Michigan’s IPP PFAS Initiative

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What’s in a Name?

- **PFAS** – Per and Polyfluoroalkyl Substances
- Also called **PFCs** for Perfluorinated Compounds (leaves out Polyfluorinated)
- But **PFCs** can also mean Perfluorocarbons associated with greenhouse gases--confusing
- **PFAS** and **PFOS** sound similar, also confusing
Environmental and Health Concerns

• Widespread wildlife and human exposure
• Human Health concerns
• Most studied chemicals are PFOS and PFOA
PFAS of Concern: PFOA

- **PFOA**: perfluorooctanoic acid (also called “C8”)
  - Non-stick coatings
  - Stain- and water-repellant treatment
- Human health exposure: food and drinking water, occupational exposure
- National voluntary phase out, but may still be found
PFAS of Concern: PFOS

- **PFOS**: Perfluorooctane Sulfonate
  - Persistent and Bioaccumulative
  - Human health concerns
  - Associated Fish Consumption Advisories
  - Low Water Quality Standards in MI:

<table>
<thead>
<tr>
<th></th>
<th>HNV (nondrinking)</th>
<th>HNV (drinking)</th>
<th>FCV</th>
<th>FAV</th>
<th>AMV</th>
</tr>
</thead>
<tbody>
<tr>
<td>PFOS (ng/L)</td>
<td>12</td>
<td>11</td>
<td>140,000</td>
<td>1,600,000</td>
<td>780,000</td>
</tr>
<tr>
<td>PFOA (ng/L)</td>
<td>12,000</td>
<td>420</td>
<td>880,000</td>
<td>15,000,000</td>
<td>7,700,000</td>
</tr>
</tbody>
</table>
Fish Consumption Advisories driven by PFOS
## PFOS and Fish Consumption Advisories

Genesee County and Lapeer County--Flint River (upstream of Mott Dam, including the Mott and Holloway Reservoirs)

<table>
<thead>
<tr>
<th>Type of Fish</th>
<th>Chemicals causing MI Serving Guideline</th>
<th>Size of Fish (length in inches)</th>
<th>MI Servings per Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carp</td>
<td>PFOS</td>
<td>Any</td>
<td>2</td>
</tr>
<tr>
<td>Largemouth Bass</td>
<td>PFOS</td>
<td>Any</td>
<td>6 per Year</td>
</tr>
<tr>
<td>Rock Bass</td>
<td>PFOS</td>
<td>Any</td>
<td>1</td>
</tr>
<tr>
<td>Smallmouth Bass</td>
<td>PFOS</td>
<td>Any</td>
<td>6 per Year</td>
</tr>
<tr>
<td>Walleye</td>
<td>PFOS</td>
<td>Any</td>
<td>1</td>
</tr>
</tbody>
</table>
Statewide, Multi-media Action

Taking Action, Protecting Michigan

Governor’s Directive Creates The PFAS Action Response Team

What You Need to Know About PFAS Contamination

Perfluoroalkyl and polyfluoroalkyl substances (PFAS), also known as PFCs, have been classified by the US Environmental Protection Agency as an emerging contaminant on the national level. PFAS are a suite of chemicals historically used in thousands of applications throughout the industrial, food, and textile industries. They are incredibly stable, breaking down very slowly in the environment, and are highly soluble, easily transferring through soil to groundwater. PFAS contamination has been identified in several locations across the state of Michigan as a result of use in multiple industries across the State. PFAS is used in firefighting foams, food packaging, cleaning products, and various other products. It is also used by many industries such as plating, tanneries, or clothing manufacturers, where waterproofing may be required or a protective film is needed in a manufacturing process.

Governor Snyder and the State of Michigan are taking action to address this issue in a proactive and innovative way. Ten state departments, in coordination with local and federal officials across Michigan, are working together to ensure that the public health and safety of residents is protected while ensuring our environmental heritage is secure for generations of Michiganders to come.

This site is intended to serve as the main resource for public information on PFAS contamination in Michigan. It will be updated regularly as additional facts about the issue and locations impacted becomes available.
Confirmed PFAS Sites, Michigan (All Types)
National Study, ACS, 2016

• PFOS/PFOA found greater than EPA lifetime health advisory (70 ng/l) in public drinking water sources for 6 million US residents

• Number of PFOS/PFOA manufacturers, military fire training areas, and WWTPs in watersheds were significant predictors of PFAS detection in public water supplies.
Associated with detectable PFAS in public water supplies:

• Industrial sites
• Military sites
• WWTPs are
Case Study: Flint River PFOS

ARTP
3 ppt, 5/2017

Flint WWTP
28 ppt, 5/2017

16 ppt, 5/2017

Lapeer WWTP
415 ppt, 5/2017
2,000 ppt 7/2017

ND, 5/2017

6 ppt, 5/2017

25 ppt, 5/2017

Lapeer
Lapeer WWTP

- DEQ found PFOS in discharge in June 2017
- Worked with City to find the source
- City working with source to eliminate PFOS
**Source:** Chrome Plater

- PFOS-containing demister in etch baths, electroplating tanks
- Discontinued use in 2013, prior to ban
- Tanks, pits not changed or cleaned since
PFOS Reduction Effort, Lapeer
NPDES Requirement:
Industrial Pretreatment Program (IPP)

• Some POTW NPDES/GW permits require an IPP to regulate industrial wastewater accepted.

• For POTWs w/ IPPs: WRD requires source evaluation and follow up.

• To ensure are not passing through PFOS or PFOA greater than water quality standards.

• Current permit requirement, new pollutants.
Sources of PFOS & PFOA for WWTPs

- Platers: Chemical fume suppressants, demisters, defoamers, wetting agents, surfactants
- Leather and fabric treaters, tanneries
- Paper and packaging manufacturers
- Manufacturers of parts with PTFE coatings (bearings, wire, etc)
- Landfills (leachate)
- Centralized Waste Treaters
- AFFF fire fighting foam
IPP PFAS Requirements

• Potential Source Screening
• Monitor Probable Sources
• If sources found:
  • Reduce/Eliminate PFOS & PFOA Sources
  • Monitor POTW effluent; report if >WQS
• Submit Interim Report — due 6/29
• Continue Source Reduction & Monitoring
• Submit Summary Report — due 10/26
Training and Outreach
http://www.michigan.gov/deq/0,4561,7-135-3308_3333-460368--,00.html

Industrial Pretreatment Programs PFAS - Regional Informational Meetings

Agency: Environmental Quality

MARCH 12, 2018 - LIVONIA
Schoolcraft College, Vista Tech Center

MARCH 14, 2018 - GRAND RAPIDS
GVSU - L.V. Eberhard Center

MARCH 27, 2018 - MT. PLEASANT
Mt. Pleasant Comfort Inn and Suites

Continuing Education: These meetings will provide 0.2 Technical CECs for Wastewater Treatment Operators.

The IPP PFAS* Initiative Regional Informational Meetings

The DEQ, Water Resources Division, held regional meetings for Industrial Pretreatment Program (IPP) professionals to discuss the technical aspects of the IPP PFAS Initiative, including a description of expectations for the initial screening, monitoring plans, probable source monitoring, and evaluation, as well as information about sampling and analysis protocol and source reduction.

*PFAS are perfluoroalkyl and polyfluoroalkyl substances (also referred to as PFCs), especially the specific chemicals PFOS (perfluorooctane sulfonate) and PFOA (perfluorooctanoic acid).

IPP PFAS INITIATIVE MEETING - DEQ PRESENTATION

PFAS Resources

- Governors PFAS Directive Website
- IPP Program Staff Contacts
- DEQ Industrial Pretreatment Website (www.michigan.gov/ipp)

PRELIMINARY AGENDA

9:00 a.m. - Registration/Sign-in
9:30 a.m. - Meeting Start

1. Welcome and Introduction
2. PFAS and its Impact on POTWs and Receiving Streams
3. Break
4. WRD Requirements for POTWs with IPPs
5. PFAS Monitoring and Analysis
6. Where to go for Resources and Assistance
7. Question and Answer

12:00 p.m. - Adjourn
Issues and Response

• Moving PFAS from one media to another:
  Sites to Landfills to POTWs to landfills

• No national or state biosolids standard

• No EPA approved PFAs method for wastewater

• Due dates and coordination among programs

• Recommended analytes (24, EPA draft)
Questions?