



2019 City of St. Charles Water Quality Report

The City of St. Charles is committed to providing a continuous supply of safe, reliable and economical water to all of our residents and businesses.

Este informe contiene información muy importante sobre su agua potable.

This report contains very important information about your drinking water.

Tradúzcalo o hable con alguien que lo entienda bien.

This report summarizes the quality of the water that we provided last year, including details about where your water comes from, what it contains, and how it compares to the standards set by regulatory agencies. We are committed to providing you, our customer, with this report to keep you informed about your drinking water supply.

The City of St. Charles Water Division is responsible for providing safe water to the 33,000 customers we serve. With eight full-time employees, the Water Division maintains seven water supply wells, six storage reservoirs, 221 miles of water main, over 3,400 valves, 2,700 fire hydrants and 12,000 domestic service connections. Presently, water usage averages about 4.5 million gallons per day (gpd). The peak day water usage was 9,741,000 gpd and occurred on June 26, 2005. The water supply is chlorinated and fluoridated in accordance with state and federal regulations.

The City uses groundwater provided by two separate aquifers. An aquifer is a geological formation that contains water. Wells numbered 7, 9, 11, and 13, are drilled into the **St. Charles** sand and gravel Aquifer. Wells numbered 3, 4, and 8, are drilled into a deeper formation of sandstone, commonly referred to as the **Galesville** formation.

A Source Water Assessment (SWA) of our water supply has been completed by the Illinois Environmental Protection Agency (IEPA). This assessment identifies any potential routes or sources of contaminants to our groundwater supply. If you would like a copy of this information, please contact the Public Works Department at (630) 377-4405.

Health Information

Some people may be more vulnerable to contaminants found 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. United States Environmental Protection Agency (USEPA)/Communicable Disease Center (CDC) guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbial contaminants are available from the USEPA's Safe Drinking Water Hotline (1-800-426-4791) or visit their website at <http://www.epa.gov/safewater/>

Public Meeting

Dates, times and agendas of public meetings are available on the Public Meeting page of our website, <http://www.stcharlesil.gov/meetings> or by contacting the Mayor's Office at (630) 377-4422.

2018 Water Quality Data

In order to ensure that tap water is safe to drink, USEPA prescribes regulations that limit the amount of certain contaminants in water provided by public water supply systems. Food & Drug Administration (FDA) regulations establish limits for contaminants found in bottled water, which are also intended to protect public health.

In addition to the information section of this report, we have included several tables for your review. The tables will give you a better picture of the contaminants that were detected in our water and the contaminants that were tested for, but not detected.

We hope that you find this information useful. In an effort to keep our customers informed, we update these reports annually.

Definitions:

MCLG: Maximum Contaminant Level Goal, or 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.

MCL: Maximum Contaminant Level, or 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.

MRDL: Maximum Residual Disinfectant Level, or the highest level of disinfectant allowed in drinking water.

MRDLG: Maximum Residual Disinfectant Level Goal, or the level of disinfectant in drinking water below which there is no known or expected health risk. MRDLG's allow for a margin of safety.

Level Found: This column represents an average of sample result data collected during the CCR calendar year. In some cases, it may represent a single sample if only one sample was collected.

Range of Detections: This column represents a range of individual sample results, from the lowest to highest that were collected during the CCR calendar year.

Date of Sample: If a date appears in this column, the Illinois EPA requires monitoring for this contaminant less than once per year because the concentrations do not frequently change. If no date appears in the column, monitoring for this contaminant was conducted during the CCR calendar year.

AL: Action Level, or the concentration of a contaminant which, when exceeded, triggers treatment or other requirements, which a water system must follow.

TT: Treatment Technique or a required process intended to reduce the level of a contaminant in drinking water.

Abbreviations:

nd – not detectable at testing limits;

n/a – not applicable;

ppm – parts per million or milligrams per liter;

ppb – parts per billion, or micrograms per liter;

ppt – parts per trillion, or nanograms per liter;

ppq – parts quadrillion, or picograms per liter;

NTU – Nephelometric Turbidity Unit, used to measure cloudiness in drinking water;

pCi/L – picocuries per liter, used to measure radioactivity;

Note: Sample frequency varies by constituent and is mandated by USEPA.

Coliform Bacteria:

MCLG	Total Coliform MCL	Highest number of positive.	Fecal Coliform or E.Coli MCL	Total number of positive Fecal Coliform or E.Coli	Violation	Likely Source of Contamination
0	5% of monthly samples are positive	4.4	Fecal Coliform or E.Coli MCL: A routine sample and repeat sample are total Coliform positive and one is also Fecal Coliform or E.Coli positive	0	No Violation	Naturally present in the environment.

Lead & Copper:

Contaminants (units)	MCLG	AL	90th Percentile (AL)	Number of Sites over AL	Violation	Date of Sample	Typical Source of Contamination
Copper (ppm)	1.3	1.3	0.19	0	No Violation	2017	Corrosion of household plumbing systems; erosion of natural deposits, leaching from wood preservatives.
Lead (ppb)	0	15	5.5	1	No Violation	2017	Corrosion of household plumbing systems; erosion of natural deposits.

NOTE: Lead and copper is monitored once every three years. Next round of monitoring will be in 2020.

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 St. Charles 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 cooking or drinking. 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 1-800-426-4791, or at <http://www.epa.gov/safewater/lead>

CITY OF ST. CHARLES WATER QUALITY REPORT

Page 3

Contaminants (units)	MCLG	MCL	Level Found	Range of Detection	Violation	Date of Sample	Typical Source of Contamination
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Radioactive Contaminants:

Gross Alpha (pCi/L)	0	15.0	7	3.62-7.44	No	2018	Erosion of natural deposits
Combined Radium (pCi/L)	0	5.0	4	0-4.2	No	2018	Erosion of natural deposits
Uranium ppb	0	30	1.0	0.6-1.0	No	9/2/05	Erosion of natural deposits

Inorganic Contaminants:

Arsenic	0	10	0.519	0-0.519	No	2015	Erosion of natural deposits; Run-off from orchards; Runoff from glass & electronics production wastes.
Barium (ppm)	2.0	2.0	0.84	0.045-0.84	No	2018	Discharge of drilling wastes; discharge from metal refineries. Erosion of natural deposits.
Fluoride (ppm)	4.0	4.0	1.01	0.497-1.01	No	2018	Erosion of natural deposits. Additive which promotes strong teeth. Discharge from fertilizer and aluminum factories.
Nitrate (ppm)	10.0	10.0	1	0-0.69	No	2017	Runoff from fertilizer use; leaching from septic tanks, sewage. Erosion of natural deposits.
Nitrite (ppm)	1.0	1.0	0	0	No	2015	Runoff from fertilizer use; leaching from septic tanks, sewage. Erosion of natural deposits.
Selenium	50	50	5.5	0-5.5	No	2018	Erosion of natural deposits

Disinfectants/ Disinfection By-Products:

Chlorine	MRDLG =4	MRDL =4	1	0.6-1	No	2018	Water additive used to control microbes.
Total Haloacetic Acids (ppb)	N/A	60	1	1.05-1.46	No	2018	By-product of drinking water chlorination.
Total Trihalomethanes (ppb)	N/A	80	23	12.4-23.2	No	2018	By-product of drinking water chlorination.

Unregulated Contaminants:

Sulfate (ppm)	N/A	N/A	93.8	14-93.8	No	2015	Erosion of natural deposits.
1,4-Dioxane	N/A	N/A	0.0083	0-0.1	No	2014	Used as a solvent in manufacture of paper, textile products, automotive coolant, cosmetics, shampoos, cleaning agents, surface coating and adhesive agent.
Chlorate	N/A	N/A	21.71	0-210	No	2014	Agricultural defoliant or desiccant; disinfection byproduct; and used in production of chlorine dioxide.
Chromium (ppb)	100	100	8	0-8	No	2018	Naturally occurring element; used in making steel alloys, chrome plating, dyes and pigment, leather tanning and wood preservation.
Chromium 6	N/A	N/A	0.02	0-0.07	No	2014	Naturally occurring element, used in making steel alloys, chrome plating, dyes, pigments, leather tanning and wood preservation.

Contaminants (units)	MCLG	MCL	Level Found	Range of Detection	Violation	Date of	Typical Source of Contamination
Molybdenum	N/A	N/A	0.71	0-2.6	No	2014	Naturally occurring element found in ores and present in plants, animals and bacteria; commonly used form molybdenum trioxide used as a chemical reagent.
Strontium	N/A	N/A	917.93	234.3-1317.8	No	2014	Naturally occurring element; historically, commercial use of strontium has been in the face-plate glass of cathode-ray tube televisions to block x-ray emissions.

State-Regulated Contaminants

Iron (ppm)	N/A	1.000	0.26	0.028-0.26	No	2018	Erosion of natural deposits.
Manganese (ppb)	150	150	72	1.3-72	No	2018	Erosion of natural deposits.
Sodium (ppm)	N/A	N/A	100	11 - 100	No	2018	Erosion of natural deposits. Used as water softener.

Fluoride:

Fluoride is added to the water supply to help promote strong teeth. The Illinois Department of Public Health recommends a single level of 0.7 milligrams of Fluoride per liter of water.

Iron:

This contaminant is not currently regulated by USEPA. However, the state has set an MCL for this contaminant for supplies serving a population of 1000 or more.

Manganese:

This contaminant is not currently regulated by USEPA. However, the state has set an MCL for this contaminant for supplies serving a population of 1000 or more.

Sodium:

There is not a state or federal MCL for sodium. Monitoring is required to provide information to consumers and health officials 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.

Our water system was required to monitor for the contaminants required under the Unregulated Contaminant Monitoring Rule (UCMR).

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. A maximum contaminant level (MCL) for these substances has not been established by either state or federal regulations, nor has mandatory health effects language.

Synthetic Organic Contaminants

Benzo (A) pyrene	N/A	0.2	0.147	0.147	No	2015	Runoff from fertilizer use: leaching from septic tanks, sewage. Erosion of natural deposits.
Benzo (A) pyrene	N/A	0.2	0	0	No	2016	Runoff from fertilizer use: leaching from septic tanks, sewage. Erosion of natural deposits

Volatile Organic Contaminants

Carbon Tetrachloride	0	5	1.5	0-1.5	No	2017	Discharge from chemical plants and other industrial activities.
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Violations Table

VIOLATION TYPE	VIOLATION BEGINS	VIOLATION ENDS	VIOLATION EXPLANATION
CCR ADEQUACY/AVILABILITY/CONTENT	7/01/2016	2016	We failed to provide to you, our drinking water customers, an annual report that adequately informed you about the quality of our drinking water and the risks from exposure to contaminants detected in our drinking water.

SOURCE WATER

Source Water Protection Efforts:

Based on geologic conditions, the Illinois Environmental Protection Act provides minimum protection zones of 200 or 400 feet for the City of St. Charles' wells. These minimum protection zones are regulated by the Illinois EPA. To further reduce the risk to the source water, the City has implemented a source water protection program, which includes a source water planning and educational committee, source water protection management strategies and contingency planning. This effort resulted in the community water supply receiving a special exception permit from the Illinois EPA that allows a reduction in the Synthetic Organic Compound monitoring. The outcome of this monitoring reduction has saved the City considerable laboratory analysis costs. In addition, the City has enacted a comprehensive overlay-zoning ordinance to further protect the community water supply wells. This additional protection implements proactive management activity inside the well recharge areas and considers impacts from potential point and non-point sources (such as agricultural land uses) of groundwater contamination. Furthermore, the City has enacted "maximum setback zones" that are authorized by the Illinois Environmental Protection Act, allowing county and municipal officials the opportunity to provide additional potential source prohibitions up to 1,000 feet from their wells.

Further information on our community water supply's source water assessment is available by calling the Ground Water Section of the Illinois EPA at (217) 785-4787.

The City of St. Charles (Facility Number IL0894830) utilizes seven active community water supply wells. Wells #3, #4, #7, #8, #9, #11 and #13 (Illinois EPA #20099, #20100, #20101, #20103, #20104, #20105, #00392, and #01414 respectively). The combined maximum output of the City wells is approximately 14,100,000 gpd.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water flows over the surface of the land or through the ground, it can dissolve naturally occurring minerals and radioactive material, and can pick up substances resulting from the presence of animals or human activity. Possible contaminants consist of:

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 contaminant, 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 may be naturally occurring or be the result of oil and gas production and mining activities.

Drinking water, including bottled water, may be reasonably 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. Please note that if our water were to exceed any contaminant level, the City is required to notify each customer, informing them of the exceedance. More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline, 1-800-426-4791.

Source Water Assessment:

To determine St. Charles' susceptibility to groundwater contamination, the following documents were reviewed: a Well Site Survey, published in 1992 by the Illinois EPA; and a Source Water Protection Plan prepared by the City of St. Charles, published by Burns and McDonnell in May of 1996. Based on the information obtained in these documents there are 121 potential sources that could pose a hazard to groundwater utilized by the City of St. Charles community water supply wells. Furthermore, information provided by the Leaking Underground Storage Tank and Remedial Project Management Sections of Illinois EPA indicated several additional sites with on-going remediation, which may be of concern.

Based upon this information, the Illinois EPA has determined that the City of St. Charles Community Water Supply's source water has a low susceptibility to Synthetic Organic Compound (SOC) contamination. In addition, Wells #3, #4, and #8 have a low susceptibility to Inorganic Compounds (IOC) and Volatile Organic Compounds (VOC) contamination. However, Wells #7, #9, #11, and #13 may be susceptible to VOC and IOC contamination. These susceptibility ratings are a result of monitoring conducted at the wells and entry point to the distribution system, the land use activities and source water protection initiatives and ordinances enacted by the City.

Furthermore, in anticipation of the USEPA proposed Ground Water Rule, the Illinois EPA has determined that the City of St. Charles community water supply wells have a low susceptibility to viral contamination. This determination is based upon the completed evaluation of the following criteria used in the Vulnerability Waiver Process: the community's wells are properly constructed with sound integrity and proper site conditions; all potential routes and sanitary defects have been mitigated such that the source water is adequately protected; monitoring data did not indicate a history of disease outbreak; and the sanitary survey of the water supply did not indicate a viral contamination threat. However, having stated this, the "[U.S.] EPA is proposing to require States to identify systems in karst, gravel and fractured rock aquifer systems as sensitive and these systems must perform routine source water monitoring". Because the community's wells are constructed in both confined bedrock and unconfined sand and gravel aquifers, the Illinois EPA evaluated the well hydraulics associated with City of St. Charles well fields. Wells #7, #9, #11, and #13, have an appreciable amount of overburden, above the portion of the aquifer contributing a significant quantity of groundwater to the screened interval. This should provide a sufficient degree of filtration to prevent movement of pathogens into the wells.

The City also has in place a Cross Connection Control program, to further ensure protection of the distribution system from contamination. The management of the program has been contracted to Aqua Backflow of Elgin, Illinois, (847) 742-2296. Aqua Backflow maintains a database of devices, test results and biannual survey information.

IS THERE LEAD IN "MY" DRINKING WATER?

First of all, the water St Charles uses water from the deep and shallow well system (source water) does NOT contain lead. Secondly, lead is NOT in the water mains which carry the water to your home or business. Lead can get into your water by leaching out of water service lines used to supply your home or business. If your building is thirty (30) years old or more, you may have a lead service line connecting your building to the water main. Lead can also get into the water from brass fittings used to couple water service lines together and from the brass fixtures (faucets, valves and couplers) in your home or business. A few years ago, brass contained up to 5% lead. With new legislation effective January 4, 2014, lead had to be removed from brass. Only NO-Lead brass (containing .25% lead or less) is allowed to be used on any potable water installations.

As you can see in this report and in all past Annual Water Quality Reports, the City of St Charles obtains the required lead and copper testing samples every three years as mandated by the Illinois Environmental Protection Agency (IEPA). Thirty locations, along with alternates, throughout the distribution system have been selected by the IEPA in which to obtain these samples. Each sampling period has shown St Charles is compliant with current action levels for lead and copper.

You can learn more about lead in drinking water by visiting the IEPA's web site @ <http://www.epa.illinois.gov/index>.

TIPS:

- ◆ Flush your faucet until water is cold before drinking. Usually thirty seconds to a minute does the trick. This removes all the water that has been sitting in the plumbing possibly absorbing lead.
- ◆ Only drink and cook with water from the "cold" faucet as hot water absorbs lead from plumbing more than cold water.
- ◆ Boiling water will NOT remove lead from it.
- ◆ Bathing in water containing lead is considered safe since lead is not absorbed through the skin.

Thank you for taking the time to review this report. Please be assured that the Mayor, City Council and City Staff are dedicated to protecting the water supply. Questions or comments can be directed to Tim Wilson, Environmental Services Manager at (630) 377-4405 or twilson@stcharlesil.gov