

Reducing Pipe and Plumbing Corrosion

MVWA is adding orthophosphate to help reduce the release of lead and copper from plumbing into drinking water. MVWA evaluated corrosion-control options in studies with the New York State Department of Health (NYSDOH), which designated orthophosphate as the optimum treatment. This is a preventative treatment change, not a notice of a lead or copper violation.

HOW THE TREATMENT WORKS

- 1. Study the water** Corrosion control depends on the water's chemistry, and the pipe surfaces it contacts. MVWA evaluated treatment options through three studies with NYSDOH.
- 2. Add a controlled dose** Orthophosphate is added during finished-water conditioning. It is a corrosion inhibitor that decreases the chance of an action level exceedance for lead and copper, not a disinfectant. Chlorine continues to provide disinfection.
- 3. Support a protective pipe scale** As treated water moves through the distribution system and household plumbing, orthophosphate helps form a thin, stable protective layer on pipe interiors. This reduces the tendency of lead and copper to dissolve into the water.
- 4. Monitor treatment and water quality** Operators and the laboratory monitor orthophosphate and relevant water chemistry, including pH and alkalinity. Lead and copper tap sampling continues under the Lead and Copper Rule.

Orthophosphate FAQ

What is orthophosphate? It is a form of phosphate, a compound containing phosphorus. Phosphorus occurs naturally in rocks, soil, water, and living things. Phosphate is also used in products such as fertilizers.

If phosphate is in fertilizer, can it cause algae blooms? Yes. Phosphorus is a nutrient for plants and algae. When excess phosphorus from fertilizer, manure, or other sources washes into lakes and streams, it can fuel rapid algae growth. Some blooms produce toxins, and heavy growth can lower oxygen in the water. This is a concern when excess nutrients enter surface waters through runoff.

Is that the same as MVWA adding orthophosphate? The purpose and pathway are different. MVWA adds a controlled amount of orthophosphate to treated drinking water to help limit pipe corrosion and metal release. Fertilizer runoff is excess nutrient reaching a lake or stream. Phosphate's environmental effect depends on how much enters a waterbody and the conditions there; the two situations should not be confused.

Is orthophosphate harmful, and is it regulated? Water utilities commonly use orthophosphate for corrosion control. It is added at a controlled treatment level and monitored as part of a regulated public-water system under state oversight. Orthophosphate does not have a separate federal or New York drinking-water MCL as a contaminant. Its use does not mean lead or copper has been found in your water. This addition is intended to reduce the release of metals from plumbing; it is not a response to a water-quality violation.

Reduce Corrosion. Lower 90th percentile. No Action Level Exceedance.

What is the Lead and Copper Rule 90th percentile? Water systems collect tap samples from selected homes and rank the results from lowest to highest for lead and copper. The 90th-percentile result is near the high end of that list: roughly 90% of the sample results are at or below it. It summarizes the sample set; it is not a result for every home.

What are the lead and copper action levels? Under New York's current rule, the lead action level is 15 parts per billion (ppb), and the copper action level is 1.3 parts per million (ppm). If a system's 90th-percentile result exceeds an action level, additional steps are required. An action level is a trigger for system action, not a boundary between safe and unsafe water in an individual home. The federal lead action level is scheduled to decrease to 10 ppb on November 1, 2027.

Questions about lead at your tap? Lead cannot be seen, tasted, or smelled. Testing is the way to know whether it is present at a particular tap. Call MVWA at 315-792-0301.

Sources: MVWA Orthophosphate Treatment Flyer; U.S. EPA, Phosphate Feed and Lead in Drinking Water ([epa.gov/lead](https://www.epa.gov/lead); [epa.gov/sdwa/overview-drinking-water-treatment-technologies](https://www.epa.gov/sdwa/overview-drinking-water-treatment-technologies)); EPA, Indicators: Phosphorus ([epa.gov/national-aquatic-resource-surveys/indicators-phosphorus](https://www.epa.gov/national-aquatic-resource-surveys/indicators-phosphorus)); NYS DOH, 10 NYCRR §§ 5-1.40–5-1.41; EPA Lead and Copper Rule Improvements (compliance begins Nov. 1, 2027).