**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 funded through the National Institute of General Medical Sciences and connects schools in Maine, New Hampshire, and North Carolina and their communities with partners at the MDI Biological Laboratory, Dartmouth College, and the University of North Carolina at Chapel Hill Superfund Research Program, and scientist partners from local colleges and universities. Students take on the role of citizen scientists when monitoring their well water for contaminants including arsenic; they will use the data to gain scientific and data literacy skills and learn science communication skills to share their knowledge with their communities.

According to the Agency for Toxic Substances and Disease Registry, arsenic is the number one contaminant of concern for human health in the US. Long term exposure to water with 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 their 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 federal MCL. Approximately one in four North Carolina residents rely on private wells, however, the state is 4th highest in the nation for wells exceeding the federal arsenic MCL. Despite these statistics, testing rates in all the study areas remain low.

## **About the sampling process**

* Register your water sample through the All About Arsenic website or paper datasheet included with your sample tube. Don’t forget the permissions form!
* Collect one 50 mL tube of water from your home faucet (see attached instructions).
* Assure your sample is returned to the person leading the project.
* Your sample will be sent to the Dartmouth Trace Elements Analysis Core.

## **What should I do next?**

Your project leader will let you know when your test results are available online. You can go to 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 on sampling day.

Should your test results reflect a reading above the federal 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](http://www.allaboutarsenic.org/) 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 your local health department or one of the many certified commercial labs in your state to arrange another test.

*Please Note: Dartmouth’s Trace Element Analysis (TEA) laboratory tests water samples specifically related to this project and produces reliable data for research purposes. Although TEA is not certified by the National Environmental Laboratory Accreditation Program, it does participate in the USGS proficiency program for water quality measurements which conducts an inter-laboratory comparison study semiannually. For study results, see* [*https://qsb.usgs.gov/srs/*](https://nam02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fqsb.usgs.gov%2Fsrs%2F&data=01%7C01%7Cjdisney%40mdibl.org%7C9b47889c6a5540d82f3d08d7eaa514a0%7C2dd2ec8b30534918ac5886eed5446f48%7C1&sdata=2BKyamVx03WJxbD2InfWSbpU3xXqq%2B4ia1nkWih1co0%3D&reserved=0)*.*

## **What about my privacy?**

The data you observe are on a public citizen science website called Anecdata.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 Anecdata.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 Hannah Lust at hlust@mdibl.org.

Thank you for your participation!



Jane Disney, Ph.D.

MDI Biological Laboratory

Principal Investigator

**(Please complete permission form on next page-samples cannot be analyzed without permissions and an accurate filled out datasheet with guardian initials)**

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

* 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. No one else can access my results unless I share them.
* I have helped my child/student fill out the paper datasheet that must accompany the well water sample when it is submitted for analysis, assured that information about my well is accurate, to the best of my knowledge, and checked yes or no for all permissions for data sharing or use beyond this immediate project.

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Name

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Guardian Signature Date

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Sample Number