

# EVANSTON 2011 WATER QUALITY DATA

## Detected Substances

| Substance  | Date Collected <sup>a</sup> | MCLG            | Highest Allowed (MCL)  | Highest Level Detected  | Range of Levels Detected | Violation | Source of Contamination   |
|--|-----------------------------|-----------------|--|---|--------------------------|-----------|---|
| Turbidity (NTU) (Cloudiness)                                 | 2011                        | NA              | TT=Monitored by % exceeding 0.3 NTU and max allowed is 1 NTU | 99.87% of samples meet 0.3 NTU; 0.4NTU Highest single measurement | 0.06 - 0.40              | NO        | Soil runoff   |
| Fluoride (ppm)   | 2011                        | 4               | 4  | 1   | 0.90 - 1.09              | NO        | Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories |
| Nitrate [measured as Nitrogen] (ppm)                         | 10/12/2011                  | 10              | 10   | 0.3   | single sample            | NO        | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits                               |
| Sodium (ppm)   | 10/12/2011                  | NA <sup>e</sup> | NA <sup>e</sup>  | 7.1   | single sample            | NO        | Erosion from naturally occurring deposits   |
| Barium (ppm)   | 10/12/2011                  | 2               | 2  | 0.021   | single sample            | NO        | Discharge of drilling wastes; Discharge from metal refineries; Erosion of Natural deposits                                |
| Chromium, Total (ppm)  | 2011                        | 0.1             | 0.1  | 0.00030   | 0.00020 - 0.00030        | NO        | Discharge from steel and pulp mills; erosion of natural deposits  |
| Total Coliform Bacteria                                      | 2011                        | 0               | 5% of Monthly Samples are Positive                           | 2.2%  | NA                       | NO        | Naturally present in the environment  |
| Combined Radium 226/228 (pCi/L) <sup>b</sup>                 | 1/9/2008                    | 0               | 5  | 0.82  | single sample            | NO        | Erosion of natural deposits   |
| Gross Alpha excluding Radon and Uranium (pCi/L) <sup>b</sup> | 1/9/2008                    | 0               | 15   | 3.9   | single sample            | NO        | Erosion of natural deposits   |
| Beta/Photon Emitters (mrem/yr) <sup>b</sup>                  | 1/9/2008                    | 0               | 50   | 7.3   | single sample            | NO        | Decay of natural and man-made deposits  |

| Disinfectants and Disinfection By-products | Date Collected | MCLG            | Highest Allowed (MCL) | Highest Level Detected | Range of Levels Detected | Violation | Source of Contamination                   |
|--|----------------|-----------------|-----------------------|------------------------|--------------------------|-----------|---|
| Total Trihalomethanes (ppb)                | 2011           | NA <sup>f</sup> | 80                    | 25 <sup>c</sup>        | 10.8 - 36                | NO        | By-product of drinking water chlorination |
| Total Haloacetic Acids (ppb)               | 2011           | NA <sup>f</sup> | 60                    | 9 <sup>c</sup>         | 5.8 - 11.8               | NO        | By-product of drinking water chlorination |
| Chlorine (ppm)                             | 2011           | 4 MRLDG         | 4 MRDL                | 0.4 <sup>d</sup>       | 0.37 - 0.50 <sup>d</sup> | NO        | Water additive used to control microbes   |

| Substance    | Date Collected      | MCLG | Action Level (AL) | 90th Percentile | Range of Levels Detected | Violation | Source of Contamination  |
|--------------|---------------------|------|-------------------|-----------------|--------------------------|-----------|--|
| Lead (ppb)   | 6/22/2011-7/10/2011 | 0    | 15                | 4.2             | <1 - 6.1                 | NO        | Corrosion of household plumbing systems; Erosion of natural deposits                                   |
| Copper (ppm) | 6/22/2011-7/10/2011 | 1.3  | 1.3               | 0.18            | 0.0023 - 0.940           | NO        | Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems |

## UNREGULATED CONTAMINANTS

|                                 |            |               |   |        |               |    |   |
|---------------------------------|------------|---------------|---|--------|---------------|----|---|
| Perfluorooctane sulfonate (ppb) | 11/14/2011 | NOT REGULATED | USEPA Provisional Health Advisory of 0.2ppb | 0.0018 | Single Sample | NO | Fabric protector/stain repellent, fire fighting foam, waste water discharge |
| Sulfate (ppm)                   | 10/12/2011 | NOT REGULATED | USEPA National Secondary Standard of 250    | 26     | Single Sample | NO | Naturally occurring, coagulant residual                                     |
| Chromium, Hexavalent (ppb)      | 2011       | NOT REGULATED | NOT REGULATED                               | 0.27   | 0.18 - 0.27   | NO | Industrial Discharge  |

### Additional Information About Your Water

| Measured Parameter                    | Evanston Average | Evanston Minimum | Evanston Maximum |
|---------------------------------------|------------------|------------------|------------------|
| pH (0-14 pH units)                    | 7.6              | 7.4              | 7.8              |
| Hardness (as mg CaCO <sub>3</sub> /L) | 133              | 118              | 149              |
| Hardness (Grains per Gallon/ gpg)     | 7.8              | 6.9              | 8.7              |
| Alkalinity (ppm)                      | 99               | 74               | 110              |
| Raw Water Temperature                 | 52° F            | 33.4° F          | 77° F            |
|                                       | 11° C            | 0.8° C           | 25.0° C          |

**Definitions:**

**Action Level** – The concentration of a contaminant which, if exceeded, triggers treatment or other required actions by the water supply.

**Disinfection By-Products** – Total Trihalomethanes and Total Haloacetic Acids are used to regulate the amount of allowable by-products of chlorination.

**Fluoride** – The Illinois Department of Public Health recommends an optimal fluoride range of 0.9 ppm to 1.2 ppm

**Lead and Copper** – There is no detectable lead in the water provided to the Evanston community. Lead enters the water from lead solder, lead pipes or plumbing fixtures in the home. To minimize contamination resulting from corrosion, the EPA established a lead action level of 15 parts per billion in 1992. The 90th percentile result of samples analyzed for lead and copper content in homes with lead pipes must be less than the action level of 15 ppb and 1.3 ppm respectively. In 2011, Evanston sampled water from thirty homes with lead service lines and analyzed them for lead and copper content. All results were below the action levels. The 90th percentile level for Lead was 4.2 ppb. The 90th percentile level for copper was 0.18 ppm as illustrated as the Evanston Result in above table.

**MCL** – Maximum Contaminant Level, the highest level of a contaminant that is allowed in drinking water. A MCL is set as close to a MCLG as feasible using the best available treatment technology.

**MCLG** – Maximum Contaminant Level Goal, 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.

**mg CaCO<sub>3</sub>/L** – milligrams of calcium carbonate per liter.

**mrem/yr** – Millirems Per Year - Measure of radiation absorbed by the body.

**MRDL** – Maximum Residual Disinfection Level – The highest level of a drinking water disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

**MRDLG** – Maximum Residual Disinfection Level Goal – The level of drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

**NA** – Not applicable.

**NTU** – Nephelometric Turbidity Units, measures water clarity.

**pCi/L** – picocuries per liter- Measure of radioactivity.

**ppm** – parts per million or milligrams per liter (mg/L).

**ppb** – parts per billion or micrograms per liter (µg/L).

**Sodium** – There is not a state or federal MCL for sodium. Sodium levels below 20 mg/l (ppm) are not considered to be a health issue.

**TT** – Treatment Technique, a required process intended to reduce the level of a contaminant in drinking water.

**Turbidity** – a measurement of the cloudiness of the water caused by suspended particles. This is monitored because it is a good indicator of water quality as well as verifying the effectiveness of the filtration and disinfection processes.

a- The state requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though accurate is more than one year old. Some contaminants are sampled less frequently than once a year; as a result, not all contaminants were sampled for during the Consumer Confidence Report (CCR) calendar year. If any of these contaminants were detected in the last sampling period, the results are included in the table along with the date that the detection occurred.

b- Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Radiation is everywhere; from the sun, from the earth and even in our bodies. Living in the Chicago area exposes us to cosmic radiation at approximately 29 mrem/yr. (from [www.iem-inc.com/primrite.html](http://www.iem-inc.com/primrite.html) and [www.thrnewmedia.com/RadiationCalculator/](http://www.thrnewmedia.com/RadiationCalculator/)). The amounts detected in Evanston's water are well below the

maximum contaminant level; so low in fact, that Evanston is on a reduced monitoring schedule and is only required to sample every 6 years.

c- Highest Running Annual Average (quarterly) (RAA). RAA quarterly is calculated by adding the most recent quarter plus the three previous quarters and dividing by four. The highest RAA during the year is reported.

d- Running Annual Average (monthly) (RAA). RAA monthly is based on the monthly averages of all samples.

e- There is no state or federal MCL for Sodium.

f- Although there is no collective MCLG for this contaminant group, there are individual contaminant MCLs: Trihalomethanes: bromodichloromethane (zero); bromoform (zero); dibromochloromethane (0.06 mg/L). Haloacetic acids: dichloroacetic acid (zero); trichloroacetic acid (0.3 mg/L).

**TOC** – The Evanston Water Supply monitored the percentage of Total Organic Carbon (TOC) removal quarterly and met all TOC removal requirements set by the IEPA.

# A Report from Your Water Utility

We are pleased to present you Evanston's annual water quality report, an information service for our water customers. The Evanston water utility is committed to providing you with the highest quality of drinking water. In 2011, as in past years, your tap water has met all United States Environmental Protection Agency (USEPA) and State of Illinois drinking water health standards and has had no violations to report. Of the hundreds of substances that are monitored, only a handful were actually detected in our drinking water and all substances detected were far below a level at which there is any known health risk!

## Your Water Source

Evanston's source of water, Lake Michigan, (a surface water) is not just a major commerce artery and a recreational resource with miles of scenic shoreline; it's also a great source of drinking water! Almost half of the world's fresh water comes from Lake Michigan and the other Great Lakes. According to the USEPA, the quality of Lake Michigan water has improved dramatically over the past 20 years. The regulations in place restrict industrial and sewage treatment plant effluents from entering Lake Michigan, thereby lowering the risk of having these contaminants in the water. All 63 miles of shoreline within Illinois are now considered to be in good condition.

## Summary of Illinois EPA Source Water Assessment Report of Lake Michigan as a Drinking Water Source

The EPA report states that there is concern for Lake Michigan water quantity and also water quality (a 1967 U.S. Supreme Court decree limits the amount of Illinois diversions of water from Lake Michigan, and currently Illinois is reaching its limit on that allocation). The Illinois EPA considers all surface water sources of community water supply to be susceptible to potential pollution problems. The very nature of surface water allows contaminants to migrate into the intakes with no protection, only dilution. This is the reason for mandatory treatment for all surface water supplies in Illinois. Evanston recognized the need for treatment long before these requirements came into effect. In fact, Evanston has operated a water treatment facility for over 100 years! To view a summary version of the completed Source Water Assessments, including: Importance of Source Water; Susceptibility to Contamination Determination; and documentation/recommendation of Source Water Protection Efforts, you may access the Illinois EPA website at [www.epa.state.il.us/cgi-bin/wp/swap-fact-sheets.pl](http://www.epa.state.il.us/cgi-bin/wp/swap-fact-sheets.pl).

All of Evanston's water intakes, which bring the lake water into the treatment plant, are located far enough offshore that shoreline impacts are not considered a factor on water quality. However, at certain times of the year, the potential for contamination during wet-weather flow conditions exists due to the proximity of the North Shore Channel. In addition, the proximity to a major shipping lane adds to the susceptibility of these three intakes. Lake Michigan, as well as all the great lakes, has many different organizations and associations that are currently working to either maintain or improve water quality. The report further commends Evanston's involvement in organizations such as the West Shore Water Producer's Association, which leads to critical coordination regarding water quality issues that takes place between the utilities on the west shore of Lake Michigan.

## Where do Contaminants come from?

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

Contaminants that may be present in source water include: microbial contaminants from a variety of sources, 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 runoff, industrial or domestic water discharges; oil and gas production, mining or farming; pesticides and herbicides which come from agricultural, storm water runoff and residential uses; organic chemical contaminants, including synthetic and volatile organics which are by-products of industrial processes and petroleum production and can also come from gas stations, urban storm runoff and septic tanks; and radioactive contaminants which can be naturally occurring or the result of oil and gas production and mining activities. The primary sources of pollution threatening Lake Michigan include air deposition (pollution from the air, rain and snow), runoff and industrial discharge.

Drinking water, including bottled water, may reasonably be expected to contain at least 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 can be obtained by calling the USEPA Safe Drinking Water Hotline at **(800) 426-4791**. In order to ensure that tap water is safe to drink, the USEPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Some people may be more vulnerable to contaminants in tap or bottled 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, and some elderly and infants can be particularly at risk for infections. These people should seek advice about drinking water from their health care providers. The USEPA/CDC's guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at **(800) 426-4791** or visit [www.epa.gov/OW](http://www.epa.gov/OW).

## Facts about Lead

There is no detectable lead in the water provided to the Evanston community. Lead enters the water from lead solder, lead pipes or plumbing fixtures in the home. 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 Evanston Water Utility 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 two minutes before using water for drinking or cooking. 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 at **(800) 426-4791** or at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).

For specific information about the Water Department, your water's quality, a complete water quality report of all tested contaminants, or any other water-related question, please contact Kevin Lookis at the Evanston Water Department at **311(847-448-4311)** outside of Evanston). The public is welcome to attend City Council meetings where decisions which affect drinking water quality are made. Additional information on the date and time for these meetings and the water treatment process can be obtained by visiting [www.cityofevanston.org](http://www.cityofevanston.org) or by calling **311**.

The staff of the Utilities Departments' Water Division continues Evanston's tradition of excellence by working around the clock for your health and safety. We're proud of our water and pledge to continue to provide you with the highest quality water that is humanly and technologically possible. Thank you for the opportunity to serve you.

