Statewide PFAS Investigation: Michigan

2019 Per- and Polyfluoroalkyl Substances: Second National Conference

Kay L. Fritz, RD, MA, PhD, Toxicologist
PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)

• PFAS can be found in fire-fighting foams, stain repellants, nonstick cookware, waterproof clothing, food wrappers, and many other household products.

• PFOS “Do Not Eat” Fish Advisories for several water bodies in Michigan.

• Michigan PFAS Action Response Team (MPART) Agencies: Environment, Great Lakes, & Energy; Health and Human Services; Natural Resources; Agriculture; and others.
MPART: 2017 to Present

www.michigan.gov/pfasresponse

TAKING ACTION, PROTECTING MICHIGAN

TAKING ACTION TO PROTECT THE PUBLIC'S WATER

Per- and polyfluoroalkyl substances (PFAS) are a large group of man-made chemicals that include perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS). PFAS have been used globally during the past century in manufacturing, firefighting and thousands of common household and other consumer products. These chemicals are persistent in the environment and in the human body – meaning they don't break down and they can accumulate over time. In recent years, experts have become increasingly concerned by the potential effects of high concentrations of PFAS on human health.
MPART ACTIVITIES

- Testing drinking water from all community water supplies, schools that use well water, child care providers and Michigan Head Start Programs.

- Identifying PFAS Sites: one or more groundwater sample exceeds the Part 201 cleanup criteria for groundwater used as drinking water, which is **70 ppt PFOA + PFOS**.

- Testing fish (since 2010) and deer (since 2018).

- Testing influent and effluent for wastewater treatment plants, and their biosolids, based on surface water quality values of **420(12,000) ppt PFOA** and **11(12) ppt PFOS**.
54 PFAS Sites:

- Military
- Chrome/metal/other platers
- Landfills (10)
- Large fire suppression (refinery, retail store, used tire storage, tanker spill)
- Automotive (plating activities?)
- Airports
- Tanneries
**Additional Investigations:**

Areas that had land application of:

- Biosolids
- Paper mill sludge and/or fly ash
Known or Suspected PFAS Sources:

- AFFF for fire suppression or training
- PFOS-containing mist suppressants
- Landfill leachate
- Waterproofing products
- Papermaking wastes
Do plants take up PFAS from contaminated soil or water?

Do food animals absorb PFAS from contaminated feed or water?

Could PFAS be found in milk or eggs?
MDARD Response

Identify and investigate within a 1 mile radius:

- Migrant Labor Housing
- Food Processors
- Grocery Stores
- Convenience Stores
- Dairy Farms
- Livestock Producers
- Irrigation Wells
- Plant Nurseries
- Animal Shelters
Example #1: Home-canned food

**Question**
Is my home-canned food safe to eat?

**Answer**
Under these specific circumstances, MDARD recommended this food not be eaten.

**Details**
Municipal drinking water > 70 ppt PFOA + PFOS. This water had been used for canning.

**Rationale**
People had been drinking unsafe water for an unknown amount of time. It was best for them to decrease their PFAS exposure as much as possible.
Example #2: Community garden

Question
Is it safe to eat produce from this garden?

Answer
Under these specific circumstances, MDARD recommended decreasing PFAS exposure to plants by using raised beds with clean soil and other measures.

Details
PFAS was found in soil (assumed to be from air deposition) and groundwater. Irrigation water was municipal water which was ND for all 14 PFAS tested.

Rationale
Garden plants can take up PFAS, however there are no standards for a safe amount in edible parts.
**Example #3: Dairy farm**

**Question**
Should the milk be tested for PFAS?

**Answer**
Under these specific circumstances, MDARD had no concern for PFAS in the milk.

**Details**
On-farm pond found to be high in PFAS. Fenced off for 1 yr. “Hay” sample taken by citizen tested as 270 ppt PFOA and ND for PFOS.
Drinking water for cattle tested as ND PFOA and ND PFOS.

**Rationale**
Similar case in AL: cattle forage estimated 3,000 ppt PFOA. FDA determined milk OK. PFOS half-life ~ 4 months.
MDARD Advice: PFAS in Food and Animals

• Pets and other animals should drink the same water you do. If you need filtered water, so do the animals.

• There are no federal standards for safe levels in food. Best practice is to reduce exposure wherever possible.

• Gardens- tips for minimizing exposure:
  • Use rain water or filtered water for irrigation
  • Use raised beds with new, clean soil
  • Add clean organic material to the soil (peat, manure, compost)
  • Peel root crops

(www.michigan.gov/pfasresponse/: FAQs crops, gardening, food)
Questions?

Kay L. Fritz
517-284-5731
fritzk1@michigan.gov