

MPART PFAS Community Meeting Cadillac Area of Interest

November 6, 2024

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MICHIGAN PFAS ACTION RESPONSE TEAM

MPART PFAS Community Meeting Cadillac Area of Interest

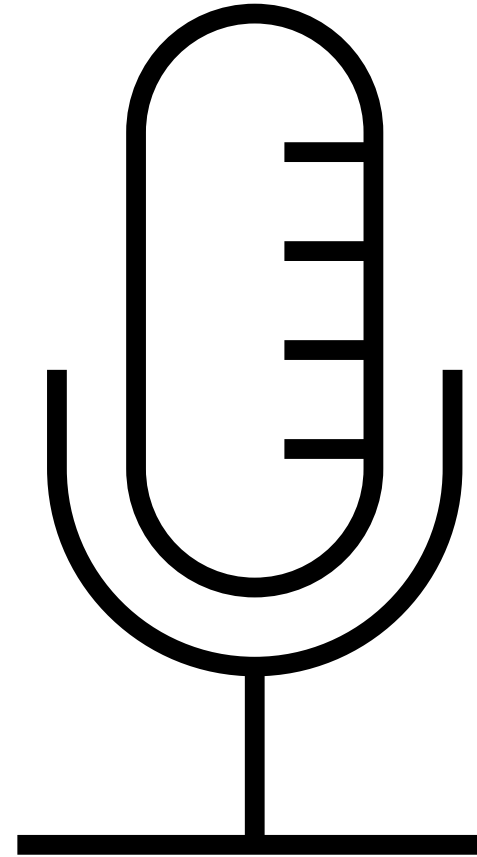
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Michigan PFAS Action Response Team
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EPA is recording
the meeting and
will post to
YouTube when
available.



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Agenda

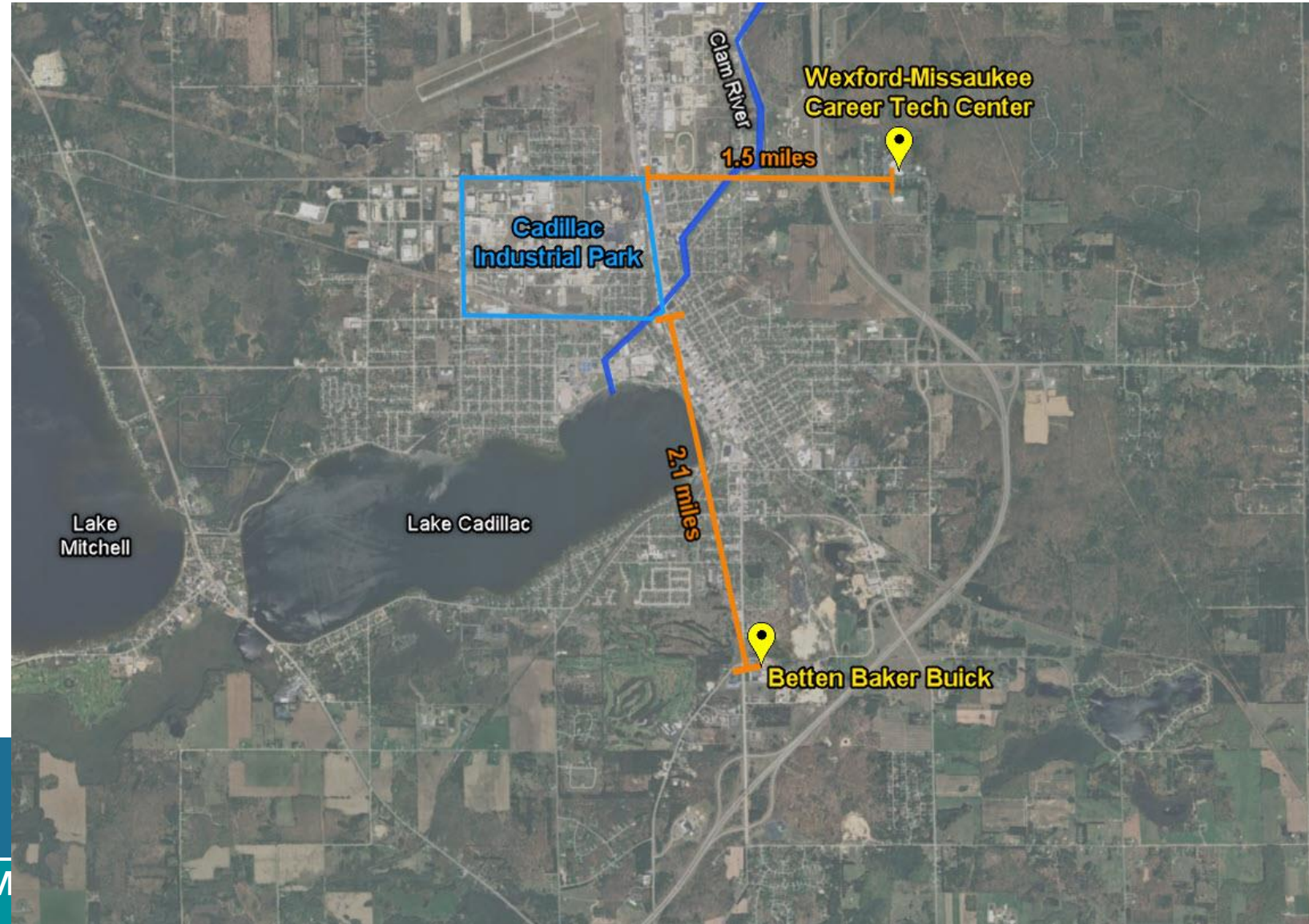
- Introductions – Abigail Hendershott, MPART Executive Director
- Agenda:
 - MPART Overview – Abby Hendershott
 - Health – Chelsea Gary, Michigan Department of Health and Human Services
 - Superfund - Catherine Nield, United States Environmental Protection Agency
 - Investigation Area – Brandi Wheeler, Michigan Department of Environment, Great Lakes, and Energy
 - Public Water Supplies – Ian Smith, Michigan Department of Environment, Great Lakes, and Energy
 - City of Cadillac - Jeff Dietlin, Cadillac Utilities Director
- Q&A

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Wexford County, Cadillac Area PFAS Focus Areas

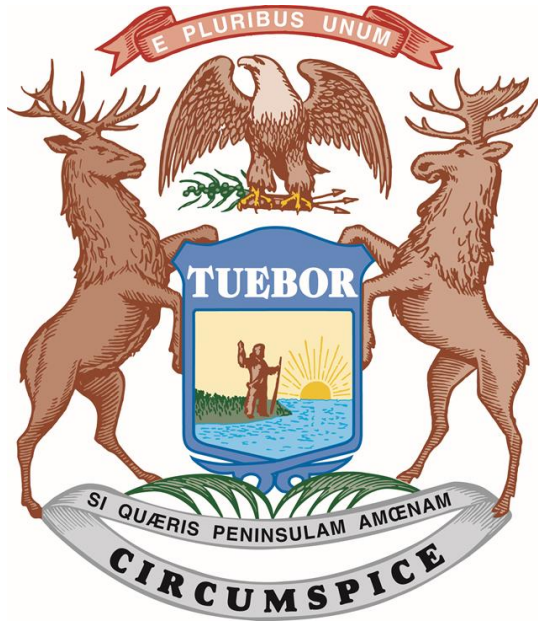
- **Cadillac Industrial Park (Area)**
 - 2 EPA Superfund sites
- **Wexford-Missaukee Career Tech Center Area of Interest**



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Michigan PFAS Action Response Team (MPART)

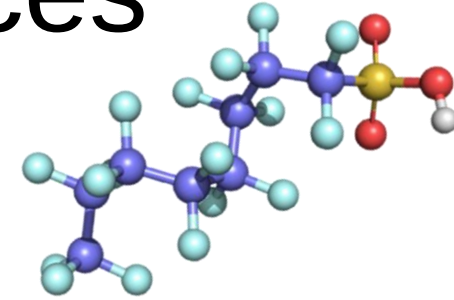


- Executive Order 2019-03
- Unique Multi-Agency Approach
- Leads Coordination and Cooperation Among All Levels of Government
- Directs Implementation of State's Action Strategy

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Per- and Polyfluoroalkyl Substances (PFAS)



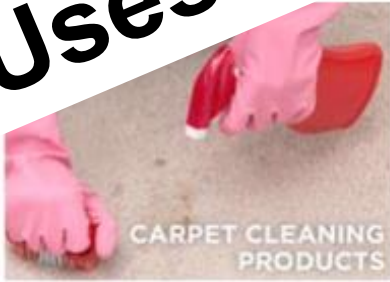
What are they?

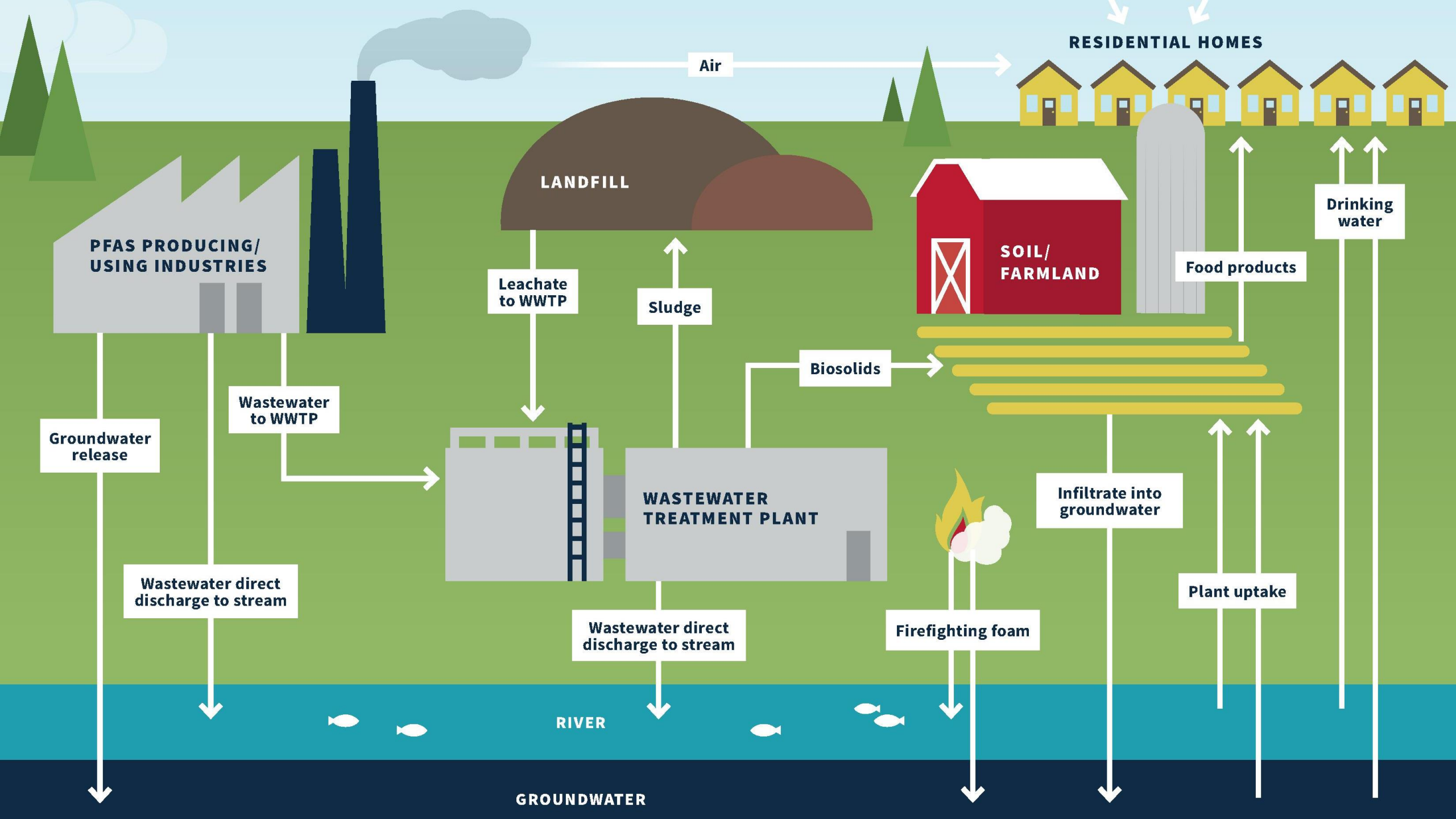
- Strong Carbon-Fluorine Bonds
- Surfactants
- Highly Stable
- Repel Water, Oil, Fat, and Grease
- Began Developing in 1940s
- Thousands of Compounds Today

Why the concern?

- Widespread through the ecosystem
- Don't Break Down Easily - Hard to Get Rid of
- Bioaccumulate – Build Up in Our Bodies
- Some PFAS May Affect Health
- Some emerging science/information
- Federal Standards

PFAS Uses





What is Michigan doing?

Protect Public Health

- Investigating where PFAS is in the environment
 - Drinking water, groundwater, water bodies
- Developed and enforcing, standards for PFAS in surface water, drinking water, and groundwater cleanup standards
 - Modifying standards as science evolves
- Educating the public to:
 - Prevent future contamination
 - Minimize future use of PFAS



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Michigan's Drinking Water and Groundwater Cleanup Standards

Compound	Standards
PFNA	6 ppt
PFOA	8 ppt
PFOS	16 ppt
PFHxS	51 ppt
GenX (HFPO-DA)	370 ppt
PFBS	420 ppt
PFHxA	400,000 ppt

Michigan Surface Water Quality Values

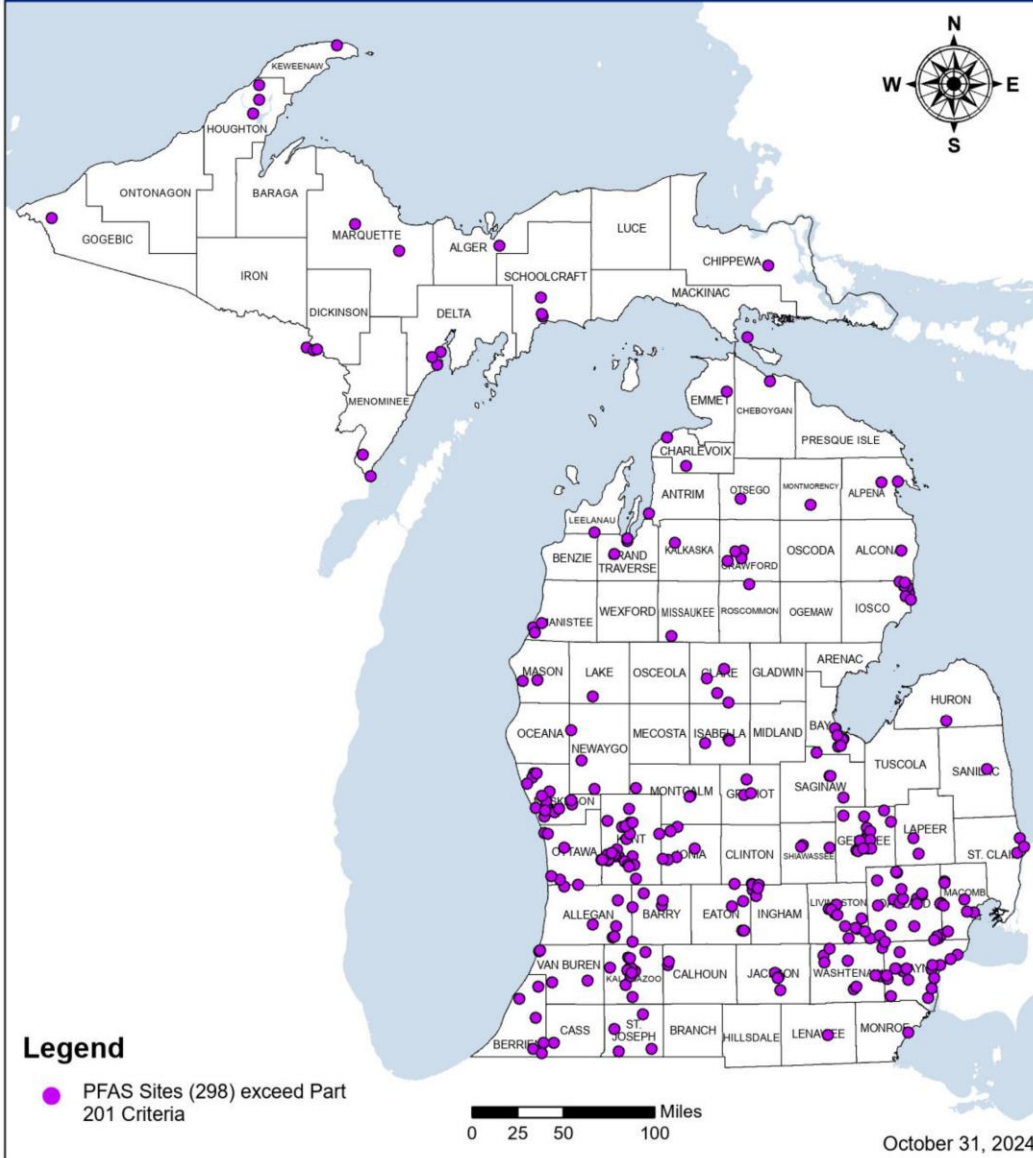
Compound	Water Quality Value
PFOA	170 ppt
<i>If Drinking Water Source</i>	<i>66 ppt</i>
PFOS	12 ppt
<i>If Drinking Water Source</i>	<i>11 ppt</i>
PFBS	670,000 ppt
<i>If Drinking Water Source</i>	<i>8,300 ppt</i>
PFHxS	210 ppt
<i>If Drinking Water Source</i>	<i>59 ppt</i>
PFNA	30 ppt
<i>If Drinking Water Source</i>	<i>19 ppt</i>

Michigan's Rule 57 Water Quality Values
apply to NPDES discharges



MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY

Michigan PFAS Sites



Sites Being Investigated

- Prioritized Investigations Based on Known or Suspected Sources, Potential for Exposure
- Protect Drinking Water Pathway
- Multiple Other Investigations Underway

QR Code for:
MPART Sites and Investigation





Lakes and Streams Investigations

- Collecting water and fish samples

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PFAS work:

- PFAS sites identified
- Surface waters sampled
- Public water sampled
- Fish sampled

Number of Features in Current Map View (zoom in or out to adjust number)



Number of PFAS Sites in View 296



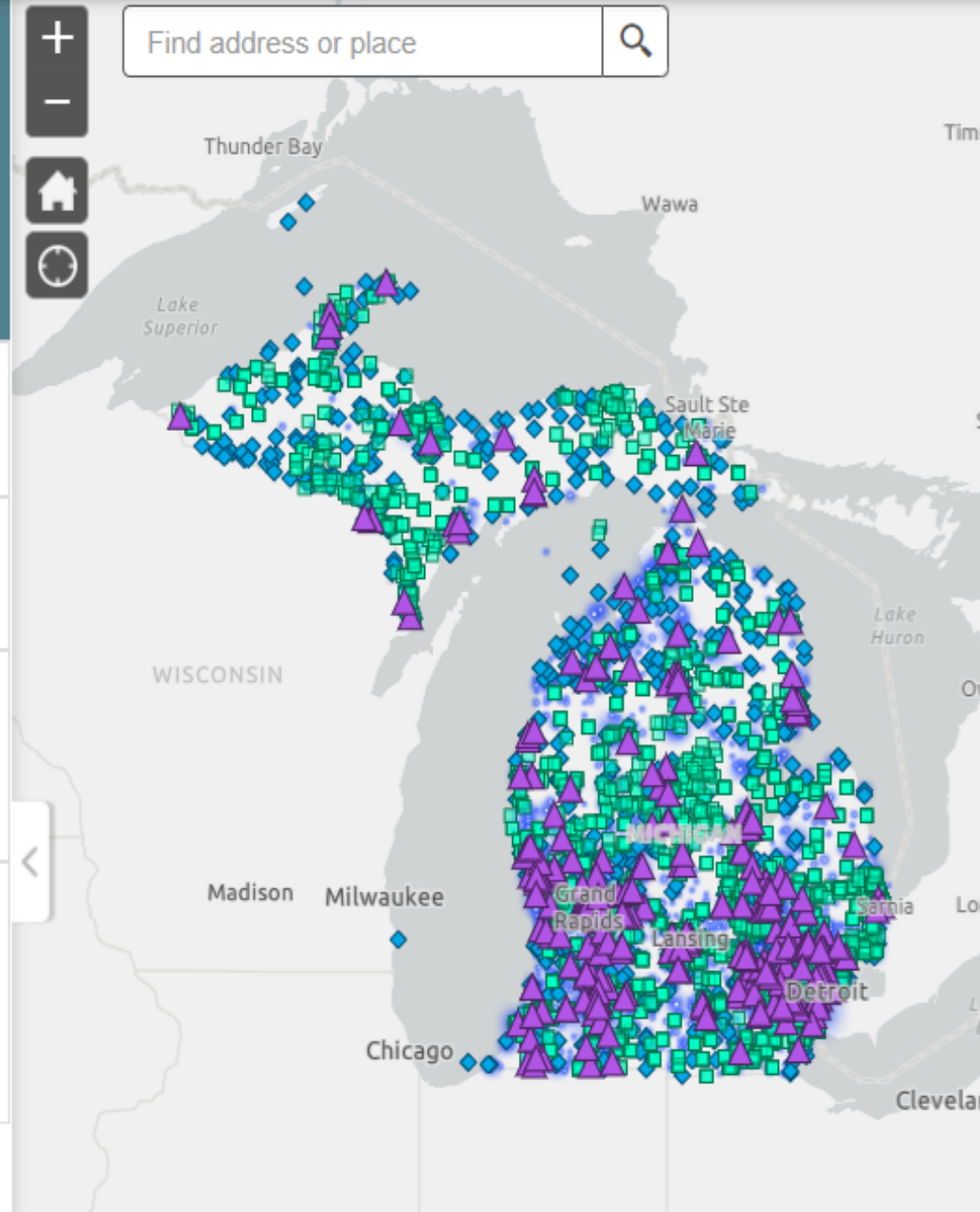
Number of PFAS Surface Water Samples in View 3,383



Number of Public Water Supply Sampling Hexbins in View (note that this is not total sampling results) 1,610



Number of Fish Contaminant Monitoring Program Sampling Sites in View (note that this is not total sampling results) 947



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Fish Sampling

- **1,551 fish** from **63 different water bodies** to determine the need for **fish consumption advisories**



What You
should know



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Not in the current investigation area and interested in self sampling

Visit the MPART Website: Michigan.gov/PFASResponse



Michigan PFAS Action Response Team

Health

Resources for Residents ▾

Drinking Water & Wells ▾

Drinking Water & Wells

[Go to Drinking Water & Wells >](#)

Home Filters

Home Sampling Guidance

Laboratories Offering Home Testing

Maximum Contaminant Levels (MCLs)

Statewide PFAS Survey of Public Water Supplies

Compliance Monitoring in Public Water Supplies



MPART | Michigan PFAS Action Response Team

CERTIFIED PFAS LABORATORIES

IN-STATE LABORATORIES

The following are in-state laboratories certified to test drinking water for PFAS. Residents can request a test kit from these labs. Most labs require you to collect the sample yourself and send the lab for testing, but some can send technicians to collect the sample for a fee.

Laboratory: [EGLE Laboratory](https://Michigan.gov/EGLELab) (Michigan.gov/EGLELab)

Phone: 517-335-8184

Address: 3350 N. Martin Luther King Jr. Blvd., Lansing, MI 48906

Analysis Cost: \$290

Laboratory: [ALS Environmental](https://ALSGlobal.com/en/water-quality/drinking-water-analysis) (ALSGlobal.com/en/water-quality/drinking-water-analysis)

Phone: 616-399-6070

Address: 3352 128th Ave, Holland, MI 49424

Analysis Cost: \$350

Laboratory: [Enviro Lab Services](https://enviro-britesolutions.com/) (enviro-britesolutions.com/)

Phone: 620-417-3608

Address: 4150 Arrow St., Oscoda, MI 48750

Analysis Cost: \$290

Sampling and courier services are available. Inquire about pricing and availability for your area.

Laboratory: [Fibertec, Inc.](https://metirgroup.com/analytical-services/specialty/pfas/) (metirgroup.com/analytical-services/specialty/pfas/)

Phone: 517-699-0345

Address: 1914 Holloway Dr., Holt, MI 48842

Analysis Cost: \$250 - upon customer's request a field blank can be analyzed for an additional cost of \$250



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ENVIRONMENT, GREAT LAKES, AND ENERGY

Michigan.gov/PFASResponse | 800-662-92



Michigan Department of Environment, Great Lakes, and Energy

FOR RESIDENTS - PRIVATE RESIDENTIAL WELL PFAS SAMPLING Guidance

Introduction

Most laboratories will provide their own sample collection instructions. This guidance document may be used in conjunction with any sample collection instructions provided by the laboratory. This document does not supersede the laboratory's sampling instructions.

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.

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) 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 Response webpage (Michigan.gov/PFASResponse) to access the current version of this document. To view the EGLE Water Sampling 101, Collecting Samples for PFAS Analysis video click [here](#).

This Residential Well PFAS Sampling Guidance discusses the potential for cross contamination that can occur from:

- Clothing
- Sample collection and handling
- Sample shipment

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Questions for Homeowners

- Do you have a private drinking water well or are you connected to municipal water?
 - Municipal water is tested regularly
- Will I be tested by EGLE?
- Or I am outside the sampling area so, how can I test my own drinking water well for PFAS?
- What else should I test my water tested for i.e., metals, nitrates, general chemistry, etc.?
 - *Contact your local health department for guidance or MDHHS Drinking Water Hotline at 800-648-6942. They can help you understand potential risks based on where you live.*

Self Testing for PFAS

- The easiest way to address the risk of repeated exposure to PFAS in your drinking water is by **testing your private drinking water well**
 - Contact a [Certified PFAS Laboratory](#) to order a test kit
 - Video - [Homeowner's Guide: Collecting Samples for PFAS Water Analysis](#)
- Once you get your results, contact the MDHHS Drinking Water Hotline at 800-648-6942 to figure out what your results mean, and if you should start filtering your water



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Michigan PFAS Action Response Team (MPART)



What's new

- 10/11 - New Area of Interest in [Wexford County: Cadillac Industrial Park Area of Interest](#)
- 10/3 - New site in [Kent County: Butterworth #2 Landfill Superfund Site](#)
- 10/2 - New [GIS Tools](#) page under resources
- 9/20 - New site in [Cheboygan county: Former City of Cheboygan Landfill](#)
- 9/18 - MBS International Airport Area of Interest is now an official site: [MBS International Airport \(Saginaw county\)](#).
- 9/17 - New site in [Genesee county: GM Van Slyke](#)
- 9/16 - New site in [Wayne county: Michigan Avenue Dump](#)
- 9/16 - New site in [Wayne county: McLouth Steel Corp. Trenton](#)
- 9/11 - New fact sheet: [PFAS Sources and Tips to Reduce Exposure](#)
- 9/10 - New site in [Oakland county: Former Anderson Landfill](#)

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Michigan.gov/PFASResponse

- PFAS 101
- FAQs
- Site investigation summaries
- Public meeting calendar

Featured topics



NEW! Resources for residents



About MPART



Citizen's Advisory Workgroup



Drinking water



Public engagement



Investigations



Sampling guidance



Identified sites

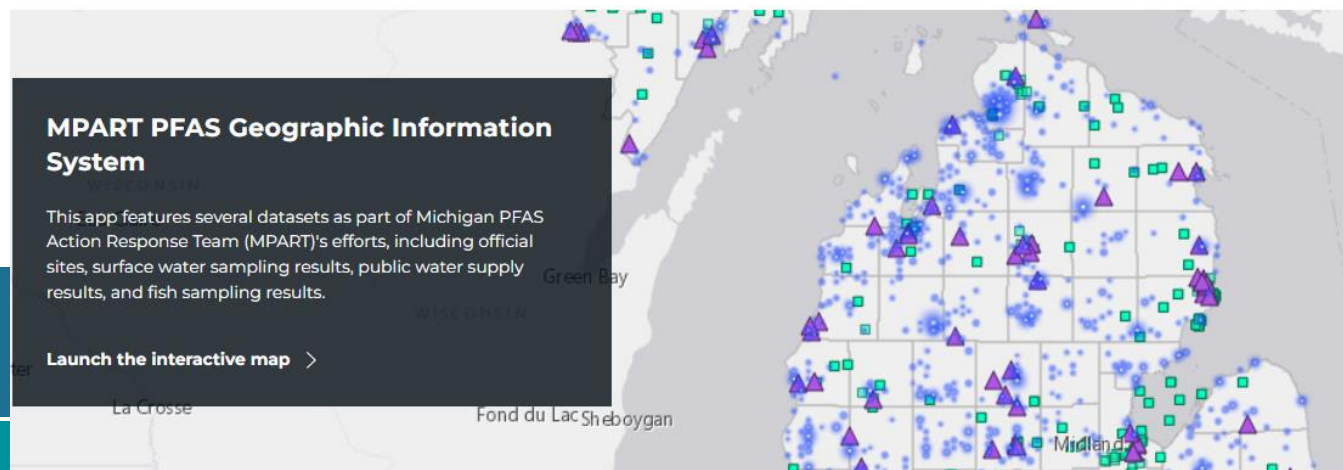
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MPART PFAS Geographic Information System

This app features several datasets as part of Michigan PFAS Action Response Team (MPART)'s efforts, including official sites, surface water sampling results, public water supply results, and fish sampling results.

Launch the interactive map >



Citizens Advisory Workgroup

Michigan.gov/MPARTCAWG

- Residents From Impacted Communities
- Key Charges:
 - Recommend How to Engage and Empower Communities
 - Recommend How to Educate the General Public
- Residents interested in becoming a CAWG Member:
 - Read the [CAWG Charter](#)
 - Submit a [Membership Registration Form](#)



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QR Code for:
MPART Citizen Advisory Workgroup



PFAS and Health

Chelsea Gary, Toxicologist

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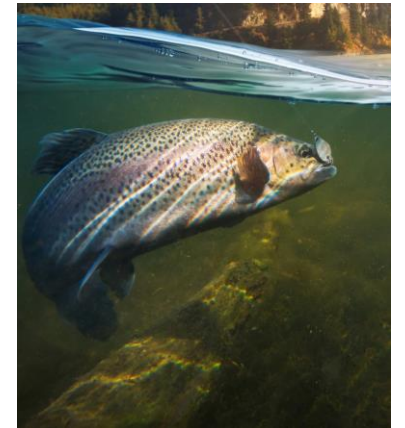
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The Role of MDHHS/ Local Health Department (LHD)

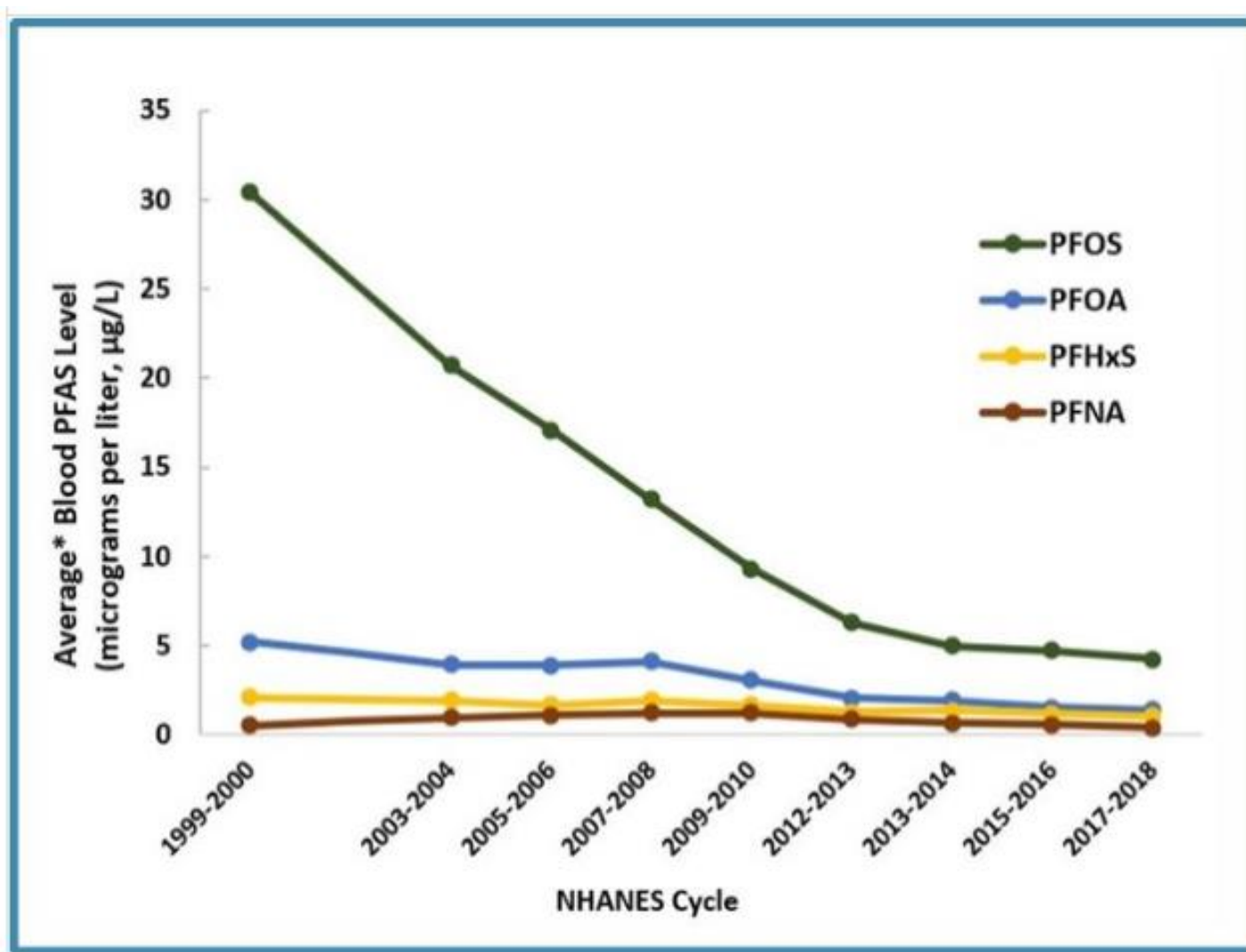
- Understand the health concerns facing your community
- Develop a plan to investigate and address health risks
 - EGLE leads the site investigation
 - MDHHS and the Local Health Department lead the public health planning and response
- Evaluate PFAS exposures to residents in the community
 - Recommend public health actions as needed

Exposure to PFAS Chemicals

- Drinking contaminated water
- Eating fish caught from water contaminated by PFAS
 - “Eat Safe Fish” Guidelines
- Incidental swallowing of contaminated soil or dust
- Eating food packaged in materials containing PFAS
- Using some consumer products
- PFAS absorption through skin is typically not a concern



Blood levels of the most common PFAS in people in the United States 2000-2018



Associated Human Health Outcomes PFOA and/or PFOS

- Reduced fertility
- High blood pressure or pre-eclampsia in pregnant women
- Small decreases in infant birth weight
- Higher cholesterol
 - Especially total cholesterol and LDL cholesterol

Associated Human Health Outcomes PFOA and/or PFOS

- Thyroid disease
- Liver damage
- Decreased immune system response to vaccines
- Developing certain types of cancer
 - In particular, kidney and testicular cancers*

* PFOA only

Multiple Lines of Consideration for Determining Public Health Response Actions

- MDHHS Comparison Values
- Residential Well Results (individually and collectively)
- Site–specific information (e.g., known source, geology, etc.)

MDHHS Comparison Values

- MDHHS Comparison Values are the lowest of:
 - MDHHS Public Health Drinking Water Screening Level
 - MPART Health-Based Value or Maximum Contaminant Level (MCL)
- Both the MDHHS screening levels and the MCL were set to protect everyone
 - including those most at risk of harm to their health: fetuses and breastfed babies

MDHHS Comparison Values

PFAS	Comparison Values
PFOS	8 ppt ^A
PFOA	8 ppt ^B
PFNA	6 ppt ^B
PFHxS	51 ppt ^B
PFBS	420 ppt ^B
PFHxA	400,000 ppt ^B
GenX	370 ppt ^B

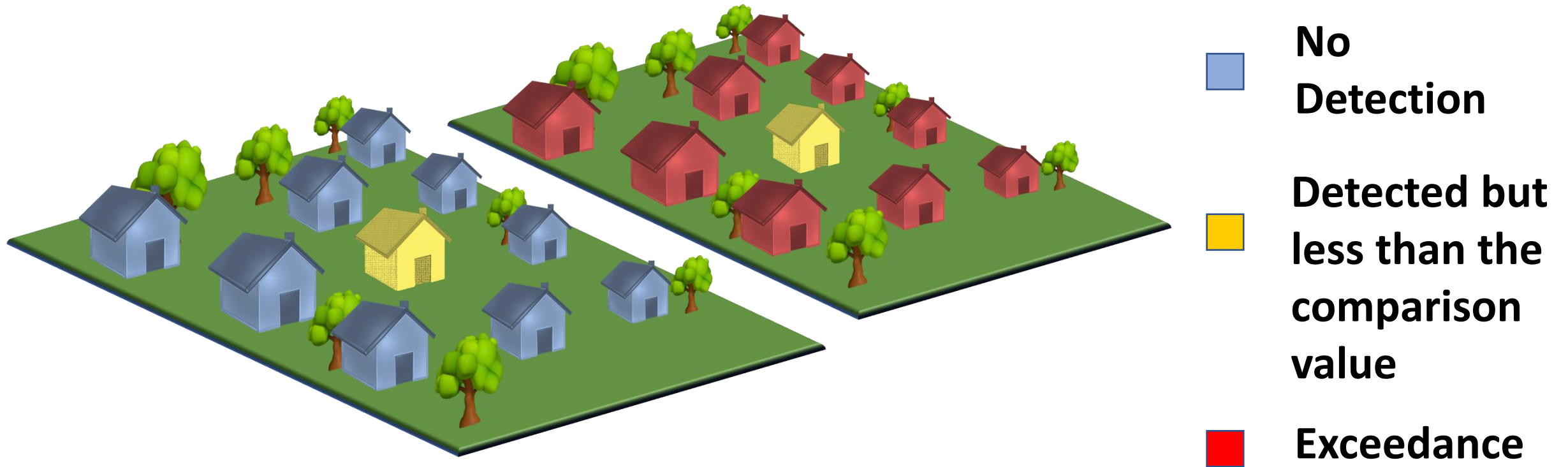
A. MDHHS Public Health Drinking Water Screening Level

B. MPART Health-Based Value or Maximum Contaminant Level (MCL)

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Residential Well Results (individually and collectively)

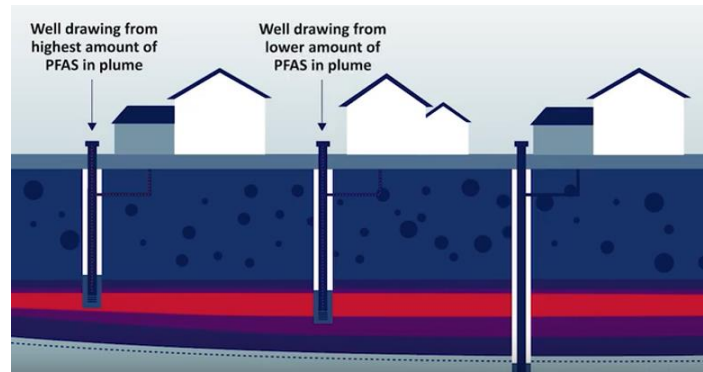


Site-Specific Information

Known Source



Geology



Plume



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What to Look for When Selecting a Filter



<http://bit.ly/PFASHomeFilter>

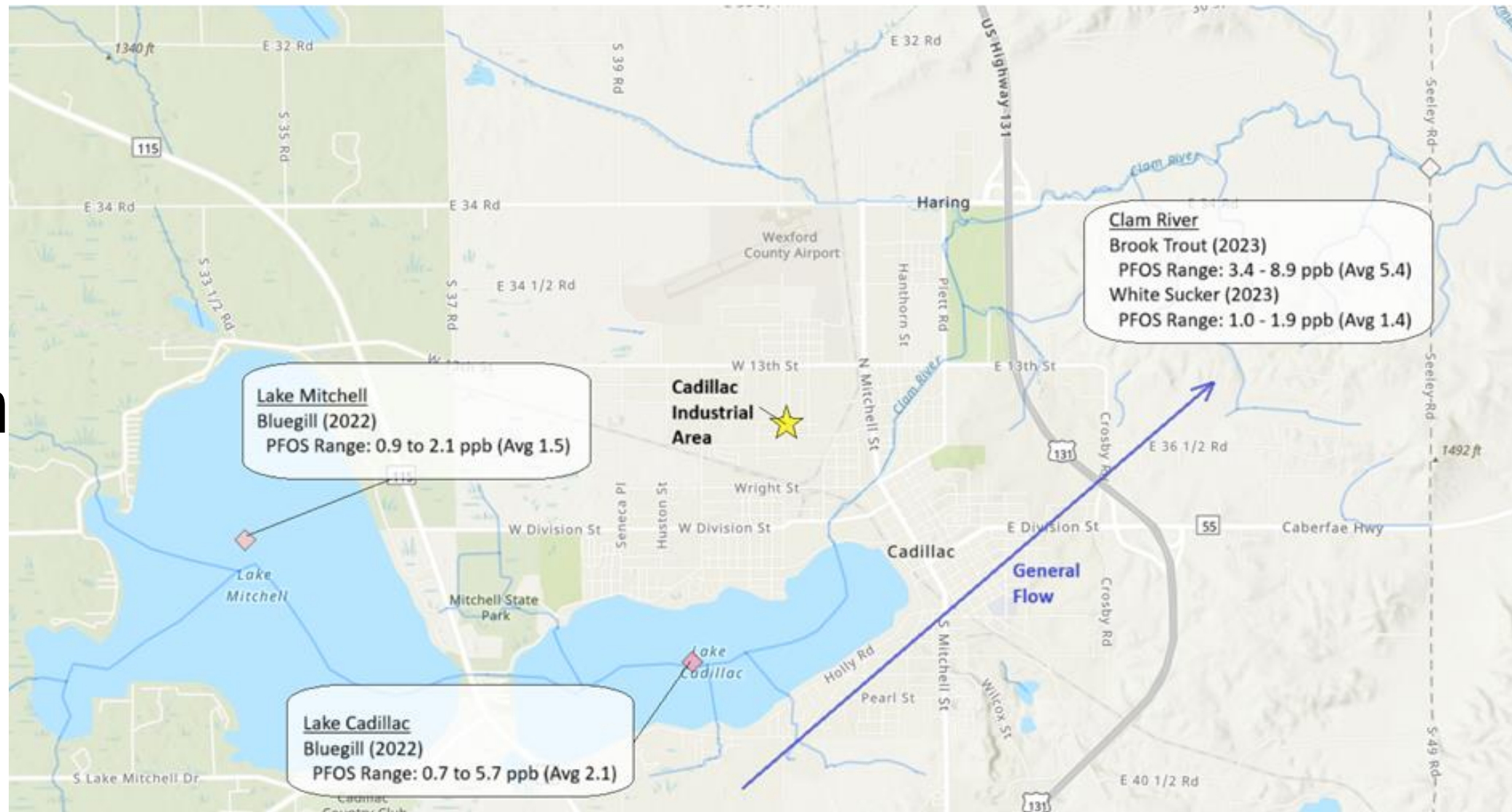
- Make sure the filter has a NSF/ANSI Standard 53 for PFOA and PFOS reduction.
- Follow all manufacturing instructions to make sure it is reducing the PFAS as expected.

MDHHS/LHD

Public Health Response Actions

- No public health actions necessary
- Recommend filter or use of alternate water
 - Need time to conduct investigation
 - Provides residents with protection from potential fluctuations in PFAS levels, if any, while investigation is ongoing
- Education
 - Provide information on PFAS in drinking water

Fish Collection Data



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Eating Fish from Michigan's Lakes & Rivers

Michigan.gov/eatsafefish



Lake Cadillac

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Largemouth Bass	Mercury	Under 18"	2
		Over 18"	1
Northern Pike	Mercury	Under 30"	4
		Over 30"	2
Smallmouth Bass	Mercury	Under 18"	2
		Over 18"	1

Lake Mitchell

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Largemouth Bass	Mercury	Under 18"	2
		Over 18"	1
Smallmouth Bass	Mercury	Under 18"	2
		Over 18"	1
Walleye	Mercury	Any	1

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AS ACTION RESPONSE TEAM

Meet the EPA Site Team



Catherine Nield

EPA Remedial Project
Manager

nield.catherine@epa.gov

312-353-6318



Amelia Holcomb

EPA Community
Involvement Coordinator

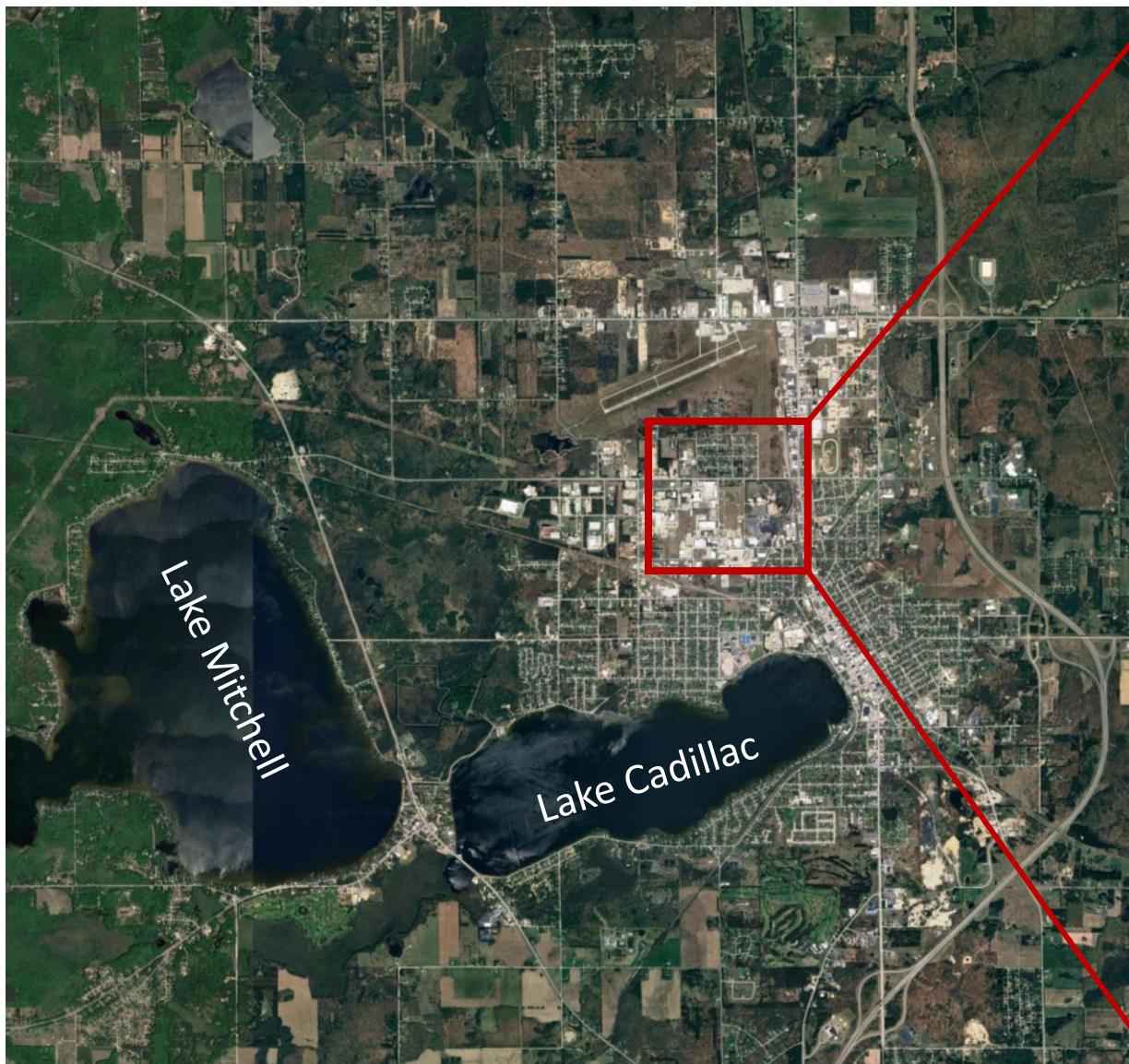
holcomb.amelia@epa.gov

312-886-6242



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What is Superfund?

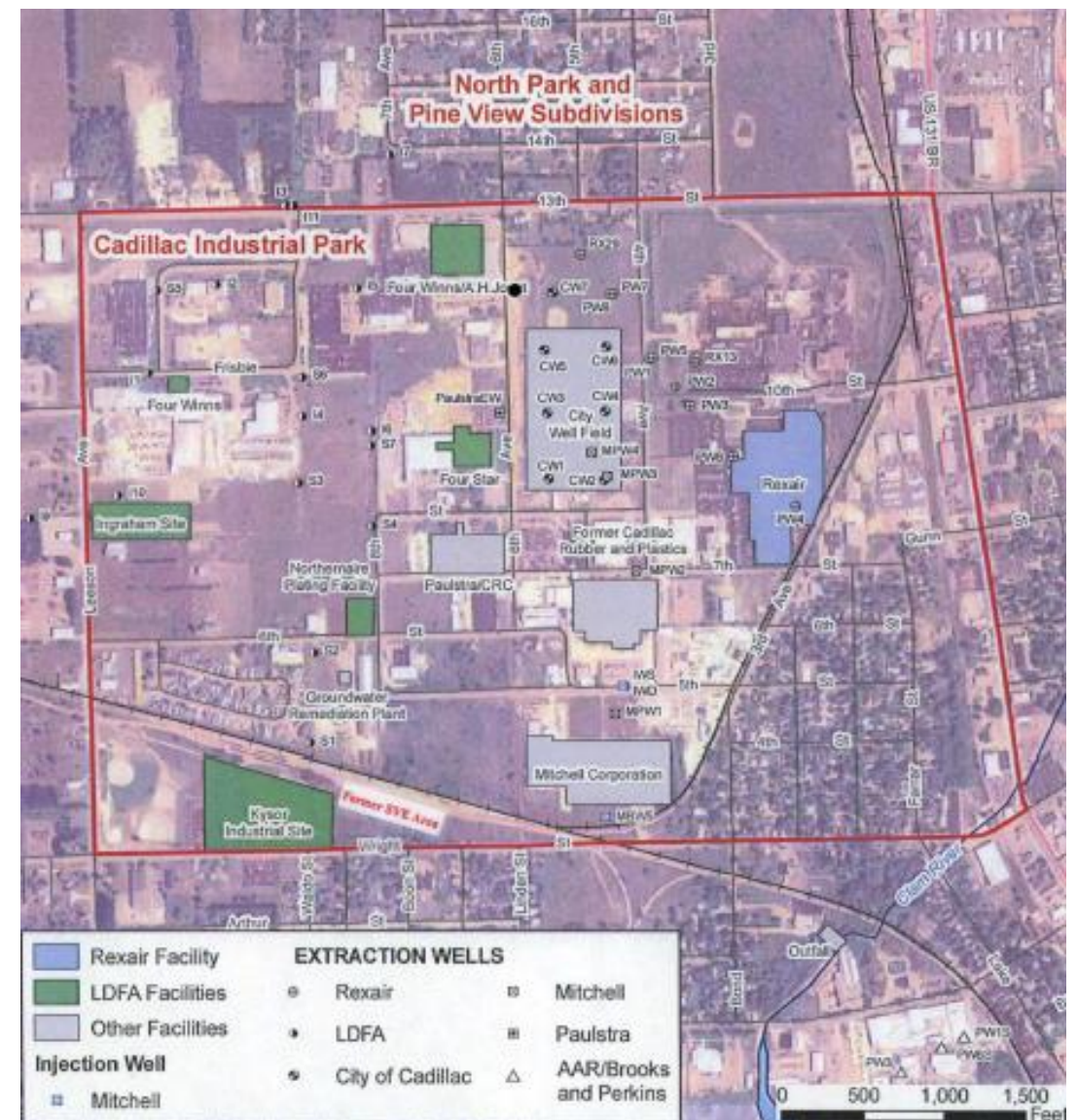
- Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).
- EPA's Superfund program is responsible for cleaning up some of the nation's most contaminated land and responding to environmental emergencies, oil spills and natural disasters.
- Goal is to protect human health and the environment.

- Kysor is an active automotive parts manufacturing plant which contributed volatile organic compounds (VOCs) to the groundwater and soil.
- Northernnaire is a former electroplating facility which contributed hexavalent chromium to the groundwater.



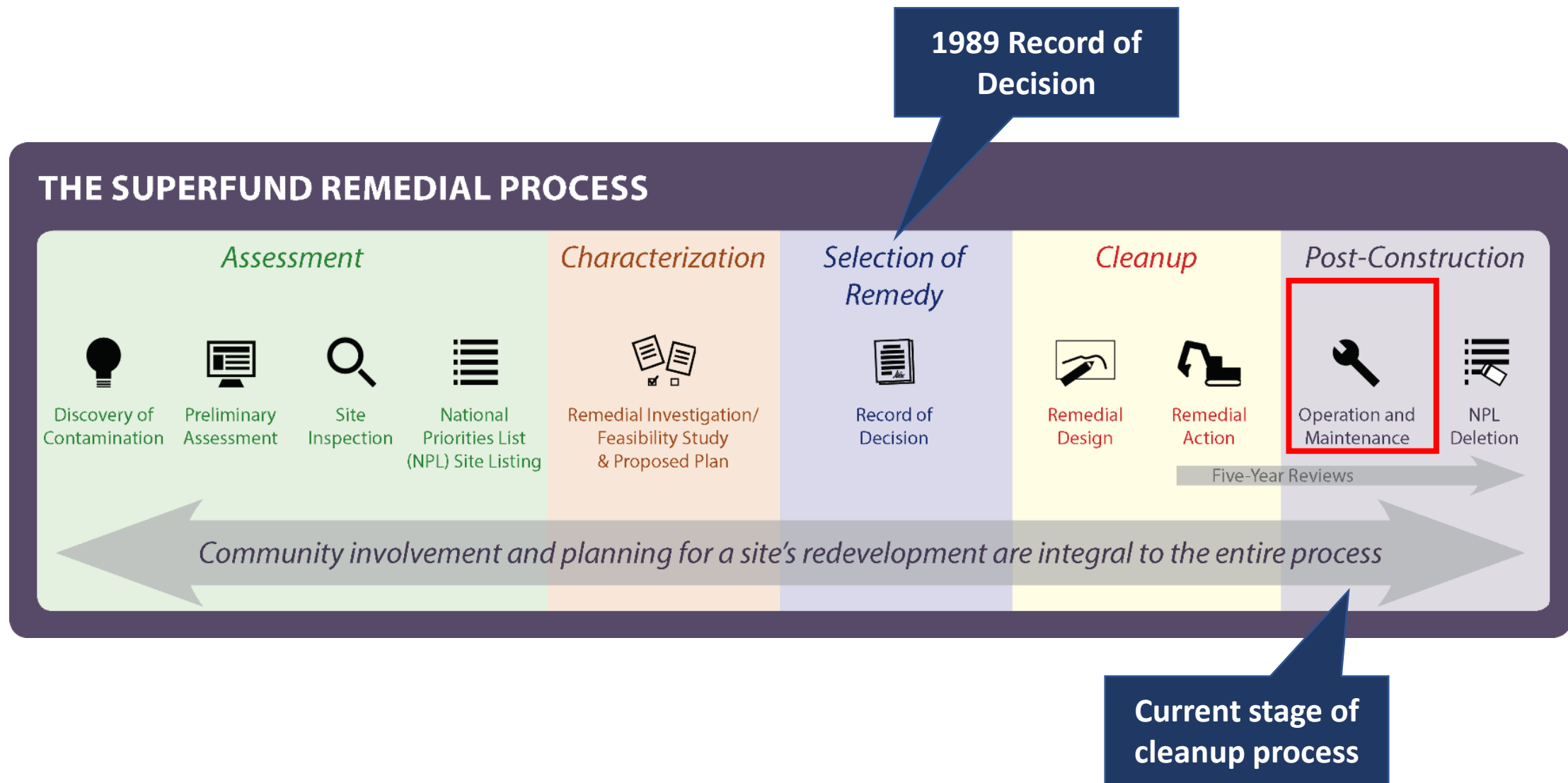
LDFA

The city of Cadillac set up a Local Development Finance Authority (LDFA) to act on behalf of industries responsible for the contamination.



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Current Operations

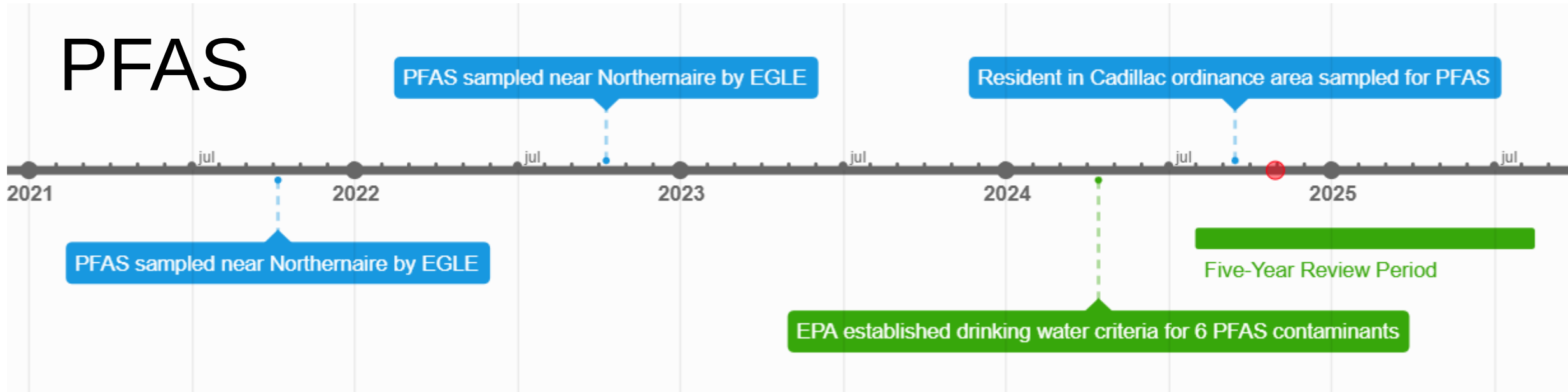


Two carbon tanks that were designed to treat hexavalent chromium from the Northernnaire Site.



View of the two-stage air stripping system that removes VOCs from groundwater.

PFAS



- Many platers used PFAS as part of their operations
- PFAS was discovered near the Superfund site
- There is not enough information to determine the source of PFAS
- The LDFA has agreed to further investigate PFAS near Northernnaire

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What's next?

- LDFA is developing quality assurance, PFAS sampling, and groundwater monitoring plans
- LDFA will sample groundwater including PFAS near the Northernnaire Superfund site after EPA's approval of the plans
- EPA is currently conducting the sixth Five-Year Review at the Kysor Industrial Corp. Superfund site
- More information at www.epa.gov/superfund/northernnaire-plating and www.epa.gov/superfund/kysor-industrial

Cadillac Area of Interest Investigation

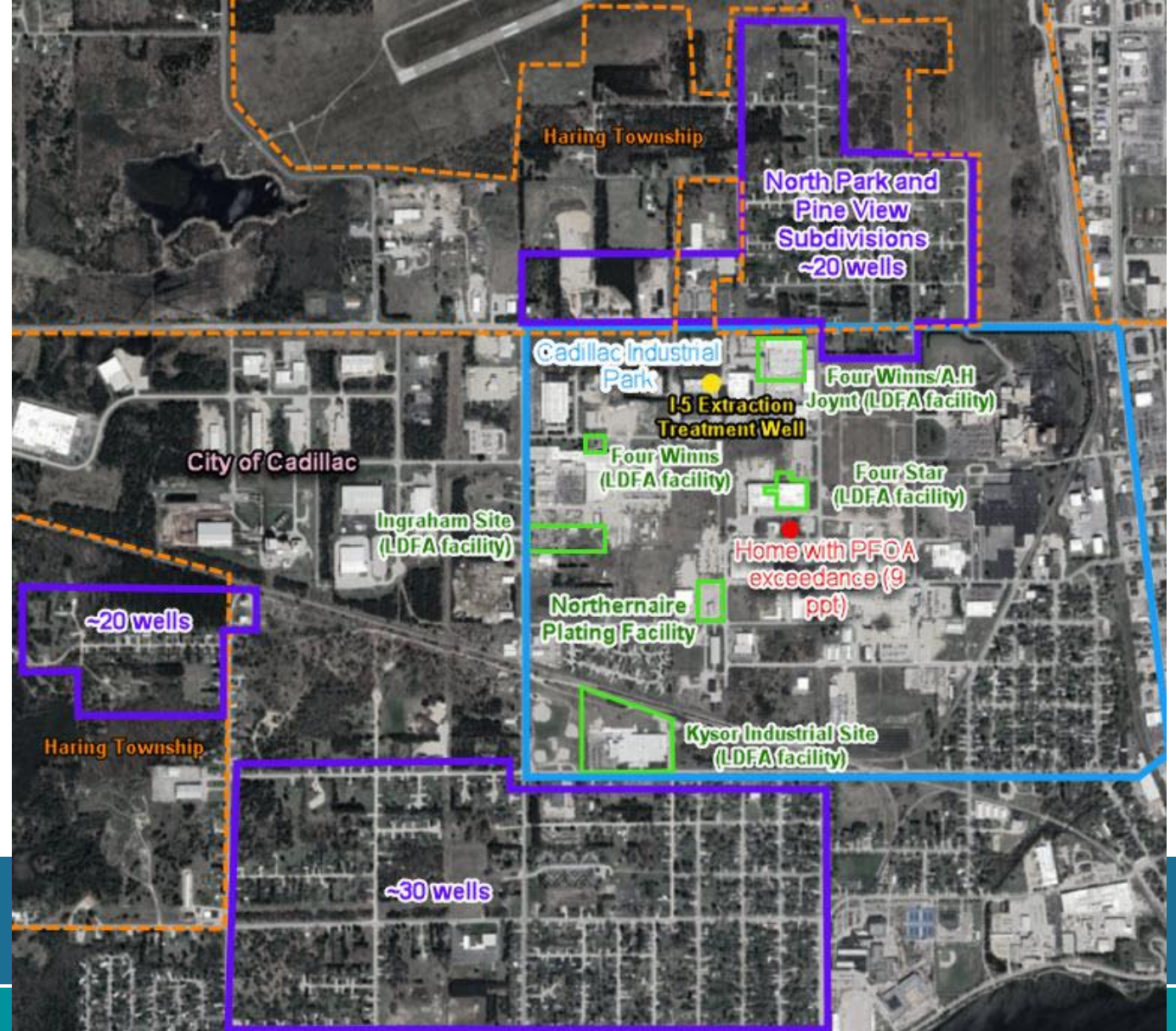
Brandi Wheeler, PFAS Site Lead & District Geologist
Michigan Department of Environment, Great Lakes, and Energy
231-878-8066
wheelerb5@michigan.gov

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Cadillac Industrial Area Historical Data

- In 2021 & 2022, EGLE sampled groundwater for PFAS at Northernnaire Superfund Site
- PFAS was detected below criteria. The highest results were:
 - 7.24 ppt PFOA (compared to 8 ppt)
 - 11 ppt PFBS (compared to 420 ppt)

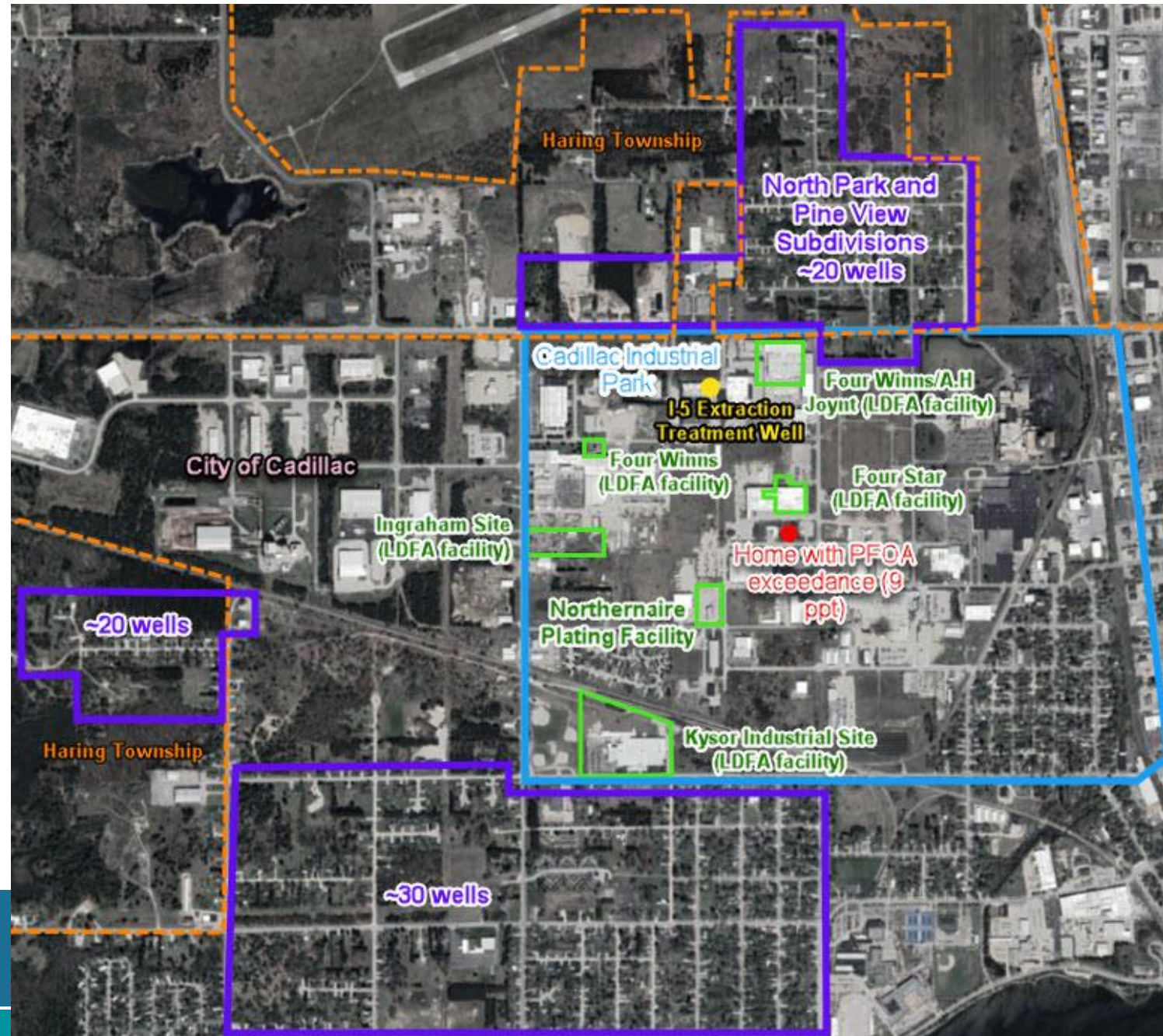


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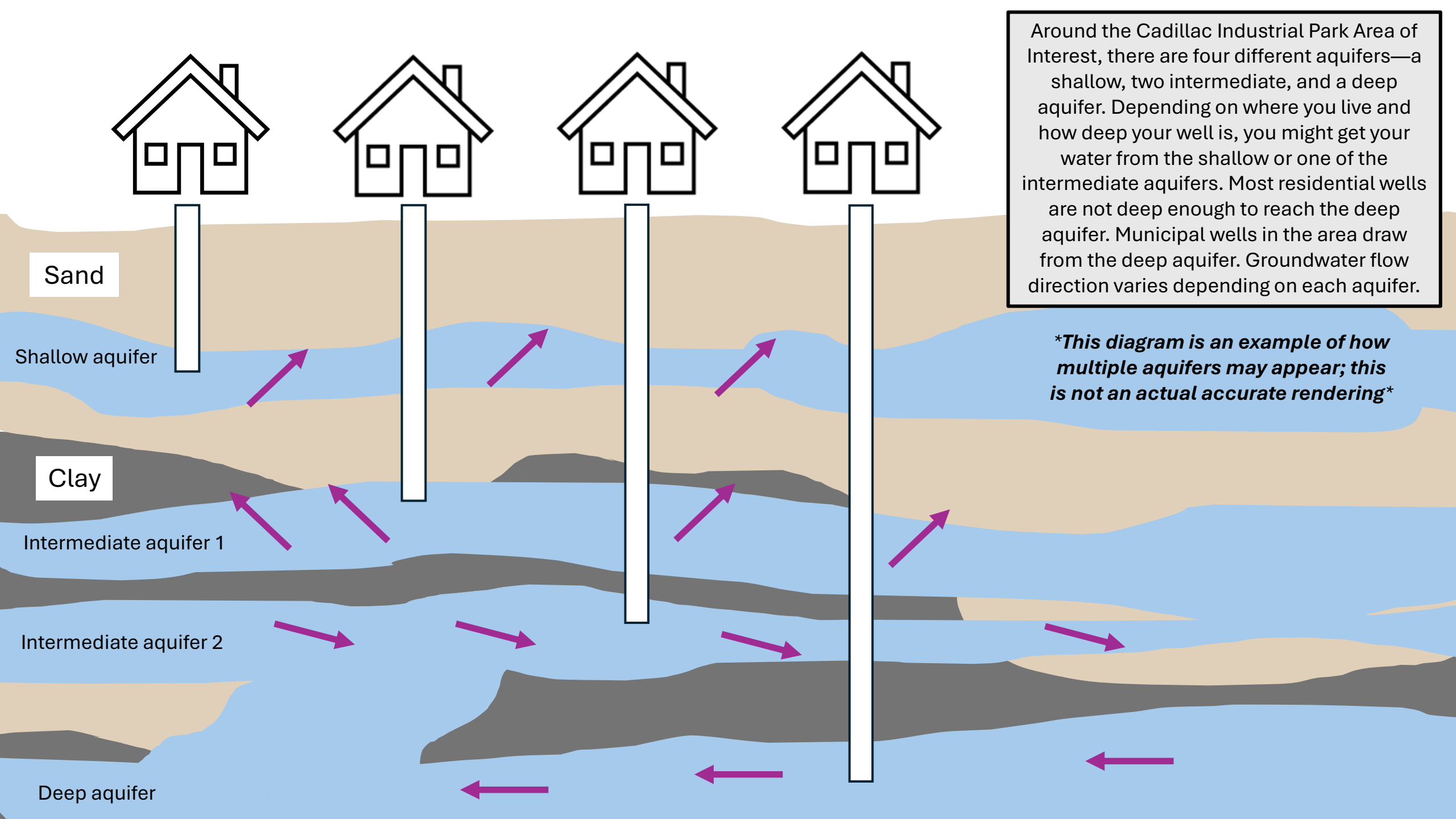
Cadillac Industrial Park

- In August 2024, MPART learned of a drinking water sample from a resident on a residential well exceeding PFAS criteria at 9 ppt PFOA (compared to 8 ppt)
- Several potential PFAS contributors identified
- EGLE MPART is currently attempting to contact additional homes for sampling



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How Residential Well Sampling is Done

- Letters are sent to residents with permission forms
- Two weeks given to respond
- EGLE contractor AECOM schedules sampling; conducts sampling
- Results usually available in 2 - 3 weeks
- Residents in the investigation area have been sent letters and access permission
 - We will evaluate the results and may expand the investigation area



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Who gets the residential well results?

- The resident, local health, DHHS and EGLE will get the results
- DHHS determines the health response (who, if anyone, gets filters)
 - Any filter installation is coordinated with local health staff
- DHHS sends packet of info to the residents that were sampled with their results—how to interpret results, how to reduce exposure to PFAS
- A “heat map” will be developed to share with the public
- EGLE, DHHS, and local health meet to review the results and determine any next steps

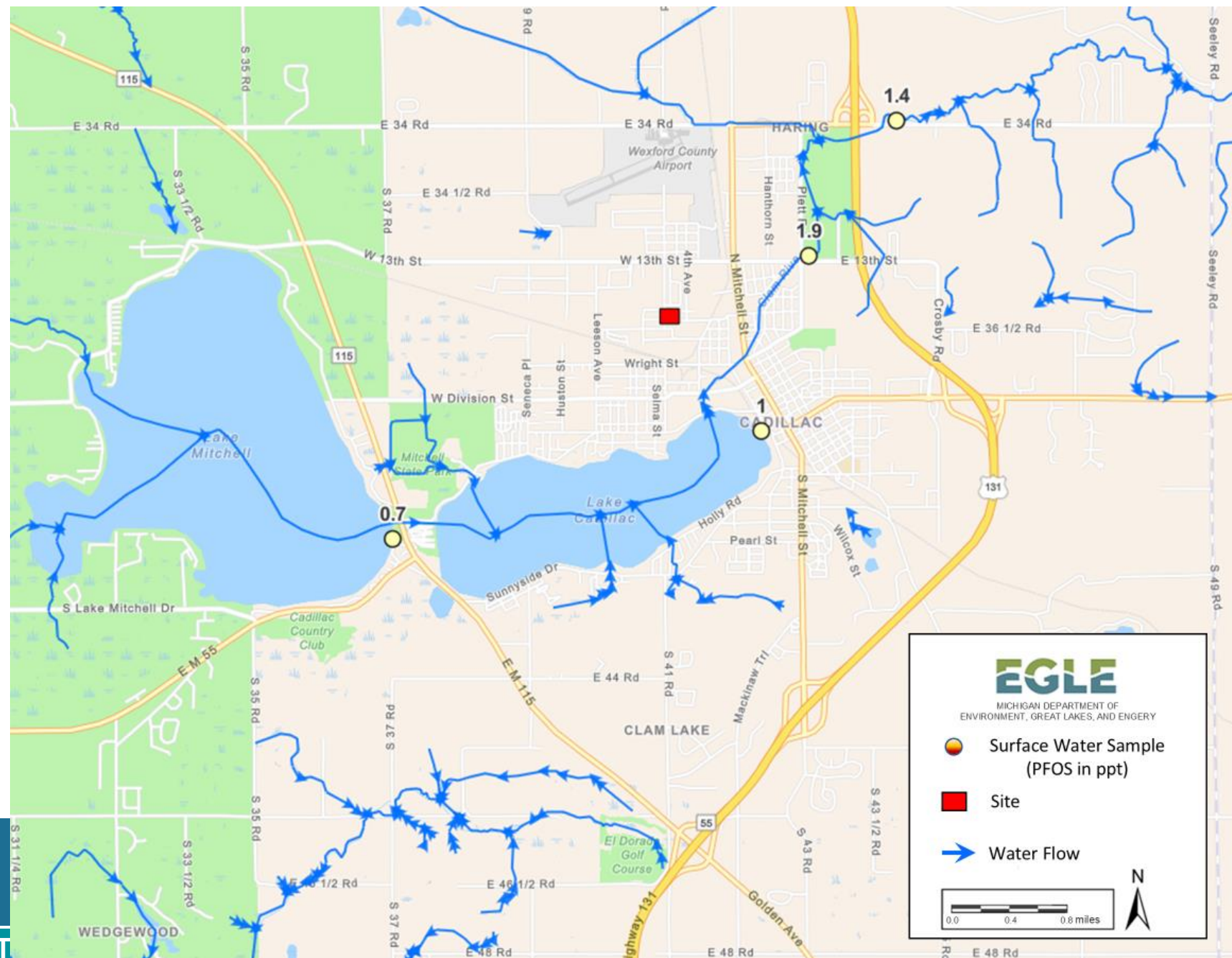
What's Next?

- The LDFA is developing quality assurance, PFAS sampling, and groundwater monitoring plans.
- The LDFA will sample groundwater for contaminants, including PFAS
- The EPA and State of Michigan will coordinate needs for the EPA Five-Year Review
- LDFA has started sampling select monitoring wells for PFAS
- EGLE, DHHS and local health will continue to review residential well needs and results to determine:
 - The appropriate health response
 - If additional sampling is needed based on data

Surface Water Samples Collected in 2022

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Cadillac Area of Interest Investigation Public Water Supply

Ian Smith, Unit Manager, Emerging Contaminants Unit
Michigan Department of Environment, Great Lakes, and Energy

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Public Water Supply

The Cadillac Industrial Area of Interest (AOI), MI is served by two municipal community water supplies (CWS). These include the City of Cadillac CWS (central to the AOI) and Haring Charter Township CWS (immediately to the north).

- The City of Cadillac CWS is currently on an annual sampling schedule with all past compliance monitoring results non-detect for all tested PFAS.
- The Haring Charter Township CWS is currently on a quarterly sampling schedule with past compliance monitoring detections below corresponding Michigan MCLs or non-detect for all tested PFAS.

Public Water Supply

The AOI is also near a smaller CWS and multiple noncommunity water supplies (NCWS) who conduct compliance monitoring for PFAS

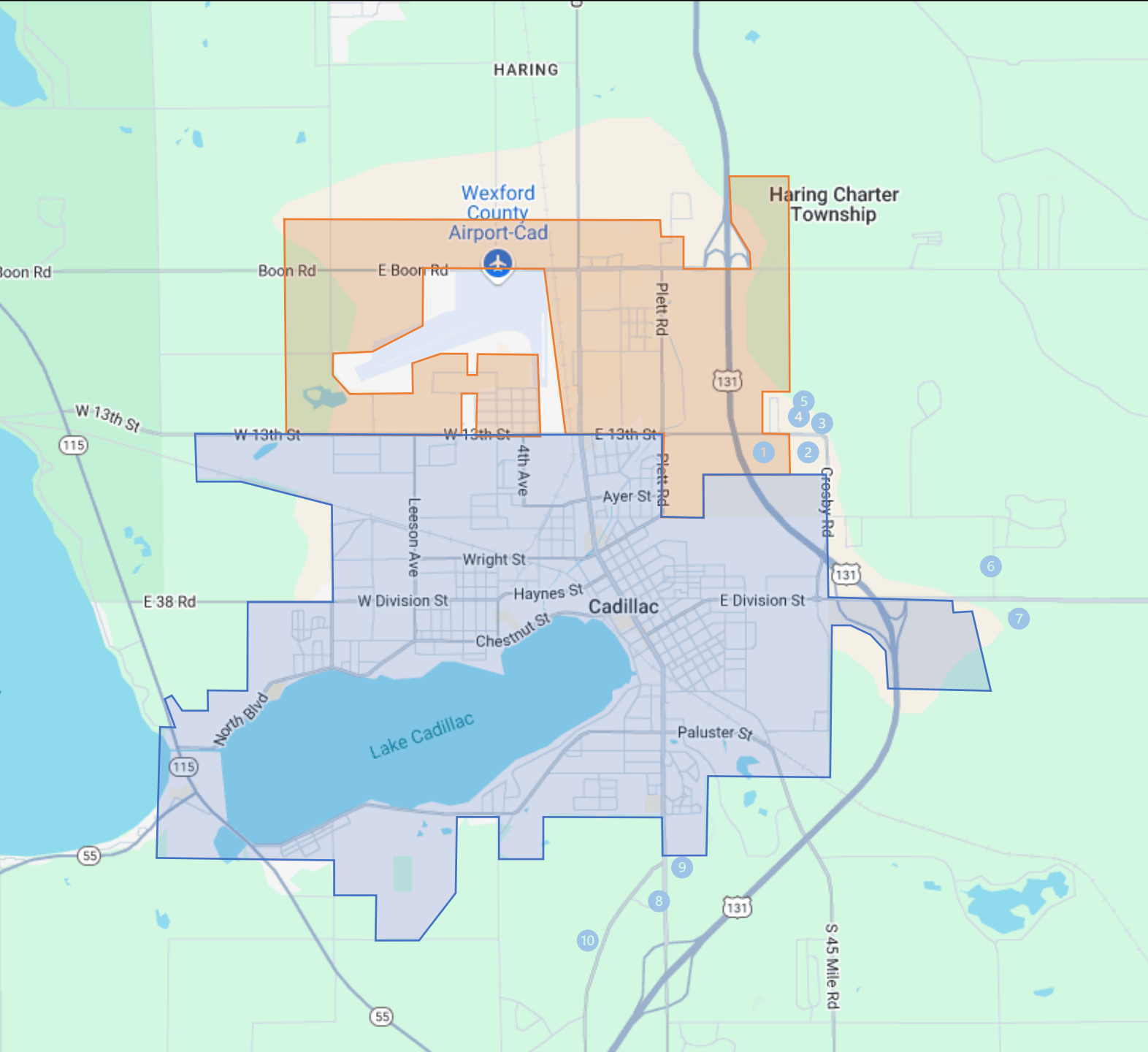
- Curry House Assisted Living Center is a CWS on annual compliance monitoring.
- Baker College, Cadillac Area YMCA, Evergreen Resort, and Emmanuel Lutheran Church are NCWS currently on annual compliance monitoring.
- Dental Health Professionals and the Wexford-Missaukee ISD General Ed Building are NCWS currently on quarterly compliance monitoring.

Results to date for these CWS/NCWS are either below corresponding Michigan MCLs or non-detect for all tested PFAS.

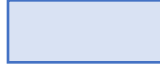
Public Water Supply

The AOI is also near multiple additional NCWS who conduct compliance monitoring for PFAS and have had exceedances of Michigan's PFAS MCLs

- Wexford-Missaukee Career Tech Ctr is currently on quarterly compliance monitoring and has had a past exceedance for PFNA
- Wexford-Missaukee Spec Svcs/Admin is currently on quarterly compliance monitoring and has a current exceedance for PFOA
- Betten Baker Buick GMC is currently on quarterly compliance monitoring and has a current exceedance for PFOS



Approximate Area of Service:

-  City of Cadillac Community Water Supply
-  Haring Township Community Water Supply

Approximate Locations of Other Public Water Supplies:

-  Baker College
-  Cadillac Area YMCA
-  Wexford-Missaukee ISD
-  Wexford-Missaukee Spec Svcs/Admin
-  Wexford-Missaukee Career Tech Ctr
-  Curry House Assisted Living Center
-  Emmanuel Lutheran Church
-  Dental Health Professionals
-  Betten Baker Buick GMC
-  Evergreen Resort

Cadillac Team

Jeff Dietlin

Cadillac Utilities Director
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Patrick Miller

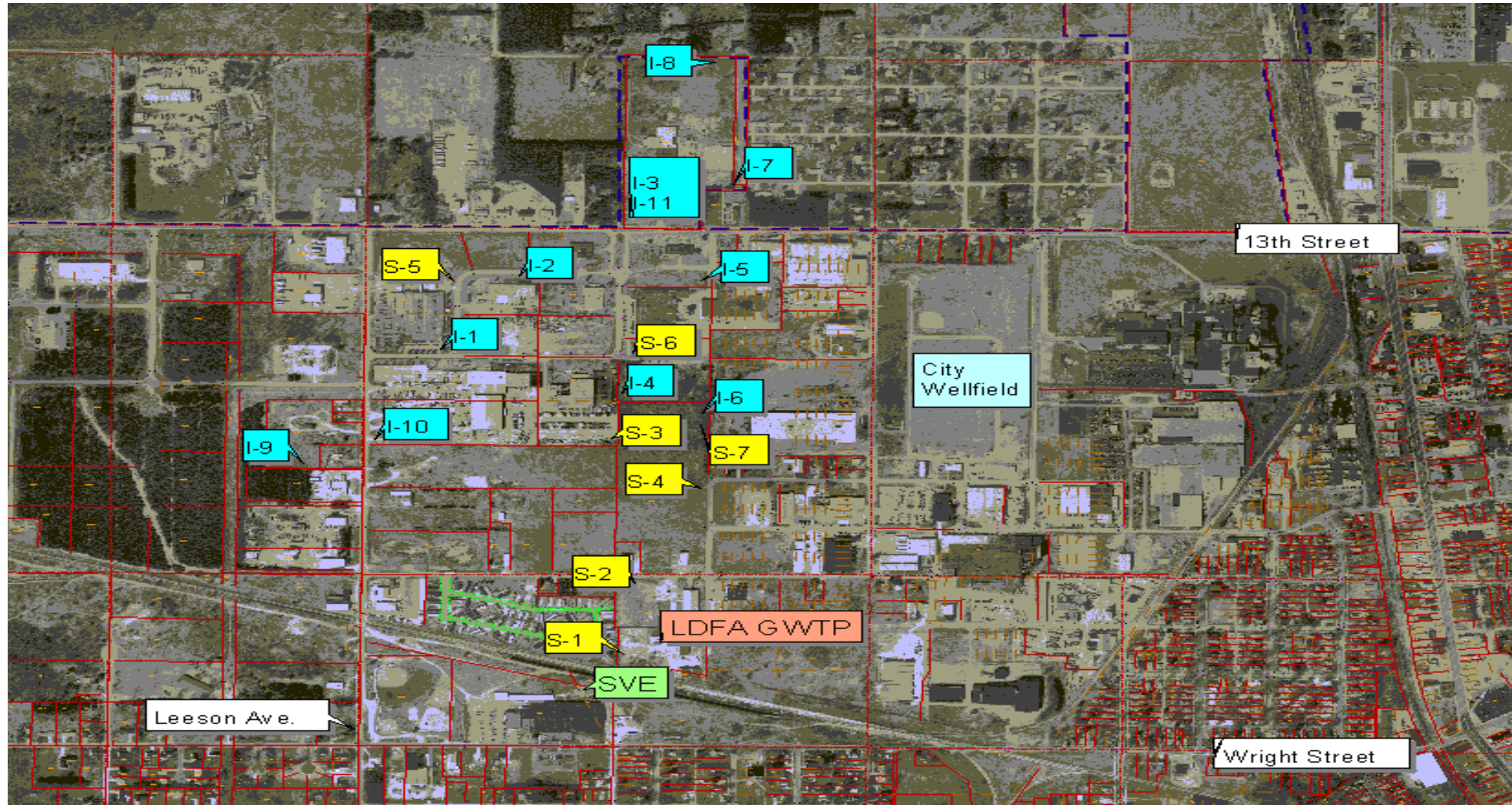
Cadillac Wastewater Treatment
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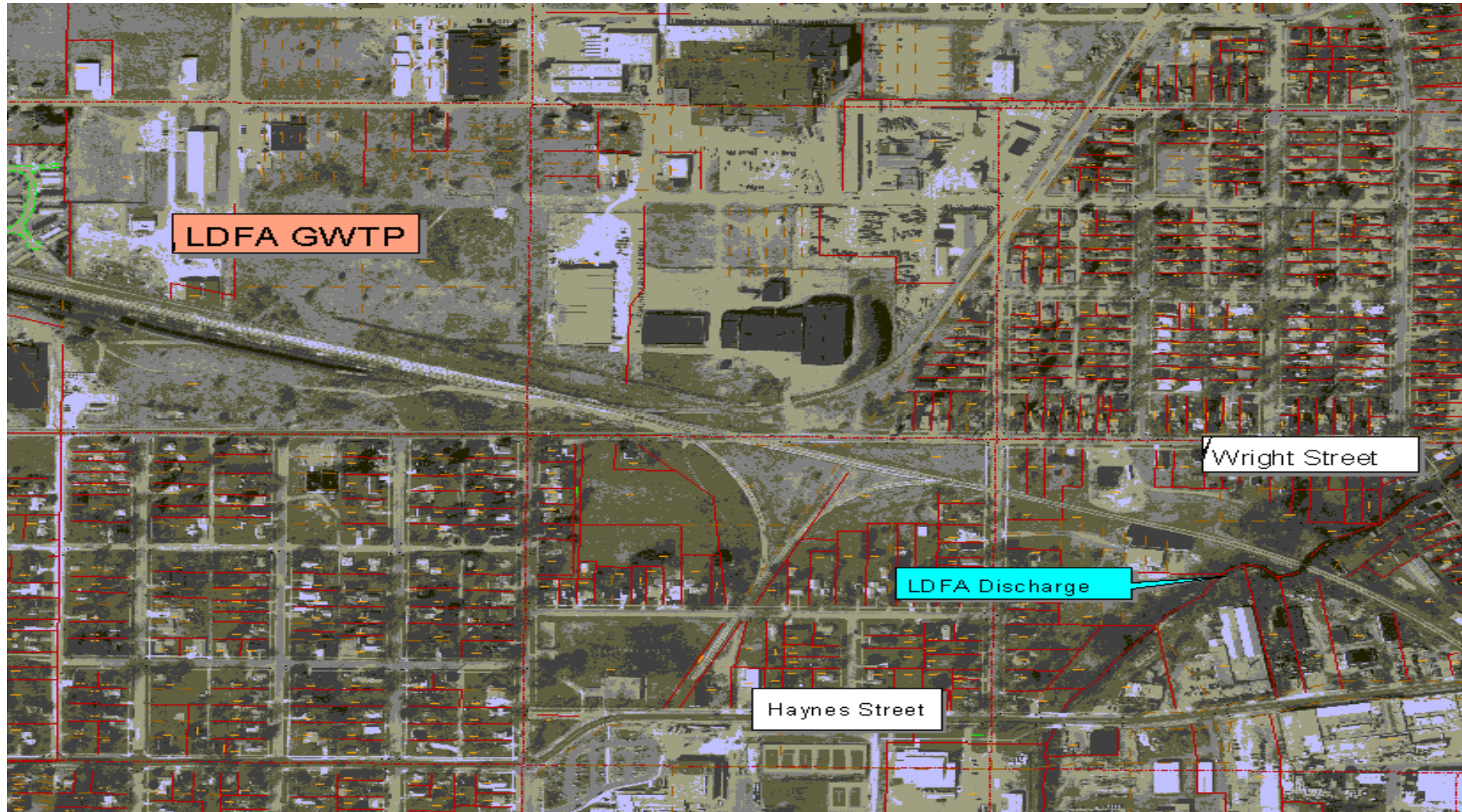
City Of Cadillac Municipal Water System

- **Cadillac Municipal Water testing has always been PFAS free.**
- Original well field located in the Institutional Control Area.
- 2012 half of well field moved to Crosby Road.
- 2021 the remaining well field relocated to East 44 Road.
- Either well field can supply the City of Cadillac water needs.
- 2022 original well field is completely abandoned.
- Testing of municipal water for PFAS occurs every year at both locations.
- Again, testing shows that City of Cadillac municipal water is PFAS free.

LDFA Groundwater Treatment Plant and Extraction Wells Locations



Groundwater Plant and Discharge Locations



Local Finance Development Authority (LDFA) History

- **Background:** Cadillac's groundwater contamination stemmed from two primary sources:
 1. **Northern Plating:** Released hexavalent chromium (referred to as chromium) due to past electroplating operations.
 2. **Kysor:** Released volatile organic compounds (VOCs), including TCE.
 - In 1989, the U.S. Environmental Protection Agency (USEPA) designated these sites as Superfund sites
 - 3. **Cleanup Efforts undertaken by LDFA:**
 - **Chromium Cleanup:** Involved treatment using granulated activated carbon (GAC).
 - **VOC Cleanup:** Utilizes air stripping technology.
 - **Soil Vapor Extraction(SVE):** Utilizes air stripping air extracted from the ground.
- Cleanup Closed 2016

Local Finance Development Authority (LDFA) History

- LDFA decided to voluntarily perform testing of influent recaptured as part of chromium cleanup for PFAS and to test as necessary the recovered and treated water after treatment and the recovered and treated water at the outfall.
- The outfall PFAS test results are below the EGLE surface water criteria and are even below the new USEPA drinking water regulatory levels.

MICHIGAN PFAS ACTION RESPONSE TEAM (MPART)

www.Michigan.gov/PfasResponse



MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY



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MICHIGAN PFAS ACTION RESPONSE TEAM

Questions ?

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