

## Dear Sampler,

Thank you for participating in “Data to Action: A secondary school-based citizen science project to address arsenic contamination of well water” (aka All About Arsenic). This project is federally funded and connects schools, students, and their communities with partners at the MDI Biological Laboratory, Dartmouth College, and local colleges and universities. Samplers engage in monitoring well water for contaminants including arsenic; students use the data to learn scientific and data literacy skills and share that knowledge with their communities.

Why arsenic? Arsenic is the number one contaminant of concern for human health worldwide. Long term exposure to arsenic may lead to a host of health issues, including heart disease; cancer of the bladder, lung, liver, prostate, and skin; and diabetes. Public water systems must meet standards set by the Environmental Protection Agency (EPA) that limit the levels of contaminants in drinking water, called Maximum Contaminant Levels (MCLs). The federal MCL for arsenic is 10 ug/L. In 2019, the state of New Hampshire lowered the New Hampshire MCL to 5 ug/L. Though public drinking water is regulated, private wells are not. Maine and New Hampshire have among the highest per-capita reliance on private wells for drinking water in the United States (Maine: 56% and New Hampshire: 46%). Approximately 10% of Maine wells and 20% of New Hampshire wells have levels of arsenic above the MCL, yet testing rates are low.

### About the sampling process

- Register your water sample through the All About Arsenic website or the paper datasheet included in your sampling packet.
- Collect one 50 mL tube of water from your home faucet (see sampling protocol).
- Ensure your sample is returned to the person/school leading the project.
- Your sample will be sent to the Dartmouth Trace Elements Analysis Core for analysis.
- Results will be available 6-8 weeks after your sample is turned in.

You may be invited to participate in an additional study as well. The Jayasundara Lab at the University of Maine is working to develop an environmental health index that will help determine the toxicity of drinking water. In order to refine their environmental health index model, the lab is interested in working with well water samples known to have environmental contaminants such as arsenic. At the teacher’s discretion, some participants will collect samples in duplicate; one sample will go to the Trace Element Analysis Core at Dartmouth and one sample will go to the Jayasundara Lab and be used in bioassays.

If you are participating in the environmental health index study, you will:

- Receive an additional 120 mL sample container. The label is identical to the one on your 50 mL sample tube.
- Fill this container following the sampling protocol.
- Return the sample to the person/school leading the project.

### What should I do next?

Your project leader let you know when your test results are available online. **Results will be available 6-8 weeks after your sample is turned in.** You can go to [allaboutarsenic.org](http://allaboutarsenic.org) and type

your sample number in the search bar on the right to find your data. As a reminder, your sample number is located on the magnet you received in your sample packet. Please note that the only way to search for your record is with your sample number (see privacy section below).

Should your test results reflect a reading above the Maximum Contaminant Level, please know that there are a variety of possible reasons why, many resources to help you understand and deal with your results, and steps you can take to improve your water quality. The resources and links on [All About Arsenic](#) under “Sampler Resources: FAQs” are a great place to start ([www.allaboutarsenic.org/faqs/](http://www.allaboutarsenic.org/faqs/)). If you have test results above the Maximum Contaminant Level for any contaminant OR have not conducted a comprehensive well water test, including bacteria, in the last three years, please contact one of the many certified commercial labs in your state to arrange another test.

*Please Note: The Dartmouth laboratory that is testing water samples specifically related to this project produces reliable data for research purposes, but it is not a certified water quality testing lab.*

### What about my privacy?

The data you observe are on a public citizen science website called Aneccdata.org. Though your individual results are being added to a collection of data from this project to better understand arsenic issues and to help students work with data, we have made sure no individual data can be identified. When you create an account on Aneccdata.org and register your sample in the All About Arsenic project, **you are the only person who can see personally identifiable information such as your name, your address, and your preferences for sharing data.** Students analyzing data will only be able to see well information, such as the type of well and if the sample was filtered or not, and your results. In addition, we have reduced the location precision on the publicly available map so no one will be able to link your results to your name or location. Questions? Contact Program Coordinator Anna Farrell at [afarrell@mdibl.org](mailto:afarrell@mdibl.org).

Thank you for your participation!



Jane Disney, Ph.D.  
MDI Biological Laboratory  
Principal Investigator

Please sign and return the permissions below to your project leader/school:

- I understand I am involved in an arsenic monitoring project that is part of the science curriculum of participating schools.
- I understand the project needs information about my well, such as well type and location (which will be publicly generalized), to participate. This information will help students ask and answer questions about well water quality.
- I understand that any personally identifying information I share will be kept confidential.
- I understand my sample results will be available on Anecdata's All About Arsenic project and that it's my responsibility to check my results.

Check the box if you agree to the following permissions. Note that you will receive your well water results regardless of your answer.

- I agree that researchers from College of the Atlantic in Bar Harbor, Maine may use my well water data to create interpolated, scientific maps that will be used for community and scientific discussions. These maps will not display my home address, nor will they show any identifying features that may expose my identity or location.
- I agree that researchers from University of Maine may use some of my well water to develop an environmental health index.

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Name

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Signature

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Date

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Sample Number

\_\_\_\_\_  
School