

Village of Marine

2022 Annual Water Quality Report

This report is intended to provide you with important information about your drinking water and the efforts made by the Village to provide safe drinking water. If you have any questions about this report or concerning your water utility, please contact our Village of Marine water supply operator at (618) 887-4531 or you may attend the regularly scheduled board meetings. The meetings are held at 7:00 p.m. on the FIRST & THIRD Wednesday of each month.

Paper copies available at Village Hall.

The Village of Marine purchases water from Bond Madison Water Company who in turn is supplied by Illinois American Water Company. This water is piped from the Granite City Water Treatment Plant which receives water from the Mississippi River. A source water assessment for the Granite City system has been completed by the Illinois EPA and a copy is available upon request by calling, Illinois American Water Quality Supervisor Sam Saucier at 618-707-1913. IEPA 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.

The Granite City distribution system also has an interconnection with the East St. Louis distribution system. Water is routinely supplied to the Granite City system through that connection. To view a summary version of the completed Source Water Assessments you may access the IEPA website at <http://www.epa.state.il.us/cgi-bin/wp/swap-fact-sheets.pl>.

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 house plumbing. The Village of Marine is responsible for providing high quality 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 Village of Marine routinely monitors for contaminants in your drinking water according to Federal and State laws. The first table in this report shows the results of Illinois Americans monitoring for the period of January 1st to December 31st, 2022 at their Granite City supply. Because customers may at times receive water from the East St. Louis supply, the second table contains the monitoring information from that distribution system. The third table includes the system monitoring data for Bond Madison Water Company. The fourth and final table shows system monitoring data for the Village of Marine.

Illinois American Water – Granite City Regulated Substances (Measured in the water leaving the treatment facility)

Substance (units)	Year Sampled	MCLG	MCL	Highest Level	Range of Detections	Compliance Achieved	Typical Source
Fluoride (ppm) ¹	2022	4	4.0	0.7	0.73 to 0.73	Yes	Water additive that promotes strong teeth
Nitrate (ppm) ²	2022	10	10	3	3.38 to 3.38	Yes	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Arsenic (ppb)	2020	0	10	2	2.0 to 2.0	Yes	Decay of natural and man-made deposits

¹ Fluoride is added to the water supply to help promote strong teeth. The Illinois Department of Public Health recommends an optimal fluoride level of 0.9 mg/L to 1.2 mg/L.

² 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. The value in the "amount detected" column is the maximum detected for the year.

DISINFECTION BYPRODUCTS – Collected in the Distribution System

Substance (with units)	Year Sampled	Compliance Achieved	MCLG	MCL	Highest Compliance Result	Range Detected	Typical Sources
Haloacetic Acids (HAAs) (ppb)	2022	Yes	NA	60	25	15 to 32.9	By-product of drinking water disinfection
Total Trihalomethanes (TTHMs) (ppb)	2022	Yes	NA	80	37	16.4 to 59.5	By-product of drinking water disinfection

Note: Compliance is based on the running annual average at each location. The Highest Compliance Result effects the highest average at any location and the Range Detected reflects all samples from this year used to calculate the running annual average.

Disinfectant – Collected in the Distribution System

Substance (with units)	Year Sampled	Compliance Achieved	MCLG	MCL	Highest Compliance Result	Range Detected	Typical Source
Chloramines (ppm)	2022	Yes	MRDLG= 4	MRDL= 4	3.4	3 to 4	Water additives used to control microbes.

Turbidity⁵ – (Measured in water leaving the Granite City Treatment Plant)

Substance (units)	Limit (Treatment Technique)	Level Detected	Compliance Achieved	Typical Source
Lowest Monthly % Meeting Limit	0.3 NTU	100%	Yes	Soil runoff
Highest Single Measurement	1 NTU	0.2 NTU	Yes	Soil runoff

⁵Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system. The treatment technique requires that at least 95% of routine samples are less than or equal to 0.3 NTU, and no sample exceeds 1 NTU. We are reporting the percentage of all readings meeting the standard of 0.3 NTU, plus the single highest reading for the year.

State Regulated Substances

Substance (units)	Year Sampled	MCLG	MCL	Highest Level Detected	Range of Detections	Compliance Achieved	Typical Source
Sodium (ppm) ⁸	2022	NA	NA	19	19.3 to 19.3	Yes	Erosion of naturally occurring deposits; By-product of home water softening

⁸ There is no state or federal MCL for sodium. Monitoring is required to provide information to consumers and health officials that are concerned about sodium intake due to dietary precautions. If you are on a sodium-restricted diet, you should consult a physician about this level of sodium in the water.

Additional Water Quality Parameters of Interest – Water leaving the Granite City Treatment Plant

Parameter	Units	Year	Average Result	Range Detected	Typical Source
Total Haloacetic Acids	ppb	2019	24	16 to 35	By-product of drinking water disinfection
Total Haloacetic Acids - Br	ppb	2019	3.2	1.4 to 7.1	By-product of drinking water disinfection
Total Haloacetic Acids -UCMR4	Ppb	2019	27	18 to 42	By-product of drinking water disinfection
Manganese	Ppb	2019	10	4.7 to 16	Naturally-occurring element

LEAD AND COPPER MONITORING PROGRAM – At least 30 tap samples collected at customers' taps every 3 years

Substances (with units)	Year Sampled	Compliance Achieved	MCLG	Action Level (AL)	90 th Percentile	Home Above Action Level	Typical Sources
Lead (ppb)	2020	Yes	0	15	2	0	Corrosion of household plumbing systems; erosion of Natural deposits
Copper (ppm)	2020	Yes	1.3	1.3	.057	0	Erosion of natural deposits; leaching from wood Preservatives; corrosion of household plumbing Systems.

TOTAL COLIFORM RULE – At least 40 samples collected each month in the distribution system

Substance	Year Sampled	Compliance Achieved	MCLG	MCL	Highest Percentage	Typical Source
Total Coliform	2022	Yes	0	5% of monthly Samples are positive	2.2%	Naturally present in the environment

Note: Coliforms are bacteria that are naturally present in the environment and are used as an indicator of the general bacteriological quality of the water. We are reporting the highest percentage of positive samples.

PER- AND POLYFLUOROALKYL SUBSTANCES

Per- or polyfluoroalkyl substances (PFAS) are synthetic substances used in a variety of products, such as: stain resistant fabric, non-stick coatings, firefighting foam, paints, waxes and cleaning products. They are also components in some industrial processes like electronic manufacturing and oil recovery. While the EPA has not developed drinking water standards for PFAS, Illinois American Water recognizes the importance of testing for these contaminants. Compounds detected are tabulated below, along with typical sources.

In 2022, our PWS was sampled as part of the State of Illinois PFAS Statewide Investigation. Results from this sampling indicated PFAS were detected in our drinking water (above the health advisories level/below the health advisory level) established by the Illinois EPA. Follow up monitoring is being conducted. For more information about PFAS health advisories <https://www2.illinois.gov/epa/topics/water-quality/pfas/Pages/pfas-healthadvisory.aspx>

UNREGULATED PERFLUORINATED COMPOUNDS – Collected at the Granite City Treatment Plant

Parameter	Year Sampled	Units	Health-Based Guidance Level	Highest Result	Range Detected	Typical Source
Perfluorohexanoic Acid (PFHxA)	2022	ppt	560,000	3.6	2.0 to 3.6	Manufactured chemical(s); used in household goods for stains, grease, heat and water resistance.
Perfluorobutanesulfonic (PFBS)	2022	ppt	2,100	4.4	0 – 4.4	Manufactured chemical(s); used in household goods for stain, grease, heat and water resistance.
Perfluorooctane Sulfonic Acid (PFOS)	2022	ppt	14	2.6	0 – 2.6	Manufactured chemical(s); used in household stain, grease, heat and water resistance.
Perfluorooctanoic Acid (PFOA)	2022	ppt	2	2.4	2.0 – 2.4	Manufactured chemical(s); used in household stain, grease, heat and water resistance.

Illinois American Water – East St. Louis

Turbidity ⁵ – (Measured in water leaving the treatment facility)

Substance (units)	Limit (Treatment Technique)	Level Detected	Compliance Achieved	Typical Source
Lowest Monthly % meeting limit	0.3 NTU	100%	Yes	Soil runoff
Highest Single Measurement	1 NTU	0.3 NTU	Yes	Soil runoff

⁵Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system. The treatment technique requires that at least 95% of routine samples are less than or equal to 0.3 NTU, and no sample exceeds 1 NTU. We are reporting the percentage of all readings meeting the standard of 0.3 NTU, plus the single highest reading for the year.

Illinois American Water – East St. Louis Treatment Plant

Substance (with Units)	Year	Compliance Achieved	MCLG	MCL	Highest Compliance Result	Range Detected	Typical Source
Arsenic (ppb)	2022	Yes	0	10	1	0 to 1	Erosion of natural deposits
Fluoride (ppm)	2022	Yes	4	4.0	0.8	.78 to .78	Erosion of natural deposits
Nitrate measures as nitrogen (ppm)	2021	Yes	10	10	4	1.77 to 3.78	Runoff from fertilizer use
Combined Radium 226/228 (pCi/l)	2020	Yes	0	5	1.29	1.29 to 1.29	Erosion of natural deposits
Gross alpha excluding radon and Uranium	2020	Yes	0	15	2.84	2.84 to 2.84	Erosion of natural deposits
Atrazine (ppb)	2022	Yes	3	3	0.8	0 to 0.8	Runoff from Herbicide used on row crops

State Regulated Substances – Illinois American Water – East St. Louis Treatment Plant

Substance (units)	Year Sampled	MCLG	MCL	Highest Level Detected	Range of Detections	Compliance Achieved	Typical Source
Sodium (ppm) ⁸	2022	NA	NA	23	15.5 to 22.7	Yes	Erosion of naturally occurring deposits; By-product of home water softening

⁸ There is no state or federal MCL for sodium. Monitoring is required to provide information to consumers and health officials that are concerned about sodium intake due to dietary precautions. If you are on a sodium-restricted diet, you should consult a physician about this level of sodium in the water.

Additional Water Quality Parameters of Interest – Water leaving the East St. Louis Treatment Plant

Parameter	Units	Year	Average Result	Range Detected	Typical Source
Total Haloacetic Acids	ppb	2019	18	9.1 to 38	By-product of drinking water disinfection
Total Haloacetic Acids - Br	Ppb	2019	2.9	0.9 to 12	By-product of drinking water disinfection
Total Haloacetic Acids -UCMR4	Ppb	2019	27	11 to 49	By-product of drinking water disinfection
Manganese	Ppb	2019	7.3	2.5 to 17	Naturally-occurring element

PER – POLYFLUOROALKYL SUBSTANCES

Per-or substances (PFASs) are synthetic substances used in a variety of products, such as: stain resistant fabric, non-stick coatings, firefighting foam, paints, waxes and cleaning products. They are also components in some industrial processes like electronics manufacturing and oil recovery. While the EPA has not developed drinking water standards for PFAS, Illinois American Water recognizes the importance of testing for these contaminants.

In 2022, our PWS was sampled as part of the State of Illinois PFAS Statewide Investigation. Results from this sampling indicated PFAS were detected in our drinking water (above the health advisory level/below the health advisory level) established by the Illinois EPA. Follow up monitoring is being conducted. For more information about PFAS health advisories <http://www2.illinois.gov/epa/topics/water-quality/pfas-healthadvisory.aspx>

UNREGULATED PERFLUORINATED COMPOUNDS – Collected at the East St. Louis Treatment Plant

Parameter	Year Sampled	Units	Health-Based Guidance Level	Highest Result	Range Detected	Typical Source
Perfluorooctane Sulfonic Acid (PFOS)	2022	ppt	14	2.8	0 to 2.8	Manufactured chemical(s); used in household goods for stain, grease, heat and water resistance.
Perfluorooctanoic Acid (PFOA)	2022	ppt	2	2.4	0 to 2.4	Manufactured chemical(s); used in household goods for stain, grease, heat and water resistance.
Perfluorohexanoic Acid (PFHxA)	2022	ppt	560,000	3.6	0 to 3.6	Manufactured chemical(s); used in household goods for stain, grease, heat and water resistance.
Perfluorobutanesulfonic Acid (PFBS)	2022	ppt	2,100	4.6	0 to 4.6	Manufactured chemical(s); used in household goods for stain, grease, heat and water resistance.

BOND MADISON WATER QUALITY REPORT

Regulated Substances

Substance (units)	Date Sampled	MCLG	Action Level	90 th Percentile	# Sites over AL	Compliance Achieved	Typical Source
Copper (ppm)	2021	1.3	1.3	0.232	1	Yes	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

Compliance with the Lead and Copper Rule (LCR) is determined by the levels of lead and copper found in samples taken from customers' taps. LCR requirements are met if the 90th percentile of all samples taken does not exceed the action level of 15 ppb for lead or 1.300 ppm for copper. Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated levels of lead in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to two minutes before using tap water. Additional information is available from the EPA's Safe Drinking Water Hotline 800-426-4791.

Disinfections/Disinfectant By-Products

Substance (units)	Date Sampled	MCLG	MCL	Highest Level Detected	Range of Detections	Compliance Achieved	Typical Source
HAAS-Total Haloacetic Acids	2022	N/A	60	28	18.4 – 44.3	Yes	By-product of drinking water chlorination
TTHM-Total trihalomethanes (ppb)	2022	N/A	80	38	18.9 – 62.2	Yes	By-product of drinking water chlorination
Chloramines (ppm)*	2022	MRDLG=4	MRDL=4	2.6	2.0 – 3.0	Yes	Water additive used to control microbes

* Chlorine and chloramines are disinfecting agents added to control microbes that otherwise could cause waterborne diseases or other water quality concerns. Most water systems in Illinois are required by law to add either chlorine or chloramines. Levels well in excess of the MRDL could cause irritation of the eyes or nose in some people. The values reported reflect multiple locations in the service area. Chloramines are a disinfectant made from combining chlorine and ammonia.

The Village of Marine

Regulated Substances

Substance (units)	Date Sampled	MCLG	Action Level AL	90 th Percentile	# Sites over AL	Compliance Achieved	Typical Source
Copper (ppm)	2022	1.3	AL=1.3	0.28	0	Yes	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb)	2022	0	15	1	0	Yes	Corrosion of household plumbing systems; Erosion of natural deposits.

Compliance with the Lead and Copper Rule (LCR) is determined by the levels of lead and copper found in samples taken from customers' taps. LCR requirements are met if the 90th percentile of all samples taken does not exceed the action level of 15 ppb for lead or 1.300 ppm for copper. Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated levels of lead in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to two minutes before using tap water. Additional information is available from the EPA's Safe Drinking Water Hotline 800-426-4791.

Disinfections/Disinfectant By-Products

Substance (units)	Date Sampled	MCLG	MCL	Highest Level Detected	Range of Detections	Compliance Achieved	Typical Source
HAAS-Total Haloacetic Acids	2022	N/A	60	27	18 – 35.8	Yes	By-product of drinking water chlorination
TTHM-Total trihalomethanes (ppb)	2022	N/A	80	33	17.4 – 45.7	Yes	By-product of drinking water chlorination
Chlorine (ppm)*	2022	MRDLG =4	MRDL =4	2.1	1.4 – 3	Yes	Water additive used to control microbes

* Chlorine and chloramines are disinfecting agents added to control microbes that otherwise could cause waterborne diseases or other water quality concerns. Most water systems in Illinois are required by law to add either chlorine or chloramines. Levels well in excess of the MRDL could cause irritation of the eyes or nose in some people. The values reported reflect multiple locations in the service area. Chloramines are a disinfectant made from combining chlorine and ammonia.

Definition of Terms

Non-Detects (ND) - laboratory analysis indicates that the contaminant is not present. **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** - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000. **Picocuries per liter (pCi/L)** - picocuries per liter is a measure of the radioactivity in water. **Millirems per year (mrem/yr)** - measure of radiation absorbed by the body. **Nephelometric Turbidity Unit (NTU)** - nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person. **Action Level (AL)**-the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. **Treatment Technique (TT)** - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water. **Maximum Contaminant Level** - The "Maximum Allowed" (MCL) is 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** - The "Goal" (MCLG) is 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** -The MRDL is the highest level of disinfectant routinely allowed in drinking water. Addition of a disinfectant is necessary for control of microbial contaminants. **Maximum Residual Disinfectant Level Goal** – The level of drinking water disinfectant below which there is no known or expected risk to health.

Your drinking water meets or exceeds all Federal and State requirements. "All sources of drinking water are subject to potential contamination by contaminants that are naturally occurring or are manmade. Those contaminants can be microbes, organic or inorganic chemicals, or radioactive materials." All 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 the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

MCLs are set at very stringent levels. 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.

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 microbiological contaminants are available from the Safe Drinking Water Hotline.
