

STATEWIDE PFAS TESTING OF PUBLIC WATER SUPPLIES & SCHOOLS

STEVE CRIDER, MANAGER MDHHS TOXICOLOGY AND RESPONSE SECTION
DRINKING WATER UNIT



STATEWIDE PFAS TESTING OF PUBLIC WATER SUPPLIES & SCHOOLS - PROCESS



STATEWIDE PFAS TESTING OF PUBLIC WATER SUPPLIES & SCHOOLS - PREPARATION

- Local Health Departments and the MDEQ updated the list of Community Public Water Supplies in Michigan
- Local Health Departments provided a list of schools on Type II wells to the MDEQ
- Statewide press release on May 18, 2018
- MDEQ's contractor AECOM is scheduling sampling visits with a goal to be done sampling by December 2018

STATEWIDE PFAS TESTING OF PUBLIC WATER SUPPLIES & SCHOOLS - SAMPLING

- MDEQ developed county level sampling priority map based on potential PFAS sources, geologic sensitivity and population
- Three (3) teams of samplers: One (1) in the Upper Peninsula and two (2) in the Lower Peninsula
- Results take about 4-6 weeks to get back from the laboratory

STATEWIDE PFAS TESTING OF PUBLIC WATER SUPPLIES & SCHOOLS – COMMUNICATION

- MDEQ is notifying Local Health Departments when sampling will occur in each area
- MDEQ will notify the water supply of the results and Local Health Department will be a copied on those letters
- Water supplies can use the communication toolkits to notify their customers
- Results posted to the MPART website
- Public meetings
 - Results of PFOA+PFOS greater than 70 ppt the MDEQ/MDHHS will initiate scheduling a public meeting
 - Results of PFOA+PFOS less than 70 ppt public meeting will only be held at the request of the Local Health Department

STATEWIDE PFAS TESTING OF PUBLIC WATER SUPPLIES & SCHOOLS - RESULTS

<10

For PFAS reported as Not Detected and less than 10 parts per trillion, the DEQ recommends annual monitoring until levels are consistently and reliably below a level that is considered a risk to public health.

10 to 70

For PFOA + PFOS reported greater than 10 parts per trillion and less than 70 parts per trillion or where total tested PFAS is greater than 10 parts per trillion, the DEQ recommends owners of water systems collect a confirmation sample within one month, remove the contamination source, if possible, minimize exposure to the extent possible, evaluate treatment technologies, begin quarterly monitoring until a permanent remedy is obtained or when levels are consistently and reliably below a level that is considered a risk to public health.

>70

For PFOA + PFOS greater than 70 parts per trillion, the DEQ requires owners of water systems to notify their consumers, and respond to the DEQ within 30 days identifying a plan with timeline to address the contamination. Meanwhile, DEQ will resample immediately and investigate the source of PFAS contamination. DEQ will offer their immediate technical assistance for installation of treatment technology, technical assistance for removal of the source from operation, if feasible, or place on standby if possible, and evaluate alternatives for replacing lost capacity of the water source.

PFAS RESPONSE WEBSITE

<https://www.michigan.gov/pfasresponse/>

Michigan.gov

[FAQS](#) |
 [NEWS AND EDUCATION](#) |
 [CONTACT MPART](#) |
 [SEARCH](#)

TAKING ACTION, PROTECTING MICHIGAN

[HEALTH](#)
[HOME WATER TREATMENT](#)
[MICHIGAN PFAS SITES](#)
[WILDLIFE](#)
[FIREFIGHTING FOAM](#)
[ABOUT MPART](#)

TAKING ACTION TO PROTECT THE PUBLIC'S WATER

Perfluorinated and polyfluorinated substances (PFAS), such as perfluorooctanoic acid (PFOA) and perfluorononanoic acid (PFNA), are part of a group of chemicals used globally during the past century in manufacturing, firefighting and thousands of common household and other consumer products.

In recent years, experts have become increasingly concerned by the potential effects of high exposure levels of PFAS on human health.

Although there is more to learn about PFAS and human health, the State of Michigan takes this issue seriously and is one of the first states in the nation to establish a clean up standard for PFAS in groundwater used for drinking water.

Launched in 2017, the Michigan PFAS Action Response Team (MPART) is the first multi-agency action team of its kind in the nation. Agencies investigating health, environment and other dimensions of state government have joined together to investigate sources and locations of PFAS contamination in the state, take action to protect people's drinking water, and keep the public informed on what we know about this nationally emerging contaminant.

Health

Home Water Treatment

Michigan PFAS Sites

Wildlife

Firefighting Foam

About MPART

NEWS AND EDUCATION

- Informative Videos
- Community Toolkit
- School Toolkit
- Public Presentations
- PFAS Stories in the News
- Press Releases
- Official Correspondence
- and more...

VISIT NEWS AND EDUCATION

INFORMATIVE VIDEOS

- Informational Videos
- Community Toolkit
- School Toolkit
- Public Presentations
- PFAS Water in the News
- Press Releases
- Official Correspondence
- and more...

VISIT NEWS AND EDUCATION

MICHIGAN.GOV HOME ABOUT MICHIGAN PFAS POLICIES
DEPENDENT AGENCIES OF MICHIGAN

FREQUENTLY ASKED QUESTIONS

<https://www.michigan.gov/pfasresponse/0,9038,7-365-86704---,00.html>

Michigan.gov

FAQS

NEWS AND EDUCATION

CONTACT MPART

Q SEARCH

PFAS RESPONSE

TAKING ACTION, PROTECTING MICHIGAN

HEALTH

HOME WATER TREATMENT

MICHIGAN PFAS SITES

WILDLIFE

FIREFIGHTING FOAM

ABOUT MPART



FREQUENTLY ASKED QUESTIONS

PFAS 101

HEALTH EFFECTS AND RECOMMENDATIONS

RESIDENTIAL WELL WATER TESTING AND
RESULTS

FILTERS OR ALTERNATE WATER

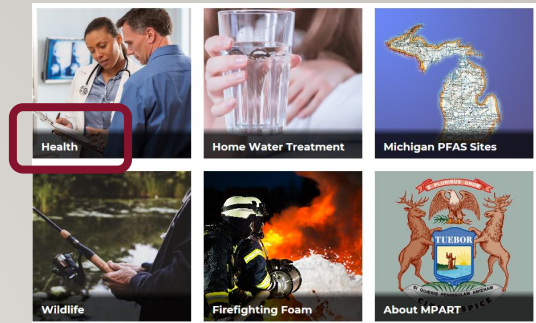
PETS AND LIVESTOCK HEALTH

CROPS, GARDENING AND FOOD

MISCELLANEOUS QUESTIONS

HEALTH

<https://www.michigan.gov/pfasresponse/0,9038,7-365-86509---,00.html>



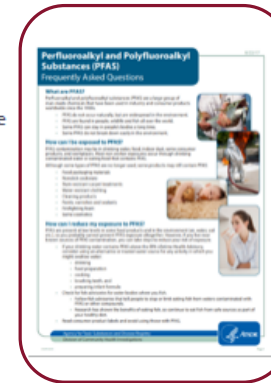
Health

The State of Michigan is working with the National Center for Environmental Health, Agency for Toxic Substances and Disease Registry (ATSDR) and additional partners to better understand how PFAS might affect people's health.

Scientists are still learning about the health effects of exposures to mixtures of PFAS. Although more research is needed, some studies in people have shown that certain PFAS may:

- affect growth, learning, and behavior of infants and older children
- lower a woman's chance of getting pregnant
- interfere with the body's natural hormones
- increase cholesterol levels
- affect the immune system
- increase the risk of certain types of cancer

National health information from ATSDR: PFAS and Your Health



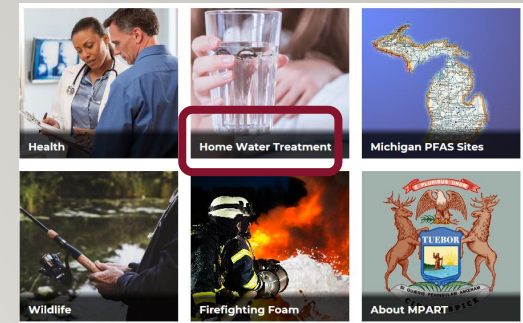
PFAS in Drinking Water Fact Sheet

If you are concerned about exposure to PFAS in your drinking water, contact the Michigan Department of Health and Human Services Toxicology Hotline at [800-648-6942](tel:800-648-6942).

Questions on the health impacts of PFAS? [Visit our FAQs for more information.](#)

HOME WATER TREATMENT

<https://www.michigan.gov/pfasresponse/0,9038,7-365-86510---,00.html>



Home Water Treatment

In-Home Water Filtration Systems

Per- and polyfluoroalkyl substances (PFAS), also known as perfluorinated chemicals (PFCs), are a large group of more than 3000 man-made fluorinated organic chemicals that have been used since the 1950s in firefighting foams, oil and water repellent products, and surfactants. PFAS can be released to the environment by manufacture and use of items that have PFAS in them. PFAS in the environment may enter surface water, groundwater, and drinking water wells. Some wells may have PFAS levels, or amounts, that are high enough to cause concern for human health. For these residents, in-home water filtration systems are recommended to lower the levels of the PFAS in their drinking water.



The U.S. Environmental Protection Agency (U.S. EPA) has set a lifetime health advisory (LTHA) level for two PFAS, perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS), in drinking water. An LTHA is set to protect human health. To date, the EPA has not set LTHAs for the other PFAS chemicals.

The LTHA level for PFOA and PFOS is 70 parts per trillion (ppt), either singularly or combined when both PFOA and PFOS are found in drinking water. PFOA and PFOS levels below the LTHA are not expected to harm human health. Some filtration systems that lower the amounts of PFOA and PFOS below the LTHA have been certified. However, no systems have been certified for lowering all PFAS.

Certified Filtration Systems

NSF International was founded in 1944 to standardize sanitation and food safety requirements, and is accredited internationally. NSF developed a standard for reducing PFOA and PFOS in water in 2016.

In order to be certified for PFOA and PFOS reduction, a water filter must undergo extensive testing and meet strict **NSF P473 requirements** set by the American National Standard Institute for drinking water units - health effects. Reverse osmosis systems must also meet all of the requirements in the **NSF/ANSI 58 standard**. To meet these requirements a filter must be able to reduce PFOA and PFOS below the EPA LTHA level. Certified products must be retested periodically and their manufacturing facilities must be inspected every year.

To date, **NSF has certified some point-of-use (POU) granular activated carbon (GAC) and reverse osmosis filters for PFOA and PFOS reduction** from three manufacturers, **Aquasana, Culligan, and eSpring**. Select a filter and scroll to its Performance Data Sheet web link. The Sheet provides information on certifications, capacity, flow rate, and other details.

Non-Certified Filtration Systems

There may be other filters that lower PFAS. However, without the NSF P473 certification, it can be difficult to know which filters effectively reduce PFAS and which do not.

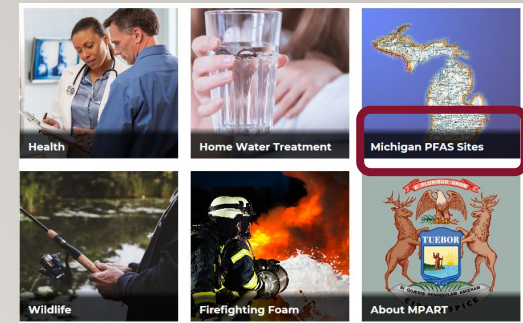
In 2007, the Minnesota Department of Health hired Water Science & Marketing, LLC and the Water Quality Association to determine if water filtration systems could lower PFAS in water. At that time, there was no NSF standard for reducing PFAS. Fourteen filters were tested, and eleven of these were shown to sufficiently reduce the amount of PFAS in water. Four of these filters were activated carbon devices and seven were reverse osmosis devices. None of the devices were, or are currently, certified for PFAS removal. It is important to note that the Minnesota Department of Health does not certify water filters.

Here is more information about the [study](#).

Types of Filtration Systems

MICHIGAN PFAS SITES

<https://www.michigan.gov/pfasresponse/0,9038,7-365-86511---,00.html>



CONFIRMED PFAS SITES (MAP)

LOCAL SITE INFORMATION

Belmont House Street Disposal Area

PFAS has been found in foam and water samples near House Street in Belmont from a Wolverine Worldwide, Inc. disposal site in Kent County.

[MORE ABOUT THIS SITE](#)

Camp Grayling and Lake Margrethe

PFAS has been found in fish, foam and water samples near the Camp Grayling Army Airfield and Lake Margrethe area in Crawford County.

[MORE ABOUT THIS SITE](#)

Former Wurtsmith Air Force Base

PFAS has been found in fish and groundwater samples near the Former Wurtsmith Air Force Base in Isco County.

[MORE ABOUT THIS SITE](#)

Alpena Combat Readiness Training Center

PFAS has been found in groundwater samples near the Alpena Combat Readiness Center in Alpena County.

[MORE ABOUT THIS SITE](#)

[MORE SITES](#)

- Environmental Investigation Areas
- Public Water Supply Sampling
- Wastewater/Industrial Pretreatment Program

PUBLIC WATER SUPPLY INFORMATION

Public Water Supply Information

The Michigan Department of Environmental Health Quality (MDEQ) has begun a statewide initiative to test drinking water from all community water supplies for PFAS. MDEQ is taking this precautionary step of testing these drinking water sources to determine if public health actions are needed. Information on this page summarizes current sampling results from these locations.

[MORE INFORMATION](#)

WASTEWATER TREATMENT INFORMATION

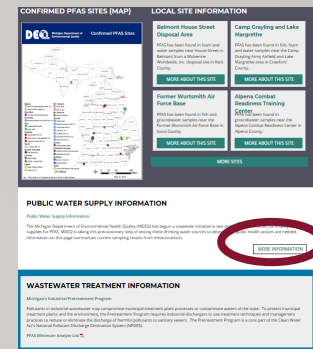
Michigan's Industrial Pretreatment Program

Pollutants in industrial wastewater may compromise municipal treatment plant processes or contaminate waters of the state. To protect municipal treatment plants and the environment, the Pretreatment Program requires industrial dischargers to use treatment techniques and management practices to reduce or eliminate the discharge of harmful pollutants to sanitary sewers. The Pretreatment Program is a core part of the Clean Water Act's National Pollutant Discharge Elimination System (NPDES).

[PFAS Minimum Analyte List](#)

PUBLIC WATER SUPPLY AND SCHOOL SAMPLING

https://www.michigan.gov/pfasresponse/0,9038,7-365-86511_86688-464299--,00.html



Public Water Supply Information

The Michigan Department of Environmental Health Quality (MDEQ) has begun a statewide initiative to test drinking water from all schools that use well water and community water supplies for PFAS. MDEQ is taking this precautionary step of testing these drinking water sources to determine if public health actions are needed. Information on this page summarizes current sampling results from these locations.

It is not uncommon to find low levels of PFAS in drinking water supplies, as PFAS can be found in fire-fighting foams, stain repellants, nonstick cookware, waterproof clothing, food wrappers, and many other household products. They do not break down in the environment and move easily into water.

The EPA set a lifetime health advisory (LHA) level for two PFAS in drinking water, perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS). The LHA level is 70 parts per trillion (ppt, equal to 70 ng/L) for PFOA and PFOS combined, or individually if only one is present. The EPA has not set health advisory levels for other PFAS chemicals. The State of Michigan is using 70 ppt for decision making purposes.

Understanding Sample Results

The table below summarizes the most current information for each water supply with available water test results.

- Population Served: The number of individuals served by the water supply.
- Sample Date: The date samples were taken at the water supply.
- Raw Water or Treated Drinking Water: The location where the water sample was collected. If the table shows "Raw Water" the sample was taken directly from the well or water source. If the table shows "Treated Drinking Water" the sample was taken after the water passed through treatment system(s) the water supply has in place.
- PFOA + PFOS (ppt): The amount of PFOA and PFOS added together.
- Total Tested PFAS (ppt): The amount of all PFAS chemicals that were tested added together.
 - PFAS are measured in ng/L (ng/L=parts per trillion (ppt)).
 - If the results listed is "ND" the lab did not detect, or find, that PFAS was in the water sample.
 - A Method Detection Limit (MDL) is the smallest amount that can be reliably measured by the laboratory equipment. If the amount found in the water sample was below the MDL and was estimated, number is followed by a "J."
 - If the lab did not detect, or find, that PFAS in the water sample, a "U" may show. This means the PFAS was not in the sample or the amount was so low the lab could not measure it.
 - Results are provided in parts per trillion. A part per trillion (ppt) is:
 - 1 nanogram per liter (ng/L)
 - The equivalent of 1 drop of water in 20 Olympic-size swimming pools
- Data Collected by: Organization that collected the water sample. If a water supply has collected its own sample, the column will show its name.
 - The MDEQ will be collecting samples from all locations to ensure the data are consistent, the same method detection limits and are used, and testing is for the same PFAS chemicals. The results will be updated once the MDEQ has completed that location's water test
- Method: The laboratory method used for analyzing the samples. For More information, please visit the Frequently Asked PFAS Questions page.

For support in communicating results to your customers, please visit our [Toolkit for documents](#) to assist in your outreach.

For more information, please visit the [Frequently Asked PFAS Questions Page](#).

Public Water Supply	Population Served	Sampling Date* (*indicates not tested by DEQ)	Raw Water or Treated Drinking Water?	PFOA + PFOS (ppt)	Total Tested PFAS (ppt)	Data Collected By	Method
Ira Township	11,112	1/17/2018	Treated Drinking Water	3.280J	4.365J	DEQ	Isotope Dilution
Ira Township	11,112	1/17/2018	Raw Water	0.666J	2.323J	DEQ	Isotope Dilution
Mount Clemens Municipal Water Supply, City of	18,405	1/17/2018	Treated Drinking Water	0.930J	2.710J	DEQ	Isotope Dilution
Mount Clemens Municipal Water Supply, City of	18,405	1/17/2018	Raw Water	2.527J	4.250J	DEQ	Isotope Dilution

- Local Public Health will be copied on the results letters
- Results will be posted to this page 5 days after they have been sent to the Public Water Supply or School on well water
- Communication Toolkits have been developed for the Public Water Supplier and Schools on well water

NEWS AND EDUCATION

https://www.michigan.gov/pfasresponse/0,9038,7-365-86513_86548---,00.html

NEWS AND EDUCATION

- * Informative Videos
- * Community Toolkit
- * School Toolkit
- * Public Presentations
- * PFAS Stories in the News
- * Press Releases
- * Official Correspondence
- * and more...

VISIT NEWS AND EDUCATION

FAQ Videos

Informative Videos

Community Water Supplier Toolkit

School Toolkits

Public Presentations

PFAS Stories in the News

Press Releases

Official Correspondence

News and Education

PFAS STORIES IN THE NEWS

KCHD and MDHHS issue Health Advisory regarding PFAS Foam on Rogue River

Following PFAS Summit, EPA Will Take Steps To Address Contamination

Michigan lobbies for nationwide PFAS rules at EPA summit

VIDEOS



School Toolkits

The Michigan Department of Environmental Quality (MDEQ) has begun a statewide initiative to test drinking water from all schools that use well water and community water supplies. The test is looking for a group of manmade chemicals called per- and polyfluoroalkyl substances (PFAS). MDEQ is taking this precautionary step of testing these drinking water sources to determine if public health actions are needed.

A toolkit containing communication templates was developed to help schools notify staff, students and parents of this process and of the testing results. This is a resource available to your school if you choose, it is not required that you use these templates. All templates can be modified to fit your school's needs. Below is a description of the documents included in this toolkit.

If your school district has schools on wells and on municipal water supplies, note that the school(s) on the municipal water supplies will be notified of results and next steps by the water suppliers. It is important to communicate to your staff and parents the information the water supplier provides.

Pre-Notification Template

The pre-notification template provides language for notifying staff, students, and parents of the PFAS testing initiative. Language could be used in a variety of formats such as a press release, newsletter, letter, email, however your school communicates best with your audiences.

Letter Templates

Letter templates that notify staff, students, and parents of the sample results, what the results mean and the schools next steps on the matter. There are three letters based on the range results may fall in and the recommendations provided by MDEQ.

- [Less Than 10 School Letter Template](#)
- [Greater Than 10 to 70 School Letter Template](#)
- [Greater than 70 Letter School Template](#)

Greater than 70 MDHHS Advice Letter

The Michigan Department of Health and Human Services will provide you with a letter containing the departments human health advisement if results are greater than 70 ppt for PFOA and PFOS, two of the PFAS compounds, individually or combined. This letter may not be modified. It is not required you distribute this letter.

PFAS FAQ

VOLUNTEERS ?

- Review and Discuss Private Well PFAS decision process for determining monitoring and/or interim POU filters.