

Mercury & PRIVATE WELLS



What is mercury?

Mercury is a metal that occurs naturally in rock, soil and water. Mercury can be categorized as either inorganic or organic mercury. Inorganic mercury in elemental form exists as a gray liquid, but in the environment, it is combined with other elements such as oxygen, chlorine, or sulfur to form a solid salt. Organic mercury compounds are referred to as methylmercury and are often found in aquatic settings. Both inorganic and organic mercury compounds are odorless.

Mercury is distributed into the air, water, and soil by the burning of fossil fuels (coal, oil, and natural gas), municipal solid waste, medical waste, or forest fires. Mercury is also used to produce some electronics, batteries, thermometers, and fluorescent lightbulbs.

How does mercury get into my private well water?

Mercury can get enter your private well from erosion of rocks underground or from industrial and agricultural activities, such as mining and smelting operations, or coal-fired power plants. The improper disposal of household products to soil, such as outdoor paints containing mercury, can also reach well water supplies. Historical mercury-based pesticides used on farms and orchards may leave high levels of mercury in the soil, which could transfer to well water since initial application.

How can mercury affect my health?

Both inorganic and organic mercury negatively affect the kidneys and nervous system, causing kidney damage, tremors, impaired vision, and impaired memory. Birth defects have also been linked to pregnant women exposed to high levels of methylmercury.

What level of mercury should I be concerned about?

The **U.S. Environmental Protection Agency (EPA)** developed a public drinking water standard of **2 micrograms of mercury per liter of water ($\mu\text{g}/\text{L}$)**. Public drinking water standards are based on public health protection and cost of treatment/testing at large utilities. The U.S. EPA standard was developed in 1992. **North Carolina established a more restrictive standard of 1 $\mu\text{g}/\text{L}$ in drinking water.**

What if my mercury levels are high?

You can install a treatment system to reduce the levels of mercury in your private well. Carbon or GAC treatment systems, installed at the point of entry should be used to reduce levels of mercury in your well water. Point of entry systems are recommended because they help mitigate mercury exposures that may occur through the dermal (skin) or inhalation (lung) routes while bathing, showering, washing, etc. in addition to oral exposures through drinking water.

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

How do I test for mercury in my private well?

Use a certified lab to test your well water for mercury every two years, as part of the NCDHHS, Division of Public Health's (NC DPH) recommended inorganic panel screen. Contact the private well program at your county health department to assist you with getting your water tested. Costs for testing varies from county to county.

Where is mercury found in North Carolina?

Mercury is found at varying levels (0 - 2 µg/L) throughout North Carolina. Only 0.03% of wells sampled for mercury in North Carolina from 2018-2019 exceeded the state standard (1 µg/L). See map for counties with elevated levels of mercury.

Where can I find more information about mercury 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
- Mercury in well water maps
- A guide for selecting a treatment system
- Other private well resources

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

Where did this information come from?

Agency for Toxic Substances & Disease Registry
www.atsdr.cdc.gov/toxfaqs/tfacts46.pdf

U.S. Environmental Protection Agency
www.epa.gov/mercury/basic-information-about-mercury

National Sanitation Foundation
www.nsf.org/consumer-resources/articles/contaminant-reduction-claims-guide

NC Department of Health and Human Services
https://epi.dph.ncdhhs.gov/oeep/a_z/mercury.html

NC Department of Environmental Quality
<https://deq.nc.gov/about/divisions/water-resources/water-quality-regional-operations/groundwater-protection/ground-water-quality-monitoring/private-well-water-quality>

Concentration of Mercury Detected in NC Private Well Water (µg/L), Average 2010

Mercury reported in Toxics Release Inventory (lbs.)

- 0.1 - 39
- 40 - 123
- 124 - 212
- 213 - 577
- 578 - 1,033

▲ National Priorities List sites reporting mercury

Concentration of mercury detected in private wells (µg/L)

- 0.25
- 0.26 - 0.35
- 0.36 - 0.50
- 0.51 - 1.0
- 1.1 - 2.0

Mercury MCL: 2 µg/L

Mercury can be present in drinking water from the erosion of natural deposits, discharges from refineries and factories, and runoff from landfills and croplands. Metallic mercury is used to produce chlorine gas and caustic soda, and is also used in some thermometers, dental fillings, and batteries.^{11,29}

[Health information about mercury.](#)

