

CITY COUNCIL REPORT

DATE: February 5, 2016  
TO: Mayor and Councilmembers  
FROM: Steve Camp, Utilities Regulatory Compliance Manager  
Brad Hill, Utilities Director  
SUBJECT: Lack of Lead in the City of Flagstaff's Drinking Water System

The Mayor inquired about the potential of lead in the City of Flagstaff water system. This City Council Report is the response.

The City of Flagstaff has never exceeded the Federal Action Level for lead or copper in any sampling and is happy to report that 100% of our lead samples are below the Federal Action Level for lead.

In accordance with the U.S. Environmental Protection Agency's (USEPA) Lead and Copper Rule adopted in 1991, the City began sampling for lead and copper throughout our water distribution system the following year. Since that time, the City has taken 359 water quality samples and none have exceeded the Federal Action Level for either lead or copper. Sample locations include older homes to determine if City water causes corrosion that could result in lead contamination. Results of sampling for both metals has met criteria for reduced monitoring and the Arizona Department of Environmental Quality granted the City reduced monitoring in 1995. The City currently samples for lead and copper every three years at thirty locations throughout the City. The most recent sampling occurred in 2014.

In general, lead typically gets into the water after it leaves a city's treatment plant. Since the City has no lead water main pipes in our water distribution system and it is not found within our source water, the most common source of lead is from corrosion of plumbing materials often found in older homes. The City does have some old lead connections used in some customer service lines, which represents a very miniscule portion of the overall water system. However, the quality of water provided by the City of Flagstaff has not promoted corrosion of plumbing fixtures as demonstrated by the water quality testing that has occurred over the past 24 years.

Customers concerned with their water quality or seeking additional information should contact Steve Camp, Utilities Regulatory Compliance Manager, at (928) 213-2475 or the Water Quality Compliance Laboratory at the Lake Mary Water Treatment Plant at (928) 774-0262.

Additional detail is provided on the Attachment.

RECOMMENDATION / CONCLUSION

This report is for information only.

## **Answers about Lead Sampling in the City of Flagstaff Water System**

**The City of Flagstaff has never exceeded the Federal Action Level for lead or copper in any sampling and is happy to report that 100% of our lead samples are below the Federal Action Level for lead.**

*Who establishes protocols, what protocols are used, and how often is lead sampling conducted?*

**The U.S. Environmental Protection Agency (USEPA) set guidelines in the Lead and Copper Rule that established the number of samples required, testing protocols, and how often samples are to be collected. A water system for a city with a population of 10,000 to 100,000, such as the City of Flagstaff (COF), was initially required in 1992 to collect sixty samples at sixty different locations every six months.**

**The COF qualified in 1993 for a reduced monitoring schedule of collecting thirty samples at thirty sampling locations annually after 90% of the initial samples collected in 1992 were below the Federal Action Levels for lead (15µg/l) and copper (1,300µg/l). The Federal Requirement was 90% of samples below the Action Level. However, all initial samples at the COF in 1993 were below the Federal Action Level. In 1995, after two additional years of annual sampling, the COF again qualified for a reduced sampling schedule of collecting thirty samples at thirty sample locations every three years after 90% of samples were less than 0.005mg/l for lead and 0.650mg/l for copper (which is one-third of the Federal Action Level for lead and one-half the Federal Action Level for copper). For perspective, 1 µg/l is one part per billion, which is equivalent to 1 second in 32 years.**

**The City currently collects samples every three years in accordance with the USEPA Lead and Copper Rule. Sample bottles and instructions, pursuant to USEPA protocols, are left with homeowners. Instructions are explicit that water must sit in the line for at least six hours. The sample collected must be the "First Draw," or collected immediately, after sitting in the line for at least six hours. The line cannot be flushed prior to collecting the sample.**

*When it comes to the City of Flagstaff's water system, how many lead samples is the City required to take?*

**The Arizona Department of Environmental Quality (ADEQ) granted the City of Flagstaff a reduced monitoring schedule and the City is required to take thirty samples at thirty separate locations every three years.**

*What is the highest lead concentration detected in the City of Flagstaff's water system and what is the average concentration of lead in the City of Flagstaff's water system over the past five years?*

**The highest lead sample collected in the system in the past five years for lead was 14µg/l; the next highest collected was 5.1µg/l. A conservative average for all samples collected for lead in the past five years is 1.3µg/l, which is less than 10% of the Federal Action Level for lead. Seventy percent (70%) of samples collected in 2014 and 65% of samples collected in 2011 were less than 1µg/l.**

*Does the City of Flagstaff have lead pipes in the water system?*

**The City does not have any lead distribution pipes. However, the City does have some lead connections used in some of the customer service lines. These represent a minuscule portion of the overall water system.**

*What are the potential sources of lead in the City of Flagstaff's water system?*

**Lead is not typically found in Flagstaff's source water. The most common source of lead would be from corrosion of plumbing materials that contain lead, often found in older homes. The City has a surface water treatment plant that includes a corrosion control treatment process so the water leaving the plant does not cause corrosion of pipes. We collect samples in homes, which includes older homes, to determine if our water causes corrosion of pipes.**

*How is the City of Flagstaff's water system different than the City of Flint's water system?*

**The City of Flint, Michigan, switched from using City of Detroit water to treating water from the Flint River. The City of Flint did not use corrosion control treatment which led to scouring and corrosion of its water distribution pipes. Some water distribution pipes contained lead, which was responsible for the lead contamination in their water.**

**A major difference is that the City of Flagstaff incorporates corrosion control treatment in treating Lake Mary surface water. Treated surface water leaving the Lake Mary plant is adjusted to a pH of 7.8 to 8.1 to minimize the potential for corrosion and lead contamination in the distribution system.**

**Another major difference is the City of Flagstaff has never discounted or thrown out any sample collected for lead or any other parameter.**