



Water - Essential for Life

# Nicholasville Water Treatment Plant Water Quality Report for year 2013

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Nicholasville, KY 40356

KY0570315

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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.

We are pleased to present this Annual Water 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. Please report any activity that might jeopardize the water supply. 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.

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:**

**Information About Lead:**

**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.  
**Variations & 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.

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>.

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. Unless otherwise noted, the report level is the highest level detected.

|  | Allowable Levels   | Highest Single Measurement | Lowest Monthly % | Violation | Likely Source |
|--|--|----------------------------|------------------|-----------|---------------|
| Turbidity (NTU) TT<br>* Representative samples of filtered water | No more than 1 NTU*<br>Less than 0.3 NTU in 95% of monthly samples | 0.14                       | 100              | No        | Soil runoff   |

### Regulated Contaminant Test Results

| Contaminant [code] (units) | MCL | MCLG | Report Level | Range of Detection | Date of Sample | Violation | Likely Source of Contamination |
|----------------------------|-----|------|--------------|--------------------|----------------|-----------|--------------------------------|
|----------------------------|-----|------|--------------|--------------------|----------------|-----------|--------------------------------|

#### Microbiological Contaminants

|   |    |   |     |     |          |    |                                      |
|---|----|---|-----|-----|----------|----|--------------------------------------|
| Total Coliform Bacteria # or % positive samples | 5% | 0 | 5 % | N/A | Aug 2013 | No | Naturally present in the environment |
|---|----|---|-----|-----|----------|----|--------------------------------------|

#### Radioactive Contaminants

|                               |    |   |      |              |        |    |  |
|-------------------------------|----|---|------|--------------|--------|----|--|
| Beta photon emitters (pCi/L)  | 50 | 0 | 4.65 | 3 to 6       | Apr-08 | No | Decay of natural and man-made deposits |
| Alpha emitters [4000] (pCi/L) | 15 | 0 | 0.99 | 0.75 to 1.4  | Sep-08 | No | Erosion of natural deposits            |
| Combined radium (pCi/L)       | 5  | 0 | 0.68 | 0.2 to 1.5   | Sep-08 | No | Erosion of natural deposits            |
| Uranium (µg/L)                | 30 | 0 | 0.24 | 0.14 to 0.37 | Aug-08 | No | Erosion of natural deposits            |

#### Inorganic Contaminants

|  |          |     |                                    |              |          |    |  |
|--|----------|-----|------------------------------------|--------------|----------|----|--|
| Barium [1010] (ppm)                                | 2        | 2   | 0.030                              | 0.03 to 0.03 | Feb-13   | No | Drilling wastes; metal refineries; erosion of natural deposits                     |
| Copper [1022] (ppm) sites exceeding action level 0 | AL = 1.3 | 1.3 | 0.08 (90 <sup>th</sup> percentile) | 0 to 0.21    | Sep-13   | No | Corrosion of household plumbing systems  |
| Fluoride [1025] (ppm)                              | 4        | 4   | 0.92                               | 0.76 to 1.17 | Feb 2013 | No | Water additive which promotes strong teeth   |
| Lead [1030] (ppb) sites exceeding action level 0   | AL = 15  | 0   | 0 (90 <sup>th</sup> percentile)    | 0 to 5       | Sep-13   | No | Corrosion of household plumbing systems  |
| Nitrate [1040] (ppm)                               | 10       | 10  | 0.420                              | 0.18 to 0.42 | Feb-13   | 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 | 1.57 (lowest average) | 1.00 to 2.45 (monthly ratios) | N/A | 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 | 1.08 (highest average)     | 0.22 to 1.98                         | N/A | No  | Water additive used to control microbes.  |
| HAA (ppb) (all sites) [Haloacetic acids] *less than 1 year of quarterly sampling       | 60       | N/A       | 34 (system average)        | 18 to 59 (range of system sites)     | N/A | No* | Byproduct of drinking water disinfection  |
| HAA (ppb) [Haloacetic acids] (Individual Sites)  | 60       | N/A       | 14 (high site average)     | 42 to 54 (range of individual sites) | N/A | No  | Byproduct of drinking water disinfection  |
| TTHM (ppb) (all sites) [total trihalomethanes] *less than 1 year of quarterly sampling | 80       | N/A       | 49 (system average)        | 14 to 72 (range of system sites)     | N/A | No* | Byproduct of drinking water disinfection. |
| TTHM (ppb) [total trihalomethanes] (Individual Sites)                                  | 80       | N/A       | 19.025 (high site average) | 64 to 76 (range of individual sites) | N/A | No  | Byproduct of drinking water disinfection. |

| Unregulated Contaminants (UCMR 3) | average | range (ppb)      | date   |
|-----------------------------------|---------|------------------|--------|
| vanadium                          | 0.23    | 0.22 to 0.24     | Oct-13 |
| strontium                         | 510.00  | 490.00 to 530.00 | Oct-13 |
| chromium-6                        | 0.02    | BDL to 0.04      | Oct-13 |
| chlorate                          | 413.50  | 403.00 to 424.00 | Oct-13 |

EPA has not established drinking water standards for unregulated contaminants. There are no MCL's and therefore no violations if found.

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# 2013 Annual Water Quality Report

Kentucky Central Division  
Fayette and Surrounding Counties  
PWS ID: KY0340250



Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien.

## A Message from the Kentucky American Water President

To Our Valued Customer:

Kentucky American Water is proud to be your local water service provider, and I am pleased to share with you good news about the quality of your drinking water. Each year, we provide you with our Annual Water Quality Report that provides information about where your water comes from, the results of water testing, and information about what was found during that testing.



Quite a lot goes into bringing that water to your home. The miles of pipeline hidden below the ground. The facilities that draw water from the source. The plant where it's treated and tested. Our treatment plant operators, water quality experts, engineers, and maintenance crews working around the clock to make sure that water is always there when you need it. Delivering high-quality, reliable water service to your tap around the clock also requires significant investment in our water infrastructure to upgrade aging facilities. In fact, we invest approximately \$20 million in capital improvements each year. We are proud that we continue to supply water for **less than a penny per gallon—an exceptional value.**

We do this because we believe we're delivering more than just water service. We deliver a key resource for public health, fire protection, economic development and overall quality of life. Our job is to ensure that quality water keeps flowing not only today, but well into the future. It's part of our commitment to you and the communities we serve.

We hope you agree that it's worth every penny and worth learning more about. Please take the time to review this report. It provides details about the source and quality of your drinking water using the data from water quality

testing conducted for your local water system from January through December 2013.

We appreciate the opportunity to serve you.

Sincerely,

Cheryl D. Norton  
President, Kentucky American Water

## About Kentucky American Water

Kentucky American Water, a subsidiary of American Water (NYSE: AWK), 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.

Founded in 1886, American Water (NYSE: AWK) is the largest publicly traded U.S. water and wastewater utility company. With headquarters in Voorhees, N.J., the company employs approximately 6,600 dedicated professionals who provide drinking water, wastewater and other related services to an estimated 14 million people in more than 40 states and parts of Canada. More information can be found by visiting <http://www.amwater.com>.

## What are the Sources of Contamination?

When it rains, water travels over the surface of the land or through the ground, dissolving naturally occurring minerals (possibly radioactive material) and picking up organic material from animals or humans. The water ends up in rivers, lakes, streams, ponds, reservoirs, springs and wells, where it may be used as a source of supply for both drinking and bottled water. The following contaminants may be present in source water as a result of this process:

- **Microbial Contaminants**, such as viruses and bacteria from sewage, agricultural livestock operations or wildlife.



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**WE CARE ABOUT WATER. IT'S WHAT WE DO.®**

- **Inorganic Contaminants**, such as salts and metals that may occur naturally or may result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.
- **Pesticides and Herbicides**, which 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 occur naturally or result from oil and gas production and mining activities.

The Kentucky River (as it runs south of Lexington and through Owen County) and Jacobson Reservoir (located in Fayette County) are surface water sources that supply the Central Kentucky area. A third surface water source in Fayette County, Lake Ellerslie, may supplement these sources if necessary.

### Information on the Internet

The U.S. EPA, Centers for Disease Control, and the Kentucky Division of Water web sites provide a substantial amount of information relating to water sources, water conservation and public health.

You may visit these sites at the addresses below:

**U.S. Environmental Protection Agency**

<http://water.epa.gov/drink/index.cfm>

**Centers for Disease Control and Prevention**

<http://www.cdc.gov/>

**Kentucky Division of Water**

<http://water.ky.gov/pages/default.aspx>

### Protecting Your Water

The Kentucky Division of Water approved a Source Water Assessment and Protection Plan for Kentucky American Water in 2003. The 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 pasture lands. Jacobson Reservoir is most vulnerable to urban storm water 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.

Protection of drinking water is everyone's responsibility. You can help protect our water supplies by:

- Eliminating excess use of lawn and garden fertilizers and pesticides, since they contain hazardous chemicals that can reach our source water.
- Picking up after your pets.
- Disposing of chemicals properly and taking used motor oil to a recycling center.
- Disposing of used medicine properly (visit our web site at [www.kentuckyamwater.com](http://www.kentuckyamwater.com) for additional information).
- Volunteering in watershed groups in our area.
- Remembering that storm drains dump directly into local water bodies.

Kentucky American Water encourages you to take an active part in protecting your water supply by participating in activities as they occur in your area. For example, the company participates in Reforest the Bluegrass annually, planting trees near water bodies to enhance our source water protection, and supports the annual River Sweep on the Kentucky River, coordinated by the Ohio River Valley Sanitation Commission (ORSANCO).

### You Can Be Involved in Matters That Affect Your Water

Kentucky American Water welcomes your comments and questions regarding water quality issues. You can contact us with questions about your water, your water bill, service issues, or to obtain additional copies of this report by calling our Customer Service Center at (800) 678-6301.

### A Proud Member of the Partnership for Safe Drinking Water Program



In 2008 Kentucky American Water treatment facilities were awarded the prestigious "Ten-Year Director's Award" under the Partnership for Safe Water program administered by the U.S. Environmental Protection Agency (EPA), American Water Works Association and other water-related organizations. Our Richmond Road Station and Kentucky River Station treatment plants in Lexington were among only 16 plants in the country to first achieve this award and the only ones in the Commonwealth of Kentucky at that time. The award honors water utilities for achieving operational excellence by voluntarily improving their processes and meeting performance goals beyond what is required by federal and state drinking water regulations. We are proud to report that we completed our fifteenth successful year in the program in 2013.



## A Proud Master Member of the Kentucky EXCEL Program

The Kentucky Department for Environmental Protection administers a voluntary program that is open to anyone who wishes to improve and protect Kentucky's environment beyond regulatory requirements. The Master membership is the highest of the four membership levels, requiring members to demonstrate comprehensive environmental management planning; undergo an independent, third-party assessment of compliance; and commit to complete and report on at least four voluntary projects that will benefit Kentucky's environment. Kentucky American Water is proud to participate in this program at the Master level, and was the first utility in the state to do so.



## Commonly Asked Questions

### Why do I have cloudy or milky water?

Occasionally your water may look cloudy or milky. Cloudy or milky-looking water is usually the result of lots of tiny air bubbles suspended in the water. The bubbles are so small that they are almost invisible, but together they look like someone poured milk in your water. Our water has dissolved air in it all of the time, but it has more during the colder months. When the colder water warms in your hot water heater or in the pipes of your home, it can no longer hold all of the dissolved air, so air bubbles appear. There is nothing that Kentucky American Water can do to remove these air bubbles from the water, but be assured that these bubbles will clear on their own as the water warms up. If you allow a glass of water to stand for a few moments, the air bubbles will rise to the surface. This phenomenon is called entrained air, does not affect the quality of your water and is not harmful to consume. If the water does not clear from the bottom up, please contact our Customer Service Center at (800) 678-6301.

### Why do I have brown or yellow water?

The internal plumbing of your house may be the culprit if discolored water only appears for a minute or two after your tap is turned on. Since iron is an essential nutrient, this condition poses no health hazard. If the discoloration bothers you, however, flush the tap until the water becomes clear, saving the flushed water for iron-loving plants. If the discoloration is detected only in your hot water supply, it is likely an indication of an issue with your hot water heater. You should consult your owner's manual for instructions and warnings regarding flushing your hot water heater or contact a licensed plumber.

Sediments in water mains sometimes get stirred up when fire hydrants are used and when the flow of water in mains is changed. These sediments may cause your water to turn brown or yellow. Wait 30 to 40 minutes after you notice the discolored water, and try turning on the cold water in your bathtub for a minute or two. You'll probably notice that it clears right away, since sediments settle quickly back to the

bottom of water mains. Discolored water due to sediments poses no known health threat, but for aesthetic reasons you should avoid doing laundry until the water color clears. If the water does not clear after a few minutes, please contact our Customer Service Center at (800) 678-6301.

### Is there lead in my water?

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. Kentucky 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>. Kentucky American Water remains in full compliance with all of the requirements pertinent to lead and copper in drinking water.

### What is the difference between "hard" and "soft" water?

Hardness is a measure of the concentration of two minerals (calcium and magnesium) naturally present in water. Excessive hardness can cause scale (white spots) to be deposited in boilers, pipelines, faucet aerators and shower heads. Hard water also requires the use of large amounts of laundry soap to achieve the desired results. The use of water softeners adds sodium to the water, which acts as a softening agent. Soft water is either water that is low in calcium or magnesium, or water that has been treated in a softener. Hardness levels leaving our water treatment plants in 2013 ranged from 70 (moderately hard) to 360 ppm (very hard) or 4 to 21 grains per gallon.

### How much sodium is in my water?

The sodium level is approximately 18 ppm.

### What is the pH (acidity) range of my water?

Water within our distribution system averages 7.5 pH units. A pH of 7.0 is considered neutral – neither acidic nor basic.

### What is the alkalinity of my water?

Alkalinity is the capacity of water to neutralize acids. Water within our distribution system averages 84 ppm.

### Is there fluoride in my water?

Yes. Kentucky American Water is required by law to add fluoride to a level of near 1 ppm to assist in the prevention of dental cavities. The average fluoride level in our distribution system is 0.98 ppm.



## Substances Expected to be in Drinking Water

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 U.S. Environmental Protection Agency's Safe Drinking Water Hotline at (800-426-4791).

To ensure tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain substances in water provided by public water systems. The U.S. Food and Drug Administration establishes limits for contaminants in bottled water that must provide the same protection for public health.

For our Central Kentucky customers Kentucky American Water maintains three water treatment plants, the Kentucky River Station, Kentucky River Station II at Hardin's Landing, and the Richmond Road Station, capable of reliably producing up to 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.

### 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/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 is *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.

The U.S. EPA issued a rule in January 2006 that requires systems with higher *Cryptosporidium* levels in their source

water to provide additional treatment. To comply with this rule, Kentucky American Water conducted 24 consecutive months of monitoring for *Cryptosporidium* in our raw water sources. We detected the organism two times in the Kentucky River during this testing. Based on the results of our *Cryptosporidium* monitoring, no additional treatment will be required by the U.S. EPA regulation.

## Tap vs. Bottled Water

The water provided by Kentucky American Water must meet more intensive EPA testing requirements than bottled water, which is regulated by the Food and Drug Administration (FDA). In addition, our award-winning quality water is produced at less than \$0.01 a gallon, compared to bottled water that typically costs well over \$1 a gallon.

## Protecting Our Water Supply – Backflow Prevention

Kentucky American Water has a backflow prevention program that ensures proper installation and maintenance of thousands of backflow prevention devices throughout our system. These devices ensure hazards originating on customers' properties and from temporary connections do not impair or alter the quality of water in our distribution system. For more information about Kentucky American Water's backflow prevention program, please visit our web site at [www.kentuckyamwater.com](http://www.kentuckyamwater.com), or contact our Senior Cross Connection Control Specialist Kenny Roney, at [kenny.roney@amwater.com](mailto:kenny.roney@amwater.com) or (859) 268-6310.

## How to Read This Table

Start by finding a **Substance**, and then read across to find the information about that substance. The **Year Sampled** is 2013 or prior years. **MCL** shows the highest level of substance (contaminant) allowed. **MCLG** is the goal level for that substance (this may be lower than what is allowed). **Highest Value (Results)** represents the measured amount (less is generally better). **Range** tells the highest and lowest amounts measured. **Typical Source** tells where the substance usually originates.

## Definitions of Terms Used in This Report

- **AL (Action Level):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- **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.
- **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.
- **MRDL (Maximum Residual Disinfectant Level):** The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.



- **MRDLG (Maximum Residual Disinfectant Level Goal):** 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 contamination.
- **mrem/year (millirems per year):** A measure of radiation absorbed by the body.
- **NA:** Not applicable
- **ND:** Not detected
- **NTU (Nephelometric Turbidity Units):** A measurement of the clarity, or turbidity, of the water.
- **pCi/L (picocuries per liter):** Measure of radioactivity in water.
- **pH:** A measurement of acidity, 7.0 being neutral
- **ppb (parts per billion):** One part substance per billion parts water, or micrograms per liter.
- **ppm (parts per million):** One part substance per million parts water, or milligrams per liter.
- **ppt (parts per trillion):** One part substance per trillion parts water, or picograms per liter.
- **TT (Treatment Technique):** A required process intended to reduce the level of a contaminant in drinking water.

## Water Quality Data

Kentucky American Water conducts extensive monitoring to ensure that your water meets all water quality standards. The results of our monitoring are reported in the following tables. While most monitoring was conducted in 2013, certain substances are monitored less than once per year because the levels do not change frequently. Although all of the substances listed below are under the Maximum Contaminant Level (MCL) set by the U.S. Environmental Protection Agency, we believe it is important that you know exactly what was detected and how much of the substance was present in the water. For help with interpreting this table, see the “How to Read This Table.”

## Unregulated Contaminant Monitoring Rule 3

Monitoring was performed during 2013 under the U.S. Environmental Protection Agency (EPA) Unregulated Contaminant Monitoring Rule 3 (UCMR 3). Unregulated contaminants are those that don't have a drinking water standard set by EPA. The purpose of monitoring for these contaminants is to help EPA decide whether the contaminants should have a standard. Contaminants that were detected as part of the UCMR 3 monitoring are included in the Water Quality Results table. For a report containing all testing performed under the UCMR 3 rule, please contact our Customer Service Center at (800) 678-6301.

## Notice of Violation

Please note that a filtered water sample taken November 24, 2013, had 12.89 turbidity units, which is above the regulated limit of 1 turbidity unit. Filtered water goes through a clearwell before leaving the water treatment plant and coming to your home. The highest level leaving the water treatment plant was 3.09 turbidity units. Appropriate action was taken to quickly restore compliance with the turbidity standard. Additionally, water samples were collected and analyzed at a certified bacteriological laboratory and they confirmed the water remained safe to consume. A notice was sent in customer bills in January 2014 explaining this incident.



**There's a lot more to your water bill than just water.**

When you turn on the tap, it's easy to see what your water bill buys. What's not as easy to see is what it takes to bring that water to your home. The miles of pipeline hidden below the ground. The facilities that draw water from the source. The plant where it's treated and tested. The scientists, engineers, and maintenance crews working around the clock to make sure that water is always there when you need it. Your water payments are helping to build a better tomorrow by supporting needed improvements that will keep water flowing for all of us—today and well into the future. All for less than a penny a gallon.

**AT LESS THAN A PENNY PER GALLON WATER IS A GREAT VALUE™**

**WE CARE ABOUT WATER. IT'S WHAT WE DO. FIND OUT WHY YOU SHOULD, TOO, at [amwater.com](http://amwater.com).**

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## Water Quality Results

### Regulated Substances (Measured on the Water Leaving the Treatment Facility)

| Substance (units)                            | Year Sampled | MCL | MCLG | Kentucky River Station (KRS) |                    | Kentucky River Station II at Hardin's Landing (KRS II) |                     | Richmond Road Station (RRS) |                     | Compliance Achieved | Typical Source  |
|--|--------------|-----|------|------------------------------|--------------------|--|---------------------|-----------------------------|---------------------|---------------------|---|
|  |              |     |      | Highest Value                | Range Low-High     | Highest Value  | Range Low-High      | Highest Value               | Range Low-High      |                     |   |
| Combined Radium (pCi/L) <sup>1</sup>         | 2011         | 15  | 2    | 1.5                          | 0.6 - 1.5          | 1.5  | NA                  | ND                          | NA                  | Yes                 | Erosion of natural deposits   |
| Fluoride (ppm)                               | 2013         | 4   | 4    | 1.2                          | 0.9-1.2            | 1.3  | 0.8 - 1.3           | 1.1                         | 0.8 - 1.1           | Yes                 | Water additive which promotes strong teeth  |
| Beta or Photon emitters <sup>2</sup> (pCi/L) | 2011         | 50  | 0    | 2.7                          | 0.8 - 2.7          | 2.7  | NA                  | NA                          | NA                  | Yes                 | Decay of natural and man-made deposits  |
| Nitrate (ppm)                                | 2013         | 10  | 10   | 0.14                         | NA                 | 0.81   | NA                  | 0.14                        | NA                  | Yes                 | Runoff from fertilizer use; Leaching from septic tanks; Sewage; Erosion of natural deposits |
| Total Organic Carbon (ppm) <sup>3</sup>      | 2013         | TT  | NA   | 1.10                         | 0.98-1.75          | 1.31   | 1.00-1.95           | 1.77                        | 1.25-2.62           | Yes                 | Naturally present in the environment  |
| Turbidity (NTU) <sup>4</sup>                 | 2013         | TT  | NA   | 12.89                        | 99% Lowest Monthly | 0.17   | 100% Lowest Monthly | 0.15                        | 100% Lowest Monthly | No                  | Soil runoff   |
| Uranium (ppb) <sup>5</sup>                   | 2011         | 30  | 0    | ND                           | ND                 | ND   | NA                  | 1.2                         | NA                  | Yes                 | Erosion of natural deposits   |

### Regulated Substances (Measured in the Distribution System)

| Substance (units)                        | Year Sampled | MCL      | MCLG      | Highest RAA | Range (Low-High) | Compliance Achieved | Typical Source  |
|--|--------------|----------|-----------|-------------|------------------|---------------------|---|
| Total Trihalomethanes (ppb) <sup>6</sup> | 2013         | 80       | 0         | 66          | 15 - 98          | Yes                 | By-product of drinking water disinfection   |
| Haloacetic Acids (ppb) <sup>6</sup>      | 2013         | 60       | 0         | 55          | 3 - 70           | Yes                 | By-product of drinking water disinfection   |
| Chloramines (ppm) <sup>7</sup>           | 2013         | MRDL = 4 | MRDLG = 4 | 2.8         | 0.6-5.0          | Yes                 | Water additive used to control microbes   |
| Chromium (ppm) <sup>8</sup>              | 2013         | 100      | 100       | 0.13        | ND - 0.50        | Yes                 | Chromium can be generated from natural deposits of chromium in soils as well as produced by industrial processes such as steel and manufacturing and pulp mills |

### Unregulated Substances (Measured in the Distribution System)

| Substance (units)             | Year Sampled | MCL | MCLG | Average | Range (Low-High) | Compliance Achieved | Typical Source  |
|-------------------------------|--------------|-----|------|---------|------------------|---------------------|---|
| Chromium-6 (ppb) <sup>8</sup> | 2013         | NA  | NA   | 0.12    | ND - 0.33        | Yes                 | Naturally-occurring element; used in making steel and other alloys; chromium-3 or -6 forms are used for chrome plating, dyes and pigments, leather tanning, and wood preservation |
| Molybdenum (ppb) <sup>8</sup> | 2013         | NA  | NA   | 0.18    | ND - 1.1         | Yes                 | Naturally-occurring element found in ores and present in plants, animals and bacteria   |
| Strontium (ppb) <sup>8</sup>  | 2013         | NA  | NA   | 231     | 145 - 390        | Yes                 | Naturally-occurring element; historically, commercial use of strontium has been in the faceplate glass of cathode-ray tube televisions to block x-ray emissions                   |
| Vanadium (ppb) <sup>8</sup>   | 2013         | NA  | NA   | 0.13    | ND - 0.40        | Yes                 | Naturally-occurring elemental metal; used as vanadium pentoxide which is a chemical intermediate and a catalyst   |



## Regulated Substances (Measured at the Customer's Tap)

| Substance (units)         | Year Sampled | Action Level | MCLG | 90 <sup>th</sup> Percentile | Number of Samples | Number of Samples Above Action Level | Compliance Achieved | Typical Source                          |
|---------------------------|--------------|--------------|------|-----------------------------|-------------------|--------------------------------------|---------------------|---|
| Lead (ppb) <sup>9</sup>   | 2012         | 15           | 0    | ND                          | 56                | 2                                    | Yes                 | Corrosion of household plumbing systems |
| Copper (ppm) <sup>9</sup> | 2012         | 1.3          | 1.3  | 0.14                        | 55                | 0                                    | Yes                 | Corrosion of household plumbing systems |

## Bacterial Results (Measured in the Distribution System)

| Substance (units) | Year Sampled | MCL         | MCLG | Highest Percentage Detected | Compliance Achieved | Typical Source                       |
|-------------------|--------------|-------------|------|-----------------------------|---------------------|--------------------------------------|
| Total Coliform    | 2013         | 5% Positive | NA   | 1%                          | Yes                 | Naturally present in the environment |

<sup>1</sup>**Combined Radium:** Radium-226 and radium-228 concentrations added together. The Kentucky River Station and Richmond Road Station tested for radium-226 and radium-228 in 2008. The Kentucky River Station II at Hardin's Landing tested for radium-226 and radium-228 in 2011.

<sup>2</sup>**Beta or Photon Emitters:** The MCL for beta or photon emitters is 4 mrem/year (millirems per year is a measure of radiation absorbed by the body). The results in the table are reported in picoCuries/liter (pCi/L). EPA considers 50 pCi/L the level of concern for beta emitters. The Kentucky River Station and Richmond Road Station tested for beta/photon emitters in 2008. Kentucky River Station II at Hardin's Landing tested for beta/photon emitters 2011.

<sup>3</sup>**Total Organic Carbon:** Although the concentration is listed as ppm, the values shown are ratios that are used to determine compliance. Compliance with the TOC Treatment Technique (TT) requirement is based on the lowest running annual average (RAA) of the monthly ratios of the % TOC treatment removal achieved compared to the required removal. A minimum annual average ratio of 1.00 is required.

<sup>4</sup>**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. Kentucky American Water violated the turbidity MCL in November 2013. Water testing showed that the water remained safe to consume during this time. Customers were notified of this violation in January 2014 via bill inserts.

<sup>5</sup>**Uranium:** Kentucky River Station, Kentucky River Station II at Hardin's Landing and Richmond Road Station tested for uranium in 2011.

<sup>6</sup>**Total Trihalomethanes (TTHMs) and Haloacetic Acids (HAAs):** Compliance is based on the highest LRAA (locational running annual average) that is calculated quarterly. The highest quarterly LRAA is the measured value in the table.

<sup>7</sup>**Chloramines:** 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.

<sup>8</sup>**Unregulated Contaminant Monitoring Rule 3 (UCMR3):** Results in table are for 2013 quarterly monitoring. Annual average is for all detections. Chromium is a regulated contaminant that was tested with the rest of the UCMR 3 constituents.

<sup>9</sup>**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.

