

Frequently Asked Questions About Upcoming Treatment Changes: Wholesale Water Customers

August 2024

How does the City of Chicago Department of Water Management (Chicago DWM) currently reduce lead in drinking water?

The finished water from both water treatment plants is currently treated with a blended phosphate chemical (60% polyphosphate/40% orthophosphate) for corrosion control. Chicago DWM's water system has been in compliance with the Lead and Copper Rule (LCR).

What is the new corrosion control chemical and why is the switch being made?

At the request of the Illinois EPA, Chicago DWM plans to switch from the current blended phosphate to orthophosphate starting in the fall of 2024 through summer 2025. With the new corrosion inhibitor, lead levels are anticipated to be lowered further.

Has the change been studied?

Chicago DWM has been in communication with the Illinois EPA since 2018 to optimize its corrosion control. Results have shown a reduction in lead and Chicago DWM was allowed to proceed with construction in 2023.

How will the new water quality parameters compare to existing drinking water quality?

The drinking water will continue to have a pH at the entry points at 7.2–7.9 and other important background chemistry such as alkalinity and hardness will remain at similar levels as they are now. The changes will increase the orthophosphate in the finished water while the current polyphosphate will be gradually removed from the finished water.

Why is the polyphosphate being removed?

Polyphosphate is being removed because recent studies have shown that it may negatively impact lead corrosion control. Polyphosphate was initially added with the orthophosphate to mask discoloration of the water from metals such as iron or manganese.

Are additional treatment changes expected beyond the improved corrosion control?

Chicago DWM is lowering the dissolved aluminum concentration in the finished water. We will do this by adding orthophosphate in the rapid mix during the same transition period as the corrosion control chemical. This will cause aluminum phosphate precipitation to happen early in the treatment process so that this aluminum phosphate can be removed by the time the water reaches the clearwell.

What impacts could this transition have on my distribution system?

This transition to orthophosphate will further lower the lead concentrations with the optimized corrosion control. While polyphosphate is removed from finished water, temporary water discoloration could occur in parts of the system where iron-based pipes are present. Low chlorine and high turbidity could also be detected in these sites.

How should my water system prepare for the transition?

The following steps are taken by Chicago DWM to prepare for the transition and are recommended for your system:

- Sample and monitor lead, copper, pH, orthophosphate, calcium, and aluminum at taps before, during, and after transition by selecting several sentinel home sites. This can be added using your existing Lead and Copper Rule (LCR) compliance sampling sites
- Sample and monitor distribution water quality before, during, and after transition such as pH, turbidity, orthophosphate, aluminum, and calcium, and legacy metals (e.g., iron, manganese). This could be added to your existing Total Coliform Rule (TCR) Sampling or Water Quality Parameter (WQP) monitoring
- Prepare a response plan if water discoloration, high turbidity, or low chlorine is detected
- Notify customers of the transition plan and schedule

What should I do if I receive customer complaints (e.g., discolored water) during the transition?

If customer complaints arise in certain areas, start with localized flushing. If the water quality issues persist, follow up with water quality sampling to diagnose the causes of the issue. Pre-transition sampling and monitoring discussed above is critical to provide a baseline water quality for the water system and to help with diagnosing the causes of these issues following the transition.

How fast will this change occur?

Chicago DWM is taking a phased approach to take out the polyphosphate at a slow pace to minimize chances of localized water quality issues.

What is the anticipated treatment chemical change schedule?

The anticipated schedule for the chemical change taking place at the Chicago DWM water treatment plants is shown below. Note that both systems are still in construction and dates may shift depending on contractor’s schedule at both plants. Chicago DWM will provide schedule updates as necessary.

Estimated Date	Average Target Orthophosphate Residual at DWM’s Entry Points	Average Target Polyphosphate Residual at DWM’s Entry Points
	mg/L as PO4	mg/L as PO4
Before October 2024	0.5–0.6	0.7
October 2024	0.6–1.2	0.7
November 2024	1.2–1.75	0.45–0.7
December 2024	1.75	0.45
January 2025	2.05	0.15
May 2025 and After	2	0.0

Will you let us know in advance of each treatment change?

Chicago DWM will notify wholesale customers before each phase via email. Email addresses that have been provided to the Illinois EPA will be used. Any additional Email addresses can be sent to chicagowatertesting@cityofchicago.org to be included in any notification.

Who should I contact if I have questions about how this transition will impact my water? Who can I contact if my system distribution system experiences water quality issues?

You can contact the Chicago Department of Water Management Bureau of Water Quality at 312-744-8190. Information can also be found at Chicagowaterquality.org/corrosioncontrol/wholesale