



2022 ANNUAL WATER QUALITY REPORT

We are pleased to present this Annual Water Quality Report (also known as the Consumer Confidence Report or CCR) to our valued customers. This report, as required by the United States Environmental Protection Agency (US EPA) and Michigan Department of Environment, Great lakes, and Energy (EGLE), is designed to inform the consumer about where your water comes from, what it contains, and how it compares to standards and regulations set forth by regulatory agencies. Our constant goal is to provide our customers with a safe and reliable drinking water supply. We appreciate the confidence our customers have placed in us and continually value your trust.

If you have any questions about this report or would like to receive more information about the City of Scottville's water system, please contact Marc Hansen at 231-690-0298 or call City Hall at 231-757-4729 from 8:00 am to 5:00 pm Monday through Friday. Interested citizens are welcome and encouraged to attend City Commission meetings to hear more about the operation of city government. Meetings are held at City Hall on the second and fourth Monday of each month at 6:00 pm.

WHERE DOES YOUR DRINKING WATER COME FROM?

The water used by the residents of the City of Scottville is purchased from the City of Ludington. The City of Ludington operates an 8.0 million gallon per day capacity conventional treatment facility which is staffed by a team of 7 licensed operators and the Water Treatment Plant Superintendent (operator in charge). This facility operates 24 hours a day – 7 days a week and uses coagulation, flocculation, sedimentation, and filtration treatment processes to provide high quality aesthetically pleasing drinking water for the community. Approximately 1,105,323,000 gallons were produced in 2022.

SOURCE WATER

The sources of drinking water (both tap and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and aquifers. As water travels over the surface of the land or through the ground, it naturally dissolves, can take on minerals, in some cases, radioactive material, and substances resulting from the presence of animals or from human activity.

Source water for the City of Ludington and customers supplied in the City of Scottville, Pere Marquette Charter Township, Amber Township, Victory Township, and West Shore Community College is drawn through two different intake structures in Lake Michigan and treated at the City of Ludington Water Treatment Plant located at 501 N. Lakeshore Drive Ludington, MI 49431. EGLE performed an assessment of the city's source water in 2003 to determine the susceptibility or the relative potential of contamination. The susceptibility rating is on a six-tier scale from "very-low" to "very-high" based primarily on geologic sensitivity, water chemistry, and contamination sources. The susceptibility of the intakes to potential contamination is moderate. An effort has been made to protect our source water by creating, implementing, and updating a Surface Water Intake Protection Plan (SWIPP).

POSSIBLE CONTAMINANTS PRESENT IN SOURCE WATER

Microbial contaminants such as viruses, protozoa, and bacteria may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife. Inorganic contaminants such as salts and metals, can be naturally-occurring or result from urban storm water run-off, industrial, or domestic wastewater discharges, oil and gas production, mining, or farming. Pesticides and herbicides may come from a variety of sources such as agriculture, urban storm water run-off, and residential uses. Organic chemical contaminants including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production can also come from gas stations, urban storm water run-off, and septic systems. Radioactive contaminants can be naturally-occurring or be the result of oil and gas production and mining activities. In order to ensure tap water is safe to drink, the US EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. US Food and Drug

Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

INDIVIDUALS WITH SPECIAL HEALTH NEEDS

For those individuals with special health issues and concerns, the following information contains US EPA water use guidelines which may be applicable. Some people may be more vulnerable to contaminants in drinking water than others. Immuno-compromised persons include those undergoing chemotherapy, those who have had an organ transplant, people with HIV/AIDS or other immune system disorders, the elderly, and infants. These individuals should seek advice about drinking water from their health care provider. Guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants can be obtained by calling the US EPA Safe Drinking Water Hotline at 1-800-426-4791, EGLE EAC at 1-800-662-9278, or the Centers for Disease Control and Prevention (CDC) at 1-800-232-4636.

DRINKING WATER QUALITY RESULTS

Licensed Waterworks Systems Operators from the City of Scottville and City of Ludington work together to routinely monitor for contaminants in your drinking water according to federal and state laws and sampling directives. The 2022 Water Quality Results Table found on page 3, 4 and 5 show the results of monitoring during the period of January 1 - December 31, 2022 (unless noted) at the City of Ludington Water Treatment Plant and from the City of Scottville's water distribution system. Additional information is provided on the City of Ludington's Annual Drinking Water Quality Report which can be found on their website or at this direct URL: <https://www.ludington.mi.us/waterquality>

GLOSSARY OF TERMS AND ABBREVIATIONS

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

Locational Running Annual Average (LRAA): The average of analytical results for samples obtained at a particular monitoring location during the previous four calendar quarters.

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water per primary drinking water regulations. 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 per primary drinking water regulations. 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.

NA: Not applicable.

Nephelometric Turbidity Unit (NTU): Turbidity is a measure of the clarity of the water. We monitor turbidity because it is a good indicator of the effectiveness of our filtration system. Turbidity in excess of 5.0 NTU is just noticeable to the average person.

Non-Detect (ND): the contaminate is not present.

Parts per million (ppm) or Milligrams per liter (mg/L): A measure of the concentration of a contaminant in water. One part per million is equivalent to one minute in two years, or one inch in sixteen miles.

Parts per billion (ppb) or Micrograms per liter (µg/L): A measure of the concentration of a contaminant in water. One part per billion is equivalent to one minute in 2,000 years, or one inch in sixteen thousand miles.

Parts per trillion (ppt) or Nanogram per liter (ng/L): A measure of the concentration of a contaminant in water. One part per trillion is equivalent to one drop of water in 20 Olympic-size swimming pools.

Running Annual Average (RAA): The average of analytical results for samples obtained during the calendar year.

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

2022 Water Quality Results Table

Regulated Monitoring at the Treatment Plant								
Contaminate	Units	Range Detected	Level Detected	MCL	MCLG	Violations	Year Sampled	Possible Sources of Contaminate
Antimony	ppm	ND	ND	0.006	0.006	No	2022	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Arsenic	ppm	ND	ND	0.010	0	No	2022	Erosion of natural deposits; runoff from orchards, runoff from glass and electronics production wastes
Barium	ppm	0.019	0.019	2	2	No	2022	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Beryllium	ppm	ND	ND	0.004	0.004	No	2022	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries
Cadmium	ppm	ND	ND	0.005	0.005	No	2022	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints
Chromium	ppm	ND	ND	0.1	0.1	No	2022	Discharge from steel and pulp mills; erosion of natural deposits
Cyanide	ppm	ND	ND	0.2	0.2	No	2022	Discharge from steel/metal factories; discharge from plastic and fertilizer factories
Glyphosate	ppm	ND	ND	0.7	0.7	No	2022	Runoff from herbicide use
Gross Alpha	pCi/L	1.93	1.93	15	0	No	2018	Erosion of natural deposits of certain minerals that are radioactive and may emit a form of radiation known as alpha radiation
Mercury	ppm	ND	ND	0.002	0.002	No	2022	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills and croplands
Nitrate	ppm	0.33	0.33	10	10	No	2022	Runoff from fertilizer use; leaking from septic tanks, sewage; erosion of natural deposits
Nitrite	ppm	ND	ND	1	1	No	2022	
PFAS	ppt	ND - 11	See PFAS Table		NA	No	2022	Fire suppression foam; household products
Radium 226 & 228 (combined)	pCi/L	0.74	0.74	5	0	No	2018	Erosion of natural deposits
Selenium	ppm	ND	ND	0.05	0.05	No	2022	Discharge from petroleum refineries; erosion of natural deposits; discharge from mines
SOC	ppt	ND	ND	Multiple	Multiple	No	2021	Industrial discharge, Agricultural chemicals
Thallium	ppm	ND	ND	0.002	0.0005	No	2022	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories
Total Organic Carbon [2]	ppm	1.3 - 2.3	1.6	TT	NA	No	2022	Naturally present in the environment
Total Xylenes	ppm	ND	ND	10	10	No	2022	Leaks and spills from gasoline and petroleum storage tanks
Turbidity [1]	ntu	0.02 - 0.07	0.02	TT=1	NA	No	2022	Soil run-off, suspended matter in lake water

2022 Water Quality Results Table (continued)

Regulated Monitoring in the Distribution System (City of Scottville)

Contaminate	Units	Range Detected	Level Detected	MCL	MCLG	Violations	Year Sampled	Possible Sources of Contaminate
Fluoride	ppm	0.65 - 0.72	0.69	4	4	No	2022	Water additive which promotes strong teeth
Free Chlorine Residual [4]	ppm	0.30 - 1.33	0.66	MRDL=4	MRDLG=4	No	2022	Used to disinfect drinking water
Haloacetic Acids [3]	ppb	15 - 37	23	60	0	No	2022	Formed when chlorine is added to water with naturally occurring organic material
Total Trihalomethane [3]	ppb	25 - 49	41	80	0	No	2022	
Total Xylenes	ppm	ND - 0.0057	0.0019	10	10	No	2022	Leaks and spills from gasoline and petroleum storage tanks
Contaminate	Units	Range Detected	90th Percentile	AL	MCLG	Violations	Year Sampled	Possible Sources of Contaminate
Copper [5]	ppm	ND - 0.1	0.1	1.3	1.3	No	2020	Corrosion of household plumbing system
Lead [5]	ppb	ND - 2	0.0	15.0	0	No	2020	Corrosion of household plumbing system

Unregulated Monitoring

Contaminate	Units	Range Detected	Avg. Level Detected	MCL	MCLG	Violations	Year Sampled	Possible Sources of Contaminate
Calcium	ppm	35	35	NA	NA	No	2022	Erosion of natural deposits
Chloride	ppm	12 - 19	14	NA	NA	No	2022	Erosion of natural deposits and run-off
Iron	ppm	ND	ND	NA	NA	No	2022	Erosion of natural deposits
Magnesium	ppm	12	12	NA	NA	No	2022	Erosion of natural deposits
Nickel	ppm	ND	ND	NA	NA	No	2022	Erosion of natural deposits, household plumbing
Sodium	ppm	10	10	NA	NA	No	2022	Erosion of natural deposits
Sulfate	ppm	23 - 29	26	NA	NA	No	2022	Erosion of natural deposits

Footnotes [x]:

1. Turbidity is a measurement of water clarity. We monitor turbidity because it is a good indicator of our filtration process. The turbidity measurements must be less than or equal to 0.3 ntu in 95% of all samples taken each month and shall never exceed 1 ntu at any time.
2. The level detected shown for Total Organic Carbon (TOC) is the running annual average calculated quarterly.
3. The level detected shown for Total Trihalomethanes (TTHM) and Haloacetic Acids (HAA5) is the running annual average calculated quarterly.
4. The level detected shown for Free Chlorine Residual was calculated using a running annual average.
5. Collected from 10 homes that met the EGLE Tier 3 site criteria (single family residence with lead soldered copper plumbing). Utilized 1st Liter Method

City of Ludington 2022 Drinking Water Compliance Sampling Results for PFAS

PFAS Compound	MCL (ppt)	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Violation?
PFBS	420	ND	ND	ND	ND	No
PFHxA	400000	ND	ND	ND	ND	No
HFPO-DA	370	ND	ND	ND	ND	No
PFHxS	51	ND	ND	ND	ND	No
PFHpA	None	ND	ND	ND	ND	No
ADONA	None	ND	ND	ND	ND	No
PFOA	8	2.5	ND	ND	2.1	No
PFOS	16	11	2.4	2.9	ND	No
PFNA	6	ND	ND	ND	ND	No
9CI-PF3ONS	None	ND	ND	ND	ND	No
PFDA	None	ND	ND	ND	ND	No
NMeFOSAA	None	ND	ND	ND	ND	No
NEtFOSAA	None	ND	ND	ND	ND	No
PFUnA	None	ND	ND	ND	ND	No
11CI-PF3OUdS	None	ND	ND	ND	ND	No
PFDoA	None	ND	ND	ND	ND	No
PFTTrDA	None	ND	ND	ND	ND	No
PFTA	None	ND	ND	ND	ND	No

Sample Collected at the Entrance Point To the Distribution System (EPTDS) at the Water Treatment Plant

NO MAXIMUM CONTAMINATE LEVEL (MCL) VIOLATIONS

As shown in the 2021 Water Quality Results Table there are no MCL violations and the City of Scottville’s drinking water meets or exceeds all Federal and State requirements. More information about contaminants and potential health effects can be obtained by calling the US EPA Safe Drinking Water Hotline at 1-800-426-4791 or EGLE EAC at 1-800-662-9278. MCLs are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink two (2) liters of water every day, which is approximately eight (8) - 8-ounce glasses of water, at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

FLUORIDE

Fluoridation is performed at the water treatment plant for dental health purposes. The CDC has the following advice for parents of infants; "The proper amount of fluoride from infancy through old age helps prevent and control tooth decay. Recent evidence suggests that mixing powdered or liquid infant formula concentrate with fluoridated water on a regular basis may increase the chance of a child developing the faint white markings of very mild or mild enamel fluorosis. Parents should follow the advice of the formula manufacturer and their child's doctor for the type of water appropriate for the formula they are using. Parents and caregivers of infants fed primarily with formula from concentrate who are concerned about the effect that mixing their infant's formula with fluoridated water may have in developing enamel fluorosis can lessen this exposure by mixing formula with low fluoride water most or all of the time." http://www.cdc.gov/fluoridation/safety/infant_formula.htm.

In 2015, the US Department of Health and Human Services (DHHS) determined 0.7 ppm (mg/L) of fluoride in water to be the optimal level.

LEAD

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. The City of Scottville 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 have a lead service line it is recommended that you run your water for at least 5 minutes to flush water from both your home plumbing and the lead service line. 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>

Lead in drinking water is rarely the sole cause of lead poisoning, but it can add to a person's total lead exposure. All potential sources of lead in the household should be identified and removed, replaced or reduced. Information on lead in drinking water, paint, soil, testing methods, and steps to take to minimize exposure are available by calling US EPA Safe Drinking Water Hotline at 1-800-426-4791, EGLE EAC at 1-800-662-9278, or District Health Department #10 at 231-845-7381.

Lead and copper sampling in drinking water takes place every 3 years per regulatory requirements of the US EPA and EGLE Lead and Copper Rule (LCR). Regulatory sampling for the City of Scottville was last completed in 2020 and will take place again in 2023.

LEAD SERVICE LINE & DISTRIBUTION SYSTEM MATERIAL INVENTORY

At this point in time:

- 620 total services lines in the distribution system.
- 30 are considered unknown service lines (need to identify material).
- 9 lead galvanized service lines were replaced in 2022

PFAS Compound	MCL (ppt)	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Violation?
PFBS	420	ND	ND	ND	ND	No
PFHxA	400000	ND	ND	ND	ND	No
HFPO-DA	370	ND	ND	ND	ND	No
PFHxS	51	ND	ND	ND	ND	No
PFHpA	None	ND	ND	ND	ND	No
ADONA	None	ND	ND	ND	ND	No
PFOA	8	2.5	ND	ND	2.1	No
PFOS	16	11	2.4	2.9	ND	No
PFNA	6	ND	ND	ND	ND	No
9Cl-PF3ONS	None	ND	ND	ND	ND	No
PFDA	None	ND	ND	ND	ND	No
NMeFOSAA	None	ND	ND	ND	ND	No
NEtFOSAA	None	ND	ND	ND	ND	No
PFUnA	None	ND	ND	ND	ND	No
11Cl-PF3OUdS	None	ND	ND	ND	ND	No
PFDoA	None	ND	ND	ND	ND	No
PFTTrDA	None	ND	ND	ND	ND	No
PFTA	None	ND	ND	ND	ND	No

Sample Collected at the Entrance Point To the Distribution System (EPTDS) at the Water Treatment Plant