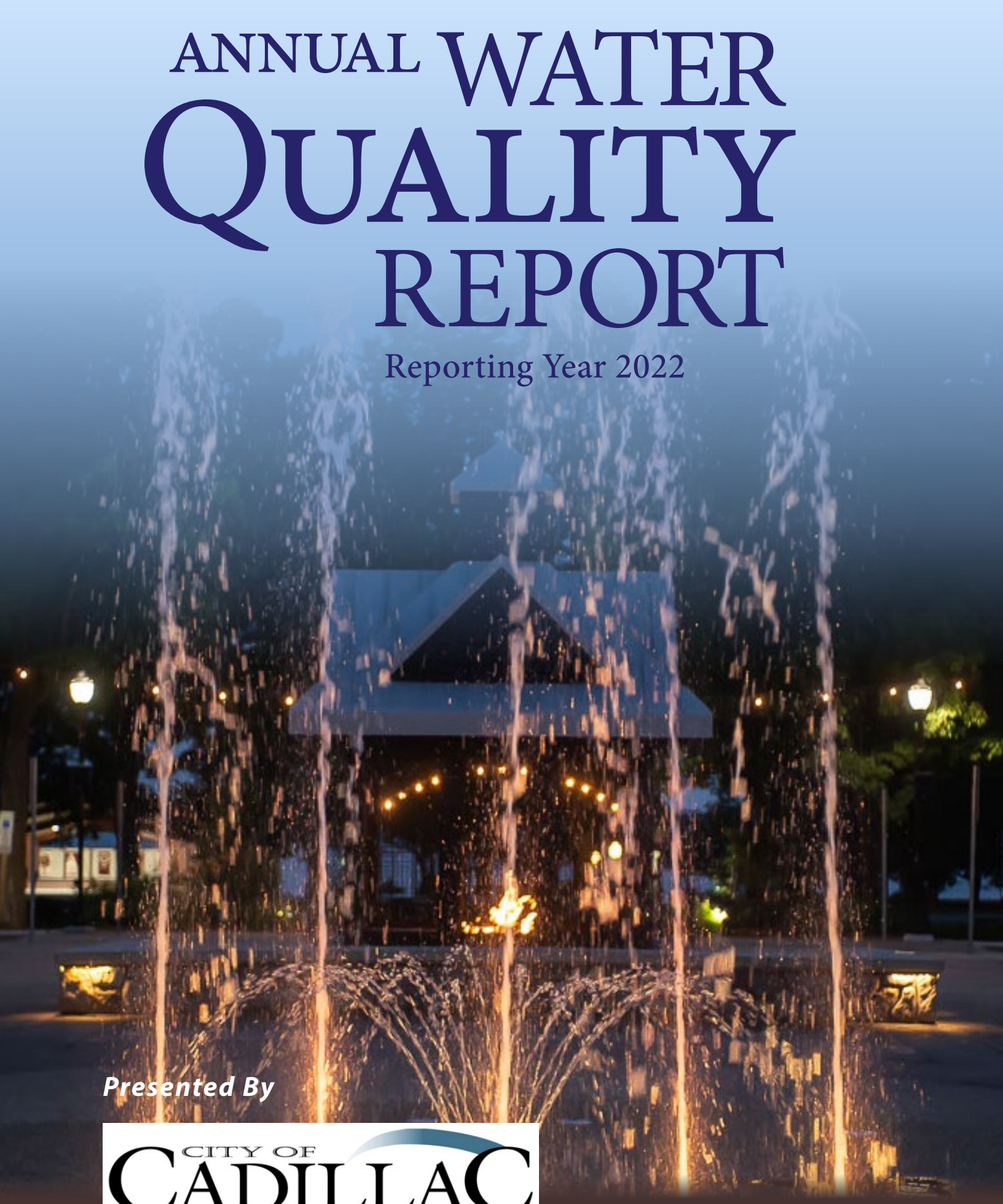
ANNUAL WATER QUALITY REPORT

Reporting Year 2022



Presented By

CITY OF CADILLAC MICHIGAN

PWS ID#: 0001030

Our Mission Continues

We are once again pleased to present our annual water quality report covering all testing performed between January 1 and December 31, 2022. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best-quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all our water users. Please remember that we are always available should you ever have any questions or concerns about your water.

Lead in Home Plumbing

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 Cadillac is responsible for providing high-quality drinking water, but 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 two 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 five 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 at (800) 426-4791, or on the U.S. EPA's website at http://www.epa.gov/safewater/lead.

> "Thousands have lived without love, not one without water."
>
> —*W.H. Auden*

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or http://water.epa.gov/drink/hotline.

Benefits of Chlorination

Disinfection, a chemical process used to control disease-causing microorganisms by killing or inactivating them, is unquestionably the most important step in drinking water treatment. By far, the most common method of disinfection in North America is chlorination.

Before communities began routinely treating drinking water with chlorine (starting with Chicago and Jersey City in 1908), cholera, typhoid fever, dysentery, and hepatitis A killed thousands of U.S. residents annually. Drinking water chlorination and filtration have helped to virtually eliminate these diseases in the U.S. Significant strides in public health are directly linked to the adoption of drinking water chlorination.

How chlorination works:

- Potent Germicide Reduction of many disease-causing microorganisms in drinking water to almost immeasurable levels.
- Biological Growth Elimination of slime bacteria, molds, and algae that commonly grow in water supply reservoirs, on the walls of water mains, and in storage tanks.
- Chemical Removal of hydrogen sulfide (which has a rotten egg odor), ammonia, and other nitrogenous compounds that have unpleasant tastes and hinder disinfection. It also helps to remove iron and manganese from raw water.

Lead Service Lines

Our preliminary distribution system materials inventory (DSMI) indicates 3,996 total service lines in the Cadillac community water supply, with no known lead service lines. In compliance with the recently updated Michigan Lead and Copper Rule, we will continue to evaluate and update our DSMI until the January 2025 final inventory deadline.

Questions?

For more information about this report, or for any questions relating to your drinking water, please call Utilities Director Jeff Dietlin at (231) 775-0181.

Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

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, in some cases radioactive material, and substances resulting from the presence of animals or from human activity. Substances that may be present in source water include:

Microbial Contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, or wildlife;

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may result from urban stormwater 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 stormwater runoff, and residential uses;

Organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and may also come from gas stations, urban stormwater runoff, and septic systems;

Radioactive Contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

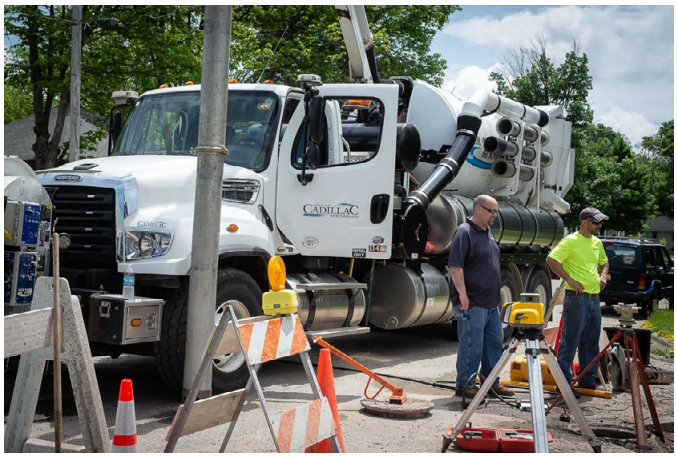
Think before You Flush!

Flushing unused or expired medicines can be harmful to your drinking water. Properly disposing of unused or expired medication helps protect you and the environment. Keep medications out of our waterways by disposing responsibly. To find a convenient drop-off location near you, please visit https://bit.ly/3IeRyXy.

Where Does My Water Come From?

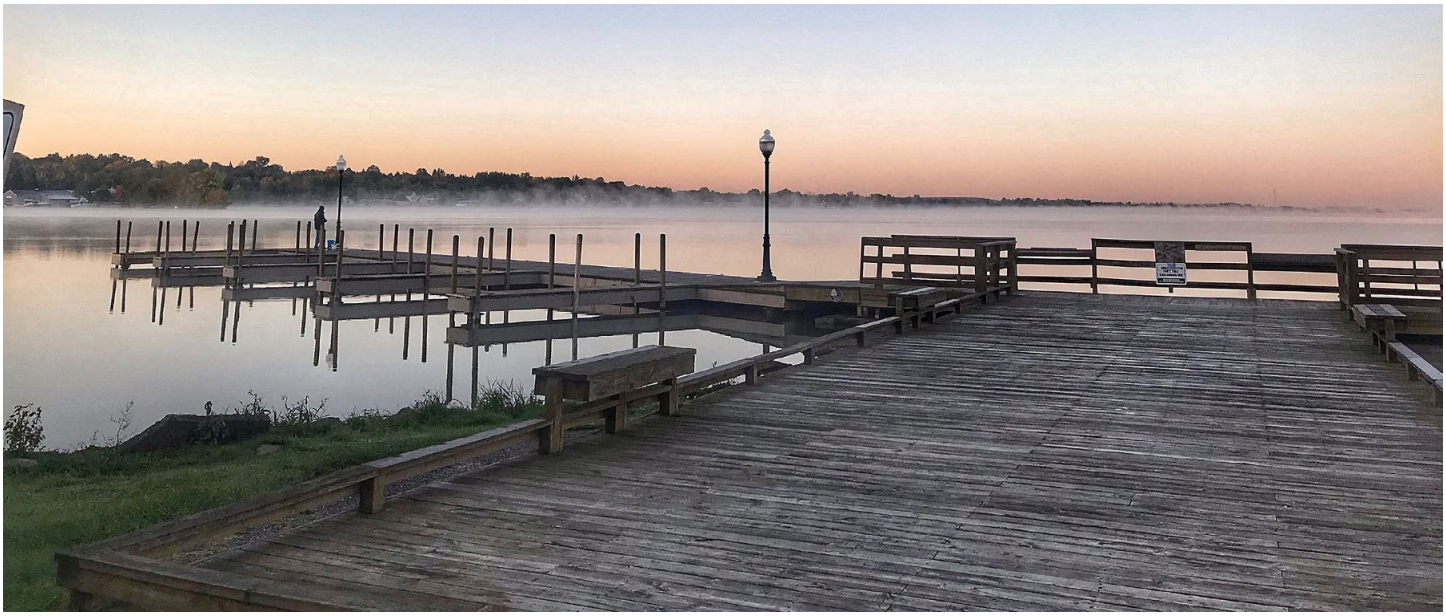
Cadillac's water comes from six wells owned by the city. Our wells draw groundwater from aquifers 300 and 400 feet below ground. The city's older wellfield and million-gallon water tower were constructed in 1960, ending our reliance on surface water from Lake Cadillac. A new wellfield, consisting of three wells, was completed and put online in September 2022.

Because well water contains varying amounts of inorganic materials (such as iron, manganese, and calcium), a solution of ortho- and polyphosphates is added at each well to sequester these. Phosphates also ensure we maintain the highest water quality by inhibiting corrosion, scale, and biofilm and reducing lead and copper levels in the distribution system. Chlorine is added for disinfection.



Community Participation

We want to inform our customers about their water utility. Copies of our operation budget and capital improvement plan are available at the Municipal Complex and at our website, www.Cadillac-mi.net. If you would like to tour a facility or learn more about our operations, please call our office to make arrangements. City council meetings are another good public forum for community participation; feel free to attend one of our regularly scheduled meetings on the first and third Monday of each month at 7:00 p.m. at the Municipal Complex, 200 Lake Street, Cadillac.



Per- and Polyfluoroalkyl Substances

Per- and polyfluoroalkyl substances (PFAS) are a group of chemicals that are resistant to heat, water, and oil. PFAS have been classified by the U.S. EPA as an emerging contaminant on the national landscape. For decades they have been used in many industrial applications and consumer products such as carpeting, waterproof clothing, upholstery, food wrappings, firefighting foams, and metal plating. They are still used today. PFAS have been found at low levels in the environment and blood samples from the general U.S. population.

No PFAS were detected above laboratory detection limits in samples collected in 2022 from the City of Cadillac's water supply entry points. For information on PFAS, including possible health outcomes, visit these websites: www.epa.gov/pfas, www.atsdr.cdc.gov/pfas/, or www.michigan.gov/pfasresponse.

BY THE NUMBERS

The number of Olympic-sized swimming pools it would take to fill up all of Earth's water. **800 TRILLION**

1 The average cost in cents for about 5 gallons of water supplied to a home in the U.S.

The percent of Earth's water that is salty or otherwise undrinkable, or locked away and unavailable in ice caps and glaciers. **99**

50 The average daily number of gallons of total home water use for each person in the U.S.

The percent of Earth's surface that is covered by water. **71**

330 MILLION The amount of water on Earth in cubic miles.

The percent of the human brain that contains water. **75**

Test Results

Our water is monitored for many kinds of substances on a very strict sampling schedule. The information in the data tables shows substances which were detected. Our goal is to keep all detects below their respective maximum allowed levels.

The state recommends monitoring for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chlorine (ppm)	2022	[4]	[4]	0.98[1]	0.14–2.00	No	Water additive used to control microbes
Haloacetic Acids [HAAs]–Stage 2 (ppb)	2022	60	NA	2.4[1]	ND–1.5	No	By-product of drinking water disinfection
Nitrate (ppm)	2022	10	10	0.8	ND–0.8	No	Erosion of natural deposits
TTHMs [total trihalomethanes]–Stage 2 (ppb)	2022	80	NA	13.3[1]	ND–12.1	No	By-product of drinking water disinfection

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH %ILE)	RANGE LOW-HIGH	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2022	1.3	1.3	0.4	ND–0.7	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2022	15	0	ND	ND–5	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chloride (ppm)	2022	250	NA	27	ND–27	No	Runoff/leaching from natural deposits
Sulfate (ppm)	2022	250	NA	13	ND–13	No	Runoff/leaching from natural deposits; Industrial wastes

UNREGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Hardness (ppm)	2022	158	128–158	Erosion of natural deposits
Sodium (ppm)	2022	7.2	2.7–7.2	Erosion of natural deposits

[1] Highest RAA.

Source Water Assessment

The 1996 amendments to the Safe Drinking Water Act require that source water assessments be completed for all public water supplies in the United States. The Michigan Department of Environment, Great Lakes, and Energy (EGLE) developed a program to identify areas that supply public drinking water, assess the susceptibility of that supply to actual and potential contamination, and inform the public of the assessment results. Cadillac's assessment was updated in 2022 based on our approved Wellhead Protection Program. EGLE's revised assessment lists the wells with a high to very high susceptibility based on geology, well construction, well water chemistry, source isolation, and potential sources of contamination. It is important to understand that this susceptibility rating does not imply poor water quality, only the system's potential to become contaminated within the assessment area

Copies of the complete source water assessment are available at Cadillac's Municipal Complex and local EGLE office. To learn more about Cadillac's Wellhead Protection Program, please visit our website, www.cadillac-mi.net.

Definitions

90th %ile: The levels reported for lead and copper represent the 90th percentile of the total number of sites tested. The 90th percentile is equal to or greater than 90% of our lead and copper detections.

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

MCL (Maximum Contaminant Level): 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.

MCLG (Maximum Contaminant Level Goal): 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.

MRDL (Maximum Residual Disinfectant Level): 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.

MRDLG (Maximum Residual Disinfectant Level Goal): 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.

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

RAA (Running Annual Average): The average of sample analytical results for samples taken throughout the distribution system during the previous four calendar quarters.

SMCL (Secondary Maximum Contaminant Level): These standards are developed to protect aesthetic qualities of drinking water and are not health based.