

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.

To receive this report in the mail, contact our office.

Greenup Water System Water Quality Report 2018



Water System ID: KY0450169

Manager:

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1005 Walnut St.

Greenup, KY 41144

Meeting location and time:

Greenup City Hall

Second Tuesday monthly at 6:00 PM

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 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.

The Greenup Water System withdraws surface water from the Little Sandy River. An analysis of the system's susceptibility to contamination yields a solid moderate ranking. Of the 156 potential contaminant sites, within the protection zones of the intake, 12 received a low ranking and 134 received a medium ranking with only 10 ranked high. Those ranked high include land used for row crops because of the possible use of pesticides, the city sewer system because of the possibility of breaks in a line, and the presence of bridges and culverts. Agricultural activity in this watershed is negligible and, therefore, the use of pesticides and herbicides and the danger of runoff contaminated thereby is greatly reduced. The threat posed by major roadways in the protection area in the event of accidental release of contaminants, though it exists, is moderate. The complete assessment is available for review at Greenup Water System.

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>.



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. Copies of this report are available upon request by contacting our office during business hours.							
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.							
	Allowable Levels	Highest Single Measurement	Lowest Monthly %	Violation	Likely Source of Turbidity		
Turbidity (NTU) TT * Representative samples of filtered water	No more than 1 NTU* Less than 0.3 NTU in 95% of monthly samples	0.08	100	No	Soil runoff		
Regulated Contaminant Test Results Greenup Water System							
Contaminant [code] (units)	MCL	MCLG	Report Level	Range of Detection	Date of Sample	Violation	Likely Source of Contamination
Inorganic Contaminants							
Barium [1010] (ppm)	2	2	0.012	0.012 to 0.012	Apr-18	No	Drilling wastes; metal refineries; erosion of natural deposits
Copper [1022] (ppm) sites exceeding action level 0	AL = 1.3	1.3	0.006 (90 th percentile)	0 to 0.014	Aug-17	No	Corrosion of household plumbing systems
Fluoride [1025] (ppm)	4	4	0.63	0.63 to 0.63	Apr-18	No	Water additive which promotes strong teeth
Lead [1030] (ppb) sites exceeding action level 0	AL = 15	0	2.9 (90 th percentile)	0.2 to 3.9	Aug-17	No	Corrosion of household plumbing systems
Nickel (ppb) (US EPA remanded MCL in February 1995)	N/A	N/A	1	1 to 1	Apr-18	No	N/A
Nitrate [1040] (ppm)	10	10	0.35	0.35 to 0.35	Mar-18	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	1.52 (lowest average)	1.00 to 4.55 (monthly ratios)	2018	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	1.03 (highest average)	0.2 to 2.1	2018	No	Water additive used to control microbes.
HAA (ppb) (Stage 2) [Haloacetic acids]	60	N/A	82 (high site average)	9.8 to 164.7 (range of individual sites)	2018	YES	Byproduct of drinking water disinfection
TTHM (ppb) (Stage 2) [total trihalomethanes]	80	N/A	85 (high site average)	8.7 to 145.4 (range of individual sites)	2018	YES	Byproduct of drinking water disinfection.

HAA(ppb) Individual Site	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Violation
SM4	53.21	66.71	62.45	57.10	Yes
SM3	65.34	81.91	69.99	64.61	Yes
056	61.10	74.28	65.40	66.41	Yes
079	52.80	69.58	63.60	62.35	Yes

TTHM(ppb) Individual Site	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Violation
SM3	79.71	84.93	79.79	67.09	Yes
056	79.06	81.70	79.73	72.24	Yes

Violations

Violation Number	Begin Date	End Date	Explanation
2017-9952576 HAA MCL Exceeded	1/1/2018	3/31/2018	We exceeded the HAA MCL of 0.060mg/L. HAAs at one of our system's sites averaged 0.066mg/L.
2017-9952577 HAA MCL Exceeded	4/1/2018	6/30/2018	We exceeded the HAA MCL of 0.060mg/L. HAAs at one of our system's sites averaged 0.082mg/L.
2018-9952578 TTHM MCL Exceeded	4/1/2018	6/30/2018	We exceeded the TTHM MCL of 0.080mg/L. TTHMs at one of our system's sites averaged 0.085mg/L.
2018-9952580 HAA MCL Exceeded	7/1/2018	9/30/2018	We exceeded the HAA MCL of 0.060mg/L. HAAs at one of our system's sites averaged 0.070mg/L.
2018-9952581 HAA MCL Exceeded	10/1/2018	12/31/2018	We exceeded the HAA MCL of 0.060mg/L. HAAs at one of our system's sites averaged 0.068mg/L.
2018-9952579 PN Rule Linked	6/21/2018	N/A	We distributed the Public Notice for Violation 2018-9952576 late. It was due to the public by 6/21/2018 and we distributed it 6/29/2018. We are no longer waiting to receive official notices from DOW before informing the public of the violation.
2018-9952573 Failure to Submit MOR	3/1/2018	3/31/2018	We failed to submit our March 2018 Monthly Operating Report to the Division of Water by April 10, 2018. We have since submitted the report and returned to compliance with timely submittals.

We are continuing to evaluate the water treatment plant to reduce the concentration of disinfection byproducts (TTHMs and HAAs) formed during the treatment process. In addition, we have implemented a flushing program to further reduce the formation of disinfection byproducts in the distribution system. We anticipate resolving the problem within the next two quarters. Public Notices were issued for each quarter we were out of compliance regarding TTHMs and HAAs.

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.

Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.

Last year we inadvertently misreported the concentration level for Barium as 0.030mg/L but it should have been 0.024mg/L. Our contract laboratory failed to inform us of the revision to our report until after the CCR was published. Our contract laboratory is making efforts to ensure us that this does not happen again in the future.

Unregulated Contaminants (UCMR 4)	average	range (ppb)	date
Manganese	0.193	0 to 0.58	Jul-18
HAA5	59.500	43 to 91	Oct-18
HAA6Br	7.083	3.7 to 13	Oct-18
HAA9	66.083	46 to 100	Oct-18

Your drinking water has been sampled for a series of unregulated contaminants. Unregulated contaminants are those for which EPA has not established drinking water standards. There are no MCLs and therefore no violations if found. The purpose of monitoring for these contaminants is to help EPA determine where the contaminants occur and whether they should have a standard. As our customers, you have a right to know that these data are available. If you are interested in examining the results, please contact our office during normal business hours.

For more information, please contact Roger Harris at 606-473-7331 or 1005 Walnut Street, Greenup, KY 41144.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.