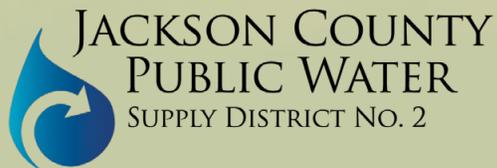


# ANNUAL WATER QUALITY REPORT

WATER TESTING PERFORMED IN 2018



***Presented By***



## Our Mission Continues

We are once again pleased to present our annual water quality report covering all testing performed between January 1 and December 31, 2018. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best-quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all our water users.

Please remember that we are always available should you ever have any questions or concerns about your water.

### Where Does My Water Come From?

Public Water Supply District #2 customers are fortunate because we enjoy an abundant water supply from two sources. The first is Kansas City Water, which draws surface water from the Missouri River and from deep wells in the Missouri Aquifer. Our second water source is Independence Water, which draws water from wells located in the Missouri River Alluvial Aquifer. Combined, we provide roughly 420 million gallons of clean drinking water every year.



### Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC

(Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or <http://water.epa.gov/drink/hotline>.



## Radon

Our system monitored for radon and found levels of 107 pCi/L. Radon is a radioactive gas that you cannot see, taste, or smell. It is found throughout the U.S. Radon can move up through the ground and into a home through cracks and holes in the foundation. Radon can build up to high levels in all types of homes. Radon can also get into indoor air when released from tap water from showering, washing dishes, and other household activities. Compared to radon entering a home through soil, the radon entering a home through tap water will, in most cases, be a small source. Radon is a known human carcinogen. Breathing air containing radon can lead to lung cancer. Drinking water containing radon may also cause increased risk of stomach cancer. If you are concerned about radon in your home, test the air in your home. Testing is inexpensive and easy. You should pursue radon removal for your home if the level of radon in your air is 4 pCi/L or higher. There are simple ways to fix a radon problem that are not too costly. For additional information, call your state radon program or call the U.S. EPA Radon Hotline at (800) SOS-RADON.

### Source Water Assessment

A Source Water Assessment Plan (SWAP) is now available at our office. This plan is an assessment of the delineated area around our listed sources through which contaminants, if present, could migrate and reach our source water. It also includes an inventory of potential sources of contamination within the delineated area and a determination of the water supply's susceptibility to contamination by the identified potential sources.

If you would like to review the Source Water Assessment Plan, please feel free to contact our office during regular office hours. You can also contact Independence Water and Kansas City Water for information on their own assessments.

### Information on the Internet

The U.S. EPA (<https://goo.gl/TFAMKc>) and the Centers for Disease Control and Prevention ([www.cdc.gov](http://www.cdc.gov)) websites provide a substantial amount of information on many issues relating to water resources, water conservation, and public health. Also, the Missouri Department of Natural Resources has a website ([www.dnr.mo.gov](http://www.dnr.mo.gov)) that provides complete and current information on water issues in Missouri, including valuable information about our watershed.

## QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please call Patrick Ertz, District Manager, at (816) 353-5550.

## Community Participation

You are invited to participate in our public meetings and voice your concerns about your drinking water. We meet the second Wednesday of each month beginning at 5 p.m. at the Water District office, 6945 Blue Ridge Boulevard, Raytown, Missouri.

## Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration 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 these contaminants does not necessarily indicate that the water poses a health risk.

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, in some cases, radioactive material, and substances resulting from the presence of animals or from human activity. Substances 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, or wildlife;

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may result from urban stormwater 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 stormwater 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 stormwater runoff, and septic systems;

Radioactive Contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

We remain vigilant in delivering the best-quality drinking water

## What's a Cross-Connection?

Cross-connections that contaminate drinking water distribution lines are a major concern. A cross-connection is formed at any point where a drinking water line connects to equipment (boilers), systems containing chemicals (air conditioning systems, fire sprinkler systems, irrigation systems), or water sources of questionable quality. Cross-connection contamination can occur when the pressure in the equipment or system is greater than the pressure inside the drinking water line (back pressure). Contamination can also occur when the pressure in the drinking water line drops due to fairly routine occurrences (main breaks, heavy water demand), causing contaminants to be sucked out from the equipment and into the drinking water line (back siphonage).

Outside water taps and garden hoses tend to be the most common sources of cross-connection contamination at home. The garden hose creates a hazard when submerged in a swimming pool or when attached to a chemical sprayer for weed killing. Garden hoses that are left lying on the ground may be contaminated by fertilizers, cesspools, or garden chemicals. Improperly installed valves in your toilet could also be a source of cross-connection contamination.

Community water supplies are continuously jeopardized by cross-connections unless appropriate valves, known as backflow prevention devices, are installed and maintained. We have surveyed industrial, commercial, and institutional facilities in the service area to make sure that potential cross-connections are identified and eliminated or protected by a backflow preventer. We also inspect and test backflow preventers to make sure that they provide maximum protection.

For more information on backflow prevention, contact the Safe Drinking Water Hotline at (800) 426-4791.

## Lead in Home Plumbing

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. We are responsible for providing high-quality drinking water, but we 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 at (800) 426-4791 or at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).



## Test Results

Our water is monitored for many different kinds of substances on a very strict sampling schedule, and the water we deliver must meet specific health standards. Here, we only show those substances that were detected in our water (a complete list of all our analytical results is available upon request). Remember that detecting a substance does not mean the water is unsafe to drink; our goal is to keep all detects below their respective maximum allowed levels. We are pleased to report that your drinking water meets or exceeds all federal and state requirements.

The state recommends monitoring for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

### REGULATED SUBSTANCES

| SUBSTANCE<br>(UNIT OF MEASURE)                     | YEAR<br>SAMPLED | MCL<br>[MRDL] | MCLG<br>[MRDLG] | Independence Water |                   | Kansas City Water  |                   | Public Water Supply District<br>#2 of Jackson County MO |                   | VIOLATION | TYPICAL SOURCE  |
|--|-----------------|---------------|-----------------|--------------------|-------------------|--------------------|-------------------|---|-------------------|-----------|---|
|  |                 |               |                 | AMOUNT<br>DETECTED | RANGE<br>LOW-HIGH | AMOUNT<br>DETECTED | RANGE<br>LOW-HIGH | AMOUNT<br>DETECTED                                      | RANGE<br>LOW-HIGH |           |   |
| <b>Alpha Emitters</b> (pCi/L)                      | 2018            | 15            | 0               | 0.97               | 0.97–0.97         | NA                 | NA                | NA  | NA                | No        | Erosion of natural deposits   |
| <b>Barium</b> (ppm)                                | 2018            | 2             | 2               | 0.053              | 0.053–0.053       | 0.0416             | 0.0416–0.0418     | NA  | NA                | No        | Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits                                |
| <b>Beta/Photon Emitters<sup>1</sup></b><br>(pCi/L) | 2018            | 50            | 0               | 6.2                | 6.2–6.2           | NA                 | NA                | NA  | NA                | No        | Decay of natural and man-made deposits  |
| <b>Chloramines</b> (ppm)                           | 2018            | [4]           | [4]             | 2.09               | 1.51–2.36         | ND                 | NA                | NA  | NA                | No        | Water additive used to control microbes   |
| <b>Chromium</b> (ppb)                              | 2018            | 100           | 100             | 1                  | 1–1               | 5                  | 5–5               | NA  | NA                | No        | Discharge from steel and pulp mills; Erosion of natural deposits  |
| <b>Combined Radium</b> (pCi/L)                     | 2018            | 5             | 0               | 0.914              | 0.914–0.914       | NA                 | NA                | NA  | NA                | No        | Erosion of natural deposits   |
| <b>Cyanide</b> (ppb)                               | 2018            | 200           | 200             | NA                 | NA                | 34                 | ND–34             | NA  | NA                | No        | Discharge from steel and metal factories; Discharge from plastic and fertilizer factories                                 |
| <b>Fluoride</b> (ppm)                              | 2018            | 4             | 4               | 0.16               | 0.16–0.16         | 0.968              | 0.226–0.968       | NA  | NA                | No        | Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories |
| <b>Haloacetic Acids [HAA]–<br/>Stage 1</b> (ppb)   | 2018            | 60            | NA              | NA                 | NA                | 21                 | 7.81–25.7         | 10  | ND–15.2           | No        | By-product of drinking water disinfection   |
| <b>Haloacetic Acids [HAA]–<br/>Stage 2</b> (ppb)   | 2018            | 60            | NA              | NA                 | NA                | NA                 | NA                | 13  | ND–21.2           | No        | By-product of drinking water disinfection   |
| <b>Lasso</b> (ppb)                                 | 2018            | 2             | NA              | NA                 | NA                | 0.93               | ND–0.93           | NA  | NA                | No        | Runoff from herbicide used on row crops   |
| <b>Nitrate</b> (ppm)                               | 2018            | 10            | 10              | 0.22               | 0.22–0.22         | 4.37               | 0.441–4.37        | NA  | NA                | No        | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits                               |
| <b>Radon 222</b> (pCi/L)                           | 2018            | 300           | 0               | 107                | 107–107           | NA                 | NA                | NA  | NA                | No        | Erosion of natural deposits   |
| <b>Selenium</b> (ppb)                              | 2018            | 50            | 50              | 0.43               | 0.43–0.43         | 2.8                | 2.8–2.8           | NA  | NA                | No        | Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines                          |

## REGULATED SUBSTANCES

| SUBSTANCE<br>(UNIT OF MEASURE)                     | YEAR<br>SAMPLED | MCL<br>[MRDL] | MCLG<br>[MRDLG] | Independence Water |                   | Kansas City Water  |                   | Public Water Supply District<br>#2 of Jackson County MO |                   | VIOLATION | TYPICAL SOURCE                            |
|--|-----------------|---------------|-----------------|--------------------|-------------------|--------------------|-------------------|---|-------------------|-----------|---|
|  |                 |               |                 | AMOUNT<br>DETECTED | RANGE<br>LOW-HIGH | AMOUNT<br>DETECTED | RANGE<br>LOW-HIGH | AMOUNT<br>DETECTED                                      | RANGE<br>LOW-HIGH |           |   |
| <b>TTHMs [Total Trihalomethanes]–Stage 1</b> (ppb) | 2018            | 80            | NA              | NA                 | NA                | NA                 | NA                | 10  | 8.02–12.2         | No        | By-product of drinking water disinfection |
| <b>TTHMs [Total Trihalomethanes]–Stage 2</b> (ppb) | 2018            | 80            | NA              | 3                  | 8.08–8.82         | 8                  | 0.42–14.3         | 11  | 7.07–15           | No        | By-product of drinking water disinfection |
| <b>Total Organic Carbon<sup>2</sup></b> (ppm)      | 2018            | TT            | NA              | 2.1                | 2.1–2.1           | NA                 | NA                | NA  | NA                | No        | Naturally present in the environment      |

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

| SUBSTANCE<br>(UNIT OF MEASURE) | YEAR<br>SAMPLED | AL  | MCLG | AMOUNT DETECTED<br>(90TH %ILE) | SITES ABOVE AL/<br>TOTAL SITES | VIOLATION | TYPICAL SOURCE   |
|--------------------------------|-----------------|-----|------|--------------------------------|--------------------------------|-----------|--|
| <b>Copper</b> (ppm)            | 2016            | 1.3 | 1.3  | 0.00402                        | 0/30                           | No        | Corrosion of household plumbing systems; Erosion of natural deposits |
| <b>Lead</b> (ppb)              | 2016            | 15  | 0    | 0                              | 0/30                           | No        | Corrosion of household plumbing systems; Erosion of natural deposits |

<sup>1</sup>The MCL for beta particles is 4 mrem/year. U.S. EPA considers 50 pCi/L to be the level of concern for beta particles.

<sup>2</sup>The value reported under Amount Detected for TOC is the lowest ratio of percentage of TOC actually removed to the percentage of TOC required to be removed. A value of greater than 1 indicates that the water system is in compliance with TOC removal requirements. A value of less than 1 indicates a violation of the TOC removal requirements.

## Definitions

**90th %ile:** The levels reported for lead and copper represent the 90th percentile of the total number of sites tested. The 90th percentile is equal to or greater than 90% of our lead and copper detections.

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

**LRAA (Locational Running Annual Average):** The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters. Amount Detected values for Stage 2 TTHMs and HAAs are reported as the highest LRAAs.

**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 a 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 contaminants.

**NA:** Not applicable

**ND (Not detected):** Indicates that the substance was not found by laboratory analysis.

**pCi/L (picocuries per liter):** A measure of radioactivity.

**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).

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