Fitzwilliam:
What's in Your Water?

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NEW HAMPSHIRE
DEPARTMENT OF
Environmental
Services

OVERVIEW

- Private wells in New Hampshire
- Common contaminants with potential health impacts
- Testing recommendations—and how to test your water
- Be *Well* Informed
- Considering water treatment
- Q&A

Private Wells: The Rundown

Main source of drinking water for approximately 46% of New Hampshire's population, more than 500,000 people.

No statewide testing or treatment requirements

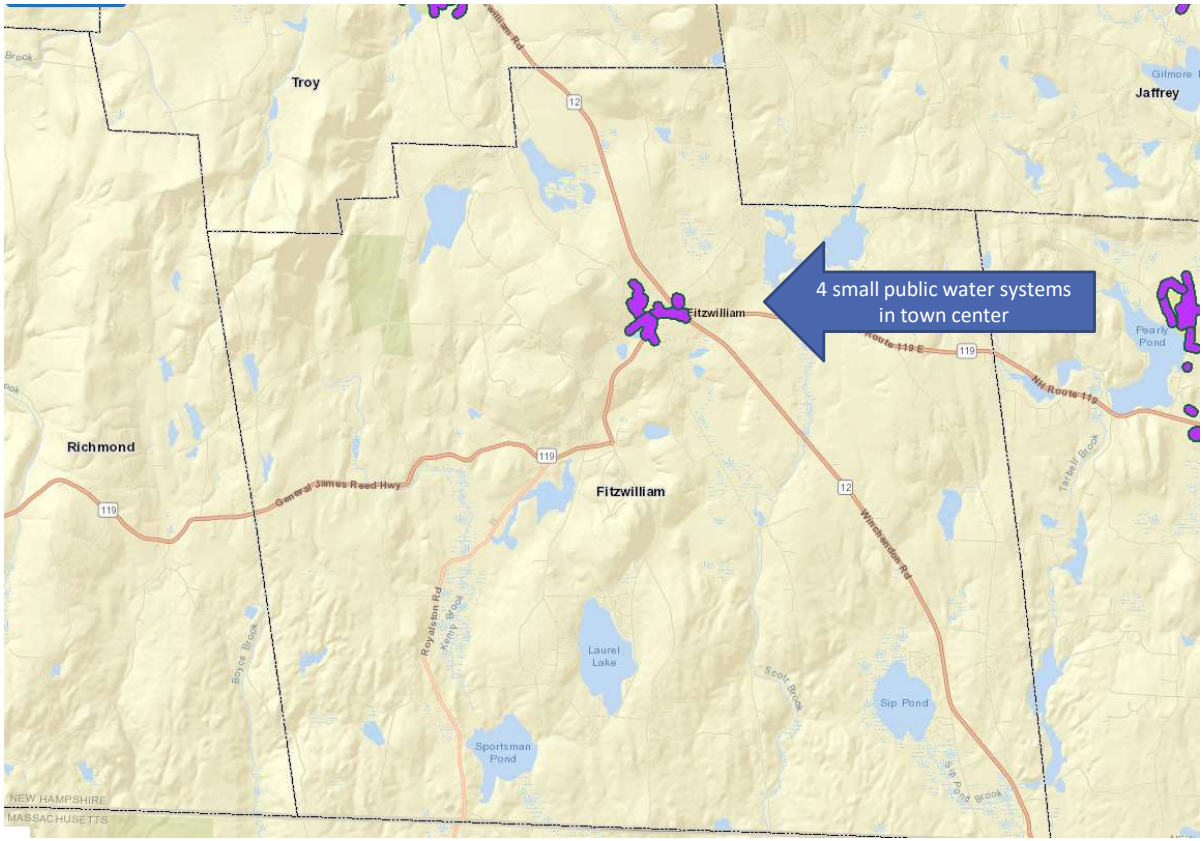
Some municipalities require testing

Fitzwilliam Private Well Users

Population ~2,400

About 200 on regulated public water systems

About 2,200 residents drinking from private wells

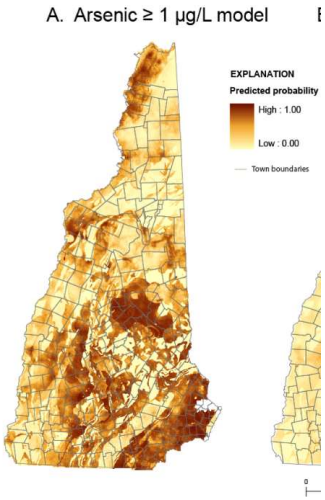


Drinking water contaminants—human-caused and natural

Human-caused contaminants in groundwater in some areas (PFAS & MtBE)

Human-caused contaminants leaching into water from plumbing (lead & copper)

Natural contaminants in groundwater in some areas (arsenic, uranium & radon)



Common risk perception mis-match

Human caused pollutants *feel* scarier, have more awareness & media coverage

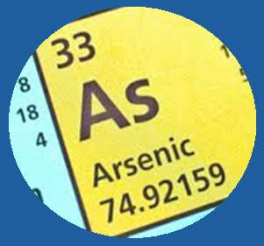
Natural contaminants are often more common, but we don't always know about them, fear them, or take actions to protect ourselves from them

Arsenic

Arsenic is a metalloid naturally found in soil and bedrock

1

Impossible to see, smell, or taste



2

Long term exposure increases risk of certain cancers, diabetes, heart disease and skin lesions; short term exposure among pregnant women associated with impact to fetal growth and increased infections in the first year of life of infants.

3

Common in New Hampshire Bedrock

Uranium

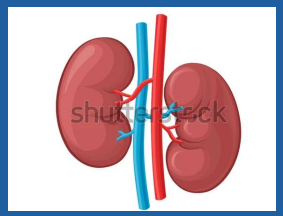
Uranium is a metal naturally found soil, rock and water and in some places extracted for nuclear fuel

1

Impossible to see, smell, or taste

2

Prolonged exposure could affect the kidneys or increase risk of certain cancers



3

Common in New Hampshire Bedrock

Manganese

Manganese is a metal found in soil and some foods

1

Impossible to see, smell, or taste (though may leave black staining in sinks)

2

An essential nutrient, but too much over time could cause neurological effects, particularly for infants, as their bodies can't eliminate excess amounts

3

Common in New Hampshire soil and bedrock

Lead

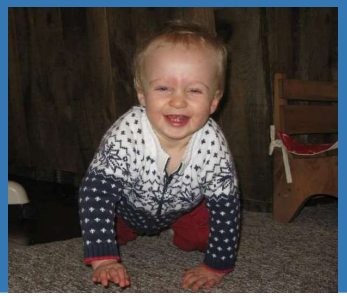
Naturally occurring in small amounts in the Earth's crust and was commonly used for many things including gasoline, plumbing materials, and paints

1

Impossible to see, smell, or taste

2

Behavior and learning problems, lowered IQ, hyperactivity, slowed growth, hearing problems and anemia in children; lead can cause reduced fetal growth and premature birth.



3

Commonly found in home plumbing. Corrosive water can cause it to leach from pipes while sitting stagnant

E. Coli

A bacteria found in the fecal matter of mammals, including humans

1

Impossible to see, smell, or taste

2

Diarrhea, vomiting, cramps, nausea, headaches, fever, fatigue. Infants, children, elderly people, and people with weakened immune systems are more likely to get sick or even die from pathogens in drinking water.

3

More common in poorly constructed dug wells and springs.

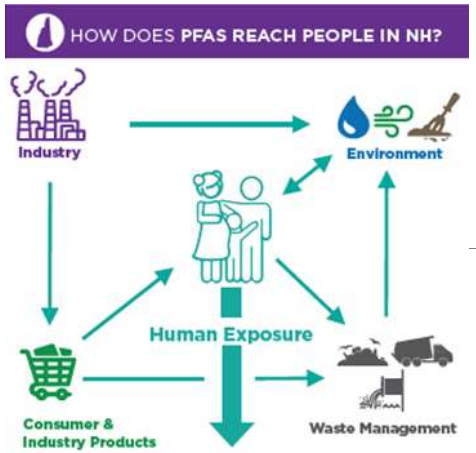


Image: Dartmouth

PFAS

Per- and poly-fluoroalkyl substances. Human-made chemicals developed to make substances water resistant or slippery. Many pathways to get in your body, including through your drinking water.

1

Impossible to see, smell, or taste

2

Interfere with:

- **the body's hormones**
- **the ability to fight infection**
- **growth and development in children**

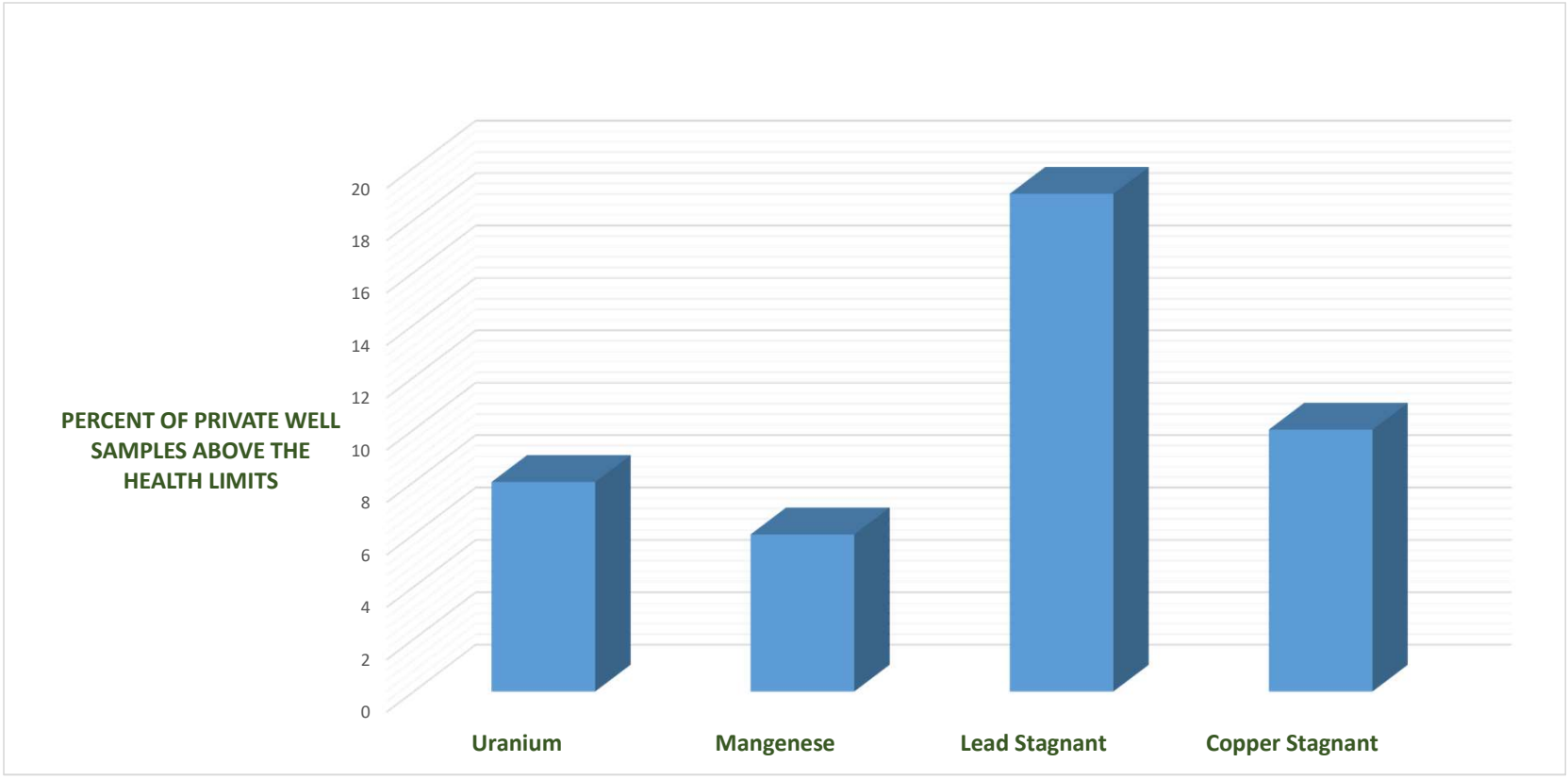
Increase risk of:
high cholesterol
thyroid disorders
certain types of cancer

3

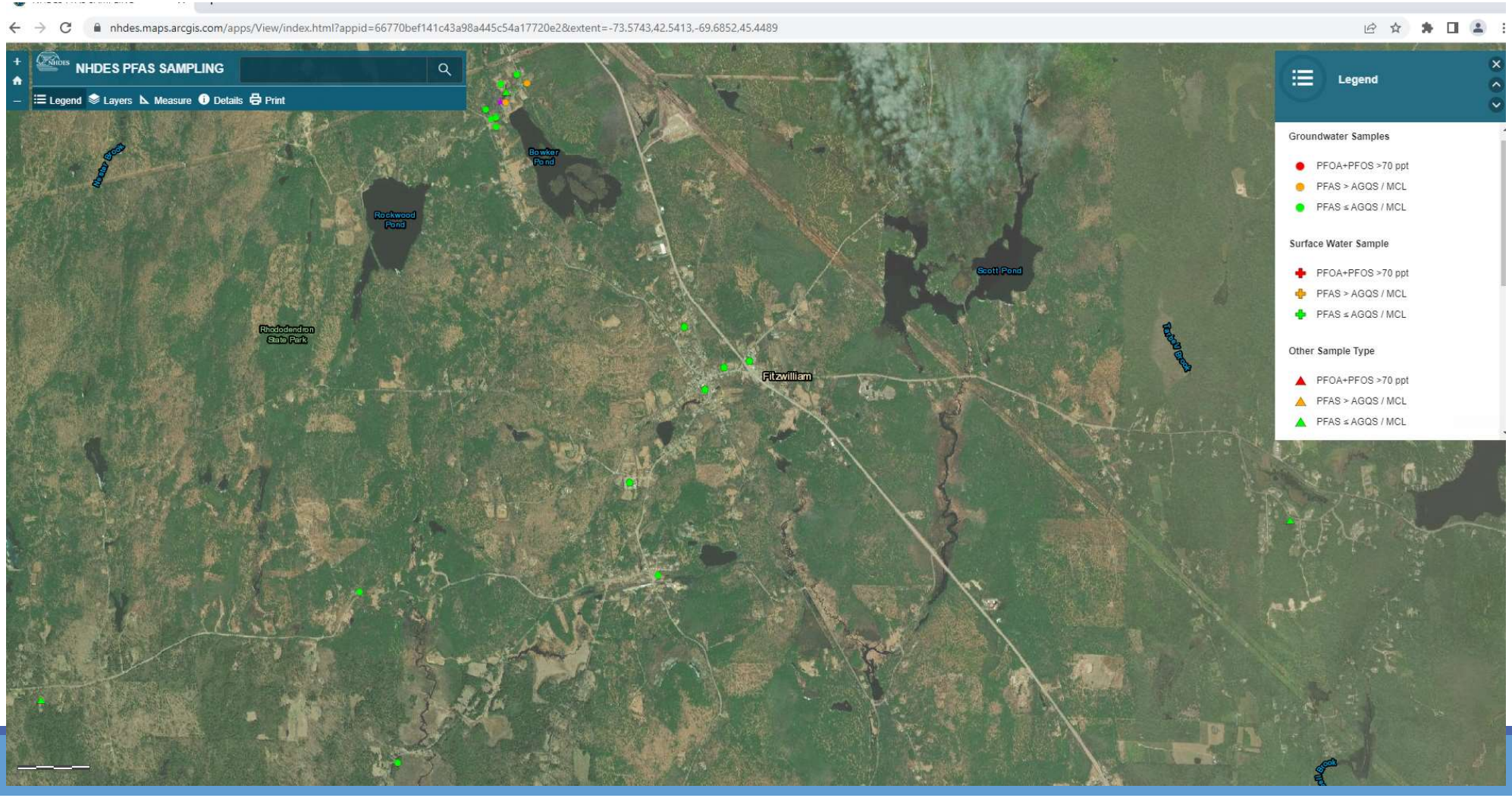
Adapted for many consumer products and are now common drinking water contaminants throughout the United States.

Percent of private well samples over the health limits in Fitzwilliam

(based on appx 40 samples analyzed by NH Public Health Lab)



View NHDES PFAS sampling on ‘NH PFAS Investigation’ webpage



Recommendations

- Test your well for NHDES' recommended list of contaminants
- Use NHDES ***Be Well Informed*** website to interpret results
- Consider treatment if you have contaminants above health limits
- Contact treatment vendors – use your ***Be Well Informed*** report
- Maintain your system and retest your water

When and What to Test

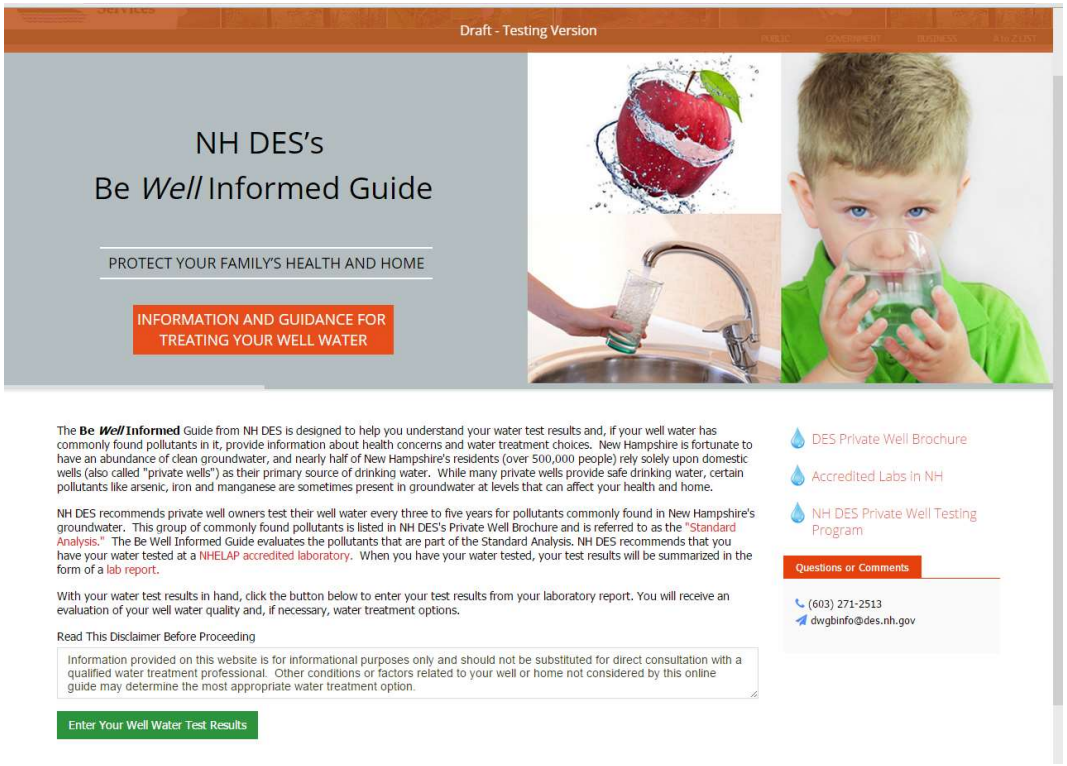
NHDES Recommendations for Private Well Testing	
Private Well *Users*	**"NH Well Water Test for *Home Buyers*"**
Test every 3 to 5 years (except for bacteria and nitrate, which are recommended yearly)	**Test during the inspection period as specified in contract**
Arsenic Bacteria (Total Coliform and E. coli) Chloride Copper* Fluoride Hardness Iron Lead* Manganese Nitrate/Nitrite pH Radon** Sodium Uranium	
Other chemicals depending on circumstances* **	

Other times to test:

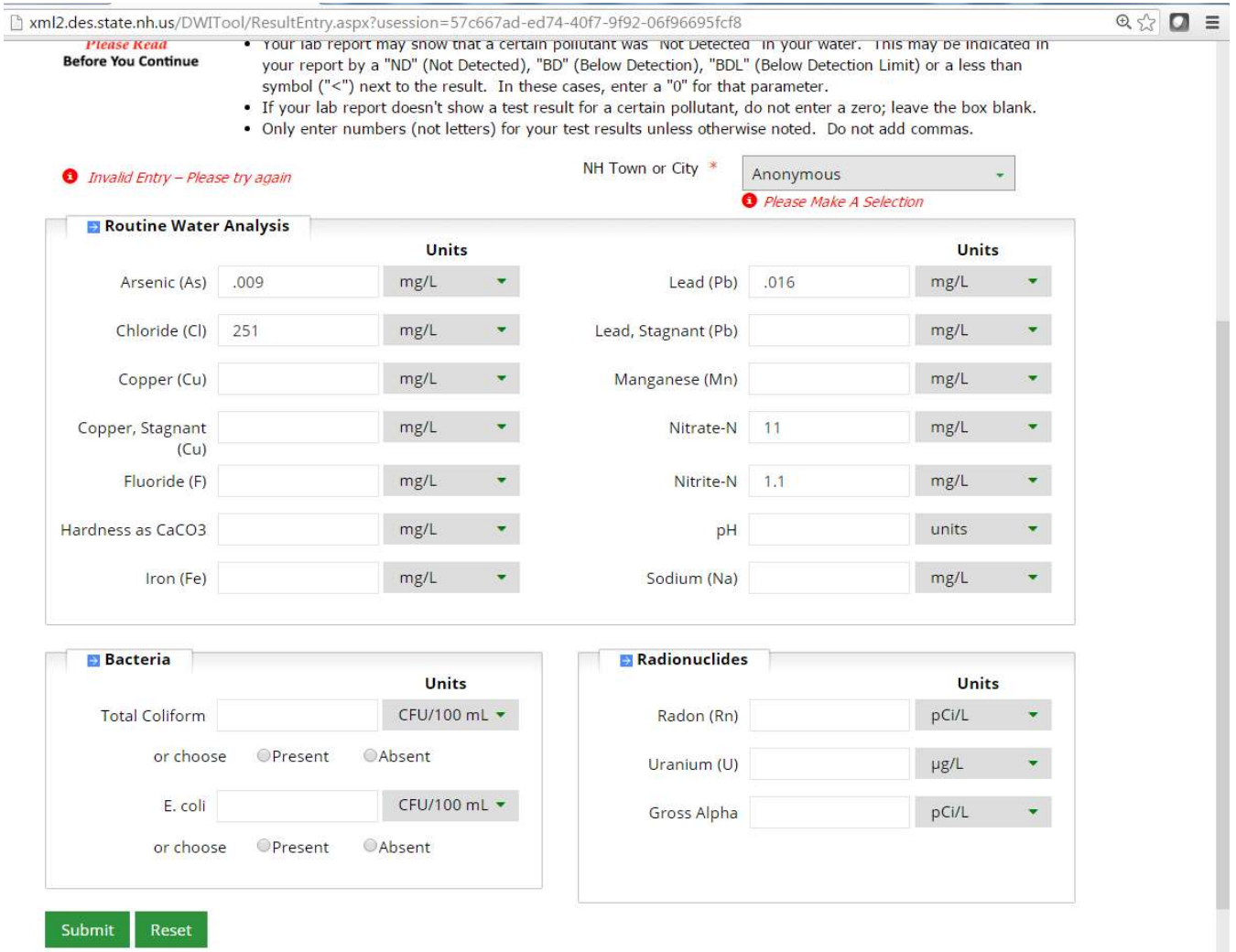
- Buying / selling your home
- If the well has flooded
- Construction blasting nearby
- If you notice a change in the color, taste or smell of your water

NHDES Be Well Informed Web Tool

- Interpretation of lab results
- Risks to health
- Treatment guidance

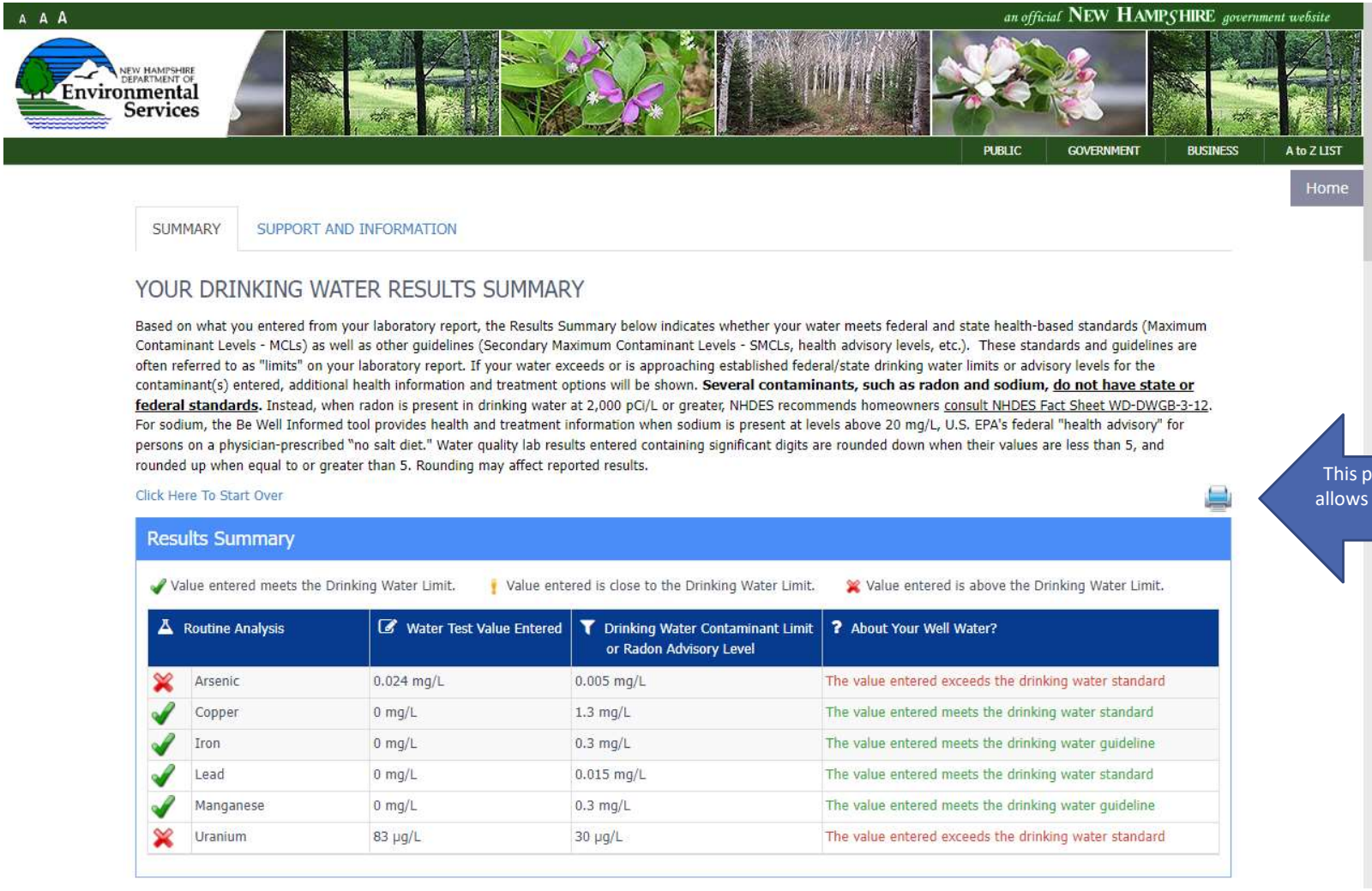


1. Get your lab report.
2. Choose a town, or anonymous
3. Enter results for each contaminant
4. Make sure you've selected the correct unit for each contaminant
5. Hit 'submit'



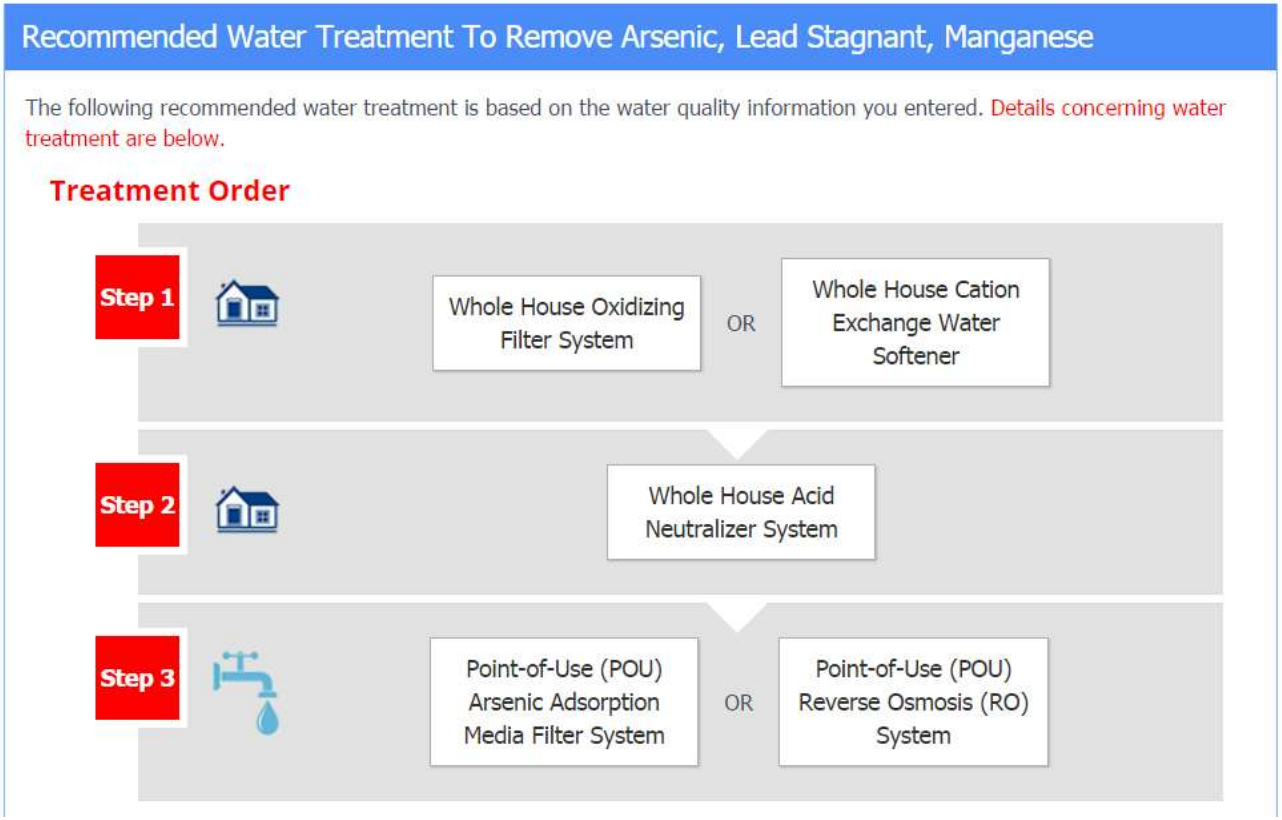
Printable Web App Report:

Part 1: Results Summary

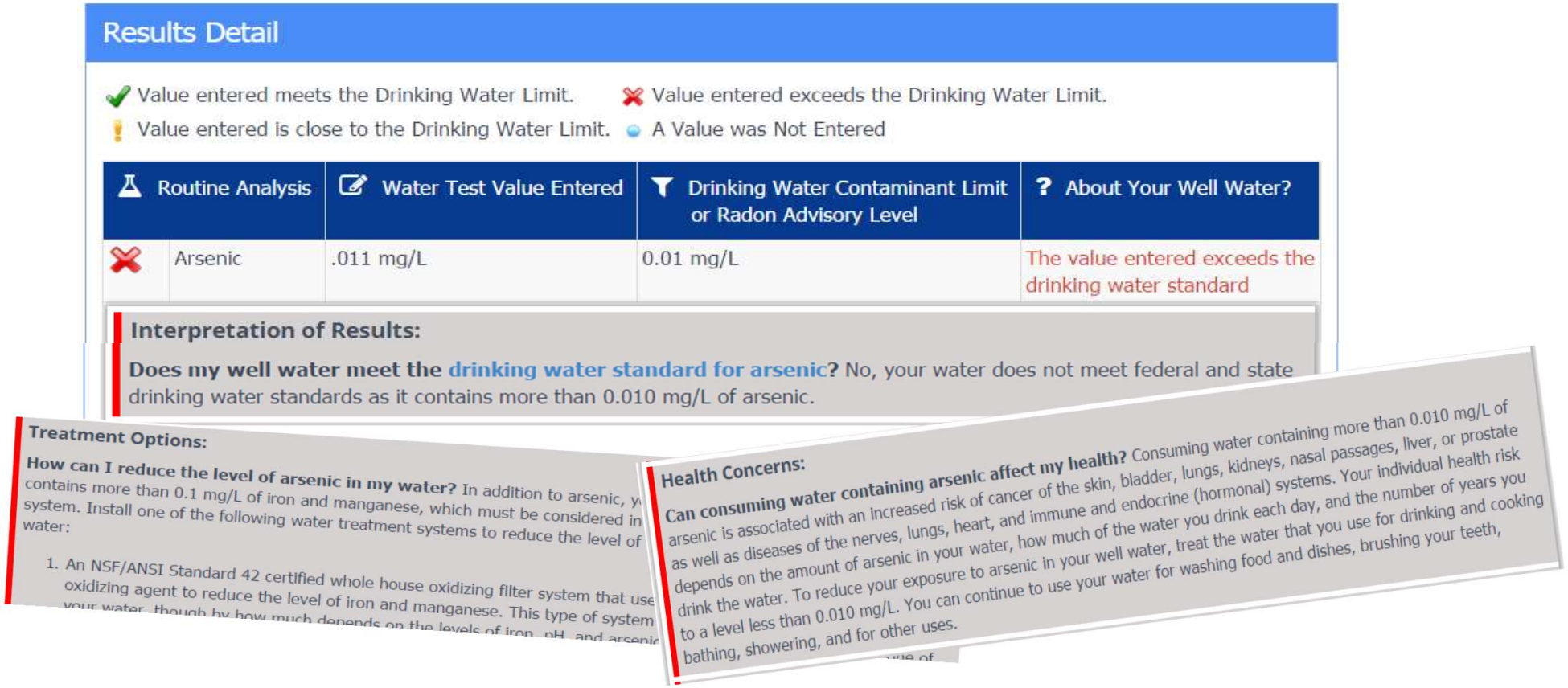


This printer icon also allows you to save as a pdf

Part 2: Treatment



Part 3: Interpretation, Health, Treatment



Results Detail

✔ Value entered meets the Drinking Water Limit. ✖ Value entered exceeds the Drinking Water Limit.

! Value entered is close to the Drinking Water Limit. ● A Value was Not Entered

Routine Analysis	Water Test Value Entered	Drinking Water Contaminant Limit or Radon Advisory Level	About Your Well Water?
✖ Arsenic	.011 mg/L	0.01 mg/L	The value entered exceeds the drinking water standard

Interpretation of Results:

Does my well water meet the drinking water standard for arsenic? No, your water does not meet federal and state drinking water standards as it contains more than 0.010 mg/L of arsenic.

Treatment Options:

How can I reduce the level of arsenic in my water? In addition to arsenic, y
contains more than 0.1 mg/L of iron and manganese, which must be considered in
system. Install one of the following water treatment systems to reduce the level of
water:

1. An NSF/ANSI Standard 42 certified whole house oxidizing filter system that use
oxidizing agent to reduce the level of iron and manganese. This type of system
your water, though by how much depends on the levels of iron, pH, and arsenic

Health Concerns:

Can consuming water containing arsenic affect my health? Consuming water containing more than 0.010 mg/L of arsenic is associated with an increased risk of cancer of the skin, bladder, lungs, kidneys, nasal passages, liver, or prostate as well as diseases of the nerves, lungs, heart, and immune and endocrine (hormonal) systems. Your individual health risk depends on the amount of arsenic in your water, how much of the water you drink each day, and the number of years you drink the water. To reduce your exposure to arsenic in your well water, treat the water that you use for drinking and cooking to a level less than 0.010 mg/L. You can continue to use your water for washing food and dishes, brushing your teeth, bathing, showering, and for other uses.

Treatment

Home Water Treatment – Point of Use (POU)

Treats water at a single tap.

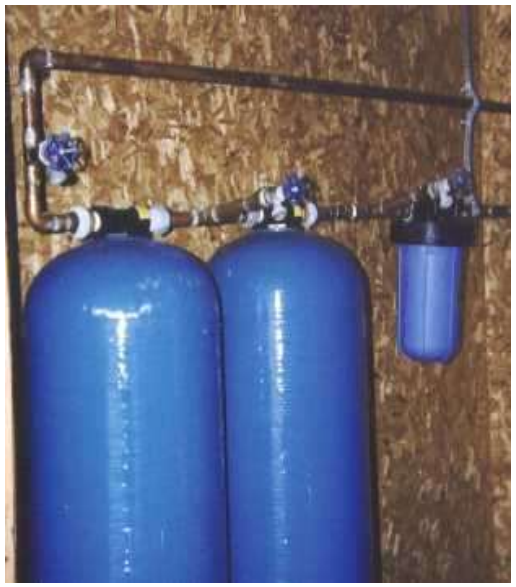
This is an example of an activated carbon filter.

In general, NHDES Recommends Using Point of Use for:

- Arsenic
- Uranium
- PFAS
- Fluoride

Home Water Treatment – Whole-House

Treats all the water entering the house and is typically installed in the basement.



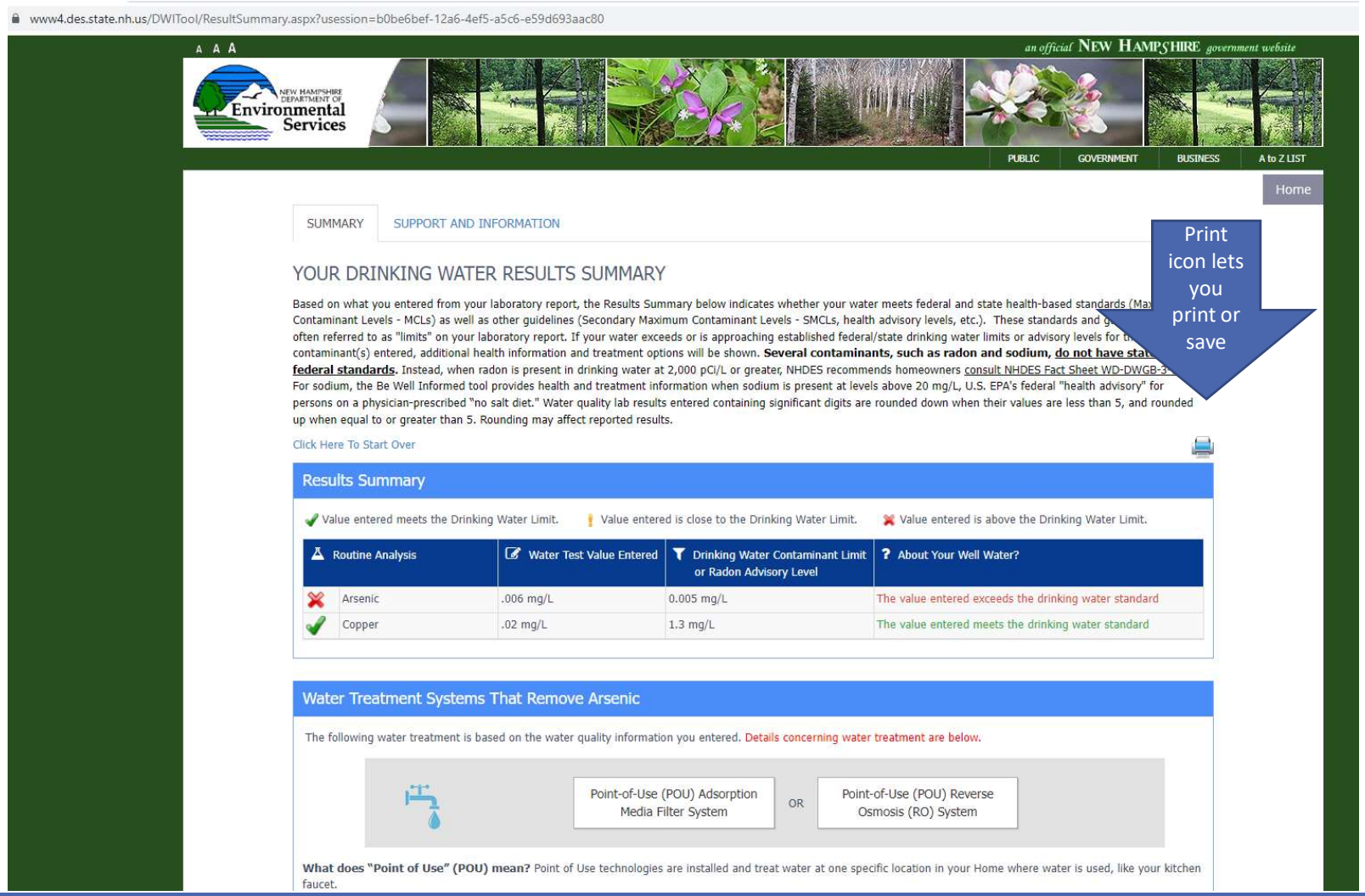
In general, NHDES Recommends Using Whole House on:

- Radon
- Staining - Iron, Manganese
- Corrosivity – Lead, Copper
- Odor - Sulfide
- Scaling- Hardness

Home Water Treatment – Filter Pitchers

- Check for NSF certification for specific contaminants—many pitchers will not lower arsenic, uranium, other harmful contaminants
- ZeroWater pitcher a good option

With any treatment, make sure it's certified to treat the contaminant you are concerned about



Remember to run your lab results through **Be *Well* Informed**, either print or save, and have on hand when you talk to water treatment companies!

A bit about bottled water….

- A good temporary solution if your lab results reveal harmful contaminants
- Not recommend as a permanent solution due to plastic waste & cost over time
- Bottled water companies aren't as heavily regulated as even public water systems in NH—for example: arsenic
- Your lab results may indicate water quality that is better than the standards bottled water companies are held to

You can call or e-mail us with testing or treatment questions

NHDES Drinking Water & Groundwater Bureau:
603-271-2513, welltest@des.nh.gov

NHDES Private Well webpage:
https://www.des.nh.gov/water/drinking-water/private-wells

Be Well Informed can be found at:
https://www4.des.state.nh.us/DWITool/Welcome.aspx
Or by searching for NHDES Be Well Informed

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Questions??????