

2018 ANNUAL WATER QUALITY REPORT



ABOVE AND BEYOND

Your 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 over 300 hundred contaminants annually.



This is your annual water quality report for the period of January 1 through December 31, 2017. 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, Deputy Director of Public Works, at 847-362-3434, our website at www.libertyville.com or Melissa Olenick at CLCJAWA at 847-295-7788, email at molenick@clcjawa.com, or visit their web page at www.clcjawa.com. *Este informe contiene información muy importante sobre el agua que usted bebe. Tradúzcalo ó hable con alguien que lo entienda bien.*

CLCJAWA and the Village of Libertyville were in full compliance with all drinking water regulations this year.

FROM THE SOURCE

Our Village purchases water from the Central Lake County Joint Action Water Agency (CLCJAWA), which is an inter-governmental cooperative formed by the communities it serves: Grayslake, Gurnee, Lake Bluff, Libertyville, Lindenhurst, Mundelein, Round Lake, Round Lake Beach, Round Lake Heights, Round Lake Park and Lake County representing the unincorporated areas of Knollwood and Roundout, Vernon Hills, Wildwood and Grandwood Park. The Village maintains several backup emergency wells 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.

THE TREATMENT PROCESS

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 a 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 to remove the remaining 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 and in the laboratory (see results page 3).

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, such as lead and copper that are found in our homes' plumbing systems.

CLCJAWA is a 13 year consecutive 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.

DELIVERY TO YOUR TAP

CLCJAWA utilizes 38 miles of pre-stressed concrete, ductile iron and PVC water main to deliver water to our community. 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 1,295 water main operating valves and 1,500 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 the budget allows. The improvements further assure the continued and 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.

LAKE MICHIGAN EXPOSURE TO CONTAMINANTS

The IEPA, using the Great Lakes Protocol, completed a source water 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 water 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 Water Reclamation District (NSWRD) pumping stations in the immediate area add to the susceptibility of CLCJAWA's intake.

The NSWRSD discharges their treated waste water to the Des Plaines River and not into Lake Michigan. Access the following website at <http://www.epa.state.il.us/cgi-bin/wp/swap-fact-sheets.pl> to view a summary of the source water assessment.

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. Visit the Solid Waste Agency of Lake County website for disposal options and information at www.swalco.org.

REGULATORY AGENCIES

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.



Water Quality Contaminants Detected in 2017

| 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 | In Compliance | Monthly |
| E. Coli (% Pos/Month) Naturally present; human and animal fecal waste | 0 | 0 | 0% per month | none | In Compliance | Monthly |
| Turbidity (NTU/Lowest Monthly % < 0.3 NTU) Lake Sediment; soil runoff | 100% below 0.3 NTU | none | 0.3 NTU | 100% | In Compliance | Monthly |
| Turbidity (NTU/Highest Single Measurement) Lake Sediment; soil runoff | 0.1 | none | 1 NTU | 0.04 – 0.1 | In Compliance | 9/2017 Monthly |
| INORGANIC CONTAMINANTS | | | | | | |
| Arsenic (ppb) Erosion of natural deposits; runoff from orchards, glass and electronic waste | 0.621 | 0 | 10 | Single Sample | In Compliance | 7/2017 |
| Barium (ppm) Discharge of drilling wastes & metal refineries; natural erosion | 0.0249 | 2 | 2 | Single Sample | In Compliance | 7/2017 |
| Copper (ppm) Corrosion of household plumbing systems; natural erosion | 0 90 th Percentile | 1.3 | AL=1.3 | 0 Sites over AL | In Compliance | 2017 |
| Lead (ppb) Corrosion of household plumbing systems; natural erosion | 3.69 90 th Percentile | 0 | AL=15 | 0 Sites over AL | In Compliance | 2017 |
| Nitrate as nitrogen (ppm) Runoff from fertilizer; leaching from septic; natural erosion | 0.319 | 10 | 10 | Single Sample | In Compliance | 4/2017 |
| DISINFECTANT/DISINFECTION BY-PRODUCTS | | | | | | |
| HAA5 Haloacetic Acids (ppb) By-product of drinking water disinfection | 8 | None | 60 | 2.28-12.12 | In Compliance | 2017 Quarterly |
| TTHMs Total Trihalomethanes (ppb) By-product of drinking water disinfection | 32 | None | 80 | 18.19-39.1 | In Compliance | 2017 Quarterly |
| Bromate (ppb) By-product of drinking water disinfection | 3 | 0 | 10 | 0 – 11 | In Compliance | 10/2017 Quarterly |
| Chlorine (ppm) Drinking water disinfectant | 0.5 | 4 | 4 | 0.5-0.6 | In Compliance | 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 | 0.7 | 4 | 4 | 0.5 – 0.7 | In Compliance | 7/2017 Monthly |
| Sodium (ppm) Erosion of naturally occurring deposits; water softener | 8.83 | none | none | Single Sample | In Compliance | 7/2017 |
| RADIOACTIVE CONTAMINANTS | | | | | | |
| Combined Radium 226/228 (pCi/L) Decay of natural and man-made deposits | 0.92 | 0 | 5 | Single Sample | In Compliance | 4/13/15 |
| Gross Alpha Emitters (pCi/L) Erosion of natural deposits | 0.39 | 0 | 15 | Single Sample | In Compliance | 4/13/15 |

The table above lists all of the regulated compounds detected in our water. Bolded compounds were sampled by the Village; all other compounds were sampled 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.

Units of Measure:

ppm: Parts per million or milligrams per liter

ppb: Parts per billion or micrograms per liter

pCi/L: Picocuries per liter used to measure radioactivity

NTU: Nephelometric turbidity unit that measures clarity in drinking water.

Definition of Terms:

Action Level (AL): level that triggers special treatment or other required action by water plant.

Maximum Contaminant Level (MCL): the highest level of contaminant that is allowed in drinking water.

Maximum Contaminant Level Goal (MCLG): level of a contaminant below which there is no known or expected health risk.

Treatment Technique (TT): required process used to reduce contaminants in drinking water.

LEAD & DRINKING WATER

Elevated levels of lead can cause serious health problems, especially in pregnant women and young children. 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 IEPA 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 home's plumbing.

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 and copper exposure by flushing your tap for 30 seconds to 2 minutes before using the water for drinking or cooking. To know with certainty whether you have lead or copper in your drinking water, have your water tested at a certified laboratory. Please call CLCJAWA at 847-295-7788 for testing information.

As of January 16, 2017, all schools where kindergarten through 5th graders are present, as well as day care facilities, must test all water sources used for cooking and drinking for the presence of lead. Any facilities constructed after 2000 are not required to complete the testing at this time. Schools should notify parents of the results, if any levels exceed 5 ppb at any location, as well as any actions the schools are taking to reduce the levels.

Water providers are now generating an inventory of all known lead service lines in use and issuing public notification to homeowners of local water main construction or repair work that might increase the risk of lead exposure.

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>

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.

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.

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 system.
- Radioactive contaminants can be naturally occurring or be the result of oil, gas and mining activities.

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