

Frequently asked questions on the PFAS Monitoring Plan

Minnesota Pollution Control Agency (MPCA) received considerable input on the draft PFAS Monitoring Plan, ranging from concrete suggestions to requests for more explanation on key components to the plan. This document provides answers to key questions raised during the plan development process. Many questions apply to the entire PFAS Monitoring Plan, but others are program-specific.

General questions

What was MPCA's process for developing this plan?

The PFAS Monitoring Plan is one example of MPCA acting on the opportunities described in the [Minnesota's PFAS Blueprint](#).

Developing an effective and efficient path to meet the goals of the PFAS Monitoring Plan required an inclusive planning process. MPCA began the plan development process in June of 2021, holding a webinar and a series of public meetings to gain ideas and early input on key components of the plan. Using this early input, the agency developed a first draft of the plan and released that draft for public input in November 2021. During the input phase, MPCA held another webinar and multiple program-specific meetings and listening sessions. Members of the public and regulated parties could provide input during these sessions or using a web-based form. MPCA reached out to community groups, advocacy groups, tribal contacts, and regulated parties to solicit their participation and input. Through this process, MPCA was able to incorporate feedback from numerous experts and concerned parties.

Is participation in this plan voluntary or mandatory?

Regulated facilities – many of which are publicly owned by municipal, county, or tribal governments – are crucial partners in the work to reduce PFAS discharges to the environment. To be successful in this work, a cooperative relationship between the MPCA and our regulated parties is needed. Voluntary collaboration will lead to the most timely and successful outcomes for the health of Minnesotans and our environment. Acquiring PFAS monitoring data is critical to support the MPCA's overall goal to prevent, manage, and mitigate PFAS pollution and by extension, fulfill MPCA's mission to protect human health and the environment. Should regulated facilities choose not to voluntarily participate in the PFAS Monitoring Plan, MPCA has the legal tools and authority to obtain the necessary PFAS information.

This plan does not change the MPCA's responsibilities to implement our core statutes. For instance, as discussed in the appendix on remediation, the agency considers PFAS "hazardous substances" under MERLA. Sites moving through the Brownfields and Superfund processes are therefore required to consider PFAS alongside any other MERLA hazardous substances.

Who is paying for all this work? Are the costs justified by the benefits?

All facilities will fund their own sampling and analysis costs. By including facilities in the planning process, providing information about the timeline, and working collaboratively with facilities to implement the plan, the agency believes facilities will have sufficient time and information to budget for the monitoring requests.

Feedback provided on the plan suggested that responsibility for paying for monitoring should vary depending on the status of the facility – publicly owned or not – and the degree of the facility’s responsibility for any PFAS likely to be found during the monitoring. The MPCA worked to ensure that the plan represented a reasonable balance between the costs of testing and the benefits of covering a broad range of facilities and media to improve our understanding of PFAS. Input on the plan both suggested more facilities be covered and that the costs represent a significant financial burden. MPCA has balanced these concerns by aiming to collect a dataset that is robust enough to achieve the project’s three listed goals, but limits costs as much as feasible. Additionally, the MPCA is asking the Minnesota Legislature for grant funds that could be used to offset some of the costs.

How are “baseline” levels of PFAS contamination in the ambient environment being considered?

The goal of this study is to identify discharges of PFAS to the environment that are elevated due to conditions at the facility or site. Numerous studies and literature reviews have shown that, though the entire globe has been contaminated to a certain degree by these man-made chemicals, there are statistically elevated PFAS levels in “industrially-impacted” discharges. A combination of Minnesota-specific and US datasets provide some context that will help distinguish between levels of PFAS indicative of industrial sources being present (i.e., “industrially impacted”) and baseline levels of environmental contamination. The table below contains some examples of studies with data relevant to baseline conditions. The MPCA has requested the legislature fund a state-specific soil and surface water study of baseline conditions.¹

	“baseline” conditions observed in select studies	
Groundwater	Median detected concentration: 4 ng/L	Minnesota’s ambient groundwater network
Surface water	Median detected concentration: 2.1 ng/L	Gewurtz et al. 2019; study of precipitation and surface water in the Great Lakes region
Soil	Median detected concentration: 680 ng/kg	Vermont PFAS background study in shallow soils

In some cases, a facility may be located in an area that is already significantly contaminated with PFAS. Examples may include facilities in the East Metro of the Twin Cities, where there are multiple plumes of PFAS-contaminated groundwater and reaches of PFAS-contaminated surface water due to PFAS waste disposal by the 3M Company. In these cases, special consideration will be needed to distinguish between the existing environmental contamination and any new sources of PFAS being contributed to the environment through releases at the facility.

Will the data be publicly available?

Yes, all data submitted to MPCA are publicly available upon request, unless the information is deemed nonpublic under the relevant portions of Minnesota Statutes, Chapter 13. PFAS monitoring results do not qualify as confidential business information.

MPCA received multiple requests for the data submitted through this plan to be “blinded” such that the agency would not be able to identify the location where the data were collected. This request would run contrary to one key goal of the PFAS Monitoring Plan, which is to allow the MPCA to respond to areas with PFAS concentrations of immediate concern. The agency could not take urgent action to protect public health (as needed) if the results were blinded.

¹ Zhu et al. 2019. PFAS BACKGROUND IN VERMONT SHALLOW SOILS.

How are principles of environmental justice invoked in this effort?

PFAS contamination could impact any community in Minnesota. Through implementing the holistic, cross-program PFAS Monitoring Plan, MPCA will generate a statewide dataset on PFAS going into the environment. This information will allow MPCA to continue to improve our understanding of where PFAS may be affecting communities, and to focus source reduction, outreach, and research efforts in those communities with potential for disproportionate negative impacts, including subsistence fishing or hunting communities and communities already vulnerable to negative health outcomes due to historic discriminatory policies of disenfranchisement and disinvestment.

When will MPCA provide more info on which permit or media is targeted if a site has multiple permits?

For facilities with multiple MPCA permits, the notification letter informing your facility that it is scoped into the PFAS Monitoring Plan will include additional information about which media should be sampled for PFAS.

Will MPCA be using this data to develop regulatory requirements?

Minnesota's PFAS Blueprint recommends that state agencies consider the necessary and appropriate changes to program activities – monitoring requirements, permit limits, or best management practices – needed to protect communities from PFAS pollution. The data collected in the PFAS Monitoring Plan will help both MPCA and our regulated facilities prepare for the transition of PFAS from unregulated contaminant of concern to being part of the regulated suite of substances under state and federal environmental laws. Regulatory developments on the federal level will also likely be finalized over the coming one to four years.² Actions taken today to reduce releases of PFAS to environment before regulations are developed will provide financial benefits to facilities and health and environmental benefits to the surrounding communities.

Are PFAS really an environmental public health concern? Are we over-reacting?

While not every PFAS is an equally potent toxicant, many members of the family have been proven to have adverse health effects including increased risk of certain cancers, reduced functionality of the immune system, and damage to the liver. Many PFAS transfer to developing fetuses during gestation, are found in breastmilk, and can cause health impacts in young children. As toxicologists continue to learn more about individual compounds in the PFAS family, they consistently find that these substances are more toxic than previously disclosed. In fact, several members of the PFAS family could have adverse health effects at lower concentrations than almost any other regulated environmental contaminant. Our agency has a duty to protect natural resources such that everyone has access to drinking water, fish, food, and an outdoor environment that is safe to enjoy.

Why isn't MPCA simply banning all PFAS in products in Minnesota?

MPCA does not have the authority to ban PFAS use in products in Minnesota. Such a ban would require legislative action.

² <https://www.epa.gov/pfas/pfas-strategic-roadmap-epas-commitments-action-2021-2024>

Analytical methods, environmental labs, data quality

How does Minnesota's certification process work for labs conducting PFAS analysis?

Minnesota Department of Health established the Environmental Laboratory Accreditation Program (MNELAP) in 1989 to ensure that environmental labs are capable of performing analytical measurements and to hold accredited labs accountable to standards that support the generation of defensible and accurate data. MNELAP offers lab accreditation to accommodate the testing needs of many state and federal environmental programs, including the Clean Water Act (CWA), Resource Conservation and Recovery Act (RCRA), Underground Storage Tank Program, and the Safe Drinking Water Act (SDWA). Laboratories apply each year to MNELAP for accreditation. MNELAP tracks proficiency of labs, works with approved third-party assessors to conduct on-site assessments every two years, and holds enforcement authorities should a lab deviate from method or quality assurance procedures. The MPCA's lab certification program certifies nonprofit municipal, government, or industrial laboratories submitting data for MPCA programs. There are 13 labs currently accredited by MNELAP to perform PFAS analysis.

What is the difference between a promulgated method, a final EPA method, and a draft EPA method?

Many regulatory programs only use EPA methods that are promulgated in the Code of Federal Regulations, but other methods are often available and valid for measuring a given set of analytes. For example, in 2020, the EPA published a memo outlining an interim strategy for incorporating PFAS into federal NPDES permits that includes non-promulgated PFAS methods.³ Additionally, the agency provided an FAQ explaining why the use of non-promulgated methods was appropriate and necessary.⁴ As noted above, PFAS methods are becoming more available, and many are moving towards promulgation. The MPCA analytical guidance outlines what data quality the MPCA expects from certified labs. Given the rapid evolution of method development for PFAS, this document will be regularly updated to reflect the current state of the science as part of the regular lab accreditation schedule.

Method 1633 is a draft method for measuring PFAS in multiple substrates (wastewater, surface water, groundwater, soil, biosolids, sediment, landfill leachate, and tissue). This method is scheduled for finalization in fall of 2022. As of December 1st, 2021, the Department of Defense (DOD) has required all non-potable water matrixes collected from their PFAS contaminated sites to be analyzed using draft method 1633.⁵

OTM-45 is a final air emissions research method published by EPA that will not be promulgated. This final method is being used in the context of compliance and enforcement and permitting at the federal level and in other states.

The EPA approves, but does not promulgate, methods used for measuring compounds in potable water. Methods 533 and 537.1 are final EPA-approved methods for use in drinking water.

Is MPCA requiring the use of draft method 1633? Could a lab use this draft method if they chose to do so?

MPCA is not requiring the use of EPA's draft method 1633. MPCA is requiring that PFAS analysis for the PFAS Monitoring Plan be conducted by a lab that is accredited for PFAS through MNELAP. Accredited labs can use draft method 1633 to conduct analyses as long as they are certified according to the data quality standards in MPCA's guidance document.

³ <https://www.epa.gov/newsreleases/new-interim-strategy-will-address-pfas-through-certain-epa-issued-wastewater-permits>

⁴ <https://www.epa.gov/cwa-methods/frequent-questions-about-pfas-methods-npdes-permits>

⁵ DOD. (2021). Update for Establishing a Consistent Methodology for the Analysis of Per- and Polyfluoroalkyl Substances in Media Other than Drinking Water. Retrieved from: <https://denix.osd.mil/dod-pfas/osd-policies/documents/pfas-in-media/>

Which labs in the US or Canada are certified to perform PFAS analysis relevant to the PFAS Monitoring Plan?

Currently there are 13 labs certified with MNELAP for some sort of PFAS work. Not all laboratories will have a full scope of PFAS analytes. To look for labs with MN accreditation (MNELAP):

- <https://eldo.web.health.state.mn.us/public/accreditedlabs/labsearch.seam>
- Select “Customized Search”
- Select Perfluorohexanoic acid (PFHxA), a common PFAS analyte, in the analyte field
- Select “search” and see the results populate below. You may click on the lab to view the full suite of analytes they are accredited for.

Lab capacity will depend on sample types (matrices), sample volume expected and the specific analytes that are going to be requested. Each lab will have different capabilities and timelines.

Can samples run by different environmental laboratories using different analytical methods be compared to each other?

Yes. This type of meta-analysis is commonplace.

Has MPCA considered requiring total organic fluorine (TOF) or total oxidizable precursor (TOP) analysis be completed at each facility?

Yes, MPCA considered requesting TOF or TOP analysis. However, it was determined that these analyses would increase the cost of monitoring without necessarily meaningfully advancing the three goals of the plan. Future research projects may consider TOF, TOP, and non-targeted analysis.

Why aren't you listing specific analytes or specific reporting limits that are required?

Labs will be running different methods, which may have slight variations in the number of analytes measured. All labs will include the core set of analytes included in the currently applicable guidance document (p-eao2-06). The guidance document also lists minimum reporting limits. Future rounds of MNELAP accreditation will consider the revised analytical guidance document (p-eao2-28) and any newly finalized PFAS analytical methods from EPA (as applicable). Analytical guidance documents can be found at: <https://www.pca.state.mn.us/data/mpca-quality-system>.

Is there a formal comment period on the guidance documents (sampling and analytical)

No, the PFAS guidance documents, like other guidance documents posted on the MPCA quality system webpage, do not go through a formal notice and comment period. The criteria described within the document are considered minimum standards (the laboratory may use stricter criteria) that should be met when analyzing and reporting sample results to the MPCA. The guidance supports MPCA staff in setting data quality objectives and reviewing the data collected and reported by contractors and regulated parties. Information included in the document includes specifications on how PFAS samples should be collected and stored for various media, how instruments should be calibrated, and which PFAS should be measured at what minimum reporting levels. This document is regularly revised to incorporate the rapid evolution of knowledge regarding PFAS contaminant analysis.

Solid waste facilities and hazardous waste landfills

Is MPCA considering connections between solid waste facilities and wastewater treatment plants when developing the PFAS Monitoring Plan?

MPCA recognizes the critical role solid waste facilities play in protecting Minnesota’s environment. We also understand there are relationships between solid waste facilities and the other components of our waste management system, such as wastewater treatment plants. Because of this relationship, we worked to make sure we did not ask for redundant sampling at the wastewater and solid waste facilities. For instance, the PFAS Monitoring Plan does not require sampling leachate going to wastewater treatment plants because that could duplicate the sampling wastewater treatment plants may request for incoming potential sources. The entire PFAS Monitoring Plan is focused on limited duration monitoring at multiple types of facilities across multiple regulatory authorities – information from this broad set of facility types will help us understand the scope and depth of the PFAS issue throughout our state before broader regulatory changes are considered.

Will MPCA support solid waste facilities with public communication about PFAS?

MPCA understands that members of the general public are likely to have concerns about being exposed to PFAS or PFAS being released in their communities. MPCA wants to support effective communication and information sharing with the public about PFAS generally, including about PFAS in waste streams. MPCA is currently meeting with an advisory group of operators of waste management facilities (including landfills, SSOMs, waste-to-energy facilities, and WWTPs) to develop communication materials related to PFAS. This effort is tied to Laws of Minnesota 2021, 1st Spec. Sess. Chapter 6, Article 1, Section 2, Subd. 2(k), which directs MPCA to develop upstream source reduction strategies for conduits of PFAS pollution. MPCA’s intent is to work with this advisory group and other stakeholder groups to help support operators in public communication around this complex topic.

Did MPCA consider monitoring PFAS in stormwater at landfills rather than groundwater or leachate?

While there are design requirements to manage and convey stormwater in the solid waste rules, the quality of stormwater discharged from the facility is not regulated by the solid waste program. Further, the solid waste rules require that stormwater contact with waste materials is minimized, meaning that water should not be coming into contact with PFAS-containing waste. Stormwater that does encounter waste materials should typically be managed as leachate for lined facilities or controlled to infiltrate into the soils on-site for unlined facilities. Therefore, PFAS monitoring in groundwater and leachate were considered a higher priority than stormwater for landfills.

How will facilities be prioritized for sampling if they have a mixture of lined, unlined, and closed cells?

Unlined facilities or unlined portions of facilities will be prioritized for monitoring due to the higher likelihood of releases from the unlined areas. Other characteristics of the landfill such as the presence of cover systems that significantly reduce infiltration or documented releases from the facility will also be considered in the prioritization.

Why should fully lined landfill facilities conduct monitoring at all?

Sampling of groundwater near lined portions of landfills is one of the lowest priorities in the PFAS Monitoring Plan because these facilities have the lowest likelihood of releases to groundwater (unless these facilities land-apply their leachate). For fully lined landfills, prioritization for PFAS sampling will consider existing monitoring data and any evidence of other types of releases from the landfill. Though the likelihood of PFAS releases from a fully lined landfill is low, the one-time monitoring called for in the PFAS Monitoring Plan can provide useful evidence that future groundwater monitoring in these types of facilities is not necessary unless other data indicate a new leak has occurred.

How is MPCA considering landfills that land apply leachate, which we know are causing PFAS exceedances in groundwater?

Landfills that land apply leachate currently sample for PFAS compounds in groundwater at the land application site, and this routine sampling will continue. However, additional actions may be necessary if existing data indicate that the extent and magnitude of contamination from the land application site has not been defined. MPCA has already determined that land application of leachate in its current form is not a sustainable practice and has begun working with facilities to explore changes to reduce the potential impacts to human health and the environment.

When will facilities receive more information on Sampling and Analysis Plan (SAP) guidance?

MPCA will work with facilities to develop sampling and analysis plans that address the specific characteristics of each monitoring network. For instance, targeted sampling of monitoring wells upgradient and downgradient of portions of the landfills most likely to identify releases will be important. Facilities may also need to modify their sampling procedures and/or equipment to prevent inadvertent PFAS contamination.

How will PFAS data be submitted?

Facilities will submit their PFAS data in a manner consistent with how data are submitted for other parameters, using an electronic data delivery (EDD) system.

How is the solid waste program using intervention limits (ILs), health-based limits (HRLs), and health based values (HBVs) in this plan?

The PFAS Monitoring Plan will use HRLs, HBVs, and ILs consistently with how these thresholds are applied throughout the solid waste program. Solid waste rules require the agency to use intervention limits in groundwater to determine if there is a risk of exceeding a health-based threshold like a HRL or HBV at the facility compliance boundary. Setting groundwater contamination standards to ILs, which are lower (more protective) than HRLs and HBVs, affords some safety factor to address releases before they impact potential downgradient groundwater users. MPCA and MDH have a long-established process to address HRL exceedances in private potable water supplies; MDH addresses HRL exceedances in public water systems.

Why are paper monofills included in the plan, even if a facility has not knowingly used PFAS?

A subset of paper mills have intentionally used PFAS-containing products to create coated papers for the food industry and other applications. Though many mills did not produce those specific products, there are many other paper products that may also include PFAS, such as some inks and manufacturing aids that create non-stick, easy to clean surfaces in the factory. For this reason, MPCA believes that even a mill that has not knowingly used PFAS-containing products may still be a significant point of PFAS release into the environment. One cycle of monitoring for PFAS at these facilities should provide more information about potentially unknown sources of PFAS.

Will waste-to-energy facilities and other waste incinerators be considered in the solid waste plan or the air plan?

Waste-to-energy facilities are conduits of PFAS, similar to landfills and wastewater treatment plants. MPCA believes that the air emissions from these facilities are the most likely to be the major contributors to overall releases, rather than leachate or groundwater surrounding the ash monofills. For this reason, waste-to-energy facilities are included in the air PFAS Monitoring Plan.

Why are yard waste sites not included in the plan?

Current rules only require yard waste sites to “prevent leachate from leaving the facility.” In contrast, source separated organic material (SSOM) compost sites are required to collect and treat contact water. This usually means SSOM sites have lined ponds adjacent to lined surfaces where sampling can occur. Yard waste sites typically do not have these features and therefore have very few comparable opportunities to conduct sampling.

Additionally, yard waste sites collect only yard clippings, brush, and leaves, so they have a lower likelihood of being significant conduits compared to other solid waste facilities.

How is MPCA supporting organics recyclers in this effort?

Organics recycling is encouraged by MPCA for a myriad of environmental benefits, and the agency wants to foster a healthy economy in the organics recycling market. MPCA is committed to working with each individual facility to reduce sources of PFAS coming into the facilities to promote sustainability and longevity of compost programs.

- MPCA supported the successful effort to ban PFAS in compostable service ware and other food packaging in Minnesota.
- MPCA undertook a research project aiming to assist composters in addressing the challenges PFAS presents for the industry. One component of the project involved testing contact water at SSOM and yard waste compost sites. Another component involved a literature review of existing research on PFAS concentrations in products and materials that are accepted at compost sites. Both studies can be found here: <https://www.pca.state.mn.us/waste/composting-and-pfas>.
- MPCA measured PFAS in yard waste bags and anticipates sharing the results from that testing effort in the coming months.
- The MPCA has also sought and received funding from the Legislative Commission on Minnesota Resources (LCCMR) to research PFAS fate and transport from compost after it has been land-applied and on-site treatment options for water containing high levels of PFAS.

Will MPCA prohibit sale of finished compost products if PFAS are detected?

No, the detection of a PFAS will not result in prohibitions or restrictions on the use of a compost product. The PFAS Monitoring Plan does not call for the testing of finished compost products. Through a LCCMR research grant, MPCA is currently studying the potential impacts of PFAS in land applied materials, including compost, and potential management strategies. This work is set to be completed in 2024. MPCA intends to use the information produced in this study and similar other studies at the federal level to guide future action on the need for regulation of PFAS in compost or other beneficial land amendment materials.

Should solid waste facilities reject PFAS-containing waste? If yes, where should that waste go?

Given the widespread use of PFAS compounds in products and the lack of clear data identifying which products contain PFAS, screening out PFAS-containing waste would be difficult and undesirable from a waste management perspective (for example, at landfills). The PFAS Blueprint and PFAS Monitoring Plans are meant to facilitate efforts to eliminate PFAS from waste streams. Some types of solid waste facilities – such as composts sites – may wish to exclude known PFAS-containing products to improve the quality of their finished product and reduce potential leaching into contact water. Note that the recently passed ban on intentionally added PFAS to compostable service ware and other food packaging in Minnesota should significantly reduce the amount of PFAS entering these facilities. While the ban does not go into effect until 2024, many individual manufacturers of food packaging are transitioning to PFAS-free products in a shorter timeframe.

Why are anaerobic digestion facilities not included in the solid waste portion of the PFAS Monitoring Plan?

Anaerobic digester facilities were not included in the PFAS Monitoring Plan because there are currently no anaerobic digester facilities operating in the state that hold permits with the solid waste program.

Why isn't the Solid Waste Program considering Memorandums of Understanding (MOUs) to implement PFAS monitoring like the Wastewater Program?

Different programs use varied terminology for implementation tools. In the Solid Waste Program, sampling and analysis plans, or SAPs, will serve a similar function as the MOUs that are being proposed by the Wastewater Program. MPCA's intent is to pursue voluntary participation in the PFAS Monitoring Plan, with the preferred approach of working cooperatively with facilities outside of permit requirements.

Wastewater

How will data be submitted?

All data will be reported electronically to the MPCA, where it will be stored in EQUIS. Detailed instructions on data submittal guidance will be communicated to facilities who are participating in the monitoring.

What are the next steps for the MPCA after this data is reported?

MPCA will evaluate the first two quarters of influent sampling from facilities. Using these data, the agency will develop response thresholds to determine which facilities should be prioritized for source identification and reduction activities. After the last two phases of source reduction, the agency will again evaluate influent concentrations in comparison to response thresholds and identify if additional next steps are needed.

A primary goal of the PFAS Monitoring Plan effort in wastewater is to evaluate the effectiveness of source identification and reduction activities at a given facility. Additionally, the data collected will assist the agency in effectively developing any future NPDES/SDS wastewater regulatory framework.

How will the timing of sampling be determined to accurately reflect influent (municipal) or internal waste streams (industrial), which may have variable concentrations of PFAS?

In general, grab samples are recommended for PFAS sampling as a method to avoid bias introduced from PFAS sorbing to the composite sampling equipment (decreasing concentrations in the sample) or leaching from potentially PFAS-containing components of the sampling device like grease (increasing concentrations in the sample). As a result, sample results will reflect the PFAS concentrations at a single moment in time. As PFAS concentrations in internal waste streams at industrial facilities are likely variable, care will be needed to select a time to sample that captures process or production activities. If there are multiple different types of activities at an industrial facility that could be associated with PFAS use or release, sampling of internal waste streams should occur during different activities in the first two quarters of sampling. At municipal wastewater treatment plants, influent sampling should capture typical conditions at the plant to the best of the facility's knowledge. These details on timing of sample collection will be discussed with facilities as MOUs or other implementation documents are developed and finalized.

Why are effluent and biosolids monitoring not included in the PFAS Monitoring Plan?

The focus of the wastewater PFAS Monitoring Plan is to understand the landscape of PFAS influent concentrations and identify where source reduction and source elimination efforts are needed. There are ongoing research and risk assessments related to potential risks posed through biosolids to drinking water, soil, and agricultural receptors like plants and livestock at MPCA and EPA. These research conclusions and risk assessments will assist future decision making and inform broad monitoring efforts for PFAS in biosolids.

How will MPCA work to support WWTPs in successful source reduction efforts?

The PFAS Monitoring Plan is one piece of MPCA's overall effort to confront the challenges posed by PFAS pollution statewide. MPCA is also working on a project to identify and evaluate the source of PFAS to conduits such as municipal WWTPs and to develop tools and education documents to support source reduction efforts -- see Laws of Minnesota 2021, 1st Spec. Sess. Chapter 6, Article 1, Section 2, Subd. 2(k).

It can be hard for municipal WWTPs to have conversations with significant industrial users because of concerns over the negative public perception sometimes associated with regulating local industries. How can PCA support these difficult conversations around PFAS?

MPCA recognizes that taking actions to reduce PFAS use and release will result in challenges to municipalities, industrial users, and the public. The agency hopes to develop tools through the legislatively funded source reduction effort to help aid in these difficult conversations.

Will MPCA be sharing a template Memorandum of Understanding (MOU) for municipal WWTPs?

Yes, MPCA will be developing a MOU that will be sent to the Municipal facilities prior to implementation.

Will MPCA use MOUs for industrial WWTPs?

Given the variability of facility specific factors, MPCA’s approach at industrial facilities is to use a variety of tools including, but not limited to schedules, agreements, and/ or orders on a case-by-case basis. MPCA preference is to work collaboratively to meet the goals and intent of the PFAS Monitoring Plan.

Air

Are stack testing requests for one-time stack testing or ongoing testing?

The intent of the PFAS Monitoring Plan is to collect data from onetime stack testing in order to determine appropriate next steps in policy and regulatory development. However, if stack testing results indicate that releases may be posing an imminent public health or environmental risk, additional testing will be considered on a facility-specific basis. Changes to state and federal regulations may also require testing in the future. Stack testing rules require that stack testing be conducted during worst-case conditions (i.e., a facility cannot stack test for PFAS during a time when known or possible PFAS-related activities are not taking place).

How will data be submitted from stack testing?

Stack tests will be submitted directly to the MPCA using the normal method (through emailing the stack testing inbox located at SubmitStacktest.pca@state.mn.us).

Will there be an opportunity to join a mutually agreed upon stack testing agreement?

Every stack test requires submittal of a test plan for approval prior to testing. The stack testing rules also call for a pre-test meeting between the facility, the testing company, and MPCA staff.

Will all stacks associated with PFAS be tested or can a representative stack be tested?

A representative stack can be tested to meet the PFAS stack testing requirement, provided the stacks are identical and exhaust identical processes that have identical operating parameters.

Stack testing with OTM-45 is new – are there enough companies who can do it? Do we trust the results?

There are multiple stack testing companies in Minnesota who can perform OTM-45. There are also testing companies in other states who can conduct the testing. Although the test method is new, there is no reason to believe test results are not representative of stack emissions.

How will data be submitted to the air emissions inventory?

Beginning with emissions inventory year 2023 (for the report due April 1, 2024), the air PFAS emissions will be submitted to MPCA via the emission inventory e-Services website. All requested PFAS will be found within the system in the same menus as other air toxic pollutants.

When will the agency be providing more details on emissions inventory reporting?

Communication to specific facilities being asked to submit PFAS emissions will occur in March 2022 for the 2023 emission inventory (due in 2024). The emissions inventory team at MPCA will hold a stakeholder meeting in November 2022 to provide more detailed information and advice regarding tracking and reporting PFAS emissions. MPCA will include reminders during our normal communication for the 2023 emission inventory.

How will permitted air facilities that are conduits of PFAS provide estimates of PFAS emissions?

Some types of facilities being asked to report air emissions are conduits of PFAS rather than manufacturers or users of PFAS-containing materials. For example, waste-to-energy facilities, facilities with biosolids incinerators, and medical waste incinerators are likely passing PFAS on from products used or manufactured elsewhere. MPCA understands that at this time, there is likely limited information available for these facilities to estimate the amount of PFAS in the materials they incinerate. It is possible that by the time that emissions inventory reporting is due in 2024, some or all of these facilities will have conducted a stack test, which would help provide estimates of annual emissions. Should stack testing information not be available, these conduit facilities should attempt to provide the best information they can when reporting emissions for the 2023 emissions inventory reporting year.

Would the air program consider using ambient air monitors to verify results of emissions inventory?

MPCA understands that for many industries, emissions estimates will be rough estimates. MPCA may implement ambient monitoring in areas where we are unsure of the data collected or if we think there may be elevated amounts of PFAS. The second goal of the PFAS Monitoring Plan is to identify areas of particular concern that warrant quick response actions. If there is high uncertainty or the amounts of PFAS may be dangerous, we would consider using ambient monitors in those areas. However, it is important to note that there are limits to our ability to monitor ambient air for PFAS, such as the requirements for the air monitor to have electrical access, the need for protective fencing around the monitor to prevent tampering, labor intensive sample collection processes, and state funding for analytical costs associated with ambient monitoring.

How does the PFAS emissions inventory effort at MPCA relate to the toxic release inventory (TRI) reporting mandated by EPA?

There is not complete overlap between the PFAS included in EPA's Toxics Release Inventory (TRI) and the PFAS included in MPCA's air emissions inventory. Additionally, MPCA has identified specific facility types or facilities for reporting that do not perfectly overlap with those required to report to TRI. TRI collects information on a facility-wide basis, and MPCA will be collecting process-level emissions information.

MPCA is collecting PFAS emissions data in order to make decisions about what is best for Minnesota moving forward. While there is likely overlap between MPCA and EPA goals regarding PFAS, a nation-wide program such as TRI is not sufficient to meet the needs of Minnesota for air quality PFAS data at this time.

How will MPCA support accurate data being submitted via emissions inventory?

MPCA acknowledges that PFAS emissions inventory reporting is new, and estimating PFAS emissions is especially challenging given the lack of public information surrounding PFAS content in products. The agency plans to do the following things to help facilities submit complete and accurate information:

- MPCA will recommend questions we think facilities should ask their suppliers, including specific questions that depend on the type of product.
- MPCA will provide a PFAS air emissions inventory fact sheet including common types of products most likely to contain PFAS.
- MPCA will develop a 1-page instructional sheet to assist facilities in identifying PFAS to teach facilities how to read labels or MSDSs to look for PFAS.

Performing a mass balance is our facility's only viable calculation option for my process. However, MSDSs for the materials we use do not indicate any of the PFAS compounds in OTM-45. What should we do?

If stack test data are not available, contact the manufacturer to ask if the materials you use contain PFAS (the target analytes from OTM-45) in any amount. Use this information to supplement any information from the MSDS.

There are no emission factors for processes at my facility for the PFAS compounds being requested. What do we do?

If stack test data are not available and material balance calculations are not feasible, then for processes known to emit PFAS, the facility should develop their own estimates of PFAS emissions based on best engineering judgement.

We have no other knowledge of PFAS being used or emitted at our facility and believe our emissions to be zero. Does MPCA still want us to identify PFAS in the emissions inventory?

No. In this case, MPCA will ask target facilities to provide verification that they have reviewed for possible emissions of the identified PFAS.

Stormwater

How will the data be submitted?

All analytical data will be provided to the MPCA electronically and stored in the EQuIS database. Details on the specifics of data submittal will be included in communications to phase-one facilities.

Will there be sample collection training for staff?

A stormwater specific sampling guidance and videos can be found on MPCA's website at <https://www.pca.state.mn.us/water/step-9-sampling>. PFAS specific sampling considerations are located at <https://www.pca.state.mn.us/sites/default/files/p-eao2-27.pdf>.

Will there be an opportunity to join a mutually agreed upon sampling agreement?

Yes, MPCA prefers to implement the PFAS Monitoring Plan in partnership with facilities in identifying and reducing PFAS releases. Typically, the industrial stormwater program would employ a mutually agreed upon sampling agreement such as a schedule of compliance.

How will MPCA support facilities with enacting source reduction or implementing best management practices (as necessary)?

MPCA's technical staff are available as resources to help facilities identify and navigate the PFAS pollutants and what BMPs may be prudent.

Remediation

How does the implementation of the PFAS Monitoring Plan change the “status quo” of Brownfields and Superfund operations?

Sites that enter the Brownfields and Superfund program are managed under the MERLA framework. Incoming sites which meet the criteria for potential PFAS presence will be managed under the same framework, therefore, there will be no change to Brownfields and Superfund operations. New sites will be assessed according to the criteria identified in Appendix E of the PFAS Monitoring Plan. If sampling is required, a site investigation will proceed to determine the extent of contamination. Appropriate remedial measures will be implemented to address potential threats to human health and the environment. Closure of the site will require relevant institutional controls to address future land use and long-term management of on-site remedial technologies.

Why is MPCA considering sites during 5-year review instead of a one-time opening of all sites?

The Site Remediation program manages the cleanup and redevelopment of several hundred sites. These include those on the Minnesota Permanent List of Priorities (PLP) and National Priorities List (NPL) as well as sites led by Cooperative Parties. Listed sites (PLP and NPL) are subject to reviews every five years. These reviews provide an opportunity to assess the effectiveness of selected remedies and investigate the potential for new contaminants. The results from these reviews will be used to evaluate the potential for PFAS contamination at nearby sites and address PFAS using a risk-based approach.

When will additional details be made available to support decision-making regarding PFAS sampling?

The Remediation program is developing a PFAS Guidance document to support site-specific decision-making. The program has convened an external stakeholder advisory group (<https://www.pca.state.mn.us/waste/advisory-group-remediation-guidance>) and the final document is expected to launch in late 2023. During the interim period, the Remediation PFAS Monitoring Plan (Appendix E) provides the required information for determining whether PFAS sampling will be required at a site. The criteria are listed in the section titled “What sites.” Resources for determining whether a site meets the listed criteria include Appendix F, which lists NAICS codes for industries associated with the generation, use or disposal of PFAS. The MPCA Groundwater Atlas (<https://www.pca.state.mn.us/data/minnesota-groundwater-contamination-atlas>) provides information on PFAS detections in groundwater at existing sites. Please note, locations are continuously updated as new data become available. Following sampling, the risks to human health and the environment are evaluated using currently available screening criteria. Media specific screening criteria are available on the MDH (<https://www.health.state.mn.us/communities/environment/risk/guidance/gw/table.html>) and MPCA (<https://www.pca.state.mn.us/sites/default/files/c-r1-06.xlsx>) websites.

How will this plan impact other sectors?

The PFAS Monitoring Plan will apply to all sectors engaged in site work and remedial activities across Minnesota. This is especially relevant in areas where site work may lead to the release of potentially impacted media that can harm human health or the environment. Activities which lead to the disposal of large quantities of soil or water will require preliminary investigations to determine if PFAS sampling is required. Environmental Site Assessment (ESA) reports may serve as sources of information about a site’s historic use and recognized environmental conditions (REC) that may indicate the need for PFAS sampling. If investigations show that PFAS are present, a site will be required to address the contamination according to the guidelines set forth in the PFAS Monitoring Plan.