

-2010-

SAINT 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 el agua potable. Tradúzcalo o hable con alguien que lo entienda bien.

One of the key aspects of our water supply system is our ability to provide sufficient volumes for effective fire suppression. As you may know, our Fire Department maintains an excellent ISO Class II fire suppression rating, which not only gives us peace of mind, but may also result in reduced insurance premiums. The water supply system comprises 40% of the rating. Our water supply is designed and operated to meet the needs of the Fire Department, as well as our residential and commercial customers. However, as our community continues to grow and mature, the demands on the water supply system are also increasing. Proper planning, operation and maintenance are critical to providing the level of service that we currently enjoy. In this respect we are partners, and one of the ways that you can help control water demand and the costs associated with meeting those demands is by adhering to the City's Water Conservation Regulations.

LAWN SPRINKLING REGULATIONS

From May 1 through August 31 of each year,

Sprinkling hours are from 12:00 a.m. to 9:00 a.m. and 6:00 p.m. to 10:00 p.m.

Even numbered addresses may sprinkle on even numbered days.

Odd numbered addresses may sprinkle on odd numbered days.

Violators of the Code are subject to a \$50.00 per day fine.

The complete code, 13.16.205 can be found on the City's website: <http://www.stcharlesil.org/>

DONALD P. DeWITTE MAYOR
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St. Charles Water Quality Report – 2010

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 information so that you can become better educated about our drinking water supply.

Our city uses **groundwater** provided by two separate aquifers. An aquifer is a geological formation that contains water. We have four wells, numbered 7, 9, and 11, and 13, that are drilled into the *St. Charles* sand and gravel aquifer, and three wells, numbered 3, 4, and 8, that 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). The purpose of the (SWA) is to identify any potential routes or sources of contaminants to enter our groundwater supply. If you would like a copy of this information, please contact our public works department office at (630) 377-4405.

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. USEPA/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 see their web sight at <http://www.epa.gov/safewater/>

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 supply were to exceed any contaminant level, the City is required to notify each customer, informing them of the exceedence. More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline (1-800-426-4791).

If you have any questions about this report or our water system, please contact our Environmental Services Manager, John Lamb at (630) 377-4918. <mailto:jlamb@stcharlesil.gov>

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 from 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.

FLUORIDATION:

In 2009 the Illinois Department of Public Health (IDPH) and Illinois Environmental Protection Agency (IEPA) recognized 462 community water systems for maintaining state mandated fluoride levels every month. This year marks the *sixteenth* consecutive year that the Illinois Department of Public Health recognized our water supply for maintaining optimum fluoride levels in our water supply. The most current record indicates that of 1850 Public water supplies in Illinois, only 46 have fifteen or more consecutive years.

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. 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 for your review several tables. 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 will find this information useful. In an effort to keep our customers informed, we will be updating these reports annually.

2009 WATER QUALITY DATA

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. MGLCs 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; **# pos/mo** – number of positive samples per month.

Coliform Bacteria

Maximum Contaminant Level Goal	Total Coliform Maximum Contaminant Level	Highest No. of positive	Fecal Coliform or E.Coli Maximum Contaminant Level	Total No. Positive Fecal Coliform or E.Coli Samples	Violation	Likely Source of Contamination
0	0 positive monthly sample	0	Fecal Coliform or E.Coli MCL: A routine sample and repeat sample are total Coliform positive and one is also Fecal Coliform of E.Coli positive	0	No	Naturally present in the environment.

Contaminants (units)	MCLG	Action Level (AL)	90 th Percentile (AL)	# Sites Over (AL)	Violation	Date of Sample	Typical Source of Contamination
Copper (ppm)	1.3	1.3	0.256	0	No	7/31/08	Corrosion of household plumbing systems; erosion of natural deposits, leaching from wood preservatives.
Lead (ppb)	0	15	9.87	1	No	7/31/08	Corrosion of household plumbing systems; erosion of natural deposits.

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

Alpha Emitters	0	15.0	6.1	0-6.1	No	9/2/05	Erosion of natural deposits.
Alpha Emitters Adjusted (pCi/L)	0	15.0	5.1	4.6-5.1	No	9/2/05	Erosion of natural deposits.
Combined Radium (pCi/L)	0	5.0	2.0	0.6-7.0	No	11/16/09	Erosion of natural deposits.
Combined Uranium (ppb)	0	30	1.0	0.6-1.0	No	9/2/05	Erosion of natural deposits.

Inorganic Contaminants

Barium (ppb)	2.0	2.0	1.3	0.0459-1.32	No	4/21/09	Discharge of drilling wastes; discharge from metal refineries; Erosion of natural deposits.
Fluoride	4	4	1.16	Not Applicable	No	4/21/09	Erosion of natural deposits; additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Nitrate (as N)	10	10	0.22	0-5.92	No	7/15/09	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Nitrite (as N)	1	1	0	0-0.1	No	7/15/09	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.

Disinfectants / Disinfection By-Products

Chlorine	MRDLG=4	MRDL=4	0.8	Not Applicable	No	6/09/09	Water additive used to control microbes.
Total Haloacetic Acids (HAA5)	N/A	60	9.22	0-9.22	No	6/22/09	
Total Trihalomethanes (ppb)	N/A	80	12.2	0-12.2	No	6/22/09	By-Product of drinking water chlorination.

Unregulated Contaminants

Sulfate (ppm)	N/A	N/A	84.000	29.400-84.000	No	4/21/09	Erosion of natural deposits.
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State Regulated Contaminants

Iron (ppm)	N/A	1.000	.212	0-0.212	No	4/21/09	Erosion of natural deposits.
Manganese (ppb)	N/A	150	63.9	0-63.9	No	4/21/09	Erosion of natural deposits.
Sodium (ppm)	N/A	N/A	57	23-57	No	4/21/09	Erosion of natural deposits; used as water softener.

WATER QUALITY DATA TABLE FOOTNOTES

Fluoride:

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

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 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.

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

Results may be obtained by calling the contact listed on page 2, of this report.

2009 SOURCE WATER ASSESSMENT SUMMARY

Source Water Protection Efforts:

Based on geologic conditions, the Illinois Environmental Protection Act provides minimum protection zones of 200 or 400 feet for 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 SOC 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 their 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 Groundwater Section of the Illinois EPA at (217) 785-4787.

Importance of Source Water:

The city of St. Charles (Facility Number 0894830) 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) supply an average of 4,113,000 gallons per day (gpd) to 12,358 services or a population of 32,900 individuals. Peak water demand is 9,741,000 gpd. Large consumers of St. Charles' source water include 43 municipal users and 1206 commercial users. The combined maximum output of the city's wells is approximately 14,100,000 gpd.

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 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 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 U.S. EPA's proposed Ground Water Rule, the Illinois EPA has determined that 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 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.

Additional Protection Efforts:

In accord with Illinois EPA recommendations and to further minimize risk to the groundwater supply, the City reviews and updates contingency planning documents annually.

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. Questions concerning the City's cross connection program may be directed to Paul Marschinke, Water Division Manager, (630) 377-4405.

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 our water supply. Questions or comments can be directed to John Lamb at (630) 377-4918. <mailto:jlamb@stcharlesil.gov>