



Village of Libertyville 2014 Annual Report Drinking Water Quality

Dear Water Customer,

This is your annual water quality report for the period of January 1st through December 31, 2013. Each year the Village issues this report to provide you information about the quality of our drinking water, the source of our water, how it is treated, and the regulated compounds it contains. These reports are issued in compliance with the Safe Drinking Water Act.

For more detailed information about our water's quality, including test results for unregulated compounds, contact Marty Wittrock, Streets & Utilities Superintendent, at 847-362-3434, our website at www.libertyville.com, also Melissa Olenick at CLCJAWA at 847-295-7788, CLCJAWA web page at www.clcjawa.com.

Where does our water come from?

Our Village purchases water from the Central Lake County Joint Action Water Agency (CLCJAWA). CLCJAWA is an intergovernmental cooperative, formed by the communities it serves: Grayslake, Gurnee, Lake Bluff, Libertyville, Mundelein, Round Lake, Round Lake Beach, Round Lake Heights, Round Lake Park, and Lake County representing Vernon Hills and the unincorporated areas of Knollwood, Rondout, and Wildwood.

The village maintains several backup wells (formerly used as our water supply), which are operated, flushed and sampled for bacteriological quality on a monthly basis to ensure reliability if the need ever arises. Please contact us if you would like to review our well sample results. The water system also includes a number of storage tanks, pumping stations, and valves which create four separate pressure zones in the village.

How is our water purified?

Our water is pumped from Lake Michigan and treated at CLCJAWA's Paul M. Neal Water Treatment Facility in the Village of Lake Bluff. The enhanced water purification process used by CLCJAWA is unique. First, the water is treated with ozone to kill organisms and break down contaminants. Ozone is produced on-site from air, bubbled into the water, and then converted back into oxygen. The water is then mixed with coagulant to remove sediment and other material from the water. Once clarified, the water is further refined as it passes through filters containing activated carbon and fine sand. Next, the water is treated with ultraviolet light to inactivate any remaining organisms. Finally, the purified water is treated with chlorine to protect it as it travels through the water main, fluoride for dental health, and a small amount of an often used food additive called phosphate. Phosphate protects the water from the metals found in our homes' plumbing systems.

CLCJAWA is a ten-time Excellence in Water Treatment award winning facility. CLCJAWA was the third facility in the nation to achieve this distinction presented by the Partnership for Safe Water. This voluntary water quality program, sponsored in part by the United States Environmental Protection Agency, holds its awardees to higher standards than required by current drinking water regulations.

CLCJAWA and Libertyville were in full compliance with all drinking water regulations this year

How is the water delivered to my tap?

Our system contains approximately 125 miles of water main in sizes ranging from 4" to 24" in diameter. The distribution system includes five water storage tanks with a total capacity of 4.1 million gallons. There are approximately 1,293 water main operating valves and 1,498 fire hydrants, all of which are operated and flushed annually by utility maintenance staff.

The Village is continually improving and maintaining the water distribution system. These improvements include fire hydrant and valve replacements, residential water meter upgrade/repair, and the replacement of aging water mains as budget allows.

These improvements further assure the continued, uninterrupted conveyance of quality drinking water to your tap. Our water system provides an average of 2,311.195 gallons of water daily to our customers.

How is our water's quality assured?

Our tap water quality is consistently monitored by the Village, by the Illinois Environmental Protection Agency (IEPA), in the CLCJAWA Water Quality Lab, and by other independent labs. This aggressive water quality assurance program is thorough: bacteriological tests are conducted six times more often than required, water clarity is monitored every 10 seconds, and our water is checked for hundreds of contaminants.

What regulated compounds are found in our drinking water?

The table below lists all of the regulated compounds detected in our water. Bolded compounds were measured by the Village, all other compounds were measured by CLCJAWA. The values shown in the Level Detected column are those used by the EPA to determine compliance with drinking water standards. Because each compound is regulated differently, this value may be a running average, a 90th percentile, or the maximum single value. The Sample Date column indicates the date when the sample was collected. When more than one sample is collected, this column shows the date of the maximum value. Explanation of MCLG and MCL may be found in the abbreviation table on the next page.

2013 Water Quality Contaminants Detected

Contaminant (unit of measure) Typical Source of Contaminant	Highest Level Detected	MCLG	MCL	Range of Detection	Violation	Date of Sample
MICROBIAL CONTAMINANTS						
TOTAL COLIFORM BACTERIA (% Pos/Month) Naturally present; human and animal fecal waste	1	0	5% per month	None	No	10/15/13 Monthly
E. COLI (% Pos/Month) Naturally present; human and animal fecal waste	0	0	0% per month	None	No	Monthly
TURBIDITY (NTU/Lowest Monthly % < 0.3 NTU) Lake Sediment; soil runoff	100% below 0.3 NTU	None	0.3 NTU	100%	No	Monthly
TURBIDITY (NTU/Highest Single Measurement) Lake Sediment; soil runoff	0.09	None	1 NTU	0.02 – 0.09	No	3/2013 Monthly
INORGANIC CONTAMINANTS						
BARIUM (ppm) Discharge of drilling wastes and metal refineries; natural erosion	0.025	2	2	Single Sample	No	7/11/13
COPPER (ppm) Corrosion of household plumbing systems; natural erosion	0.146 (90 th Percentile)	1.3	AL = 1.3	0 sites exceeding AL	No	9/20/11
LEAD (ppb) Corrosion of household plumbing systems; natural erosion	12.7 (90 th Percentile)	0	AL = 1.5	1 sites exceeding AL	No	9/20/11
NITRATE as nitrogen (ppm) Runoff from fertilizer use; leaching from septic; natural erosion	0.431	10	10	Single Sample	No	4/8/13
DISINFECTANT/DISINFECTION BY-PRODUCTS						
HAAS Haloacetic Acids (ppb) By-product of drinking water disinfection	6.63	1.16- 4.28	60	0 – 4.4	No	2013 Quarterly
TTHMs Total Trihalomethanes (ppb) By-product of drinking water disinfection	27.3	17.6-27.3	80	6.6 – 27.3	No	2013 Quarterly
CHLORINE (ppm) Drinking water disinfectant	0.5	4	4	0.5 – 0.6	No	12/31/13 Monthly
TOC (Total Organic Carbon)	The % of TOC removal was measured each month & the system met all removal requirements set by IEPA					
STATE REGULATED CONTAMINANTS						
FLUORIDE (ppm) Water additive which promotes strong teeth; natural erosion	0.8	4	4	0.8 – 1.0	No	7/11/13 Monthly
RADIOACTIVE CONTAMINANTS						
COMBINED RADIUM 226/228 (pCi/L) Decay of natural and man-made deposits	1.55	0	5	Single Sample	No	11/12/08
GROSS ALPHA EMITTERS (pCi/L) Erosion of natural deposits	2.6	0	15	Single Sample	No	11/12/08
BETA EMITTERS (mrem/yr) Decay of natural and man-made deposits	3.9	0	50	Single Sample	No	11/12/08
UNREGULATED CONTAMINANTS						
CHLORATE (ppm) Drinking water disinfectant	0.060	none	none	.054 - .060	No	9/18/13
CHROMIUM, TOTAL (ppm) Erosion of natural deposits	0.0004	none	none	ND – 0.0004	No	9/18/13
HEXAVALENT CHROMIUM (ppm) Erosion of natural deposits	0.0003	none	none	0.0001 – 0.0003	No	12/11/13
MOLYBDENUM (ppm) Erosion of natural deposits; industrial runoff	0.001	none	none	0 – 0.001	No	12/11/13
SODIUM (ppm) Erosion of naturally occurring deposits; water softener	9	none	none	Single Sample	No	7/11/13
STRONTIUM (ppm) Erosion of natural deposits	0.12	none	none	0.10– 0.12	No	12/11/13
SULFATE (ppm) Erosion of naturally occurring deposits	29	none	none	Single Sample	No	7/11/13
VANADIUM (ppm) Erosion of natural deposits	0.0002	none	none	0.0002 – 0.0002	No	9/18/13

Abbreviation	Definition
Action Level	Action Level is the level that triggers special treatment or other required actions by a water supply.
MCL	Maximum Contaminant Level is the highest level allowed by EPA in drinking water.
MCLG	Maximum Contaminant Level Goal is the level of a contaminant below which there is no known or expected health risk.
NTU	Nephelometric Turbidity Units. Turbidity is a measure of water clarity.
pCi/l	pico Curies per liter. EPA considers 50 pCi/L to be a level of concern for beta particles.
pos/month	The maximum number of positive samples collected in a calendar month.
ppb	Parts-per-billion is also referred to as micrograms per liter (µg/L). Equivalent to one ounce in 7,350,000 gallons of water.
ppm	Parts per-million is also referred to as milligrams per liter (mg/L). Equivalent to one ounce in 7,350 gallons of water.
TT	Treatment Technique refers to a required process intended to reduce contaminant level drinking water.

How is our drinking water regulated?

To ensure tap water safety, the U.S. Environmental Protection Agency (USEPA) prescribes limits on the amount of certain contaminants in our drinking water. Water quality may be judged by comparing our water to USEPA benchmarks for water quality. One such benchmark is the Maximum Contaminant Level Goal (MCLG). The MCLG is the level of a contaminant in drinking water below which there is no known or expected risk to health. This goal allows for a margin of safety. Another benchmark is the Maximum Contaminant Level (MCL). An MCL is the highest level of a contaminant that is allowed in drinking water. An MCL is set as close to an MCLG as feasible using the best available treatment technology.

Lead and Copper:

Some homes with old lead service lines, lead plumbing, or copper plumbing with lead solder, may have lead and copper in their water. To minimize these levels, the Illinois EPA requires that CLCJAWA add phosphate to our water at a concentration of 0.3 ppm orthophosphate. This commonly used food ingredient coats the inside of your plumbing with a thin film. The film reduces lead and or copper levels that may have otherwise leached from your plumbing into your water.

Sodium:

There is no state or federal MCL for sodium. Monitoring is required to provide information to consumers in case you are concerned about sodium intake for dietary reasons. If the sodium level in our water was greater than 20 ppm, and you were on a sodium-restricted diet, you would be advised to consult a physician.

Turbidity:

Turbidity is a measure of water clarity. Treatment facilities monitor turbidity because it is a good indicator of water quality and the effectiveness of their filtration and disinfection systems. At CLCJAWA, turbidity is checked every ten seconds in numerous locations by automatic monitoring equipment and twice a day, by hand, in the laboratory.

Unregulated Contaminants:

A contaminant that may be present in drinking water but that do not have health based standards set by the regulatory agencies. Drinking water agencies may be monitoring these contaminants to assist the USEPA in determining the occurrence of unregulated contaminants in drinking water.

More info is available at www.drinktap.org/home/water-information/water-quality/ucmr3.aspx

Where do water contaminants come from?

Drinking water, including bottled water, may reasonably be expected to contain small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects may be obtained by

calling the US Environmental Protection Agency's (USEPA) Safe Drinking Water Hotline at 1-800-426-4791.

The sources of drinking water (both tap and bottled) water come from rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of land or through the ground, it dissolves naturally occurring materials and can pick up substances resulting from the presence of animal or human activity. Contaminants that may be present in untreated water include:

- Microbial contaminants such as viruses and bacteria can be naturally occurring or may come from sewage treatment plants, septic systems, and livestock operations.
- Inorganic contaminants such as salts and metals can be naturally occurring or result from urban storm water runoff, wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides come from sources such as agricultural and residential storm water runoff.
- Organic chemical contaminants including synthetic and volatile organic compounds are by-products of industrial processes and petroleum production but can also come from gas stations, urban storm water runoff and septic systems.
- Radioactive contaminants can be naturally occurring or be the result of oil, gas, and mining activities.

Has Lake Michigan been assessed to determine how susceptible it is to potential contamination?

The Illinois EPA, using the Great Lakes Protocol, completed an assessment in April 2003. Lake Michigan is a surface water source and like all surface waters, is susceptible to potential contaminants. The very nature of surface water allows contaminants to migrate to the intake with no protection, only dilution. CLCJAWA's intake is ranked as moderately sensitive to potential contaminants. There are no potential contamination sources within the intake's critical assessment zone. However,

the combination of land use, storm sewer outfalls, and the proximity of North Shore Sanitary District (NSSD) pumping stations in the immediate area add to the susceptibility of CLCJAWA's intake. NSSD discharges their treated waste water to the Des Plaines River and not into Lake Michigan. *We are all participants in the water cycle. Our individual activities impact the rivers and lakes in our watershed and those into which our waste water plants discharge. Please properly use, store, and dispose of all medications and household chemicals.*

A pill collection unit has been installed in the Libertyville Police Department, 200 East Cook Street. The following items are acceptable for disposal: Prescription medications, including controlled substances, all over-the counter and pet medications, samples, vitamins, liquids and creams. Items *not acceptable* for deposit in the collection unit are: Needles/sharps, thermometers, IV bags, bloody waste and hydrogen peroxide. More information is available on the Solid Waste Agency of Lake County website for disposal options and information at www.swalco.org.



How can Lead get into drinking water?

Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. We cannot control the variety of materials used in plumbing components. You can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using the water for drinking or cooking. Elevated levels of lead can cause serious health problems, especially in pregnant women and young children. If you are concerned about lead in your water, you may wish to have your water tested. For more information on lead in drinking water, testing methods and steps you can take to minimize exposure, contact the Safe Drinking Water Hotline at 1-800-426-4791 or go to <http://www.epa.gov/safewater/lead>.

What precautions should immune compromised persons take?

Some people may be more vulnerable to drinking water contaminants than the general population. Immune 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 from their health care providers about drinking water. The USEPA and Center for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the USEPA Safe Drinking Water Hotline at 1-800-426-4791.

What is a backflow preventer?

A backflow prevention device is used to protect water supplies from contamination or pollution. Our hope is that our water customers will join with us in safeguarding our water supply by having their backflow devices certified annually. Annual backflow testing is required by the U.S. EPA Clean Water Act and supported by state and local plumbing codes. The sole purpose of this legislation is to protect the public water supply and you the consumer.

We would appreciate your assistance in protecting our most valued resources: our water supply and the people use it. If you have any questions about Cross-Connection Devices, the ordinance or the requirements regarding call (847)362-3434.

Who needs backflow preventer?

Homeowners, if you have an irrigation system or fire sprinkler system make sure you have backflow devices installed and inspected annually.

Businesses are required to have devices installed if they have irrigation systems, fire sprinkler systems, and/or because the nature of their business poses a greater risk of contamination.

How can I get involved?

The Village Board has a monthly meeting schedule, and the public is always welcome to attend any of these meetings. Our Mayor is also a member of the Board of Directors of CLCJAWA, which meets on the fourth Wednesday of each month. CLCJAWA provides tours of the water treatment facility, and staff members are also available for public speaking or for school visits. Please contact the Village or CLCJAWA for more information.

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