

Reading Your Water Analysis Report



Lab reports are the lists of codes and numbers that show the results of your water testing. Here's a quick guide to understanding the different numbers and labels you may see on yours.

IMPORTANT: This sheet is for only for educational purposes, and there are many other factors around your well and water that aren't covered here. You should talk to a qualified water professional (such as your laboratory's licensed interpreter) before making any decisions or changes to your well or home water system.

All private well water lab reports from certified laboratories will generally have the same information, though sometimes in a different order or under slightly different names.

The example here is from the Rhode Island State Health Laboratories.

1 Analytical Method	2 Test	3 Test Code	4 Flag	5 Result	Units	6 Reporting Limit	Analysis Date	Approved By
300.0	CHLORIDE	WL20		10.5	mg/L	0.20	01/03/2019	RW
4500F-C	FLUORIDE	WL21		1.66	mg/L	0.20	12/28/2018	RW
353.2	NITRITE	WL56		< 0.02	mg/L	0.02	12/21/2018	RW
200.8	LEAD	WL63		< 0.001	mg/L	0.001	12/26/2018	RW

- 1 The **Method** column shows which EPA-approved steps the lab used for each test. Some labs will put these codes on a separate page.

NOTE:

Certified labs *must* use EPA-approved methods. If your report doesn't have these codes on it, the report may not be from a certified water testing lab.

- 2 The **Test** (or sometimes **Parameter**) column lists each specific thing you tested for.
- 3 The **Test Code** column is that laboratory's own code system, if they have one.
- 4 The **Flag** (or sometimes **High**) column may have a marker show up if your result for that test is over the EPA's health limit or recommended amount.
- 5 The **Result** column shows how much was in your water sample. Be sure to look at the units when comparing them to the health limits - 1 milligram (mg/L) equals 1,000 micrograms (ug/L) and that makes a big difference!

Sometimes you might see the letters 'ND' for 'Not Detected' or a number with a 'less than' sign in front (like in the example). This means that the amount was too small to be seen by the equipment, or possibly not there at all.

Some tests, like Total Coliform Bacteria and E.coli, will only show up as Present/Positive or Absent/Negative. Others might have special unit labels on them, like pH. If you don't know what they are, the laboratory can explain them to you.

- 6 The **Reporting Limit** column tells you the smallest amount of something that the lab equipment can see. This is *not* your result or the health limit.

Other pages in the report

There are often other pieces of paper that come with your results. Some examples you might see:

- The Chain of Custody form shows exactly who handled your sample and when. This makes sure that there were no handling mistakes and all holding time limits were followed.
- If a licensed sampler from the lab came to take your water, they may also include the sample collection sheet for your records.
- Some labs will have a separate page that explains what their labels and symbols mean. This is good to read, since all labs' reports will look at least a little different.
- If you tested for Volatile Organic Compounds (VOCs), you may also get a page that has a few chemicals labeled 'surrogates' on it. These aren't results from your water sample. They just look and act like the real VOCs, so the labs use them for comparison during analysis.

What it all means

One way to read your report is by comparing your numbers to the health limits and recommended levels (which are set by the EPA and State, provided on the next few pages). Every well and system is unique, however, so what's 'normal' for your water might not always fit the ranges for some tests.

There are many tests that look for *clues* instead - things like pH, hardness, or chloride. There are no health limits for these, but they can help you do things like find the source of a problem or choose the right treatment system.

Also, certified laboratories will have someone on staff called an Interpreter whose job it is to talk to you about your results. If you have questions, call your lab and ask to speak to them.

Next steps

If you have talked to the lab's Interpreter about your results and are thinking about treatment, the Center for Drinking Water Quality can provide resources and talk with you about options.

401-222-6867 | DOH.RIDWQ@health.ri.gov | health.ri.gov/water/for/privatewellowners/

Primary Standards

There are two sets of water quality standards. Primary Standards are for things associated with health risks, and Maximum Contaminant Levels (MCLs) are the amount where there may be health effects. RIDOH recommends looking into treatment when your results are more than half of that amount.

MICROBIOLOGICAL

Total Coliform Bacteria	'ABSENT' or 0
Fecal Coliform Bacteria (<i>E.coli</i>)	'ABSENT' or 0

INORGANIC CHEMICALS, mg/L

Antimony	0.006	Cadmium	0.005	Mercury	0.002
Arsenic	0.01	Chromium (Total)	0.1	Nitrate	10
Asbestos	7 MFL	Cyanide	0.2	Nitrite	1
Barium	2.0	Fluoride	4.0	Selenium	0.05
Beryllium	0.004	Lead	0.015	Thallium	0.002

ORGANIC CHEMICALS, mg/L

Alachlor	0.002	1,2-Dichlorobenzene	0.6	Dioxin (2,3,7,8-TCDD)	3 PPQ*
Atrazine	0.003	1,4-Dichlorobenzene	0.075	Diquat	0.02
Benzene	0.005	1,2-Dichloroethane	0.005	Endothall	0.1
Benzo(a)pyrene	0.0002	1,1-Dichloroethene	0.007	Endrin	0.002
Carbofuran	0.04	cis-1,2-Dichloroethene	0.07	Ethylbenzene	0.7
Carbon Tetrachloride	0.005	trans-1,2-Dichloroethene	0.1	Ethylene Dibromide (EDB)	0.00005
Chlordane	0.002	1,2-Dichloropropane	0.005	Glyphosate	0.7
Chlorobenzene	0.1	Di(2-ethylhexyl) adipate	0.4	Heptachlor	0.004
2,4-D	0.07	Di(2-ethylhexyl) phthalate	0.006	Heptachlor Epoxide	0.002
Dalapon	0.2	Dichloromethane	0.005	Hexachlorobenzene	0.001
1,2-Dibromo-3-chloropropane	0.0002	Dinoseb	0.007	Hexachlorocyclopentadiene	0.05

TABLE CONTINUED ON NEXT PAGE ▼

* 1 PPQ (part per quadrillion) equals 0.000000001 mg/L.

ORGANIC CHEMICALS, mg/L (continued)

Lindane	0.0002	Simazine	0.004	1,2,4-Trichlorobenzene	0.07
Methoxychlor	0.04	Styrene	0.1	1,1,1-Trichloroethane	0.2
MTBE	0.04	Tetrachloroethene	0.005	1,1,2-Trichloroethane	0.005
Oxamyl (Vydate)	0.2	Toluene	1	Trichloroethene	0.005
Polychlorinated Biphenyls (PCBs)	0.0005	Toxaphene	0.003	Vinyl Chloride	0.002
Pentachlorophenol	0.001	2,4,5-TP (Silvex)	0.5	Xylenes (Total)	10
Picloram	0.5				

RADIOCHEMISTRY

Alpha Particles	15 pCi/L	Combined Radium 226/228	5 pCi/L
Beta Particles & Photon Emitters	4 millirem/yr	Uranium	30ug/L

Secondary Standards

The Secondary Standards are also called 'Nuisance Standards.' These are things that do not typically cause major health effects (unless advised by your doctor) but may do damage to your plumbing or affect the taste and color of your water.

SECONDARY REGULATIONS

Aluminum	0.2 mg/L	Iron	0.3 mg/L	Conductivity*	1,500
Chloride	250 mg/L	Manganese	0.05 mg/L	Sulfate	250 mg/L
Color	15 CU	Odor	3 TON	Total Dissolved Solids	500 mg/L
Copper	1.0 mg/L	pH	6.5 - 8.5	Turbidity	2.0
Fluoride	2.0 mg/L	Silver	0.1 mg/L	Zinc	5.0 mg/L
Foaming Agents	0.5 mg/L	Sodium	250 mg/L		

COMMON RANGES, OTHER

Alkalinity	100 - 200
Hardness**	60 - 120

* Also sometimes listed as 'Specific Conductance.'

** Hardness is tied to calcium levels, so this might be Calcium Hardness or Hardness with calcium separately.