3M PFAS Settlement Priority 2 Grant Program

PFOS fish sampling outline for developing proposed project costs

***Disclaimers:**

1. This document is for costing purposes – more specific sampling information will be provided if the application is selected for funding.
2. The Minnesota Department of Health (MDH) has issued state-wide fish consumption guidelines for PFOS (and other compounds). PFOS data can benefit the information available for a waterbody to guide MDH's decisions on fish consumption recommendations but may not singly lead to a change in official Fish Consumption Guidelines. See the MDH fish consumption home page for more information.
3. Contact 3MPriority2@state.mn.us with questions.

Roles and responsibilities

Several state agencies are involved with developing fish consumption guidance:

- DNR issues permits to take fish
- MPCA receives data submissions and stores data in EQuIS database
- MDH reviews data in EQuIS format and develops guidance as applicable

Project proposer:

- Plans and organizes all aspects of consultant acquisition, data collection, and data submission

Contracting

Required: Proposer must obtain a qualified consultant to conduct fish collection, sample processing, shipment to a lab, and data submission to MPCA.

If qualified, a proposer can access state MMB pre-approved Master Contracts using the Cooperative Purchasing Venture / Minnesota Office of State Procurement. Master Contracts are available for consultants and qualified labs. Contact Lindsey Egge at the MPCA lindsay.egge@state.mn.us for more information on PFAS-related contracts.

Scope of work for fish collection

Per water body:

- Collecting at least two species is required (three species is preferred). Preferably, species will occupy different niches and/or trophic levels. For example, if collecting three species, target one benthivore (e.g., common carp, freshwater drum), one omnivore (e.g., black crappie, bluegill), and one piscivore (e.g., walleye, northern pike, largemouth bass).
- Five fish per species must be collected (i.e., minimum of 10 samples for two species and 15 for three species for lab analysis).

- If there are other species of interest due to local fishing/fish consumption patterns, MPCA and MDH would consider how those datasets fit into our knowledge of PFAS based on the species most often tested when considering consumption guidelines.

Lab and sampling requirements

Refer to MPCA's PFAS analytical guidance and sampling guidance for information on selecting appropriate data quality objectives (DQOs). DQOs should be established prior to data collection and sampling, and the prescribed quality assurance/quality control (QA/QC) procedures should be followed throughout sampling, laboratory analysis, and data analysis.

Additional procedures:

- Samples should be analyzed as scale-off, skin-on fillets.
- Wrap individual whole fish in clean aluminum foil (do not use foil labeled as non-stick). Label each individual wrapped fish with waterbody, location and latitude/longitude (if river), species, and date of collection (label can be scale envelope, writing on foil, piece of paper, etc.). Place foil-wrapped fish in plastic bags (such as Uline poly bags). All fish of one species and from a single waterbody may be combined in the same plastic bag.
- Place fish in a cooler with ice to prevent decomposition. If reusing containers filled with frozen water for ice (e.g., milk jugs, water bottles), the containers should be placed in new Ziploc bags prior to reuse. Make sure fish are completely frozen prior to shipping to lab. Always ship fish on ice to keep them frozen.
- Place completed Chain-of-Custody/Field Collection forms in a sealed Ziploc bag inside the cooler.

PFAS sample collection protocol must be utilized (supplied by consultant)

Example protocol:

Source: Michigan DEQ Fish Tissue PFAS Sampling Guidance (2019)

Precautions to Avoid PFAS Contamination of Samples

"To date, it has not been documented that cross-contamination of fish during collection and sample processing outside of the analytical laboratory setting will result in a significant impact on the concentrations measured in tissue samples, but staff must be aware of potential PFAS sources and take precautions to minimize possible effects on the analytical results." (Michigan DEQ, 2019)

• Avoid wearing waterproof, stain proof, or other treated clothing while handling samples or sample media.

• Avoid handling fast food packaging or other food packaging (including compostable plates, bowls, etc.) prior to or during handling of samples or sample media.

• Materials to avoid include:
- Teflon (PTFE)
- Food packaging, especially fast food

- Anything with “fluoro” in the name. For example:
    - Fluorinated ethylene propylene (FEP)
    - Ethylene tetrafluoroethylene (ETFE)
    - Polyvinylidene fluoride (PVDF)

Clothing materials that are acceptable include the following:

- Life jackets made of polyethylene foam and nylon shell fabric can be used.
- Waders made of nylon, polyvinyl chloride (PVC), or neoprene can be used (for example, Cabela’s Three Forks waders are PVC-coated nylon).
- PVC or wax-coated fabrics.
- Neoprene.
- Synthetic and natural fibers (preferably cotton).
- Any boots made of polyurethane and PVC.
- Clothes that have been well laundered several times and without fabric softener from time of purchase.
- When handling fish, bare hands, cotton gloves, and powderless nitrile gloves are acceptable.

Data Submittal requirements (for cost purposes – more information will be provided during the grant establishment)

Ideally, one of the labs on state contract will be utilized. All labs on state contract are set up to submit electronic data to MPCA in Lab_MN format. This format is suitable for uploading into EQuIS.

If a contract lab cannot be used, you must have your consultant work with MPCA to ensure data are submitted in the correct Lab_MN format.

If a contract lab can be used, request a chain of custody form (COC) from MPCA. This form includes metadata for each sample that are required for proper Lab_MN formatting and submission to EQuIS.

Required metadata include: DOWID, latitude and longitude, full species name, fish weight and length, field name (equivalent to sample ID), collection date and time. Contact MPCA to establish MN Location Identifiers, which requires DOWID and latitude/longitude to establish.