

Zinc & PRIVATE WELLS



What is zinc?

Zinc is a natural element found in rocks deep underground, air, soil, and water. Zinc is found in the environment as zinc compounds joined to other elements like chloride, oxygen and sulfur.

Zinc is used to produce metals, batteries, and pennies. Zinc is also used as a metal coating to prevent rust. Zinc compounds are used to make paint, rubber, dyes, ointments, and wood preservatives.

How does zinc get in my private well water?

Zinc compounds can enter your private well water from erosion of rocks underground. Zinc can also enter groundwater from industrial practices like mining, steel production, coal burning, and burning of waste.

How can zinc affect my health?

Zinc is an essential element, meaning your body needs it small amounts. It helps with enzyme function, structure, and regulation throughout the body. However, drinking high levels of zinc may cause adverse health effects. You can't smell or see zinc. Zinc may have a detectable taste.

Drinking high levels of zinc over short periods can lead to:

- Stomach cramps
- Nausea
- Vomiting

Drinking high levels of zinc over long periods can cause anemia, decreased good cholesterol levels and reduced copper absorption.

What level of zinc should I be concerned about?

The **NC Department of Environmental Quality** developed a groundwater standard of **1 milligrams of zinc per liter of water (mg/L)**. Ground water standards are developed to protect public health. This standard was developed in 2013.

The **US Environmental Protection Agency** developed an aesthetic standard of **5 mg/L**. This standard was developed to prevent metallic taste.

How do I test for zinc in my private well?

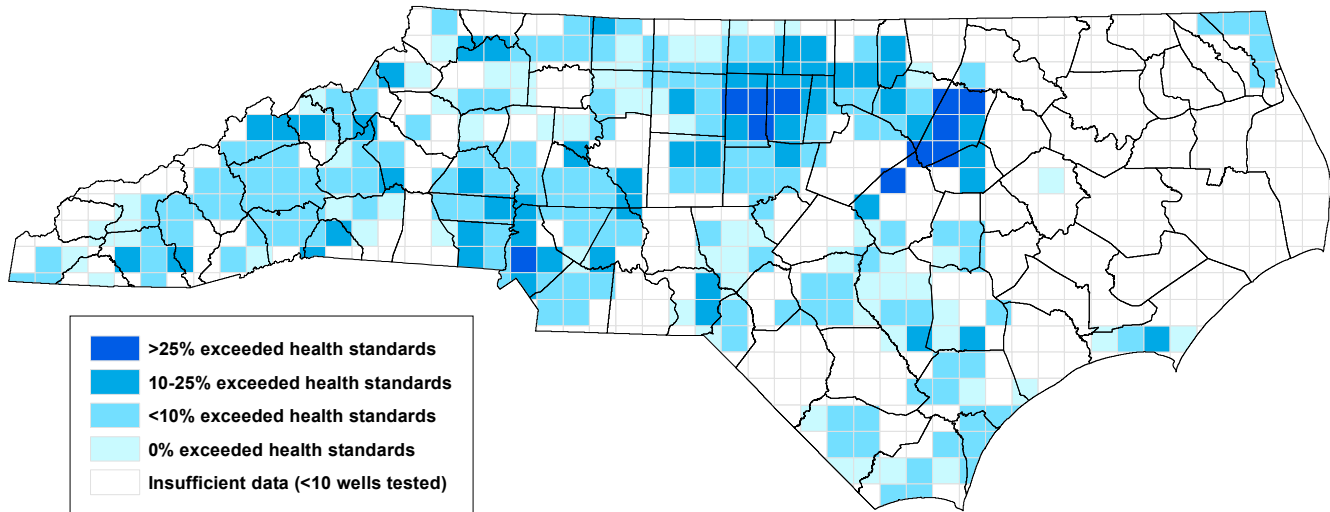
Use a certified lab to test your well water for zinc every two years, as part of the inorganic panel screen. Contact the private well program at your county health department to assist you with getting your water tested. Pricing of testing varies from county to county.

What if my zinc levels are high?

You can install a treatment system to reduce the levels of zinc in your private well. Installing a filtration treatment system can reduce the level of zinc in your well water.

You can also reduce your exposure by using bottled water or connecting to public water supply, if possible.

Percent of Private Wells Tested Exceeding State Standards for Zinc, 2011-2013



Where is zinc found in NC?

Zinc is found at low levels (0.05- 43 mg/L) throughout NC. **About 8%** of wells sampled for zinc in NC from 2011 to 2013 exceeded the N.C. Department of Environmental Quality groundwater standard (1 mg/L). Yet, there are several areas in NC with at least 10% of wells exceeding state standards. See map for areas with elevated zinc.

Where can I find more information about zinc and my well?

Visit the NC Division of Public Health's Private Well and Health Program website: <http://epi.publichealth.nc.gov/oeep/programs/wellwater.html>.

There you can find:

- Contacts for your county private well program
- Zinc in well water maps
- A guide for selecting a treatment system
- Other private well resources

You can also call the Private Well and Health Program at 919-707-5900.

Where did this information come from?

Agency for Toxic Substances and Disease Registry: www.atsdr.cdc.gov/toxfaqs/tfacts60.pdf

World Health Organization: www.who.int/water_sanitation_health/dwq/chemicals/zinc.pdf

National Sanitation Foundation: www.nsf.org/consumer-resources/water-quality/water-filters-testing-treatment/contaminant-reduction-claims-guide

King, J. C. The American journal of clinical nutrition *Zinc an essential but elusive nutrient* 2011: www.ncbi.nlm.nih.gov/pmc/articles/PMC3142737/pdf/ajcn9420679S.pdf

