



# Annual Water Quality Report

# 2016

CLCJAWA & LAKE BLUFF WERE IN FULL COMPLIANCE WITH ALL DRINKING WATER REGULATIONS THIS YEAR

Village of Lake Bluff Annual Drinking Water Quality Report for the period of January 1 through December 31, 2015. Each year the Village of Lake Bluff (“Village”) issues this report to provide you information about the quality of its 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 the Village’s water quality, including test results for unregulated compounds, contact Melissa Olenick at the Central Lake County Joint Action Water Agency (“CLCJAWA”) at 847-295-7788, or Village Engineer Jeff Hansen at 847-283-6884. Residents are also welcome to visit [clcjawa.com](http://clcjawa.com) or [lakebluff.org](http://lakebluff.org). *Este informe contiene información muy importante sobre el agua que usted bebe. Tradúzcalo ó hable con alguien que lo entienda bien.*

### Our Treatment Process:

Water is pumped from Lake Michigan and treated at CLCJAWA’s Paul M. Neal Water Treatment Facility in the Village. 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 (i) chlorine to protect it as it travels through the water main, (ii) fluoride for dental health, and (iii) a small amount of an often used food additive called phosphate. Phosphate protects the water from the metals, such as lead and copper, found in our homes’ plumbing systems. CLCJAWA is a 10-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.



### Quality Water Assured

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.

### Get Involved in your Water

The Village Board meets on the second and fourth Monday of each month, and the public is always welcome to attend these meetings. Our Village President 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

2015 Water Quality Contaminants Detected

Contaminant (unit of measure) Typical Source of Contaminant	Highest Level Detected	MCLG	MCL	Range of Detection	Violation	Date of Sample
<b>MICROBIAL CONTAMINANTS</b>						
<b>TOTAL COLIFORM BACTERIA (# Pos/Month)</b> Naturally present; human and animal fecal waste	1	0	1 per month	none	-	Monthly
<b>E. COLI (# Pos/Month)</b> Naturally present; human and animal fecal waste	0	0	0 per month	none	-	Monthly
TURBIDITY (NTU/Lowest Monthly % < 0.3 NTU) Lake Sediment; soil runoff	100% below 0.3 NTU	none	0.3 NTU	100%	-	Monthly
TURBIDITY (NTU/Highest Single Measurement) Lake Sediment; soil runoff	0.07	none	1 NTU	0.02 – 0.07	-	12/4/15 Monthly
<b>INORGANIC CONTAMINANTS</b>						
BARIUM (ppm) Discharge of drilling wastes & metal refineries; natural erosion	0.0218	2	2	Single Sample	-	7/15/15
<b>COPPER (ppm)</b> Corrosion of household plumbing systems; natural erosion	<b>&lt;0.150</b> (90 <sup>th</sup> Percentile)	<b>1.3</b>	<b>AL=1.3</b>	<b>0</b> Sites Over AL	-	<b>9/2014</b>
<b>LEAD (ppb)</b> Corrosion of household plumbing systems; natural erosion	<b>4.8</b> (90 <sup>th</sup> Percentile)	<b>0</b>	<b>AL=15</b>	<b>0</b> Sites Over AL	-	<b>9/2014</b>
NITRATE as nitrogen (ppm) Runoff from fertilizer use; leaching from septic; natural erosion	0.384	10	10	Single Sample	-	4/13/15
<b>DISINFECTANT/DISINFECTION BY-PRODUCTS</b>						
<b>HAA5 Haloacetic Acids (ppb)</b> By-product of drinking water disinfection	<b>1.3</b>	<b>None</b>	<b>60</b>	<b>1 – 1.3</b>	-	<b>Semi-Annual</b>
<b>TTHMs Total Trihalomethanes (ppb)</b> By-product of drinking water disinfection	<b>13.4</b>	<b>None</b>	<b>80</b>	<b>9.7 – 13.4</b>	-	<b>Semi-Annual</b>
BROMATE (ppb) By-product of drinking water disinfection	1.2	0	10	0 – 1.2	-	10/26/15 Quarterly
<b>CHLORINE (ppm)</b> Drinking water disinfectant	<b>0.8</b>	<b>4</b>	<b>4</b>	<b>0.4 – 0.8</b>	-	<b>Monthly</b>
TOC (Total Organic Carbon)	The % of TOC removal was measured each month & the system met all removal requirements set by IEPA					
<b>STATE REGULATED CONTAMINANTS</b>						
FLUORIDE (ppm) Water additive which promotes strong teeth; natural erosion	0.84	4	4	0.4 – 0.84	-	7/15/15 Monthly
SODIUM (ppm) Erosion of naturally occurring deposits; water softener	6.85	none	none	Single Sample	-	7/15/15
<b>RADIOACTIVE CONTAMINANTS</b>						
COMBINED RADIUM 226/228 (pCi/L) Decay of natural and man-made deposits	0.92	0	5	Single Sample	-	4/13/15
GROSS ALPHA EMITTERS (pCi/L) Erosion of natural deposits	0.39	0	15	Single Sample	-	4/13/15

**Regulated Contaminates Table:**

lists all of the regulated compounds detected in the Village’s drinking 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 90<sup>th</sup> 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 Definition of Terms Table.

**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):** refers to a required process used to reduce contaminants in drinking water.

**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

Dash symbol (-): No violation

### Where does our water come from?

The Village purchases water from CLCJAWA. CLCJAWA is an inter-governmental cooperative, formed by the communities it serves, including: Grayslake, Gurnee, Lake Bluff, Libertyville, Mundelein, Round Lake, Round Lake Beach, Round Lake Heights, Round Lake Park, and Lake County representing the unincorporated areas of Knollwood and Rondout, Wildwood and Vernon Hills.

### Lake Michigan Susceptibility to Potential Contaminants

The IEPA, 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 Water Reclamation District (NSWRD)

pumping stations in the immediate area add to the susceptibility of CLCJAWA's intake. The North Shore Sanitary District (NSSD) discharges their treated waste water to the Des Plaines River and not into Lake Michigan. Access the following website at [epa.state.il.us/cgi-bin/wp/swap-fact-sheets.pl](http://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 for disposal options and information at [swalco.org](http://swalco.org).

### How is water delivered to my tap?

CLCJAWA utilizes 32 miles of pre-stressed concrete water main installed in 1991 to deliver water to the Village. All water purchased from CLCJAWA enters the Village's water distribution system at the Village's one-million gallon elevated water tank located along Illinois Route 176. From the tank water is delivered throughout the Village via a network of 39 miles of cast



*Booster Station Storage Tank*

iron and ductile iron water mains. The Village has an ongoing program to remove and replace older water mains to further assure the continued, uninterrupted conveyance of quality drinking water to the tap. Each property owner has their own water service line that extends from each building to the public water main, which is typically located within the public right-of-way. If there should be a problem with the Village's supply of water, the Village does have emergency interconnections with the City of Lake Forest's water system. Both the Village and the City of Lake Forest have the ability to transfer water across systems should an occasion occur where one community's primary source of supply is unable to provide water.

### Lead and Copper

Elevated levels of lead can cause serious health problems, especially in pregnant women and young children. Some homes



*Delivery Structure in Lake Bluff*

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 CLCJAWA add phosphate to the 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 the 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. Homeowners can minimize the potential for lead exposure by flushing the tap for 30 seconds to 2 minutes before using the water for drinking or cooking. To know with certainty whether you have lead in your drinking water, have your water tested at a certified laboratory. Please call us at 847-295-7788 for testing information. 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 visit [epa.gov/safewater/lead](http://epa.gov/safewater/lead).

**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 the 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 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.

**Compliance with Regulations?**

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

**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.

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

**Drinking Water 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.

**Precautions for Immune Compromised Persons**

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.

**CLCJAWA SYSTEM**



**Raw Water Pump Station**

Lake Michigan water is drawn from an inlet structure nearly 3000 feet offshore to this pump station.



**Paul M. Neal Water Treatment Plant**

Located on 27 acres in Lake Bluff, this facility serves as headquarters for the water treatment process.



**Booster Pump Station**

Three standpipes provide additional system storage and maintain adequate pressure for our most distant member communities.