

The City of Flatwoods

Water Quality Report 2016

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Our water comes from Russell and Ashland. (Russell serves North and East sides and Ashland serves South and West sides.) Both water systems treat surface water from the Ohio River. A susceptibility analysis evaluates the potential for contaminants to enter the water supply by identifying potential contaminant sources and rating them by proximity to the system's intake, the likelihood of release for the contaminant type, and by the nature of the contaminant itself. Within the Kentucky portion of the protection zone, there are 536 identified potential contaminant sources. Of these 302 have a susceptibility rating of High, 206 rated Medium and 28 rated Low. Oil spills which receive a High rating may float by the intake without noticeable effect. Chemicals which mix with the water present a different kind of threat and the intake may be shut down until the danger passes. In all cases the Ohio River Valley Sanitation Commission (ORSANCO) issues notices of spills, their location on the river and the speed of the river. Given the number of High ranked potential contaminant sources, both water systems are ranked Moderately High in their source water assessments. The complete Source Water Assessment Plans can be viewed at the Russell Water Company office or Ashland Water Works.

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).

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>.

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.

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

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.

Regulated Contaminant Test Results from Flatwoods:

Regulated Contaminant Test Results							
Contaminant [code] (units)	MCL	MCLG	Report Level	Range of Detection	Date of Sample	Violation	Likely Source of Contamination
Copper [1022] (ppm) sites exceeding action level 0	AL = 1.3	1.3	0.149 (90 th percentile)	0 to 0.551	Jun-15	No	Corrosion of household plumbing systems
Lead [1030] (ppb) sites exceeding action level 0	AL = 15	0	0 (90 th percentile)	0 to 4	Jun-15	No	Corrosion of household plumbing systems
Chlorine (ppm)	MRDL = 4	MRDLG = 4	1.03 (highest average)	0.38 to 1.64	2016	No	Water additive used to control microbes.
HAA (ppb) (Stage 2) [Haloacetic acids]	60	N/A	49 (high site average)	20 to 51 (range of individual sites)	2016	No	Byproduct of drinking water disinfection
TTHM (ppb) (Stage 2) [total trihalomethanes]	80	N/A	94 (high site average)	28 to 129 (range of individual sites)	2016	Yes	Byproduct of drinking water disinfection.

Regulated Contaminant Test Results from Russell:

	Allowable Levels	Highest Single Measurement	Lowest Monthly %	Violation	Likely Source
Turbidity (NTU) TT * Representative samples of filtered water	No more than 1 NTU* Less than 0.3 NTU in 95% of monthly samples	0.35	99	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
Barium [1010] (ppm)	2	2	0.019	0.019 to 0.019	Apr-16	No	Drilling wastes; metal refineries; erosion of natural deposits
Fluoride [1025] (ppm)	4	4	0.96	0.96 to 0.96	Apr-16	No	Water additive which promotes strong teeth
Nitrate [1040] (ppm)	10	10	0.86	0.86 to 0.86	Apr-16	No	Fertilizer runoff; leaching from septic tanks, sewage; erosion of natural deposits
Total Organic Carbon (ppm) (measured as ppm, but reported as a ratio)	TT*	N/A	1.31 (lowest average)	0.84 to 2.06 (monthly ratios)	2016	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.

Regulated Contaminant Test Results from Ashland:

	Allowable Levels	Highest Single Measurement	Lowest Monthly %	Violation	Likely Source
Turbidity (NTU) TT * Representative samples of filtered water	No more than 1 NTU* Less than 0.3 NTU in 95% of monthly samples	0.22	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
Barium [1010] (ppm)	2	2	0.034	0.034 to 0.034	Mar-16	No	Drilling wastes; metal refineries; erosion of natural deposits
Fluoride [1025] (ppm)	4	4	0.5	0.5 to 0.5	Mar-16	No	Water additive which promotes strong teeth
Nitrate [1040] (ppm)	10	10	0.7	0.7 to 0.7	Feb-16	No	Fertilizer runoff; leaching from septic tanks, sewage; erosion of natural deposits
Total Organic Carbon (ppm) (measured as ppm, but reported as a ratio)	TT*	N/A	1.12 (lowest average)	0.85 to 1.70 (monthly ratios)	2016	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.

Other Contaminants

Cryptosporidium [oocysts/L]	0	TT (99% removal)	0 (positive samples)	12 (no. of samples)	2016	No	Human and animal fecal waste
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Unregulated Contaminants (UCMR 3)	average	range (ppb)	date
1,4-dioxane	0.128	BDL to 0.36	Dec-15
vanadium	0.140	0 to 0.319	Jun-15
molybdenum	1.181	0 to 2.46	Sep-15
strontium	226.500	115 to 307	Mar-15
chromium-6	0.049	0.04 to 0.07	Dec-15
chlorate	124.450	63.5 to 234	Sep-15

EPA has not established drinking water standards for unregulated contaminants. There are no MCL's and therefore no violations if found. Sampling for UCMR3 was completed in 2015, however results were not received until 2016.

Violations

The table below lists the violations we received during 2016 and the actions taken to rectify the violations.

Violation	Begin Date	End Date	Explanation / Remedial Measures
2016-9950629 – Trihalomethanes MCL exceeded	1/1/2016	3/31/2016	Disinfection by-product MCL exceeded. Public notification provided.
2016-9950630 – Trihalomethanes MCL exceeded	4/1/2016	6/30/2016	Disinfection by-product MCL exceeded. Public notification provided.
2016-9950632 – Trihalomethanes MCL exceeded	7/1/2016	9/30/2016	Disinfection by-product MCL exceeded. Public notification provided.
2017-9950633 – Trihalomethanes MCL exceeded	10/1/2016	12/31/2016	Disinfection by-product MCL exceeded. Public notification provided.

During all four quarters we exceeded the MCL for THM.

Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.