

Well Water Contaminants in Orange 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	7262	91	1.25%	0.71	49	2.78
Barium	2000	3553	0	0%	70.71	1500	79.34
Beryllium	4	14	0	0%	1.41	2.12	1.62
Cadmium	5	3826	9	0.24%	0.71	225	1
Chromium	100	3553	2	0.06%	0.71	120	7.18
Copper	1300	3582	11	0.31%	7.07	11100	64.11
Lead	15	7286	192	2.64%	3.54	863	5.54
Mercury	2	3146	0	0%	0.35	1	0.35
Nitrate	10000	2848	10	0.35%	707.11	38000	1059.4
Nitrite	1000	2848	0	0%	70.71	740	72.74
Selenium	50	3553	0	0%	3.54	33	3.66
Uranium	30	3	0	0%	0.71	0.71	0.71
NC 2L Groundwater							
Barium	700	3553	5	0.14%	70.71	1500	79.34
Boron	700	10	0	0%	70.71	70.71	70.71
Cadmium	2	3826	25	0.65%	0.71	225	1
Chromium	10	3553	17	0.48%	0.71	120	7.18
Cobalt	1	12	2	16.67%	0.71	7.07	1.77
Nickel	100	10	0	0%	7.07	7.07	7.07
Zinc*	1000	3548	688	19.39%	35.36	41000	908.34
Health Advisory							
Iron*	2500 (DEQ)	3557	768	21.59%	70.71	260000	673.07
Manganese*	300 (EPA)	7250	2165	29.86%	7.07	10300	111
Sodium	20000 (EPA)	3304	3298	99.82%	707.11	1300000	21778.57
State Health Goal							
Hexavalent Chromium	0.07	35	13	37.14%	0.04	0.84	0.09
Thallium	0.2	14	4	28.57%	0.01	1.41	0.44
Vanadium	0.3	10	7	70%	0.14	1.7	0.7

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.

This publication was funded by a grant from the National Institute of Environmental Health Sciences (P42ES031007).

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](https://doi.org/10.1016/j.scitotenv.2021.151479). Epub 2021 Nov 9. PMID: 34767890.

