuries per liter (pCi/L) - a measure of the radioactivity in water.

Millirems per year (mrem/yr) - measure of radiation absorbed by the body.

Million Fibers per Liter (MFL) - a measure of the presence of asbestos fibers that are longer than 10 micrometers.

Nephelometric Turbidity Unit (NTU) - a measure of the clarity of water. Turbidity has no health effects. However, turbidity can provide a medium for microbial growth. Turbidity is monitored because it is a good indicator of the effectiveness of the filtration system.

Variances & Exemptions (V&E) - State or EPA permission not to meet an MCL or a treatment technique under certain conditions.

Action Level (AL) - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system shall follow.

Treatment Technique (TT) - a required process intended to reduce the level of a contaminant in drinking water.

Level 1 Assessment - A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

Level 2 Assessment - A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

Information About Lead:

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. Your local public water system 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.

Spanish (Español) Este informe contiene información muy importante sobre la calidad de su agua beber. Tradúzcalo o hable con alguien que lo entienda bien.

To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

The data presented in this report are from the most recent testing done in accordance with administrative regulations in 401 KAR Chapter 8. As authorized and approved by EPA, the State has 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 the data in this table, though representative, may be more than one year old. **Copies of this report are available upon request by contacting our office during business hours.**

Regulated Contaminant Test Results — Nicholasville Water Department

Contaminant [code] (units)	MCL	MCLG	Report Level	Range of Detection	Date of Sample	Violation	Likely Source of Contamination
Radioactive Contaminants							
Alpha emitters [4000] (pCi/L)	15	0	2.025	0 to 4.6	Feb-17	No	Erosion of natural deposits
Combined radium (pCi/L)	5	0	0.675	0 to 1.6	Aug-17	No	Erosion of natural deposits
Inorganic Contaminants							
Barium [1010] (ppm)	2	2	0.03	0.03 to 0.03	Mar-21	No	Drilling wastes; metal refineries; erosion of natural deposits
Fluoride [1025] (ppm)	4	4	0.73	0.73 to 0.73	Mar-21	No	Water additive which promotes strong teeth
Nitrate [1040] (ppm)	10	10	0.19	0.19 to 0.19	Mar-21	No	Fertilizer runoff; leaching from septic tanks, sewage; erosion of natural deposits
Disinfectants/Disinfection Byproducts and Precursors							
Total Organic Carbon (ppm) (measured as ppm, but reported as a ratio)	TT*	N/A	1.28 (lowest average)	0.76 to 1.78 (monthly ratios)	2021	No	Naturally present in environment.
*Monthly ratio is the % TOC removal achieved to the % TOC removal required. Annual average must be 1.00 or greater for compliance.							
Chlorine (ppm)	MRDL = 4	MRDLG = 4	1.00 (highest average)	0.20 to 1.69	2021	No	Water additive used to control microbes.
HAA (ppb) (Stage 2) [Haloacetic acids]	60	N/A	28 (high site average)	2 to 36 (range of individual sites)	2021	No	Byproduct of drinking water disinfection
TTHM (ppb) (Stage 2) [total trihalomethanes]	80	N/A	69 (high site average)	30.1 to 113.6 (range of individual sites)	2021	No	Byproduct of drinking water disinfection.
Household Plumbing Contaminants							
Copper [1022] (ppm) sites exceeding action level = 0	AL = 1.3	1.3	0.07 (90^{th} percentile)	0 to 0.35	Sep-19	No	Corrosion of household plumbing systems

Other Constituents

Turbidity (NTU) TT * Representative samples	Allowable Levels	Highest Single Measurement	Lowest Monthly %	Violation	Likely Source of Turbidity
Turbidity is a measure of the clarity of the water and not a contaminant.	No more than 1 NTU* Less than 0.3 NTU in 95% of monthly samples	0.13	100	No	Soil runoff

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.

During the past year we were required to conduct one Level 1 assessment. One Level 1 assessment was completed. In addition, we were required to take one corrective action and we completed one of these actions.

2021 Annual

WATER QUALITY REPORT

CENTRAL DIVISION | Fayette and Surrounding Counties
PWSID: KY0340250

QUALITY. ONE MORE WAY
WE KEEP LIFE FLOWING.

KENTUCKY
AMERICAN WATER

WE KEEP LIFE FLOWING®

A message from **Kentucky American Water's President**

Nick Rowe

President, Kentucky American Water

Dear Kentucky American Water Customer,

Having access to safe, reliable water service is something that can be easily taken for granted. At Kentucky American Water, it's our top priority.

I am pleased to share with you our 2021 Consumer Confidence Report, which is a testament to the hard work and dedication of our employees. As you read through this annual water quality information, you will see that we continue to supply high quality drinking water service to keep your life flowing.

We monitor and test your water at multiple points throughout our process of drawing it from its source, treating it to meet drinking water standards, and distributing it through our pipeline systems. In fact, we test for about 100 regulated contaminants as required by state and federal drinking water standards.

QUALITY: We take water quality so seriously that all three of our water treatment plants have been nationally recognized with Directors Awards from the U.S. Environmental Protection Agency's (EPA) Partnership for Safe Water program for surpassing federal and state drinking water standards. We remain committed to protecting our sources of drinking water. We utilize advanced technology and detection methods that are paving the way for source water protection across the country.

SERVICE: Last year, we invested $32 million to upgrade our water and wastewater treatment and pipeline systems in the communities we serve. These investments allowed us to improve water quality, water pressure and service reliability for our customers.

VALUE: While costs to provide water service continue to increase across the country, our investments help us provide high quality water service that remains an exceptional value for such an essential service.

We hope our commitment to you and our passion for water shines through in this report detailing the source and quality of your drinking water in 2021. We will continue to work to keep your life flowing – today, tomorrow and for future generations.

Proud to be your local water service provider,

Nick Rowe
Kentucky American Water

This report contains important information about your drinking water. Translate it or speak with someone who understands it at 1-800-678-6301, Monday-Friday, 7 a.m. to 7 p.m.

ATTENTION: Landlords and Apartment Owners

Please share a copy of this notice with your tenants. It includes important information about their drinking water quality.

What is a **Consumer Confidence Report (CCR)**

Once again, we proudly present our Annual Water Quality Report, also referred to as a Consumer Confidence Report (CCR). CCRs let consumers know what contaminants, if any, were detected in their drinking water as well as related potential health effects. CCRs also include details about where your water comes from and how it is treated. Additionally, they educate customers on what it takes to deliver safe drinking water and highlight the need to protect drinking water sources.

We are committed to delivering high quality drinking water service. To that end, we remain vigilant in meeting the challenges of source water protection, water conservation, environmental compliance, sustainability and community education while continuing to serve the needs of all our water users.

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Mark of **Excellence**

EVERY STEP OF THE WAY.

Our team monitors and tests your water at multiple points throughout our process of drawing it from its source, treating it to meet drinking water standards, and distributing it through our pipeline systems. **In fact, American Water performs over one million tests annually for about 100 regulated contaminants, nationwide.**

EXPERTISE. RECOGNIZED AT THE HIGHEST LEVEL.

American Water is an expert in water quality testing, compliance and treatment and has established industry-leading water testing facilities. Our dedicated team of scientists and researchers are committed to finding solutions for water quality challenges and implementing new technologies. American Water is recognized as an industry leader in water quality and works cooperatively with the EPA so that drinking water standards and new regulations produce benefits for customers and public water suppliers. American Water has earned awards from the EPA's Partnership for Safe Water as well as awards for superior water quality from state regulators, industry organizations, individual communities, and government and environmental agencies.

WATER QUALITY. DOWN TO A SCIENCE.

Our team also has access to American Water's Central Laboratory in Belleville, Illinois, which conducts sophisticated drinking water testing and analysis. American Water scientists refine testing procedures, innovate new methods, and set new standards for detecting potentially new contaminants—even before regulations are in place.

MAINTAINING QUALITY FOR FUTURE GENERATIONS.

Just as Kentucky American Water is investing in research and testing, we also understand the importance of investing in the infrastructure that provides high-quality water service to you. Last year alone, **we invested more than $32 million to improve our water and wastewater treatment and pipeline systems.**

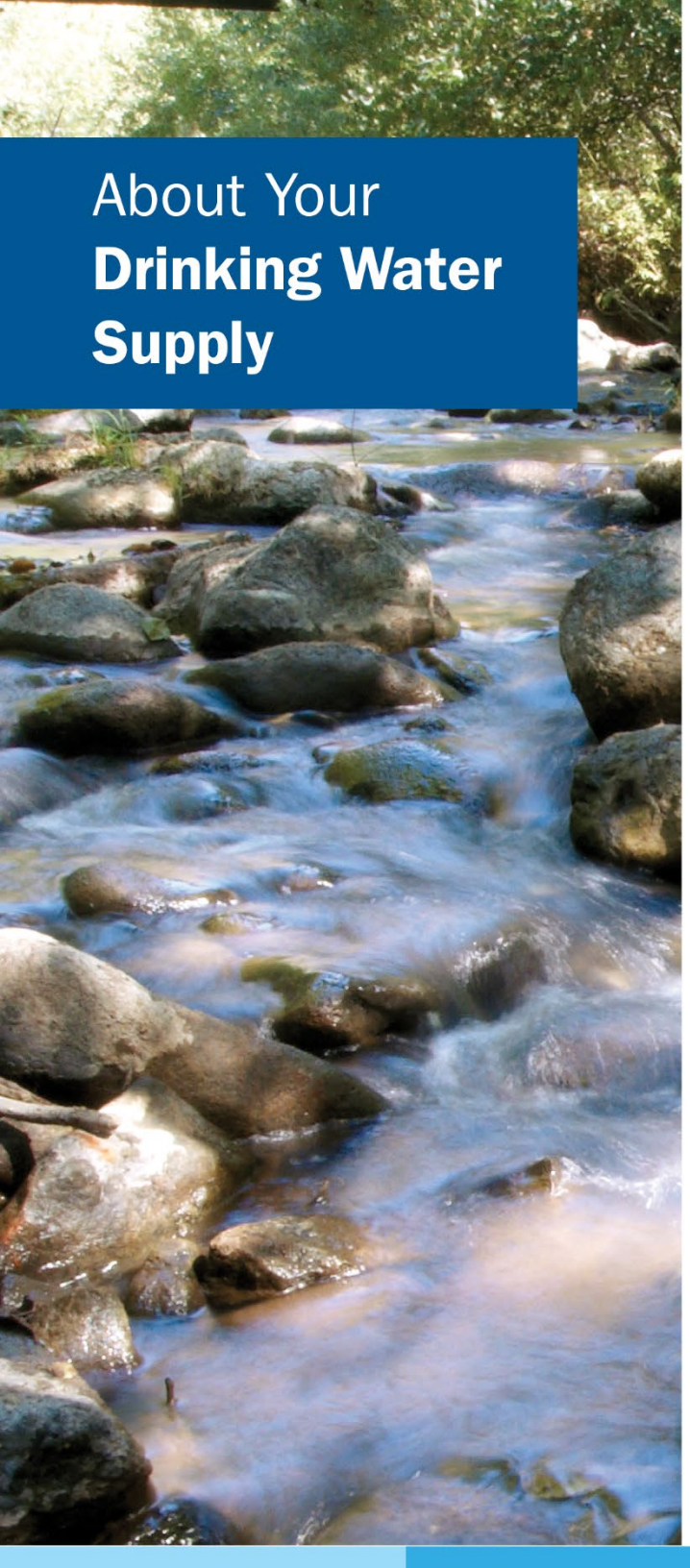
NOT JUST MEETING DRINKING WATER STANDARDS—

SURPASSING THEM.

The EPA regulates about 100 potential contaminants and sets stringent standards for each one. **Kentucky American Water takes water quality so seriously that:**

All 3 of our water treatment plants, Kentucky River Station, Richmond Road Station, and Kentucky River Station II, **have been nationally recognized with Directors Awards** from the EPA's Partnership for Safe Water program for surpassing federal and state drinking water standards.

PARTNERSHIP FOR SAFE WATER



About Your **Drinking Water Supply**

WHERE YOUR WATER COMES FROM

The drinking water supply for **Kentucky American Water's Central Division** is surface water from pools 3 and 9 of the Kentucky River as well as the Jacobson Reservoir. The Kentucky River passes south of Lexington then flows north past Owen County to the Ohio River. Jacobson Reservoir is located in south-central Fayette County. This surface water provides the primary source of drinking water produced by our three water treatment plants.

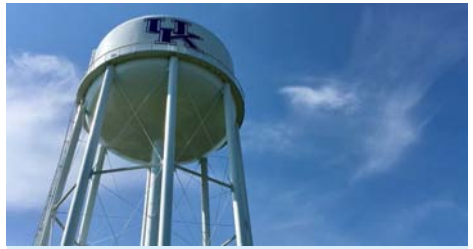
The Kentucky Division of Water approved a **Source Water Assessment and Protection Plan** for Kentucky American Water. This plan focuses on potential sources of contamination for the water supplies used by Kentucky American Water.

The Kentucky River is most vulnerable to contamination from agricultural runoff, which may include pesticides, nutrients and silt from croplands, and substances resulting from the presence of animals on pasturelands.

Jacobson Reservoir is most vulnerable to urban stormwater runoff, which may include heavy metals from paved areas, nutrients, pesticides and organics (e.g., yard waste) from lawn care. Industrial and construction runoff in urban areas may include silts, synthetic chemicals, and metals. A copy of the completed Source Water Assessment and Protection Plan may be viewed by calling our Customer Service Center at 800-678-6301.

Learn more about local waterways at:
https://mywaterway.epa.gov/

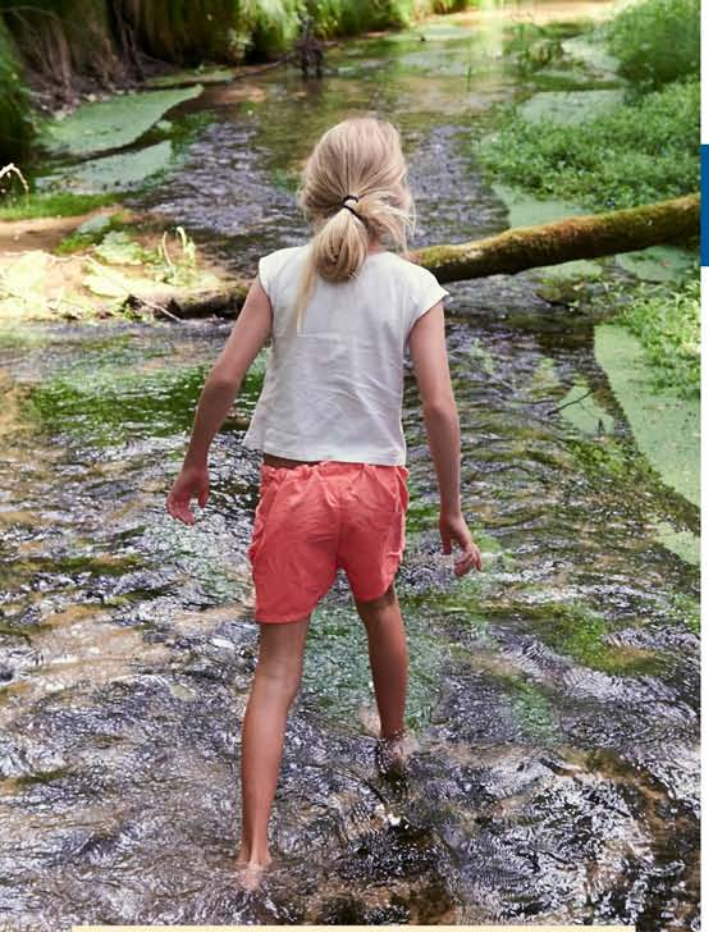
The Kentucky River Station, Richmond Road Station, and Kentucky River Station II are capable of reliably producing up to a combined total of 85 million gallons of water per day (MGD). Our treatment processes are designed to protect human health by reducing contaminant concentrations to levels well below what might cause health concerns.



YOU CAN BE INVOLVED IN MATTERS THAT AFFECT YOUR WATER

Kentucky American Water welcomes your comments and questions regarding your water. To provide feedback on decisions that may affect the quality of your water, for questions about your water or this report, or to obtain additional copies of this report, please call our Customer Service Center at 800-678-6301 or 859-269-2386 ext 6 for Bob Money, Manager, Water Quality and Environmental Compliance.

As a customer of a utility regulated by the Kentucky Public Service Commission, you have the opportunity to participate in periodic public hearings regarding Kentucky American Water. For more information about this process, please refer to the Public Service Commission website at http://psc.ky.gov/ or call 800-772-4636.



SPECIAL HEALTH INFORMATION

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer 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 about drinking water from their health care providers. EPA/Centers for Disease Control and Prevention (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

What are the **Sources of Contaminants**?

To provide tap water that is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, aquifers and/or groundwater. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

CONTAMINANTS THAT MAY BE PRESENT IN SOURCE WATER INCLUDE:	
Microbial Contaminants	such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
Inorganic Contaminants	such as salts and metals, which can be naturally occurring or may result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
Pesticides and Herbicides	which may come from a variety of sources, such as agriculture, urban storm water runoff, and residential uses.
Organic Chemical Contaminants	including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and may also, come from gas stations, urban storm water runoff, and septic systems.
Radioactive Contaminants	which can be naturally occurring or may be the result of oil and gas production and mining activities.

Protecting **Your Drinking Water Supply**

Protecting drinking water at the source is an important part of the process to treat and deliver high quality water. It takes a community effort to protect our shared resources. This includes utilities, businesses, residents, government agencies, and organizations. Everyone who lives, works, and plays in the area has a role and stake in clean water supplies.

WHAT CAN YOU DO?

Quality drinking water starts upstream. Everyone can help maintain and improve drinking water supplies through the following actions:

- Properly dispose of pharmaceuticals, household chemicals, oils, and paints
- Materials can impact waterways if poured down the drain, flushed down the toilet, or dumped on the ground
- Check for leaks from automobiles and heating fuel tanks. Clean up any spills using an absorbent material like cat litter. Sweep up the material and put it in a sealed bag; check with the local refuse facility for proper disposal
- Clean up after your pets and limit the use of fertilizers and pesticides
- Take part in watershed activities

Report any spills, illegal dumping or suspicious activity to the Kentucky Department of Environmental Protection, Emergency Response Branch: 1-800-928-2380

WHAT ARE WE DOING?

Our priority is to provide reliable, quality drinking water service for customers. The source of supply is an important part of that mission. We work to understand and reduce potential risks to your drinking water supply by collaborating with regulators and community stakeholders.

Here are a few of the efforts underway to protect our shared water resources:

Community Involvement: We have a proactive public outreach program to help spread the word and get people involved. This includes school education, contests, and other community activities.

Environmental Grant Program: Each year, we offer funding for innovative, community-based environmental projects that improve, restore or protect watersheds in our local communities.

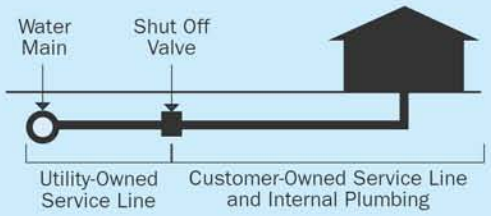
Pharmaceutical Collection: We support the biannual Drug Take Back event and funded a drop box location at the Lexington Police Department lobby for residents to safely dispose of unwanted drugs for free. This helps keep pharmaceutical products from entering water supplies.

Backflow Prevention: This program safeguards the water supply by eliminating cross connections in our distribution system and ensuring the proper installation and maintenance of backflow prevention devices. These devices block the reverse flow of water from hazards originating on customers' properties and temporary connections from entering our water lines. Visit www.kentuckyamwater.com for more information or contact the Cross Connection Department at KAW.cc@amwater.com or 859-544-0903.

About **Lead**

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. American Water 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.

UTILITY-OWNED VS. CUSTOMER-OWNED PORTION OF THE SERVICE LINE



Please note: This diagram is a generic representation. Variations may apply.

The most common source of lead in tap water is from the customer's plumbing and their service line.

Our water mains are not made of lead; however, the water service line that carries the water from the water main in the street to your home could be. Homeowners' service lines may be made of lead, copper, galvanized steel or plastic. You can assess your service line material where it enters your home, typically in your basement, crawl space or garage, near the inlet valve.

MINIMIZING YOUR POTENTIAL EXPOSURE

You cannot see, smell or taste lead, and boiling water will not remove lead. Here are steps you can take to reduce your potential exposure if lead exists in your home plumbing.

CHECK YOUR PLUMBING AND SERVICE LINE

If you live in an older home, consider having a licensed plumber check your plumbing for lead. If your service line is made of lead, and you're planning to replace it, be sure to contact us at 1-800-678-6301.

1. **Flush your taps.** The longer the water lies dormant in your home's plumbing, the more lead it might contain. If the water in your faucet has gone unused for more than six hours, flush the tap with cold water for 30 seconds to two minutes before drinking or using it to cook. To conserve water, catch the running water and use it to water your plants.

2. **Use cold water for drinking and cooking.** Hot water has the potential to contain more lead than cold water. If hot water is needed for cooking, heat cold water on the stove or in the microwave.

3. **Routinely remove and clean all faucet aerators.**

4. **Look for the "Lead Free" label** when replacing or installing plumbing fixtures.

5. **Follow manufacturer's instructions for replacing water filters** in household appliances, such as refrigerators and ice makers, as well as home water treatment units and pitchers. Look for NSF 53 certified filters.

6. **Flush after plumbing changes.** Changes to your service line, meter, or interior plumbing may result in sediment, possibly containing lead, in your water supply. Remove the strainers from each faucet and run the water for 3 to 5 minutes.

Important Information About **Drinking Water**

CHLORAMINES

Chloramines are a Kentucky and federally approved alternative to free chlorine for water disinfection. Chloramines can reduce disinfection by-product formation and may help reduce concerns related to taste. Chloramines are also used by many American Water systems and many other water utilities nationally.

Chloramines have the same effect as chlorine for typical water uses with the exception that chloramines must be removed from water used in kidney dialysis and fish tanks or aquariums.

Treatments to remove chloramines are different than treatments for removing chlorine. Please contact your physician or dialysis specialist for questions pertaining to kidney dialysis water treatment. Contact your pet store or veterinarian for questions regarding water used for fish and other aquatic life.

CRYPTOSPORIDIUM

Cryptosporidium is a microbial pathogen found in surface water throughout the United States. Although filtration removes Cryptosporidium, the most commonly used filtration methods cannot guarantee 100 percent removal. Ingestion of Cryptosporidium may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. People with severely weakened immune systems have a risk of developing life-threatening illness. We encourage such individuals to consult their doctor regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water.

Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Kentucky American Water began a second round of 24 consecutive months of monitoring for Cryptosporidium in our source waters in April 2015. Sample results were as follows:

- 2015: Cryptosporidium detected in 8 of our 27 source water samples with levels ranging from 0.089 to 0.390 oocysts per liter
- 2016: Cryptosporidium detected in 11 of our 36 source water samples with levels ranging from 0.087 to 2.3 oocysts per liter
- 2017: Cryptosporidium detected in 3 of our 9 source water samples with levels ranging from 0.089 to 0.744 oocysts per liter

Kentucky American Water's treatment processes are designed to remove Cryptosporidium from the water, but additional treatment options are being evaluated.

Water Quality **Results**

WATER QUALITY STATEMENT

We are pleased to report that during calendar year 2021, the results of testing of your drinking water complied with all state and federal drinking water requirements.

For your information, we have compiled a list in the table below showing the testing of your drinking water during 2021. The Kentucky Division of Water allows us to monitor for some contaminants less than once per year because the concentration of the contaminants does not change frequently. Some of our data, though representative, are more than one year old.

Definitions of Terms that may appear in this report

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

Level 1 Assessment: A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system

Level 2 Assessment: A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions

LRAA: Locational Running Annual Average

Maximum Contaminant Level (MCL): 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

Maximum Contaminant Level Goal (MCLG): 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

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

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a 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

MFL: Million fibers per liter

NA: Not applicable

N/A: No data available

ND: Not detected

Nephelometric Turbidity Units (NTU): A measurement of the clarity, or turbidity, of the water

pH: A measurement of acidity, 7.0 being neutral

picocuries per liter (pCi/L): Measurement of the natural rate of disintegration of radioactive contaminants in water

parts per billion (ppb): One part substance per billion parts water, or micrograms per liter (ug/L)

parts per million (ppm): One part substance per million parts water, or milligrams per liter (mg/L)

parts per trillion (ppt): One part substance per trillion parts water, or nanograms per liter (ng/L)

Public Water System Identification (PWSID): A unique identification number assigned to a public water system by their regulatory agency

RAA: Running Annual Average

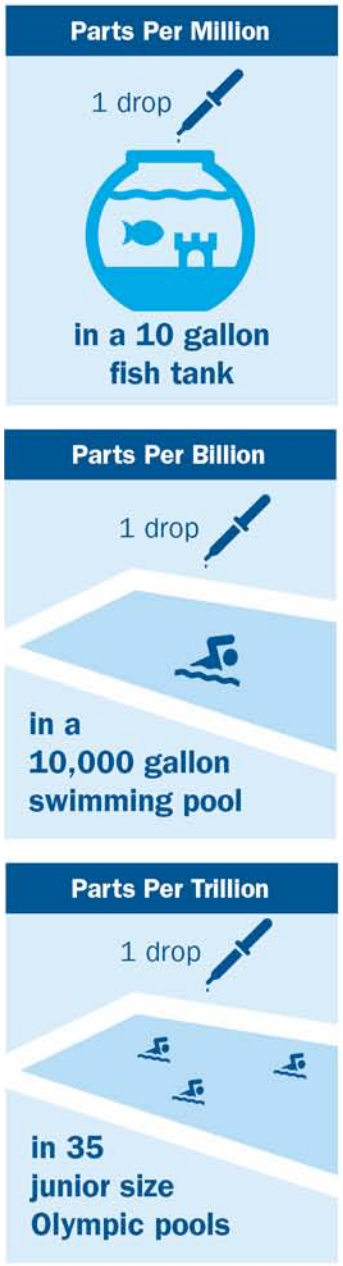
Secondary Maximum Contaminant Level (SMCL): Secondary MCLs are set to protect the odor, taste, and appearance of drinking water

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

Variance and Exemptions: State or EPA permission not to meet and MCL or utilize a treatment technique under certain conditions

%: Percent

MEASUREMENTS



Water Quality **Results**

Kentucky American Water conducts extensive monitoring to determine if your water meets all water quality standards. The detections of our monitoring are reported in the following tables. While most monitoring was conducted in 2021, certain substances are monitored less than once per year because the levels do not change frequently. For help with interpreting the tables below, see the "Definition of Terms" on the previous page. Some unregulated substances are measured, but maximum contaminant levels have not been established by the government. These contaminants are shown for your information.

NOTE: Regulated contaminants not listed in these tables were not found in the treated water supply.

REGULATED SUBSTANCES - Collected at the Treatment Plant

Substance (with units)	Year Sampled	Compliance Achieved	MCLG	MCL	Kentucky River Station		Richmond Road Station		Kentucky River Station II		Typical Source
					Highest Value	Range	Highest Value	Range	Highest Value	Range	
Arsenic (ppb)	2021	Yes	NA	10	3	NA	1	NA	ND	ND	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Fluoride (ppm)	2021	Yes	4	4	0.75	NA	0.83	NA	0.83	NA	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate (ppm)	2021	Yes	10	10	0.3	NA	0.12	NA	0.47	NA	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits

TURBIDITY - Monitored at the Treatment Plant

Substance (with units)	Year Sampled	Compliance Achieved	MCLG	MCL	Kentucky River Station		Richmond Road Station		Kentucky River Station II		Typical Source
					Highest Value	Lowest Monthly % of Samples ≤ 0.3 NTU	Highest Value	Lowest Monthly % of Samples ≤ 0.3 NTU	Highest Value	Lowest Monthly % of Samples ≤ 0.3 NTU	
Turbidity (NTU)	2021	Yes	NA	TT	0.08	100%	0.15	100%	0.06	100%	Soil runoff

Turbidity: Turbidity is the clarity of water. It is measured as an indicator of water quality and the effectiveness of the filtration system. Compliance with the turbidity Treatment Technique (TT) is achieved when 95% of four-hour filtered water readings are 0.3 NTU or lower and no readings are greater than 1 NTU.

MAXIMUM CONTAMINANT LEVELS (MCLs) are set at very stringent standards. To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL for a lifetime to have a one-in-a-million chance of having the described health effect.

Water Quality **Results**

TREATMENT BYPRODUCTS PRECURSOR REMOVAL - Collected at the Treatment Plant

Substance (with units)	Year Sampled	Compliance Achieved	MCLG	MCL	Kentucky River Station		Richmond Road Station		Kentucky River Station II		Typical Source
					Lowest RAA	Range of Monthly Ratios	Lowest RAA	Range of Monthly Ratios	Lowest RAA	Range of Monthly Ratios	
Total Organic Carbon (ppm)	2021	Yes	NA	TT	1.12	1.00 to 1.51	1.34	0.88 to 2.24	1.68	1.24 to 2.84	Naturally present in the environment

Total Organic Carbon: Although the concentration listed is ppm, the values shown are ratios used to determine compliance. Compliance with the Treatment Technique (TT) requirement is based on the lowest running annual average (RAA) of monthly ratios of the treatment removal achieved compared to required removal. A minimum annual average ratio of 1.00 is required.

REGULATED SUBSTANCES - Collected in the Distribution System

Substance (with units)	Year Sampled	Compliance Achieved	MCLG	MCL	Highest Running Annual Average	Range Detected	Typical Source
Total Trihalomethanes (ppb)	2021	Yes	NA	80	42	12.2 to 70.1	By-product of drinking water disinfection
Haloacetic Acids (ppb)	2021	Yes	NA	60	37	3.4 to 57.7	By-product of drinking water disinfection
Chloramines (ppm)	2021	Yes	MRDLG 4	MRDL 4	2.84	1.01 to 3.85	Water additive used to control microbes
Chlorine (ppm)	2021	Yes	MRDLG 4	MRDL 4	0.94	0.51 to 1.89	Water additive used to control microbes

Total Trihalomethanes (TTHMs) and Haloacetic Acids (HAAs): Compliance based on the highest LRAA (locational running annual average) that is calculated quarterly. The highest quarterly LRAA is the measured value in the table.
Chloramines and Chlorine: A public water system shall be in compliance with the MRDL if the running annual average of monthly averages of samples taken in the distribution system computed quarterly is less than or equal to the MRDL.

LEAD AND COPPER MONITORING PROGRAM - At least 50 tap water samples collected at customers' taps every 3 years

Substance (with units)	Year Sampled	Compliance Achieved	MCLG	Action Level (AL)	90th Percentile	Total Homes Sampled	Homes Above Action Level	Typical Source
Lead (ppb)	2021	Yes	0	15	ND	59	0	Corrosion of household plumbing systems
Copper (ppm)	2021	Yes	1.3	1.3	0.095	59	0	Corrosion of household plumbing systems

Lead and Copper: Compliance is achieved when at least 90% of samples collected from water standing in contact with plumbing for at least 6 hours are below the Action Level.

Water Quality **Results**

ADDITIONAL WATER QUALITY PARAMETERS OF INTEREST - Water Leaving the Treatment Facility								
Substance (with units)	**Year Sampled**	**SMCL**	**Kentucky River Station**		**Richmond Road Station**		**Kentucky River Station II**	
			Average	**Range**	**Average**	**Range**	**Average**	**Range**
Alkalinity (ppm as $CaCO_3$)	2021	NA	73	22 to 131	90	36 to 122	100	22 to 156
Calcium (ppm)	2021	NA	24	23 to 24	51	49 to 52	35	31 to 38
Chloride (ppm)	2021	250	13.3	12.6 to 14.0	113.0	110.0 to 116.0	20.8	18.6 to 23.0
Fluoride (ppm)	2021	4	0.74	0.60 to 0.92	0.80	0.72 to 0.87	0.82	0.73 to 0.96
Iron (ppm)	2021	0.3	ND	ND	ND	ND	ND	ND
Magnesium (ppm)	2021	NA	12	NA	6	NA	9	NA
Manganese (ppm)	2021	0.05	ND	ND	ND	ND	ND	ND
pH	2021	NA	7.5	7.0 to 7.9	7.6	7.1 to 8.1	7.2	6.8 to 7.6
Sodium (ppm)	2021	NA	10.8	NA	68.6	NA	7.5	NA
Sulfate (ppm)	2021	250	58.3	44.0 to 72.6	25.8	23.0 to 28.0	44.1	43.0 to 45.1
Total Dissolved Solids (ppm)	2021	500	66	NA	38	NA	210	NA
Total Hardness (grains per gallon)	2021	NA	8	3 to 14	6	3 to 11	9	5 to 12
Total Hardness (ppm as $CaCO_3$)	2021	NA	134	50 to 248	103	48 to 186	148	94 to 208

The substances listed above do not have a direct impact on the health of consumers. These commonly requested constituents are provided for informational purposes only. Some substances may have a Secondary Maximum Contaminant Level (SMCL), a non-mandatory water quality standard for parameters with no adverse health impacts. Levels above the SMCL may cause aesthetic, cosmetic, or technical effects.

PFAS MONITORING

PFAS refers to per- and polyfluoroalkyl substances, a class of synthetic chemicals, manufactured for industrial applications and commercial household products such as: non-stick cookware; waterproof and stain resistant fabrics and carpets; firefighting foam and cleaning products. The properties that make these chemicals useful in so many of our every-day products also resist breaking down and therefore persist in the environment. Exposure may be from food, food packaging, consumer products, house dust, indoor and outdoor air, drinking water and at workplaces where PFAS are made or used.

Kentucky American Water is currently performing voluntary sampling to better understand certain occurrence of PFAS levels in drinking water sources. This testing allows us to understand how our water compares against the non-enforceable Health Advisory Level set by USEPA of 70 nanograms per liter or parts per trillion for a combination of two PFAS compounds, PFOA and PFOS. Testing also allows Kentucky American Water to be better prepared if the USEPA or state environmental regulator develop a drinking water standard for those PFAS for which we have USEPA approved testing methods.

The science and regulation of PFAS and other contaminants is always evolving, and Kentucky American Water strives to be a leader in research and development. PFAS contamination is one of the most rapidly changing areas in the drinking water field. We have invested in our own independent research, as well as engaging with other experts in the field to understand PFAS occurrence in the environment. We are also actively assessing treatment technologies that can effectively remove PFAS from drinking water, because we believe that investment in research is critically important to addressing this issue.

> This is one of the most rapidly changing landscapes in drinking water contamination. We have invested time and effort on our own independent research, as well as engaging with other experts in the field to understand PFAS occurrence, fate and transport in the environment. We are also actively assessing treatment technologies that can effectively remove PFAS from drinking water, because we believe that investment in research is critical for addressing this issue.
>
> **Lauren Weinrich**
> Principal Scientist,
> Water Research and Development

UNREGULATED PERFLUORINATED COMPOUNDS

Substance (with units)	Year Sampled	Health Advisory Level	Kentucky River Station	Richmond Road Station	Kentucky River Station II	Typical Source
Perfluorooctanoic Acid (PFOA) (ppt)	2021	70	ND	2.6	ND	Manufactured chemical(s); used in household goods for stain, grease, heat and water resistance
Perfluorooctanesulfonic Acid (PFOS) (ppt)	2021		ND	2.4	ND	

About Us

With a history dating back to 1886, **American Water** (NYSE: AWK) is the largest and most geographically diverse U.S. publicly traded water and wastewater utility company. The company employs more than 7,000 dedicated professionals who provide regulated and market-based drinking water, wastewater and other related services to 15 million people in 46 states. American Water provides safe, clean, affordable and reliable water services to our customers to help make sure we keep their lives flowing.

Kentucky American Water, a subsidiary of American Water, is the largest investor-owned water utility in the state, providing high-quality and reliable water and/or wastewater services to approximately half a million people. For more information, visit **kentuckyamwater.com** and follow us on Twitter, Facebook, Instagram and YouTube.

KENTUCKY AMERICAN WATER FACTS AT A GLANCE

- **COMMUNITIES SERVED**
  Portions of 14 counties
- **PEOPLE SERVED**
  Approximately half a million (90.77% residential, 6.82% commercial, .02% industrial)
- **EMPLOYEES**
  Approximately 151
- **TREATMENT FACILITIES**
  Three surface water treatment facilities (average daily delivery is 40 million gallons per day (MGD); five wastewater plants (0.74 MGD permitted capacity)
- **MILES OF PIPELINE**
  2,333 miles of waterline and 27 miles of sewer pipe
- **STORAGE AND TRANSMISSION**
  26 water storage facilities
  18 water pumping stations
  19 wastewater pumping stations
- **SOURCE OF SUPPLY**
  98% surface water
  2% purchased water
- **PARTNERSHIP FOR SAFE WATER AWARDS**
  All 3 of our treatment plants have received Directors Awards from the Partnership for Safe Water

How to **Contact Us**

If you have any questions about this report, your drinking water, or service, please contact Kentucky American Water's Customer Service Center Monday to Friday, 7 a.m. to 7 p.m. at 1-800-678-6301.

WATER INFORMATION SOURCES

Kentucky American Water
www.kentuckyamwater.com

Kentucky Division of Water
https://eec.ky.gov/Environmental-Protection/Water/Drinking/Pages/information-for-consumers.aspx

United States Environmental Protection Agency
www.epa.gov/safewater

Safe Drinking Water Hotline
1-800-426-4791

Centers for Disease Control and Prevention
https://www.cdc.gov/healthywater/

American Water Works Association:
www.awwa.org

Water Quality Association
www.wqa.org

National Library of Medicine/National Institute of Health
www.nlm.nih.gov/medlineplus/drinkingwater.html

This report contains important information about your drinking water. Translate it, or speak with someone who understands it at 1-800-678-6301.

This report contains important information about your drinking water. Translate it, or speak with someone who understands it at 1-800-678-6301.

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien al 1-800-678-6301.

Ntawm no yog ib co lus qhia tseem ceeb heev txog koj cov dej seb huv npaum li cas. Yog tias koj xav tau kev pab txhais cov lus qhia no, thov hu rau peb ntawm 1-800-678-6301.

這是關於您的水質的十分重要的資訊。如果您需要幫助翻譯此資訊請致電 **1-800-678-6301** 與我們聯繫。

आपके पानी की गुणवत्ता के बारे में यह बहुत महत्वपूर्ण सूचना है। यदि इस सूचना के अनुवाद के लिए आपको सहायता की जरूरत हो, तो कृपया **1-800-678-6301** र हमें काल करें।

Это очень важная информация о качестве Вашей воды. Если Вам требуется перевод этой информации, позвоните нам по телефону 1-800-678-6301.

Ito ay isang napakahalagang impormasyon tungkol sa kalidad ng iyong tubig. Kung iyong kailangan ng tulong sa pagsalin ng impormasyon na ito, mangyaring tumawag sa amin sa 1-800-678-6301.

Đây là thông tin rất quan trọng về chất lượng nước của quý vị. Nếu quý vị cần thông dịch thông tin này, xin gọi chúng tôi theo số 1-800-678-6301.