

Operator Quiz Corner
Don't Forget.....It's the Lead and _____ Rule
(Dan Laprade, Training Coordinator)

What is the metal that is an essential nutrient for the human body to form red blood cells? What is the metal that is used to treat nuisance algae in surface water bodies? What is the metal that can cause gastrointestinal distress and Wilson's Disease in humans? The answer is copper.

While lead in drinking water gets the most attention, EPA has recognized that elevated levels of copper in drinking water is also a health concern and included it in the 1993 "Lead and Copper Rule" (LCR). Like lead, the primary source of copper in drinking water is the corrosion of copper service lines and building plumbing. The LCR has set the copper Action Level at 1.3 mg/L. Below are some other facts about copper in drinking water:

- EPA has set a secondary standard for copper = 1.0 mg/L
- At levels above the secondary standard the consumer may notice – metallic taste and the telltale blue-green staining of white sinks, tubs, and toilets.
- Reducing copper corrosion usually only requires a relatively small increase in the water's pH
- Exceeding the copper Action Level triggers the same follow-up monitoring and corrosion control measures by the water system, but it does not trigger "Public Education" like a lead Action Level exceedance.

Below are a few questions to test your knowledge on copper. The American Water Works Association has produced a video that is a good refresher on proper lead and copper sample collection. Click this link to watch: <https://www.youtube.com/watch?v=YBnwIjRVn4>

- 1) In accordance with the Lead and Copper Rule water must remain stagnant in building plumbing for a minimum of _____ hours before collecting the sample.
a) 6
b) 12
c) 24
d) 48

- 2) Which of the following best describes proper lead and copper sample collection?
a) Let the water run for at least 5 minutes before filling the sample bottle.
b) Let the water run until the temperature stabilizes before filling the sample bottle.
c) Fill the sample bottle immediately upon turning the tap on.
d) Sample collection flushing time depends on the length and diameter of the service line.

- 3) Which of the following is NOT required when a public water system exceeds only the copper Action Level?
a) Public education.
b) Sampling for lead at the source water.
c) Water quality parameter sampling (pH, conductivity, alkalinity, calcium) from the distribution system.
d) All of the above

- 4) A copper result reported as 1250 ug/L is the same as _____?
a) 0.125 mg/L

- b) 1.25 mg/L
- c) 1.25 ppb
- d) 125.0 mg/L

- 5) Given the following 10 copper results calculate the 90th percentile. 0.9 mg/L, 1.44 mg/L, 1.1 mg/L, 0.66 mg/L, 0.002 mg/L, 1.0 mg/L, 0.9 mg/L, 0.85 mg/L, 1.2 mg/L, 0.003 mg/L
- a) 0.8 mg/L
 - b) 0.9 mg/L
 - c) 1.2 mg/L
 - d) 72.4 mg/L

