

Consumer Confidence Report

Annual Drinking Water Quality Report

CARTHAGE

IL0670250

Annual Water Quality Report for the period of January 1 to December 31, 2021

This report is intended to provide you with important information about your drinking water and the efforts made by the water system to provide safe drinking water.

The source of drinking water used by CARTHAGE is Purchased Surface Water

For more information regarding this report contact:

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Este informe contiene información muy importante sobre el agua que usted bebe. Tradúzcalo o hable con alguien que lo entienda bien.

Source of Drinking Water
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 can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include: <ul style="list-style-type: none">- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.- Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.- Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

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 EPA's Safe Drinking Water Hotline at (800) 426-4791.
In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water which must 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).
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 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 .

Source Water Information

Source Water Name	Type of Water	Report Status	Location
CC 04-METER FROM HAMILTON FF IL0670400 TP01 WELL 4 (02054)	SW GW		

Source Water Assessment

We want our valued customers to be informed about their water quality. If you would like to learn more, please feel welcome to attend any of our regularly scheduled meetings. The source water assessment for our supply has been completed by the Illinois EPA. If you would like a copy of this information, please stop by City Hall or call our water operator at 815-224-1800 to view a summary version of the completed Source Water Assessments, including: Importance of Source Water; Susceptibility to Contamination Determination; and documentation/recommendation of Source Water Protection Efforts. You may access the Illinois EPA website at <http://www.epa.state.il.us/cgi-bin/wp/swap-fact-sheets.pl>.

Source of Water: CARTRAGE Illinois EPA considers all surface water sources of community water supply to be susceptible to potential pollution problems; hence, the reason for mandatory treatment for all surface water supplies in Illinois. Mandatory treatment includes coagulation, sedimentation, filtration, and disinfection. Source of Water: HAMILTON Illinois EPA considers all surface water sources of community water supply to be susceptible to potential pollution problems; hence, the reason for mandatory treatment for all surface water supplies in Illinois. Mandatory treatment includes coagulation, sedimentation, filtration, and disinfection. Within the Illinois portion of the Mississippi River Watershed, which is illustrated in Figure 3, many commodities, including manufactured goods, petrochemicals, and pesticides are transported along the river system. The production, storage, and transportation of these commodities are a major concern, especially when occurring near surface water intakes. In addition, agricultural runoff within the Illinois portion of the Mississippi River Basin contributes to the susceptibility of the Hamilton intakes. With high flow rates and long distances of travel on the Mississippi River, critical areas can be extensive. The critical area for the Hamilton intake was determined using data from a joint U.S. Environmental Protection Agency/U.S. Geological Survey project. This project used a computer modeling program (SPARROW) to determine travel times on major rivers in the United States. Accidental spills of hazardous materials into navigable waterways are a major concern because of their frequency in the United States in recent years. Illinois has access to 1,116 miles of inland waterway that can handle commercial barge traffic. These include the Upper Mississippi River, Illinois River Waterway, and the Ohio River. Along these waterways are numerous facilities that load and unload hazardous materials. Analysis of reported spills indicate that between 1974 and 1989, 794 accidental spills of hazardous materials occurred along Illinois waterways. Approximately 92% of these spills occurred along this critical area will travel to the intake in five hours or less, making contingency planning and spill reporting a major concern in this watershed. Further information concerning spill response planning on the Mississippi River may be found in U.S. EPA's website at www.epa.gov/regions5/oil and at U.S. Geological Survey's website ftp://ftp.urnesc.er.usgs.gov/pub/gis_data/oil_spill.

2021 Regulated Contaminants Detected

Lead and Copper

Definitions:
 Action Level Goal (ALG): The level of a contaminant in drinking water below which there is no known or expected risk to health. ALGs allow for a margin of safety.
 Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
 Likely Source of Contamination

Lead and Copper	Date Sampled	MCLG	Action Level (AL)	90th Percentile	# Sites Over AL	Units	Violation	Likely Source of Contamination
Copper	2021	1.3	1.3	0.201	0	ppm	N	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.
Lead	2021	0	15	1.57	0	Ppb	N	Corrosion of household plumbing systems; Erosion of natural deposits.

Water Quality Test Results

Definitions:
 AVG: The following tables contain scientific terms and measures, some of which may require explanation.
 Level 1 Assessment: Regulatory compliance with some MCLs are based on running annual average of monthly samples.
 Level 2 Assessment: A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.
 Maximum Contaminant Level or MCL: A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.
 Maximum Contaminant Level Goal or MCLG: 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 residual disinfectant level or MRL: 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 goal or MRLG: 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.
 na: The level of a drinking water disinfectant below which there is no known or expected risk to health. MRLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
 not applicable.
 mrem: millirems per year (a measure of radiation absorbed by the body)
 ppb: micrograms per liter or parts per billion - or one ounce in 7,350,000 gallons of water.

Water Quality Test Results

ppm: milligrams per liter or parts per million - or one ounce in 7,350 gallons of water.
Treatment Technique or IT: A required process intended to reduce the level of a contaminant in drinking water.

Regulated Contaminants

Disinfectants and Disinfection By-Products	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Chloramines	12/31/2021	1.6	0.3 - 2	MEDLG = 4	MSDL = 4	ppm	N	Water additive used to control microbes.
Halocetic Acids (HAA5)	2021	12	6.57 - 13.3	No goal for the total	60	ppb	N	By-product of drinking water disinfection.
Total Trihalomethanes (THM)	2021	8	2.05 - 16.3	No goal for the total	80	ppb	N	By-product of drinking water disinfection.
Inorganic Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Arsenic	2021	1	0.745 - 0.745	0	10	ppb	N	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes.
Barium	2021	9.0787	0.0787 - 9.0787	2	2	ppm	N	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Chromium	2021	1	0.62 - 0.82	100	100	ppb	N	Discharge from steel and pulp mills; Erosion of natural deposits.
Fluoride	2021	0.8	0.775 - 0.775	4	4.0	ppm	N	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Manganese	2021	9	8.91 - 8.91	150	150	ppb	N	This contaminant is not currently regulated by the USPPA. However, the state regulates. Erosion of natural deposits.
Nitrate (measured as Nitrogen) - Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice from your health care provider.	2021	6	0.737 - 6.27	10	10	ppm	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.

Nitrite (measured as Nitrogen)	2021	0.053	0.025 - 0.053	1	1	Ppm	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Sodium	2021	19	18.7 - 18.7			Ppm	N	Erosion from naturally occurring deposits. Used in water softener regeneration.
Radioactive Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Combined Radium 226/228	02/28/2020	1.074	1.074 - 1.074	0	5	pCi/L	N	Erosion of natural deposits.
Gross alpha excluding radon and uranium	02/28/2020	0.016	0.016 - 0.016	0	15	pCi/L	N	Erosion of natural deposits.
Synthetic organic contaminants including pesticides and herbicides	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
2,4-D	2021	2.74	0 - 2.74	10	10	ppb	N	Runoff from herbicide used on row crops.
Atrazine	2021	2	0.82 - 2.32	3	3	ppb	N	Runoff from herbicide used on row crops.
Simazine	2021	0.42	0 - 0.42	4	4	ppb	N	Herbicide runoff.

Turbidity

Limit (Treatment Technique)	Level Detected	Violation	Likely Source of Contamination
Highest single measurement	1 NTU	0.2 NTU	N
Lowest monthly & meeting limit	0.3 NTU	100%	N

Information Statement: Turbidity is a measurement of the cloudiness of the water caused by suspended particles. We monitor it because it is a good indicator of water quality and the effectiveness of our filtration system and disinfectants.

Total Organic Carbon

The percentage of Total Organic Carbon (TOC) removal was measured each month and the system met all TOC removal requirements set, unless a TOC violation is noted in the violations section.

Regulated Contaminants for Hamilton IL0670400

Disinfectants and Disinfection By-Products	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Chloramines	12/31/2021	3.4	2.6 - 3.8	MCLG = 4	MSDL = 4	ppm	N	Water additive used to control microbes.
Malonic Acids (HAA5)	2021	13	7.48 - 18.6	No goal for the total	60	ppb	N	By-product of drinking water disinfection.
Total Trihalomethanes (THM5)	2021	18	8 - 31	No goal for the total	80	ppb	N	By-product of drinking water disinfection.
Inorganic Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Barium	2021	0.016	0.016 - 0.016	2	2	ppm	N	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Fluoride	2021	0.6	0.579 - 0.579	4	4.0	ppm	N	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate (measured as Nitrogen)	2021	3	1.2 - 2.7	10	10	ppm	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Selenium	2021	1	1 - 1	50	50	ppb	N	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines.
Sodium	2021	12	12 - 12			ppm	N	Erosion from naturally occurring deposits. Used in water softener regeneration.
Radioactive Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Gross alpha excluding radon and uranium	07/27/2020	2.46	2.46 - 2.46	0	15	PCI/L	N	Erosion of natural deposits.

Turbidity

Limit (Treatment Technique)	Level Detected	Violation	Likely Source of Contamination
1 NTU	0.14 NTU	N	Soil runoff.

Information Statement: Turbidity is a measurement of the cloudiness of the water caused by suspended particles. We monitor it because it is a good indicator of water quality and the effectiveness of our filtration system and disinfectants.

