# Well Water Contaminants in Avery County

| Contaminant | Drinking Water Standard | Private Well Water Test Results | | | | | |
|---|---|---|---|---|---|---|---|
| | | Total wells tested | Number of wells tested above standard | Percentage (%) of wells tested above standard | Minimum | Maximum | Average |
| ***Maximum Contaminant Level (MCL)*** | | | | | | | |
| Arsenic | *10* | 640 | 7 | 1.09% | 0.71 | 484 | 4.7 |
| Barium | *2000* | 532 | 0 | 0% | 70.71 | 1300 | 80.8 |
| Beryllium | *4* | 0 | - | - | - | - | - |
| Cadmium | *5* | 553 | 0 | 0% | 0.71 | 3.54 | 0.72 |
| Chromium | *100* | 532 | 0 | 0% | 7.07 | 20 | 7.11 |
| Copper | *1300* | 532 | 2 | 0.38% | 35.36 | 3130 | 63.35 |
| Lead | *15* | 640 | 30 | 4.69% | 3.54 | 147 | 5.38 |
| Mercury | *2* | 456 | 0 | 0% | 0.35 | 0.6 | 0.35 |
| Nitrate | *10000* | 418 | 3 | 0.72% | 707.11 | 18000 | 1331.75 |
| Nitrite | *1000* | 418 | 0 | 0% | 70.71 | 790 | 77.54 |
| Selenium | *50* | 532 | 0 | 0% | 3.54 | 12 | 3.55 |
| Uranium | *30* | 0 | - | - | - | - | - |
| ***NC 2L Groundwater*** | | | | | | | |
| Barium | *700* | 532 | 3 | 0.56% | 70.71 | 1300 | 80.8 |
| Boron | *700* | 0 | - | - | - | - | - |
| Cadmium | *2* | 553 | 2 | 0.36% | 0.71 | 3.54 | 0.72 |
| Chromium | *10* | 532 | 2 | 0.38% | 7.07 | 20 | 7.11 |
| Cobalt | *1* | 0 | - | - | - | - | - |
| Nickel | *100* | 0 | - | - | - | - | - |
| Zinc* | *1000* | 532 | 73 | 13.72% | 35.36 | 36000 | 694.35 |
| ***Health Advisory*** | | | | | | | |
| Iron* | *2500 (DEQ)* | 532 | 155 | 29.14% | 70.71 | 13000 | 576.22 |
| Manganese* | *300 (EPA)* | 640 | 78 | 12.19% | 21.21 | 2300 | 46.15 |
| Sodium | *20000 (EPA)* | 521 | 512 | 98.27% | 707.11 | 70000 | 6273.83 |
| ***State Health Goal*** | | | | | | | |
| Hexavalent Chromium | *0.07* | 0 | - | - | - | - | - |
| Thallium | *0.2* | 0 | - | - | - | - | - |
| Vanadium | *0.3* | 0 | - | - | - | - | - |

*Contaminant levels are measured in micrograms per liter (µg/L), which is equal to parts per billion (ppb). Note: Copper and Lead standards are called "Action Levels".*

**The EPA also has a nuisance standard for aesthetic effects caused by these contaminants, however, this table uses the health-based standard.*

**Maximum Contaminant Level (MCL)**: The highest level of a contaminant that the US EPA allows in drinking water supplied by public utilities. An MCL takes into consideration the best available treatment technology and associated costs along with health risk. More information about MCL standards: https://bit.ly/epa-MCL.

**NC 2L Groundwater**: Set by NC DEQ as the highest level of a contaminant allowed in groundwater, which may be tolerated without creating a threat to human health or which would otherwise make the groundwater unsuitable for its intended best usage, such as a drinking water. Note: Barium, Cadmium, and Chromium have different standards under state and federal regulations; both are included in this table. More information about NC 2L Groundwater standards: https://bit.ly/nc2Lgw.

**Health Advisory**: In the absence of federal standards, the US EPA and state agencies can issue advisories to communicate the level of a contaminant in drinking water at which harmful health and/or aesthetic effects are not anticipated to occur over a specific period of time.

**State Health Goal**: In the absence of state and federal standards, level established by NC DHHS to communicate to private well users the risk associated with using their well water.

*For more information visit:*
*https://sph.unc.edu/superfund-pages/for-communities/*

Eaves LA, Keil AP, Rager JE, George A, Fry RC. Analysis of the novel NCWELL database highlights two decades of co-occurrence of toxic metals in North Carolina private well water: Public health and environmental justice implications. Sci Total Environ. 2022 Mar 15;812:151479. doi: 10.1016/j.scitotenv.2021.151479. Epub 2021 Nov 9. PMID: 34767890.

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