



FOR HOMEOWNERS - PRIVATE RESIDENTIAL WELL PFAS SAMPLING

Guidance

Introduction

This sampling guidance is for homeowners who want to sample their own residential well for per- and polyfluoroalkyl substances (PFAS). This guidance discusses the process and acceptable materials that should be used when sampling for PFAS. **This guidance assumes the homeowner has a basic understanding of their residential well.**

The Michigan Department of Environmental Quality (DEQ) intends to update the information contained within this PFAS Sampling Guidance document as new information becomes available. The user of this PFAS Sampling Guidance is encouraged to visit the Michigan PFAS Action Response Team webpage (www.michigan.gov/PFASresponse) to access the current version of this document.

This sampling guidance discusses the potential for cross-contamination that can occur from:

- Clothing and protective clothing
- Items required for collecting samples
- Collecting and handling the sample
- Shipping the sample

This sampling guidance also includes **Step-By-Step Sample Collection (Pages 4-7)** for taking your sample. The Step-By-Step Sample Collection starts with finding an appropriate laboratory and ends with what to do when you get your results back from the lab.

On **Page 8** is a simplified diagram to help you find where to take your sample, and a **Quick Reference Guide on Page 9** that summarizes which items and materials to avoid while collecting your sample.

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1. Prohibited and Allowable Items and Materials

For the purposes of this document, sampling materials that have the potential for PFAS cross contamination have been divided into two major categories:

- **Prohibited Materials** (●) are items or materials that should not be used when sampling. It is well documented that they contain PFAS or that PFAS are used in their manufacture.
- **Allowable Materials** (■) are items or materials that may be used and have been proven not to be sources of PFAS cross contamination and are considered acceptable for sampling.

1.1 Clothing and Protective Clothing

Determine whether the clothing you intend to wear during sampling has been advertised as waterproof, water-repellant, or dirt and/or stain resistant. These types of clothes are most likely to have had PFAS used in their creation. Specifically, do not use any clothing or protective clothing that that is known to contain PFAS such as, but not limited to the following:

- Do not use latex gloves.
- Do not wear anything made of Gore-Tex® or other water-resistant synthetics, or coated Tyvek® clothing. Some water-resistant clothing can also contain Teflon®, which also must be avoided.
- Do not wear clothing that has recently been dry-cleaned, as stain remover or water proofing—which may contain PFAS—may be used at the dry-cleaning facility.
- Wear well laundered synthetic or 100% cotton clothing **not** recently washed with fabric softeners; or wear protective clothing made of rubber or Neoprene.
- Use only powderless nitrile gloves (which can be found at some hardware and major retail outlets).

1.2 Personal Hygiene and Personal Care Products, Sunscreens, and Insect Repellents

PFAS are known to have been used in personal hygiene and personal care products such as cosmetics, shampoo, dental floss, etc., and used in some sunscreens and insect repellents. However, if the current Sampling Guidance is followed, these items should not come into contact with the sample bottles or the actual water sample being collected.

- Do not handle or apply any personal care products, such as lotion, perfume, deodorant/anti-perspirant, sunscreen, insect repellent, etc.—that have not been determined to be PFAS-free-several hours before sampling, and especially do not use these products during sampling.
- If **absolutely necessary**, use sunscreens and insect repellents that have been determined to be PFAS-free. Apply these before sampling and throughouhly wash hands afterwards.

MDEQ’s contractor has identified two insect repellants that are PFAS-free:

- Deep Woods OFF®, and Sawyer® Permethrin.

MDEQ’s contractor has also identified over 15 sunscreens that are PFAS-free.

- These sunscreens are listed in the **General PFAS Sampling Guidance** document found at www.michigan.gov/PFASresponse.

1.3 Food Packaging

PFAS has been used by the paper and packaging industry as a special protective coating against grease, oil, and water for paper and cardboards, including food packaging. As a result, it is important to be aware of the potential of cross-contamination if the sample bottles or actual water samples come into contact with these products.

- Do not touch, eat, or otherwise interact with pre-wrapped food or snacks, carry-out food, fast food, or other food items right before sampling, and especially not during sampling.
- Wash hands thoroughly after contact with any of these products and before starting your sampling.

1.4 Items Required for Sampling

The laboratory that you choose should provide sampling materials for you to use. It is important to use these for sample collection. Many laboratories only accept samples returned in their sample containers and may qualify your test results from any other container; we highly recommend you only use the materials sent from the lab that have been verified to be PFAS-free. We also recommend that you do not acquire your own sampling materials, and that you avoid using any additional materials if possible.

Any materials used must not contain the prohibited substances listed below. If it is unknown what an item is made of, it is best to avoid it if possible.

- Polymer materials bearing trade names such as Teflon[®], Hostaflon[®], Kynar[®], Neoflon[®], Tefzel[®], Teflon[®] FEP, or Hostaflon[®] FEP.
- Do not use low density polyethylene (LDPE) for any items that will come into **direct contact** with the drinking water sample. LDPE can be found in many items, including but not limited to containers and bottles, plastic bags (e.g. Ziploc[®]), and tubing.
- Post-It Notes[®] should not be used for any reason during collection of your sample, as they have been demonstrated to contain PFAS.
- LDPE bags (e.g. Ziploc[®]) that **do not** come into direct contact with the drinking water sample may be used.
- Use only PFAS-free bottles provided by the lab. Other containers can not be guaranteed to be PFAS-free.
- Use materials as described in **Section 2, Step-by-Step Sample Collection**.

2. Step-by-Step Sample Collection

Follow this step-by-step guide when taking your well sample. Note that steps 1 – 3 will be done well in advance (days – weeks) of steps 4 – 9.

Steps 1 – 3: Find a Laboratory and Gather Sampling Materials

Step 1: Locate a laboratory that analyzes PFAS in drinking water. The MDEQ recommends your drinking water be analyzed using the United States Environmental Protection Agency (USEPA) Method 537 Revision 1.1. The Michigan PFAS Action Response Team webpage (www.michigan.gov/PFASresponse) has information to assist you in finding an appropriate laboratory. Keep in mind that as of this document there is no USEPA certification for PFAS analysis; be wary of labs making such a claim.

Step 2: Contact the laboratory to get details about working with them, such as costs for materials, shipping, and analysis. Some labs have preassembled, PFAS-sampling kits available to purchase. Other labs may provide you the materials you need to assemble a sampling kit for use. The lab should provide you with:

- The appropriate PFAS-free sample bottle(s) for you to use.
- A form for requesting a PFAS test, such as a Chain of Custody (CoC), which may also include sample collection instructions¹ and keeps track of who did what with the sample and when.
- Ice packs that have been verified to be PFAS-free, or storage bags for ice. The ice packs should not be chemical or “blue” ice, unless specifically stated by the lab to be PFAS-free.
- Storage bags (e.g. Ziploc®) for sample bottles, test request form, and ice.
- Powder free nitrile gloves for you to use while collecting your sample (may be provided).
- An estimation of how long it will take to get your results.

Step 3: Laboratory analysis for PFAS is a sensitive procedure. **Read this entire document** and any instructions provided by the lab prior to sampling, to avoid possible cross contamination when you collect your sample. If necessary, purchase any equipment you may need before you sample, such as powderless nitrile gloves (available at some hardware stores and most major retail outlets).

Note that you will be putting on and taking off four or more separate pairs of powderless nitrile gloves during preparation, sampling, and sample packing. It is important that you do not re-use gloves after removal, and that you dispose of them promptly to avoid sample cross-contamination.

Steps 4 – 5: On the Day of Sampling – Prep for Sampling

Step 4: Identify the location to collect the sample. The typical residential well sample will either be collected from inside the residents’ home or an outside tap. If possible, by-pass any water treatment systems in your home, such as iron removal, in-line filtration, softening, etc. This ensures the sample you collect represents the raw water that is coming out of your well that you are drinking.

- Do not collect the sample from any garden hose or other devices used for irrigation.
- Avoid using leaky or spraying faucets, if possible.
- When swivel or single lever faucets are used for sampling, please ensure that only cold water is used for flushing and sample collection.

¹ If you have a question as to which sampling instructions to use, please contact MDEQ PFAS Drinking Water staff at DEQ-PFAS-DrinkingWater@michigan.gov.

If you have questions about where to collect your sample or how to bypass your treatment system, contact:

- Your local health department
- The well drilling contractor who constructed your well
- Your water treatment device installation contractor

The sample should be collected as close to the well as possible. Sample location options in order of the most favorable to least favorable are:

1. The kitchen faucet
2. An outside, untreated tap
3. A laundry sink tap
4. Another point of use within the home

The diagram at the end of this document may be helpful in locating the appropriate tap to take your sample. Your well set-up may appear different from the illustration.

Step 5: Choose a spot away from the sample location where you can label your sampling materials - this is your 'staging area'. (Note that the sample bottle from the lab may have come pre-labeled) Remove any jewelry that might tear the gloves, prior to putting them on. Thoroughly wash your hands with PFAS free soap and water and allow them to air dry. A plain cotton cloth or untreated, non-recycled paper towels may be used to dry your hands if necessary, but only if it is known for certain that it has not been chemically treated.

- Do not use markers other than Fine or Ultra-Fine point Sharpies®, as they may contain PFAS.
- Do not open the sample bottle, set the cap down, or let anything touch the inside of the cap or bottle until *immediately* before sampling.
- Do use Ballpoint pens, or Fine or Ultra-Fine Point Sharpie® markers.



Put on your first pair of powderless nitrile gloves. Fill out the label using a Fine or Ultra-Fine point Sharpie®, or a Ballpoint pen. Allow the ink to dry completely before proceeding. Temporarily place the sample bottle on top of the closed bag(s) in which it arrived until ready to collect the water sample. (You are keeping the bottle/bag set together)



Discard this first pair of gloves.

Steps 6 – 7: Collecting Your Sample

Wear outer clothing that is PFAS-free (see **Section 1.1**, above) to avoid potential cross-contamination. Gloves must be worn as instructed during sampling and glove changes (as indicated) are required any time there is an opportunity for cross-contamination.

● - Prohibited ■ - Allowable

Step 6: You will now perform a 3 to 5-minute flush of your drinking water to allow the water temperature to stabilize and to avoid sampling stagnant water. This step is critical to allow the water temperature, pH, and other factors to reach equilibrium. Have a bowl, bucket or something else ready to catch water during the flush, as there will likely be a large volume.

If it is more convenient handling a large volume of water flushed, you may use other household taps for the 3 to 5-minute flushing period. (utility sink, laundry sink, etc.)

If using an outside tap, a garden hose may be temporarily used to divert water during the flush. Collect flushed water in a bucket and dispose of the water in the yard. **NOTE:** This hose must be removed prior to sampling and the tap threads thoroughly cleaned to prevent cross contamination. Tap threads should be cleaned using a clean wire brush, until which time remnants of thread tape or other detritus are gone.

Do not use hot water to flush or for your sample, as the water heater may introduce cross-contamination.



Put on your second pair of nitrile gloves. Turn on the cold-water tap(s) and commence 3 to 5-minute flushing period. Utilize your bucket or bowl to collect water during flushing and remove this water from the sample area until 3 to 5 minutes have passed. If you used a garden hose, remove it after completion of the 3 to 5-minute flush and clean the tap threads at that time.



Discard this second pair of gloves.

Step 7: Having completed the 3 to 5-minute flush, you will now collect your drinking water sample. Allow your sample tap to continue flowing while you prepare for sample collection. **NOTE:** If a second tap was utilized during the 3 to 5-minute flush, an additional one-minute flush will be necessary at the sample tap prior to sample collection, to clear any stagnant water from the lines.

Sampling must be done while the well pump is running, to assure that the sample is being drawn from within the well column. If the well pump is not currently running, the sampler will prolong the flush time until the next pump cycle, to assure the pump is running during sample collection.



Put on your third pair of nitrile gloves. Open your lab-provided, verified PFAS-free sample bottle, taking care not to set the cap down, or let anything touch the inside of the cap or bottle. There may be a preservative in the bottle in liquid or pellet form—this preservative is required for chlorinated water; however, it will not affect results from non-chlorinated water.

Using water from the **cold** tap, fill the sample bottle to the point indicated in the lab instructions that came with the sample bottle, or to the base of the bottle neck if no instructions were provided. Do not allow the bottle to overflow. Replace the cap.

Double-bag the full sample bottle with bags provided by the lab or using polyethylene plastic bags (such as Ziploc®). Close the bags removing as much air as possible to ensure the sample can be thermally preserved from the ice.



Discard this third pair of gloves.

If the laboratory provided you with more than one bottle to collect a duplicate sample, repeat **Step 7**, using and disposing of a new pair of nitrile gloves.

Step 8: After Sampling - Shipping Your Sample



Step 8: *Put on your last pair of nitrile gloves.* Place the double-bagged sample bottle(s) into the cooler provided by the lab, taking care to surround the sample(s) with the provided ice packs (including on top), or fill provided bags with ice. Temperature control is vital for PFAS samples and is especially important during warm weather months.

Samples must be chilled during shipment and must not get warmer than 50°F during the first 48 hours after collection.

- Do not use chemical or blue ice that did not come from the lab.
- Use regular ice that has been double bagged in bags provided by the laboratory, or polyethylene plastic bags (such as Ziploc®).
- Use ice packs provided by the lab only if the lab has said they are PFAS-free.

The PFAS test request form/Chain of Custody provided by the laboratory should be single-bagged in a fashion similar to that used for samples and placed inside of the cooler.

The cooler should be closed and secured, to be shipped by overnight courier.



Discard this last pair of gloves.

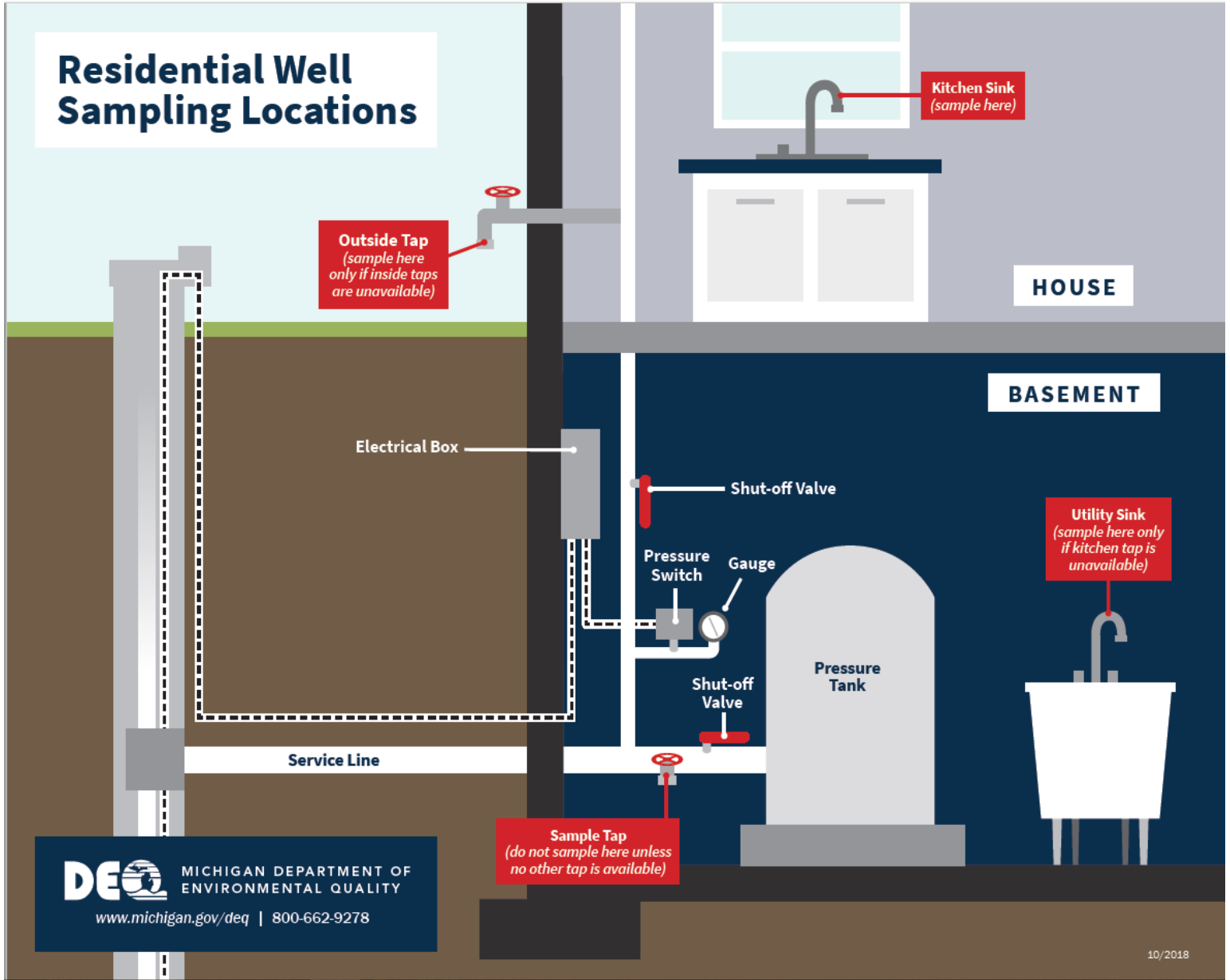
Do not delay shipping your samples. The lab must be able to perform the next steps within 14 days of the date the sample was collected, to meet USEPA guidelines for PFAS testing.

Evaluating Your Test Results

Once you get your test results back, you may contact your local health department if you have questions on your results. You may also contact the Michigan Department of Health and Human Services at 1-800-648-6942.



Residential Well Sampling Locations Diagram





MDEQ PFAS Sampling Quick Reference Guide¹ – For Homeowners

Personal Care Products (PCPs) – for the day of sample collection

● Prohibited	■ Allowable
<ul style="list-style-type: none"> Any personal care products, sunscreens, insect repellents applied or handled in the sampling area. 	<ul style="list-style-type: none"> Personal care products, sunscreens, and insect repellents applied in the staging area, away from sampling bottles, followed by thoroughly washing hands and putting on a fresh pair of powderless nitrile gloves. Sunscreens and insect repellents listed in the MDEQ General PFAS Sampling Guidance

Clothing and Protective Clothing

● Prohibited	■ Allowable
<ul style="list-style-type: none"> Anything made with Gore-Tex or other water-resistant synthetics Anything applied with or recently washed with: <ul style="list-style-type: none"> Fabric softeners Fabric protectors, including UV protection Insect resistant chemicals Water, dirt, and/or stain resistant chemicals Latex gloves 	<ul style="list-style-type: none"> Well-washed synthetic or 100% cotton clothing, with most recent washings not using fabric softeners, made of or with: <ul style="list-style-type: none"> Polyurethane Polyvinyl chloride (PVC) Rubber Neoprene Powderless nitrile gloves

Note Taking

● Prohibited	■ Allowable
<ul style="list-style-type: none"> Clipboards coated with PFAS Notebooks made with PFAS treated paper PFAS treated loose paper PFAS treated adhesive paper products 	<ul style="list-style-type: none"> Loose paper (non-waterproof, non-recycled) Rite in the Rain® notebooks Aluminum, propylene, or Masonite clipboards Ballpoint pens, pencils, and Fine or Ultra-Fine Point Sharpie® markers

Sampling Items and Materials

● Prohibited	■ Allowable
<ul style="list-style-type: none"> Do not use sample bottles that have not been provided by the laboratory Chemical or blue ice Recycled or chemically treated paper towels 	<ul style="list-style-type: none"> Laboratory-provided PFAS-free bottles <ul style="list-style-type: none"> Such as HDPE or polypropylene bottles Regular ice³, double bagged Low-density polyethylene (LDPE) (e.g., Ziploc®) bags Untreated paper towels or cotton cloth

Food and Beverages

● Prohibited	■ Allowable
<ul style="list-style-type: none"> No food should be eaten in the staging or sampling areas, including pre-packaged food or snacks. <ul style="list-style-type: none"> If eating food on-site becomes necessary, move to the staging area and remove PPE. After eating, wash hands thoroughly and put on new PPE. 	<ul style="list-style-type: none"> Brought and consumed only outside the sampling area: <ul style="list-style-type: none"> Bottled water Hydration drinks (i.e. Gatorade®, Powerade®)

¹ This table is not considered to be a complete listing of prohibited or allowable materials.

² The avoidance of PCPs is considered to be precautionary because none have been documented as having cross-contaminated samples due to their use. However, if used, application of PCPs must be done away from sampling bottles, and hands must be thoroughly washed after the use of any PCPs before sampling.

³ Regular ice is recommended as there are concerns that chemical and blue ice may not cool and keep the sample at or below 50°F (10°C) during collection and through shipping to the laboratory.