

Dear Test Sample,

07/12/2021

Thank you for participating in the 2019 New Hampshire Tracking and Assessment of Chemical Exposures (TrACE) Study (<https://tinyurl.com/2019TrACEStudy>). The 2019 TrACE Study was a biomonitoring study. Biomonitoring is the testing of blood, serum (the clear part of the blood), and urine from people to assess exposure to environmental chemicals. Biomonitoring is important because it helps identify whether certain people are at greater risk for coming into contact with chemicals. Examples why this might occur are due to occupation, water quality, or eating habits.

As part of the TrACE Study, your blood, serum, and urine were tested for a panel of chemicals. You may have been exposed to these chemicals from the food, water, and beverages you consume; the air you breathe; the products you use; or your everyday activities like your job or hobbies. All of the blood, serum, and urine tests in this report were performed at the New Hampshire Public Health Laboratories (NH PHL), a bureau of the NH Department of Health and Human Services. Funding for the testing was provided by cooperative agreement with the Centers for Disease Control and Prevention (CDC) Division of Laboratory Sciences at the National Center for Environmental Health (RFA EH14140202). The content of these pages do not necessarily represent the official views of the CDC.

The TrACE Study also involved testing household water for many potential contaminants and a few water quality indicators. Water results were provided in a separate mailing in March 2020. Funding for water testing was provided by the NH Drinking Water and Groundwater Trust Fund, the NH MtBE Bureau, and the NH Environmental Public Health Tracking Program.

This results packet includes your blood, serum, and urine test results and additional information for understanding these results. It is important to remember that finding a chemical in your body does not mean you will develop a health effect. Many factors go into whether a person will develop a health effect after coming into contact with a chemical. Some of these include the person's genetics, overall health, how much and for how long they have been in contact with that chemical, and if they are exposed to other chemicals at the same time. Much of the research scientists have done has involved people exposed to large amounts of these chemicals at work, those who have misused the chemicals, or with animals. Additionally, many chemicals are needed in certain amounts for good health. Scientists are conducting further studies to learn more about these chemicals and their effects on humans.

Understanding Your Report

The first few pages after this letter (titled "Results") summarize all of your blood, serum, and urine results. Your results are in the Result column. The "Reference Value (95th Percentile)" for each chemical is provided for comparison.

- The 95th percentile means 95% of the US population tested below that level. This means only 5% of the US population tested higher than that level.
- The Reference Value (95th Percentile) is specific to your age group (when available) or the next closest age group. Your age at the time of specimen collection (summer and early fall 2019) was used when determining which age group you fell into.
- All of the Reference Value information is from the most recently available data as of summer 2019. It is for the US population from the CDC's Fourth Report on National Exposure to Environmental Chemicals ("Exposure Report") which can be found at <https://www.cdc.gov/exposurereport/>.
- If your result is boxed, then it is higher than the 95th percentile. We encourage you to consider sources of that chemical in your environment and speak with your health care provider. Not all chemicals are bad for

your health; some (like manganese) are essential nutrients and are needed in certain amounts for you to be healthy.

- We also encourage you to share these results as well as your water results with your health care provider so they can help you decide if you need to reduce your exposure to any of these chemicals.
- The CDC does not have information available on the 95th percentile for two chemicals (GenX and PFHxA in serum). The Reference Value (95th Percentile) provided for these is taken from the 2019 NH TrACE Study population. This is not specific to your age group; it includes everyone who participated in the TrACE Study.
- The majority of specimens for the TrACE Study were collected from June to September 2019 during which time participants may have had exposures specific to the season, such as eating more seafood or using insect repellants. This differs from the US population used for the Reference Value where specimens were collected over two calendar years. The TrACE specimen collection timeframe should be considered when interpreting these results.

The pages following the summary results (titled "Chemical Measured: *chemical name*") are dedicated to each individual chemical. Your result is presented along with the 95th and 50th percentiles from the US population specific to your age group or the next closest age group (except for GenX and PFHxA which are from the 2019 TrACE Study population). The 50th percentile means 50% or half of the US population tested below that level and 50% tested above. These are shown in a table format and also as a graph. This is so you can see how your level compares to the US population from the Exposure Report. The graph may not be displayed if one of the values was too low to be plotted.

Occasionally the Reference Value in this table or in the preceding "Results" pages may be "< *numerical value* (LOD)". LOD is limit of detection. This means that the reference value was so low that it was less than the level the CDC lab can reliably detect. The lowest level the CDC lab can reliably detect is the number given in "< *numerical value* (LOD)".

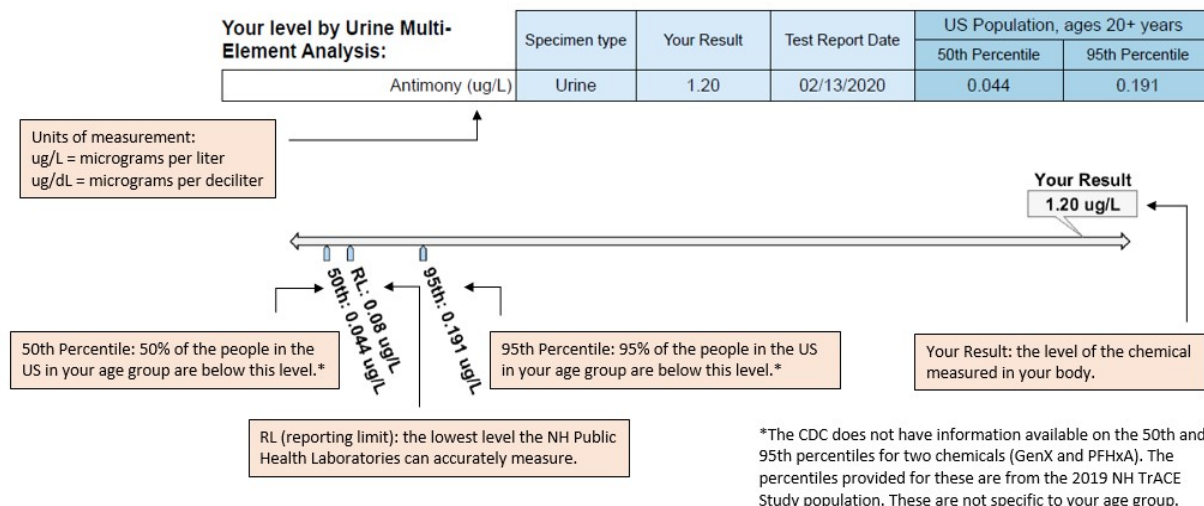
The reporting limit (RL), or the lowest level the NH PHL can accurately measure, is also provided on the graph (see the example on the next page). If your result was detected by the NH PHL BiomonitoringNH Lab, but is lower than the lab's reporting limit, then "< *numerical value* (RL)" will be shown under "Your Result". The lowest level the lab can accurately measure is the number given in "< *numerical value* (RL)".

The page then provides background information on the chemical, such as how people may be exposed and potential health effects. It also includes public water system limits for these chemicals set by the US Environmental Protection Agency (US EPA) or the NH Department of Environmental Services (NHDES) where applicable. It is important to note that some text is carried to a second page.

Example Chemical Result Table and Graph with Key Term Definitions

Your result and the US population 50th and 95th percentiles are shown in a table as well as on a graph. The graph may not be displayed if one of the values was too low to be plotted. Please see the example on the next page.

Chemical Measured: Antimony



Next Steps

Please discuss your results with your health care provider. BiomonitoringNH has also contracted with the Northern New England Poison Center (NNEPC) for medical interpretation of your results. Please contact them at 1-800-222-1222 with any health-related questions. Your clinical and water results have been uploaded to their secure portal so they can review them with you. The NNEPC will ask your permission before accessing your results.

Your personal test results will be kept private and confidential at the NH PHL. Your results have been combined with other participants in the NH TrACE Study and used in a summary report and Key Findings handout. This means no one will be able to identify you from the data. This report package includes the Key Findings handout and you will be mailed a copy of the summary report once it is complete.

If you have questions about the NH TrACE Study, please contact a representative from the BiomonitoringNH Program at (603) 271-4611, (800) 852-3345 ext. 4611, or BiomonitoringNH@dhhs.nh.gov.

Your participation in the 2019 NH TrACE Study has been greatly appreciated. The information collected will be used to help NH residents reduce their exposure to potentially harmful chemicals and will contribute to protecting the health of all New Hampshire residents. Thank you for your time and commitment to this project.

Sincerely,



Amanda Cosser, MPH
BiomonitoringNH Program
Administrator

LABORATORY REPORT: DRAFT



Name	Test Sample
Date of Birth	2/13/1980
Sex	Male
Participant ID	56963
Address	29 Hazen Dr Concord, NH 03301 271-4617

Sample Information

Sample ID	86041	Date Collected	2/12/2020
Lab ID	2002130012	Date Received	2/13/2020 10:08 AM
Chain of Custody	399867	Date Reported	7/12/2021 11:06 AM
Specimen Source	Serum		
Description			

RESULTS

Test/Observation	Result	Reference Value (95th Percentile)	Testing Completed
<i>Polyfluoroalkyl chemicals (CH-B-SOP-701)</i>			
PFOA	3.36 ug/L	4.27 ug/L	02/13/2020
PFHpA	< 0.1 ug/L (RL)	0.100 ug/L	02/13/2020
PFHxA	< 0.1 ug/L (RL)	<0.094 ug/L (LOD)	02/13/2020
PFHxS	0.658 ug/L	5.00 ug/L	02/13/2020
PFDaA	0.108 ug/L	< 0.1 ug/L (LOD)	02/13/2020
PFUA	0.390 ug/L	0.400 ug/L	02/13/2020
PFOSA	< 0.1 ug/L (RL)	< 0.1 ug/L (LOD)	02/13/2020
MePFOSAA	< 0.25 ug/L (RL)	0.600 ug/L	02/13/2020
EtPFOSAA	< 0.25 ug/L (RL)	0.110 ug/L	02/13/2020
PFBuS	< 0.1 ug/L (RL)	< 0.1 ug/L (LOD)	02/13/2020
GenX	< 0.1 ug/L (RL)	<0.075 ug/L (LOD)	02/13/2020
PFOS	< 0.25 ug/L (RL)	19.1 ug/L	02/13/2020
PFDeA	0.673 ug/L	0.700 ug/L	02/13/2020
PFNA	1.32 ug/L	1.90 ug/L	02/13/2020
<i>Serum Cotinine (CH-B-SOP-801)</i>			
Cotinine	0.340 ug/L	0.861 ug/L	02/13/2020

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Chain of Custody	399867	Date Reported	7/12/2021 11:06 AM
Specimen Source Description	Whole Blood		

RESULTS

Test/Observation	Result	Reference Value (95th Percentile)	Testing Completed
<i>Biomonitoring - Blood Metals (CH-B-SOP-501)</i>			
Selenium	164 ug/L	237 ug/L	02/13/2020
Mercury	13.8 ug/L	4.66 ug/L	02/13/2020
Manganese	7.40 ug/L	16.1 ug/L	02/13/2020
Lead	1.83 ug/dL	2.89 ug/dL	02/13/2020
Cadmium	0.577 ug/L	1.35 ug/L	02/13/2020

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Chain of Custody	399867	Date Reported	7/12/2021 11:06 AM
Specimen Source	Urine		
Description			

RESULTS

Test/Observation	Result	Reference Value (95th Percentile)	Testing Completed
<i>Arsenic Speciation (CH-B-SOP-601)</i>			
Monomethylarsonic acid	0.964 ug/L	1.45 ug/L	02/13/2020
Arsenocholine	< 0.5 ug/L (RL)	0.440 ug/L	02/13/2020
Arsenous (III) acid	< 0.5 ug/L (RL)	1.11 ug/L	02/13/2020
Arsenic (V) acid	< 0.5 ug/L (RL)	<0.79 ug/L (LOD)	02/13/2020
Arsenobetaine	78.3 ug/L	33.9 ug/L	02/13/2020
Dimethylarsinic acid	25.4 ug/L	12.0 ug/L	02/13/2020
<i>Biom - Pesticide Metabolites (CH-B-SOP-901)</i>			
PNP	0.782 ug/L	3.27 ug/L	02/13/2020
cis-DCCA	1.14 ug/L	0.960 ug/L	02/13/2020
cis-DBCA	< 0.08 ug/L (RL)	<0.5 ug/L (LOD)	02/13/2020
TCPy	0.658 ug/L	4.18 ug/L	02/13/2020
trans-DCCA	2.24 ug/L	5.88 ug/L	02/13/2020
3-PBA	1.86 ug/L	6.95 ug/L	02/13/2020
2,4-D	0.247 ug/L	1.33 ug/L	02/13/2020
4F-3-PBA	< 0.02 ug/L (RL)	<0.1 ug/L (LOD)	02/13/2020
<i>Urine Multi-Element Analysis (CH-B-SOP-401)</i>			
Tungsten	0.0690 ug/L	0.321 ug/L	02/13/2020
Cobalt	0.235 ug/L	1.41 ug/L	02/13/2020
Cesium	9.90 ug/L	11.4 ug/L	02/13/2020
Total Arsenic	11.4 ug/L	49.9 ug/L	02/13/2020

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