

**CITY OF NAPERVILLE
MANAGER'S MEMORANDUM**

DATE: January 28, 2016

TO: Doug Krieger, City Manager

FROM: Jim Holzapfel, Director, Water and Wastewater Utilities

SUBJECT: Public Water Supply Lead (Pb) Testing

ACTION REQUESTED:

We recommend the City Manager forward this memo to the City Council in the next Manager's Memorandum.

BACKGROUND:

In view of the issues with the presence of elevated lead (Pb) in the Flint, Michigan public water supply, this memo is to assure and address any concerns of the City Council and consumers on the water quality and safety of the Naperville public water supply system.

The Safe Drinking Water Act sets the action level for lead in drinking water at 15 parts per billion (ppb). The action level (public notification and mitigation) for lead is exceeded if the concentration of lead in more than 10% of tap water samples collected during the monitoring period is greater than the action level. If the level at the tap exceeds the action level of 15 ppb, the utility must take action to reduce the concentration of lead. Because of the serious health effects of ingesting lead, the Environmental Protection Agency (EPA) has set a Maximum Contamination Level Goal (MCLG) of zero for lead. The MCLG is the level of contaminant in the drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Flint, Michigan was found to have elevated lead in its public water supply, which has led to a massive public response with state and federal intervention to mitigate the problem.

Flint's issues arose from changing their source of water from Lake Huron to the Flint River. The water chemistry of the Flint River is significantly different from Lake Huron. Changes in water chemistry can lead to the water being corrosive (low pH) resulting in the water attacking the pipe, which results in the leaching of the pipe materials into the water itself. Flint, Michigan has a significant number of customers with lead water service lines. The lead in their water comes from the water attacking the lead service line pipe, with the lead dissolving into the water. For more information on the Flint, Michigan public water supply please follow the link: <http://www.epa.gov/flint>.

To protect corrosive water from attacking the pipe materials, chemicals typically are added to the water during treatment to elevate the water's pH and inhibit corrosion (orthophosphate). The orthophosphate comes out of solution and sticks to the pipe walls, providing a protective film between the water and pipe material. In the Flint, Michigan case, either no chemicals were added or insufficient amount of chemical was added to ensure the water would not attack (corrode) the pipe materials.

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DISCUSSION:

Naperville's source water for the public water supply originates from Lake Michigan. Lake Michigan is a high quality body of water and is treated at the Jardine Water Purification Plant in Chicago, before being sent to the DuPage Water Commission and on to the City of Naperville.

At the Jardine Water Purification Plant, the water undergoes treatment to remove organics and other impurities. The plant also adds orthophosphate to prevent corrosion and maintains pH levels within allowable limits, also to prevent corrosion. More information regarding treated water from City of Chicago can be found here: <http://www.cityofchicago.org/city/en/depts/water/provdrs/supply.html>.

Naperville monitors the water's pH and chemistry every two weeks at our receiving stations where Lake Michigan water enters Naperville's water supply. Staff measures pH and orthophosphate levels as a corrosion inhibitor, ensuring that the parameters are at sufficient levels to prevent the leaching of the pipe materials into the water supply. Additionally, we conduct a special sampling of 50 homes in Naperville every three years to ensure there are no elevated levels of lead being consumed by the public. The last special sample was last year (2015), with no samples reporting elevated concentrations of lead in the water supply or at the tap.

There are very few homes in Naperville with lead service lines. The City of Naperville stopped the installation of lead piping in construction in the 1920's. All lead materials were removed from use in new construction in Naperville in 1986, when the EPA prohibited the use of lead solder. And as previously noted, the Utility monitors and maintains the water's pH and corrosion inhibitors levels to ensure a protective film is in place which minimizes the probability of lead in the drinking water.

Annually, the Water Utility publishes a Water Quality Report, showing the ranges of common water quality parameters, including lead. Naperville's Water Quality Report can be viewed at the link: <http://www.naperville.il.us/emplibrary/WaterQualityReport2014.pdf>.

RECOMMENDATION:

Forward this information to the City Council in the Manager's Memorandum Report.