



# Oscoda Area and Former Wurtsmith Air Force Base PFAS Update Meeting

The Webinar will Begin Shortly

June 22, 2022

MPART

# Webinar Housekeeping



All lines are muted during the webinar.



We are recording this webinar

# How to ask a question in Zoom



Submit your questions using the “Q/A” box in at the bottom of your screen.



Click the “hand” icon at the bottom of your screen.



Type #2 to raise your hand.

**#2**

# Welcome

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Sue Manente

Community Services and Planning Unit

Division of Environmental Health

Michigan Department of Health and Human Services

# Introductions, Logistics and Agenda

- Introductions
- Agenda:
  - Michigan Department of Environment, Great Lakes, and Energy (EGLE) Update
  - Michigan Department of Health and Human Services (MDHHS) Update
  - Michigan Department of Natural Resources – Purdue University Study
  - Comments, Questions, and Answers
  - Meeting Conclusion

*\*\* This meeting is being recorded. \*\**



MICHIGAN DEPARTMENT OF  
ENVIRONMENT, GREAT LAKES, AND ENERGY

## Former Wurtsmith Air Force Base

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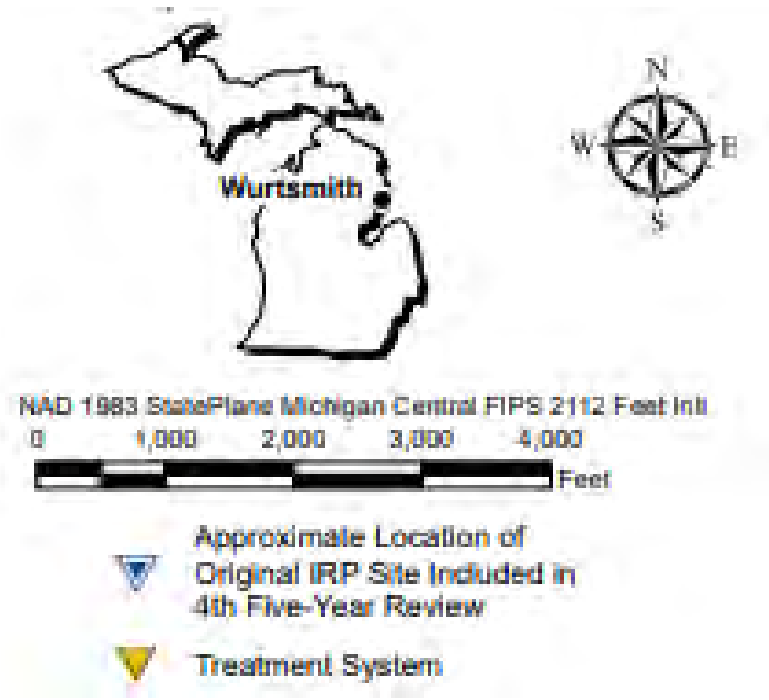
Beth Place, Project Manager  
Remediation and Redevelopment Division  
517-899-7924 | [placeb1@michigan.gov](mailto:placeb1@michigan.gov)

# Former Wurtsmith Air Force Base

- 1923 Established
- 1993 Officially closed under the Base Realignment and Closure decision, 1991
- Most Acreage has been transferred for reuse.
- Air Force is the lead
- Comprehensive Environmental Response, and Liability Act (CERCLA)

# Wurtsmith

## 'Historical' Environmental Response

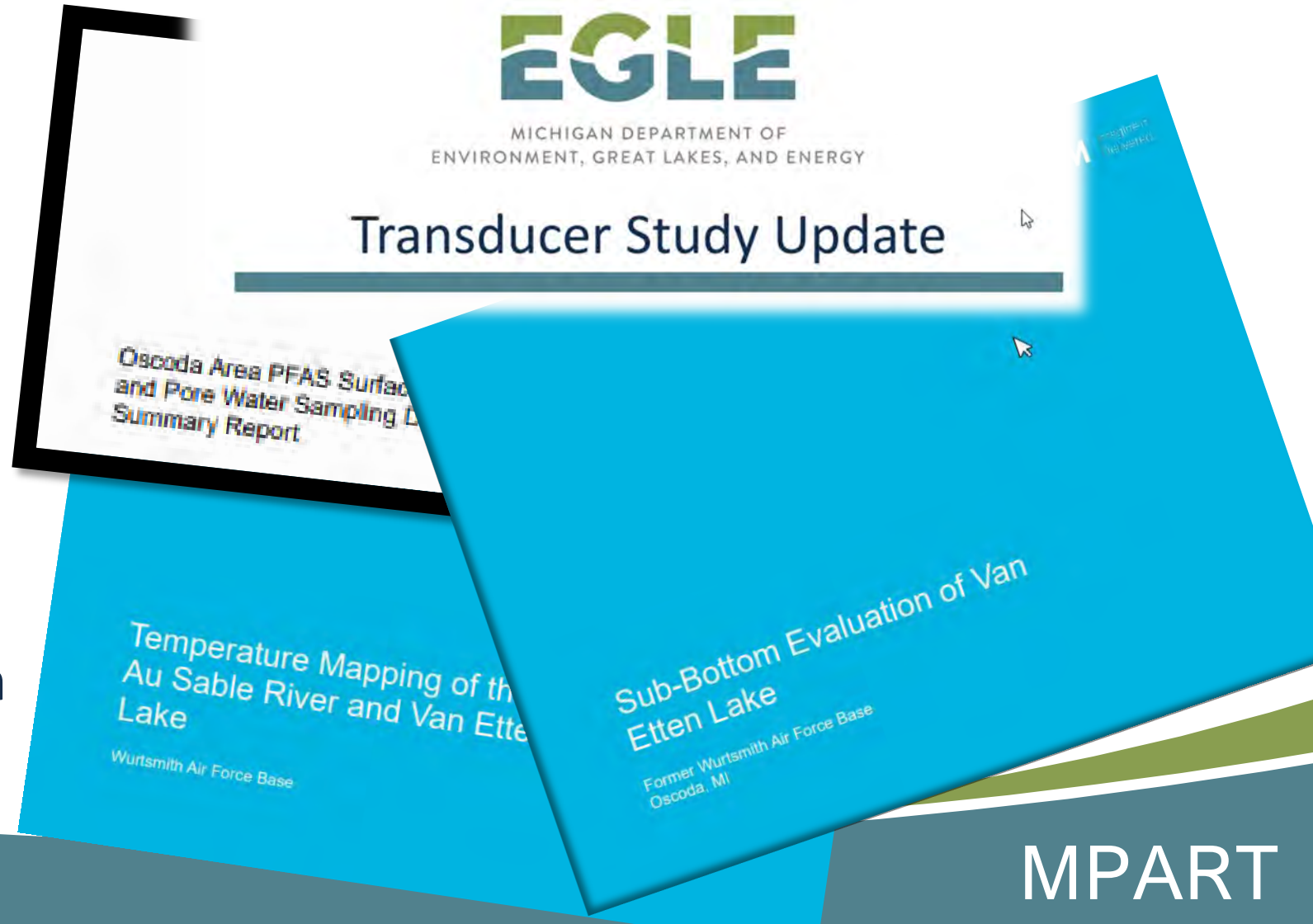


Source: Bay West 4<sup>th</sup> Five Year Review Work Plan, 2019



# EGLE PFAS Response

- Groundwater
- Surface Water
- Soil
- Fish
- Wildlife
- Residential Wells
- Research
- [Michigan.gov/Wurtsmith](https://www.michigan.gov/Wurtsmith)



# Air Force PFAS Response

Preliminary Assessment

Site Inspection

Remedial Investigation

- FT02 Pump and Treatment System (PTS)

Removal Actions

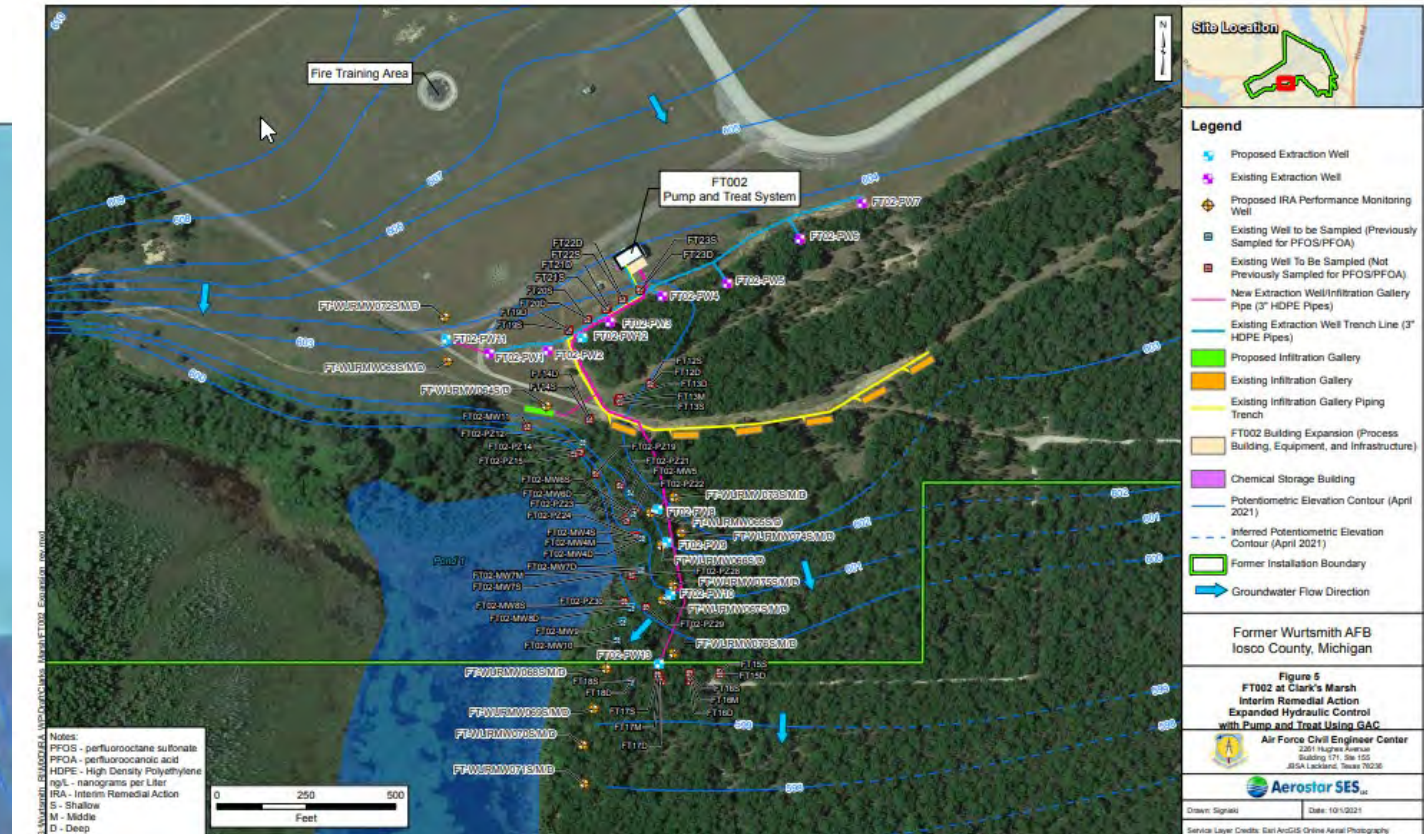
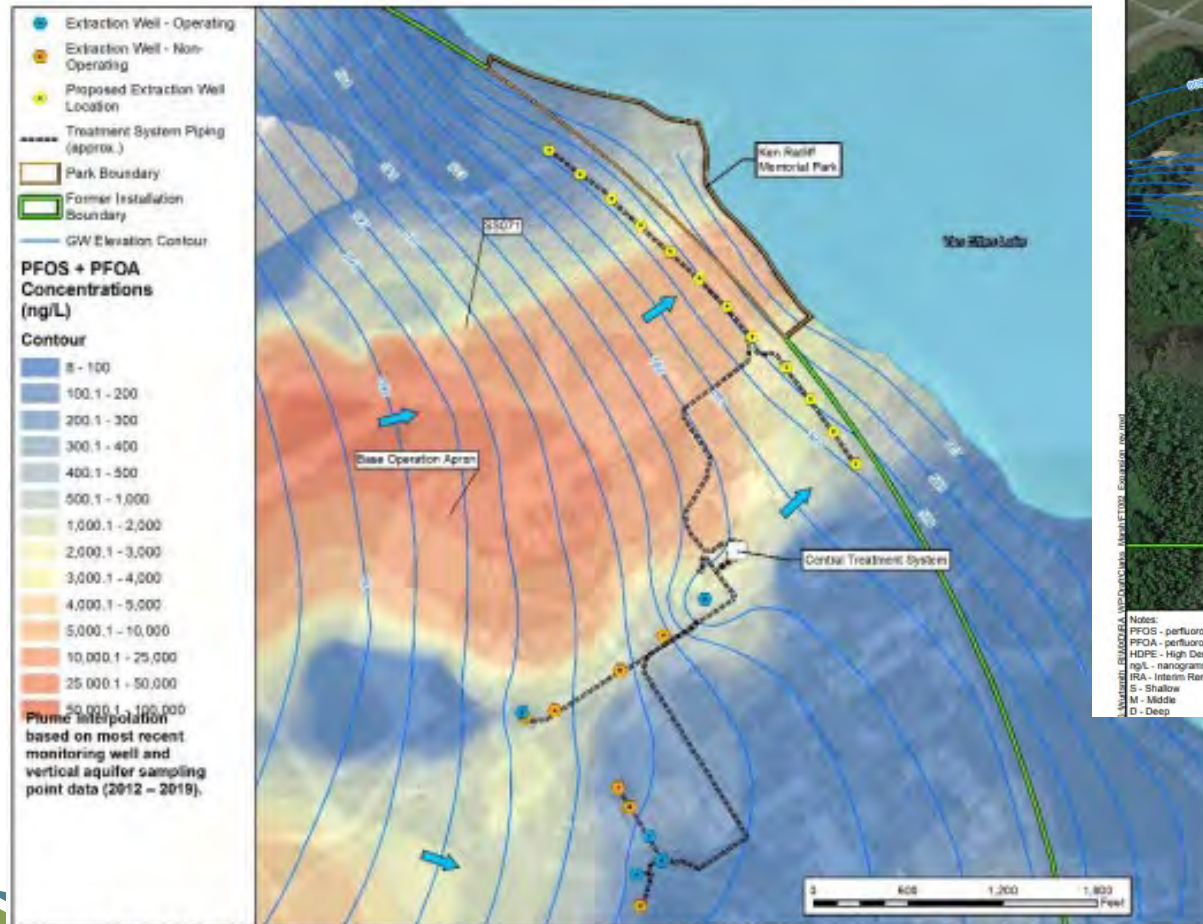
- Central Treatment System (Arrow and Benzene PTSs)
- Mission Street PTS
- Soil Removal at FT02

Interim Remedial Actions



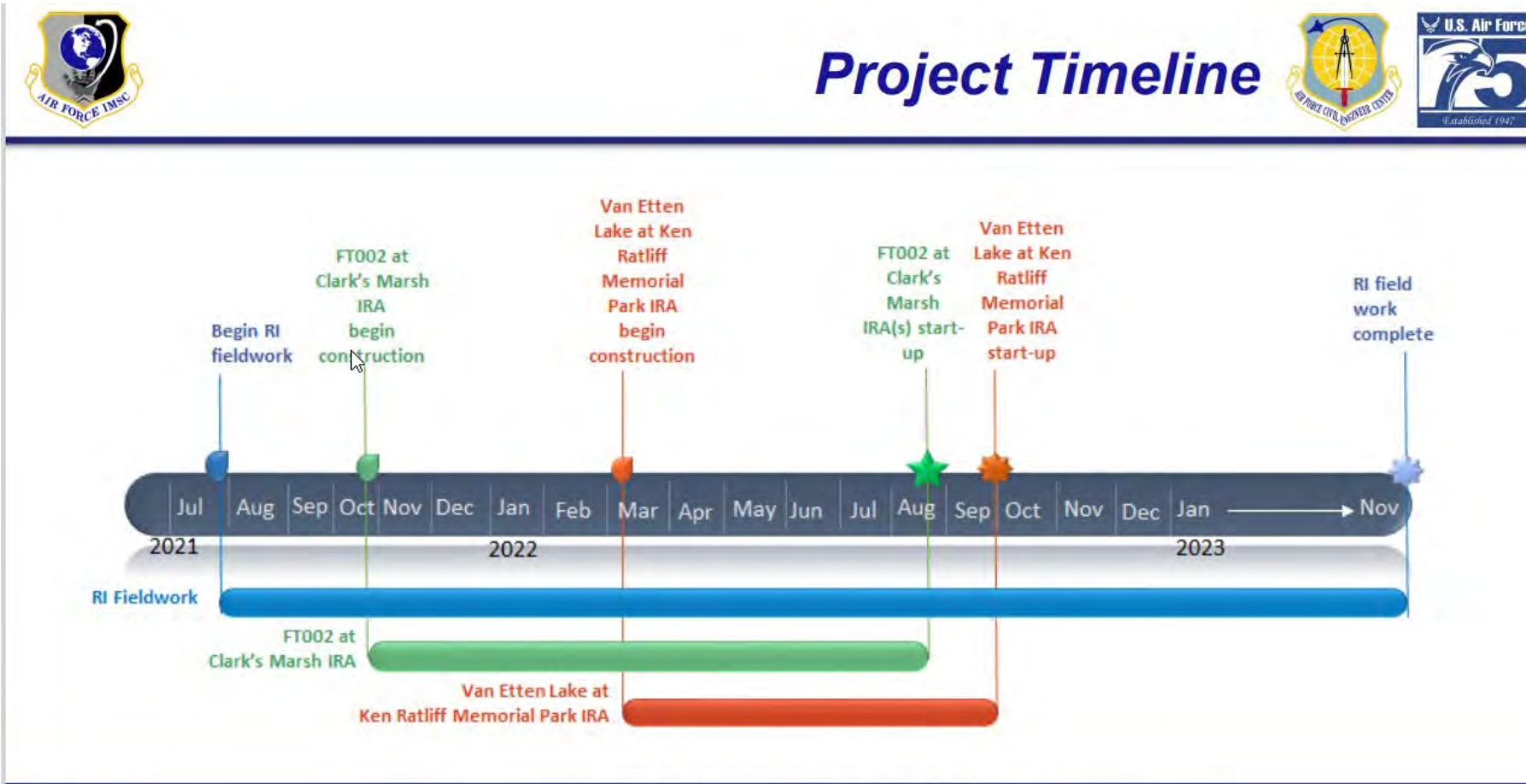


# Interim Remedial Actions under Construction



- Clarks Marsh at FT002
- Van Etten Lake @ Ken Ratliff Memorial Park

# Air Force Timeline - presented May 18, 2022



**Your Success is Our Mission!**

Innovate, Accelerate, Thrive - The Air Force at 75

UNCLASSIFIED

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# EGLE Oversight of Air Force Field Activities

- EGLE Contractor Oversight of Air Force activities
  - [Michigan.gov/Wurtsmith](http://Michigan.gov/Wurtsmith)
- Quality Assurance Samples

Locations	Air Force	EGLE	%
448	1955	205	10%



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# Oscoda Area Sites

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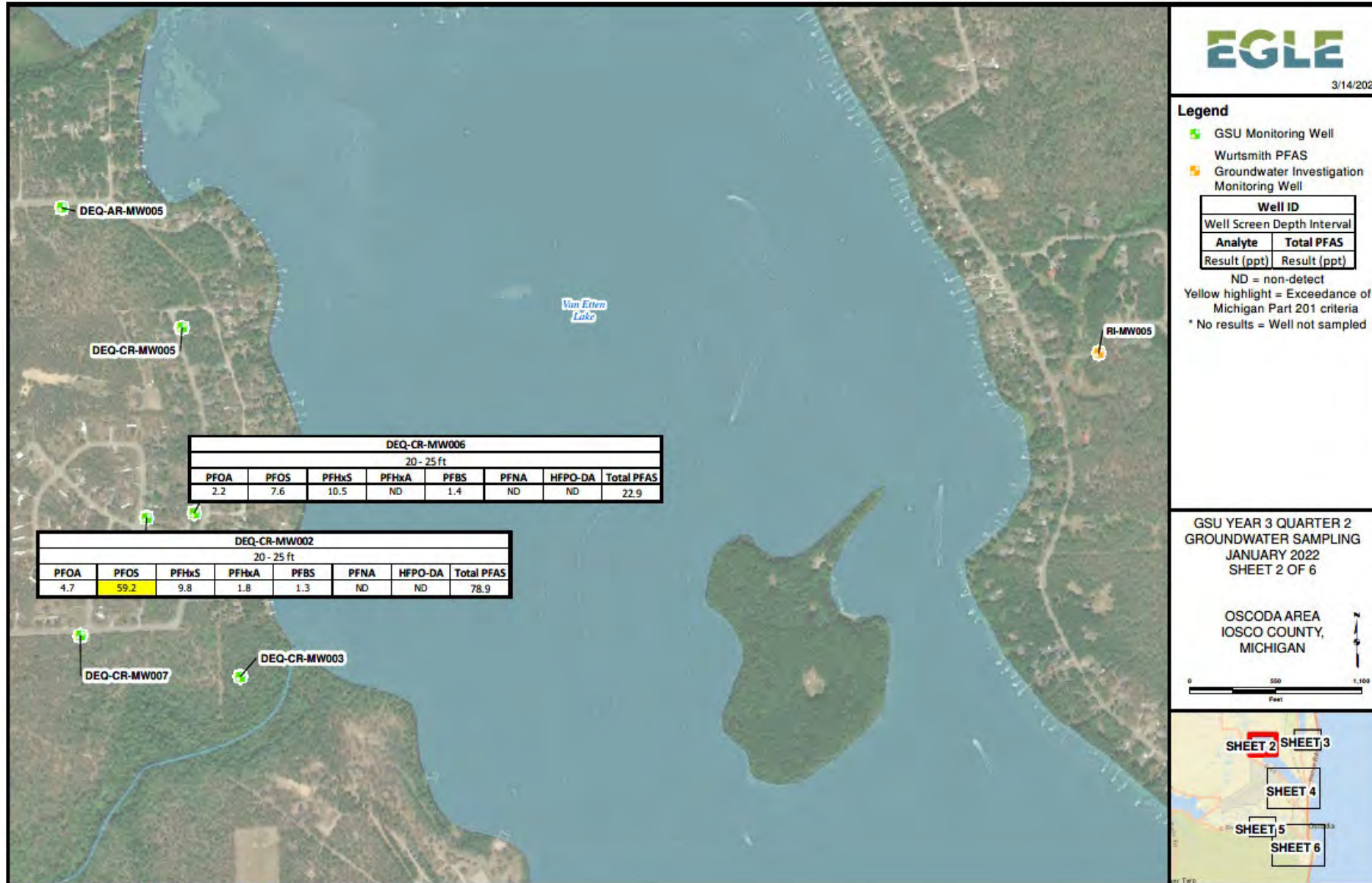
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Remediation and Redevelopment Division

# Oscoda Township & Au Sable Township EGLE Groundwater Monitoring Well Locations

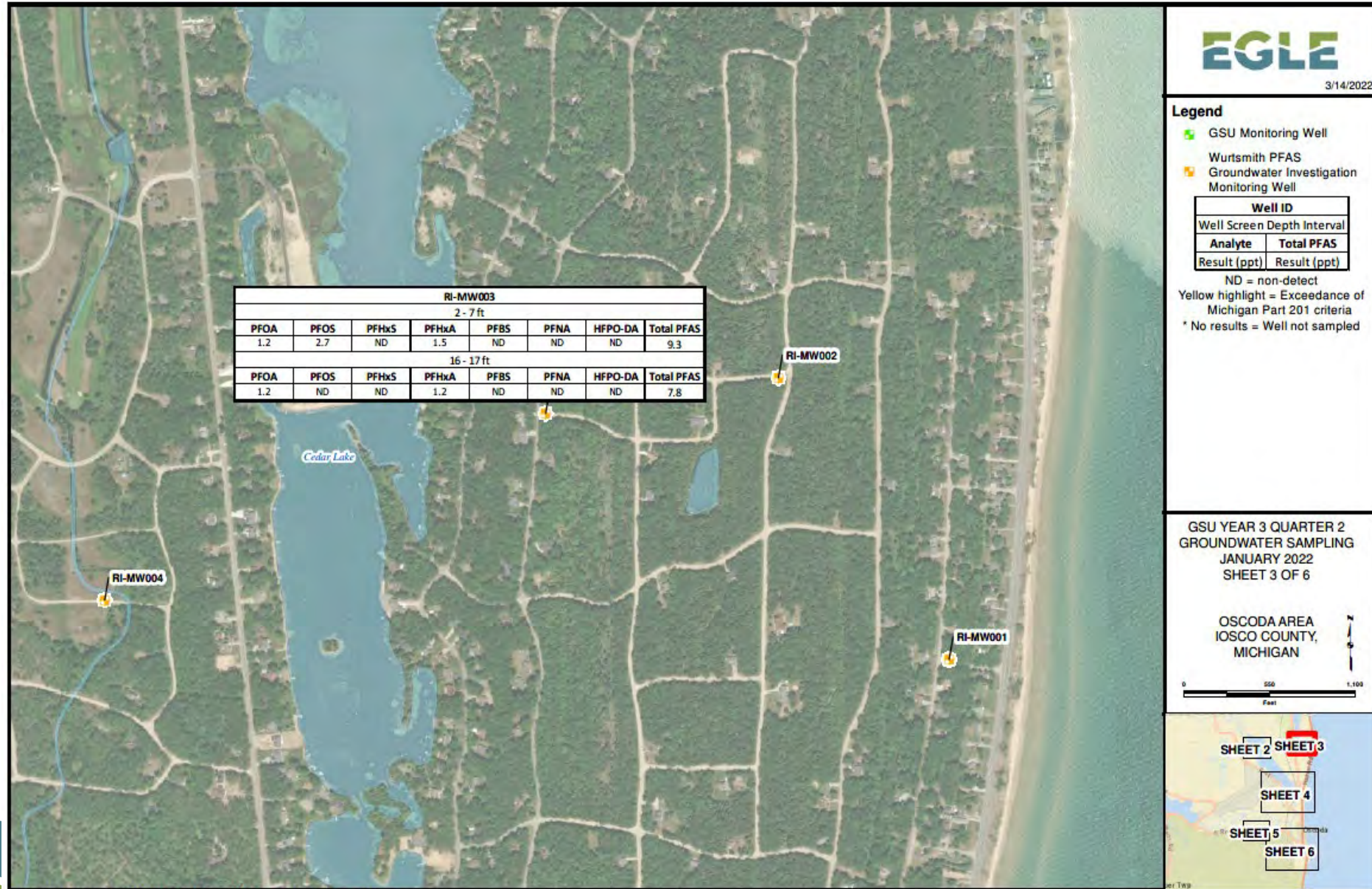


# Colbath Road Area





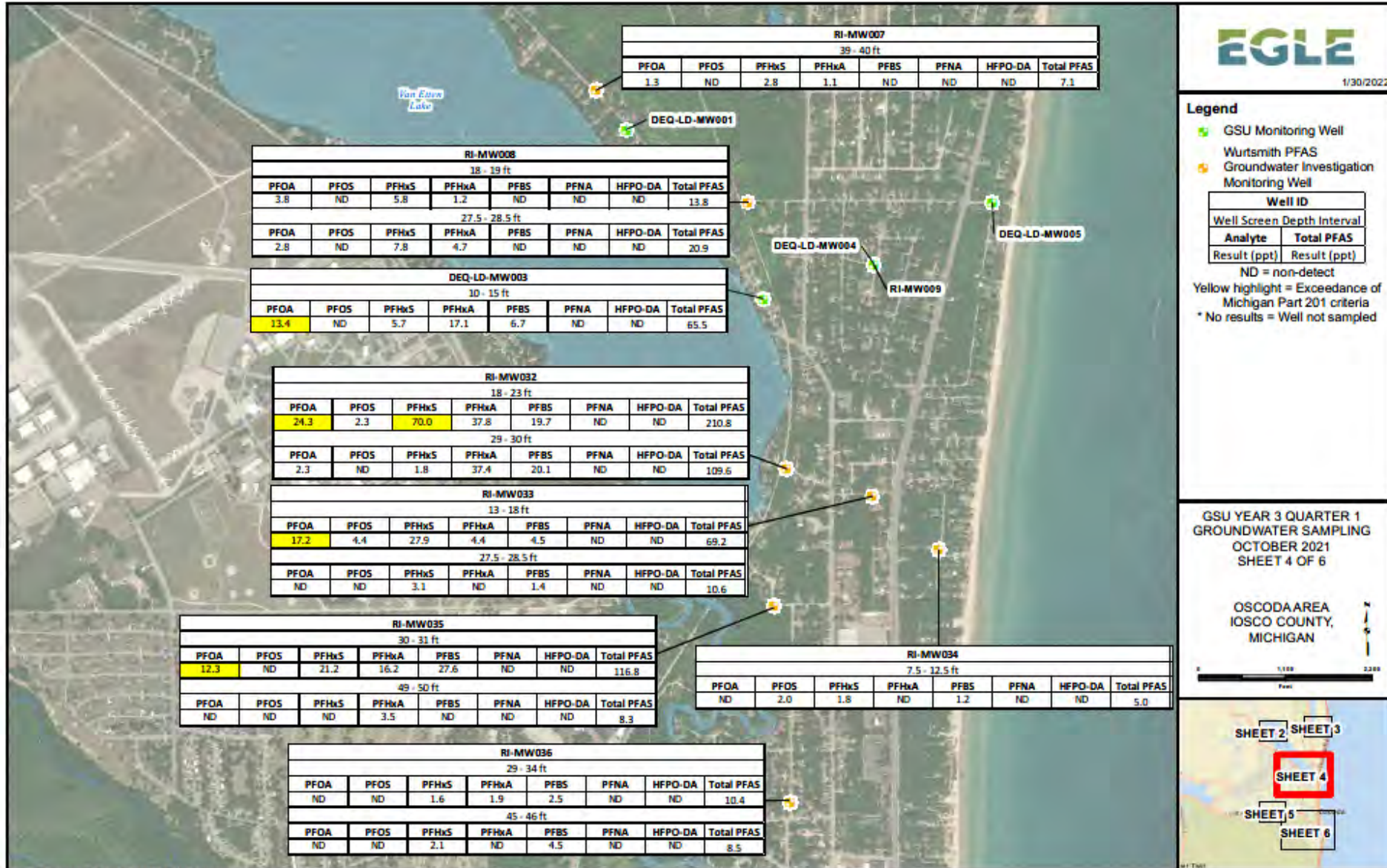
# Cedar Lake Area



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# Loud Drive Area



RI-MW007							
39 - 40 ft							
PFOA	PFOS	PFHxS	PFHxA	PFBS	PFNA	HFPO-DA	Total PFAS
1.3	ND	2.8	1.1	ND	ND	ND	7.1

RI-MW008							
18 - 19 ft							
PFOA	PFOS	PFHxS	PFHxA	PFBS	PFNA	HFPO-DA	Total PFAS
3.8	ND	5.8	1.2	ND	ND	ND	13.8
27.5 - 28.5 ft							
PFOA	PFOS	PFHxS	PFHxA	PFBS	PFNA	HFPO-DA	Total PFAS
2.8	ND	7.8	4.7	ND	ND	ND	20.9

DEQ-LD-MW003							
10 - 15 ft							
PFOA	PFOS	PFHxS	PFHxA	PFBS	PFNA	HFPO-DA	Total PFAS
13.4	ND	5.7	17.1	6.7	ND	ND	65.5

RI-MW032							
18 - 23 ft							
PFOA	PFOS	PFHxS	PFHxA	PFBS	PFNA	HFPO-DA	Total PFAS
24.3	2.3	70.0	37.8	19.7	ND	ND	210.8
29 - 30 ft							
PFOA	PFOS	PFHxS	PFHxA	PFBS	PFNA	HFPO-DA	Total PFAS
2.3	ND	1.8	37.4	20.1	ND	ND	109.6

RI-MW033							
13 - 18 ft							
PFOA	PFOS	PFHxS	PFHxA	PFBS	PFNA	HFPO-DA	Total PFAS
17.2	4.4	27.9	4.4	4.5	ND	ND	69.2
27.5 - 28.5 ft							
PFOA	PFOS	PFHxS	PFHxA	PFBS	PFNA	HFPO-DA	Total PFAS
ND	ND	3.1	ND	1.4	ND	ND	10.6

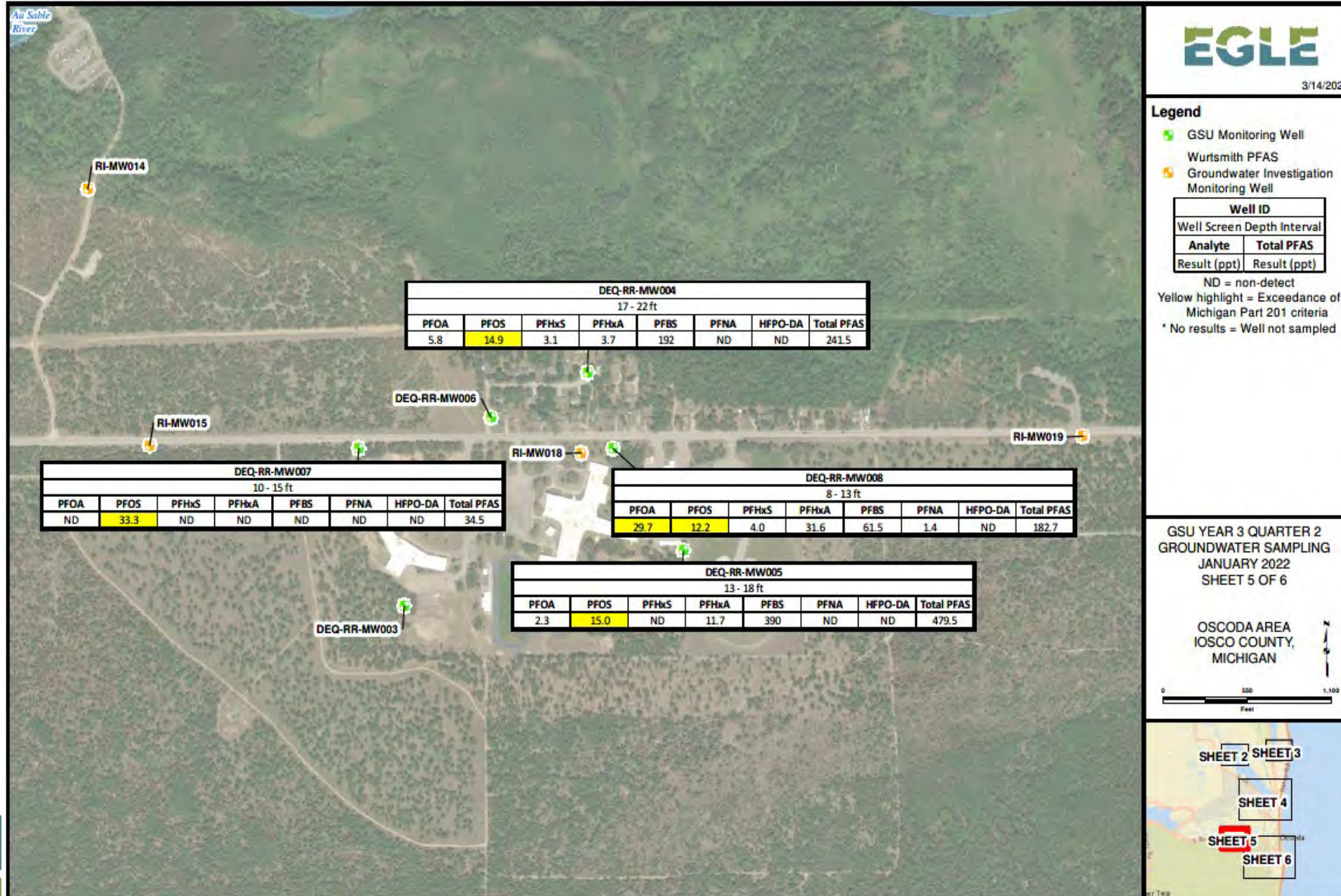
RI-MW035							
30 - 31 ft							
PFOA	PFOS	PFHxS	PFHxA	PFBS	PFNA	HFPO-DA	Total PFAS
12.3	ND	21.2	16.2	27.6	ND	ND	116.8
49 - 50 ft							
PFOA	PFOS	PFHxS	PFHxA	PFBS	PFNA	HFPO-DA	Total PFAS
ND	ND	ND	3.5	ND	ND	ND	8.3

RI-MW034							
7.5 - 12.5 ft							
PFOA	PFOS	PFHxS	PFHxA	PFBS	PFNA	HFPO-DA	Total PFAS
ND	2.0	1.8	ND	1.2	ND	ND	5.0

RI-MW036							
29 - 34 ft							
PFOA	PFOS	PFHxS	PFHxA	PFBS	PFNA	HFPO-DA	Total PFAS
ND	ND	1.6	1.9	2.5	ND	ND	10.4
45 - 46 ft							
PFOA	PFOS	PFHxS	PFHxA	PFBS	PFNA	HFPO-DA	Total PFAS
ND	ND	2.1	ND	4.5	ND	ND	8.5

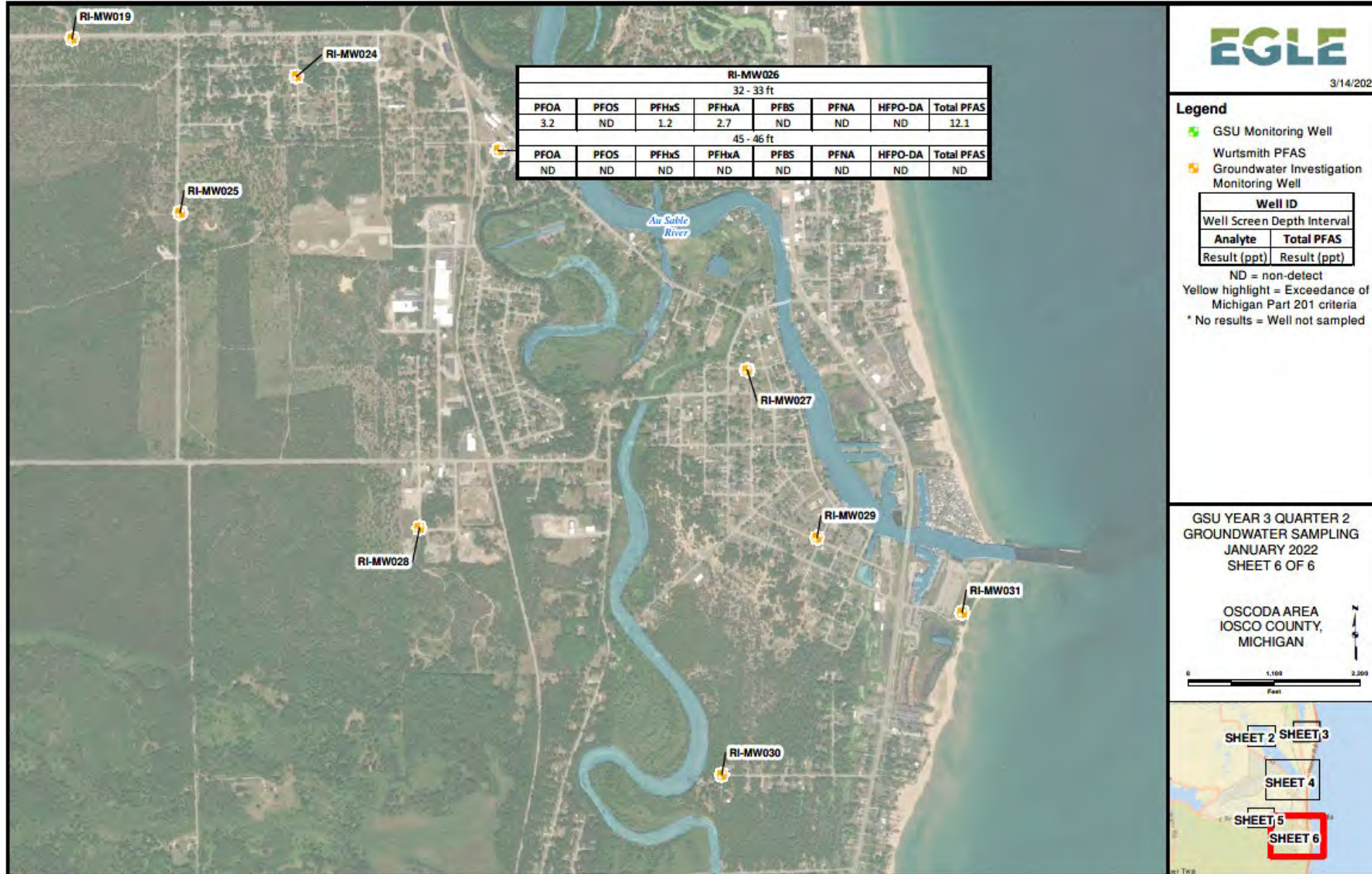


# River Road Oscoda Schools Area





# Au Sable Township



3/14/2022

### Legend

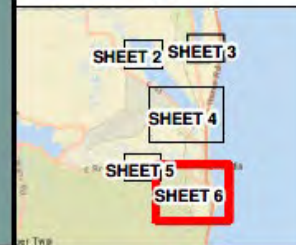
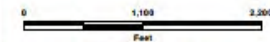
- GSU Monitoring Well
- Wurtsmith PFAS
- Groundwater Investigation Monitoring Well

Well ID	
Well Screen Depth Interval	
Analyte	Total PFAS
Result (ppt)	Result (ppt)

ND = non-detect  
 Yellow highlight = Exceedance of Michigan Part 201 criteria  
 \* No results = Well not sampled

GSU YEAR 3 QUARTER 2  
 GROUNDWATER SAMPLING  
 JANUARY 2022  
 SHEET 6 OF 6

OSCODA AREA  
 IOSCO COUNTY,  
 MICHIGAN





# Au Sable Township – Smith Street Area



# Wurtsmith Groundwater Treatment Systems

Three systems: FT002, Central Treatment,  
Mission Street

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Industrial Permits Unit, Permits Section

Water Resources Division

# Role of Water Resource Division at Wurtsmith

1. Water Quality Assessment and Fish Assessment –Surface Water Assessment Section
2. Development of Substantive Requirement Documents (SRDs) – Permits Section
3. Compliance and Enforcement of SRDs - Bay City District Office

# Overview

- Three PFAS granular activated carbon filtration treatment systems in operation as authorized by Substantive Requirements Documents (SRDs) at each site: FT002, Central, and Mission Street.
- All three systems are effectively treating for PFAS.
- Effluent monitoring for PFOS and PFOA demonstrates compliance with effluent limitations in the SRDs.



# Start of Current System Operations

1. FT002: built and began operating in 2014.
2. Central Treatment System: reconstructed and began operating in 2018.
3. Mission Street Treatment System: reconstructed and began operating in 2019.

# SRD (Permit) Requirements

- **Water quality-based effluent limitations (WQBELs):** site-specific limits based on meeting water quality standards in the receiving water (e.g., phosphorus, oxygen-demanding substances, toxic pollutants).
  - **Technology-based effluent limitations (TBELs):** Effluent limitation Guidelines (ELGs) are industry-specific national standards (e.g., secondary treatment standards, steam electric power generating, dairy products processing). No ELGs for groundwater treatment.
  - **Best Professional Judgement (BPJ):** state-specific standards developed in absence of ELGs set on the **capabilities of a specific treatment technology** (e.g., granular activated carbon for PFOS/PFOA).
  - Water Quality Standards: specified in rules (e.g., pH and fecal coliform).
  - Permit Writer's Judgement: reporting for flow, production rates, outfall observation, etc.
- -----**When setting permit effluent limitations, the most restrictive limitation is specified.**

# Standard Evaluations

## Water quality-based effluent limitations (WQBELs):

- PFOS: 12 ng/l (11 ng/l drinking water source) as a monthly average; 1600 ng/l as a daily maximum.
- PFOA: 12,000 ng/l (420 ng/l drinking water source) as a monthly average; 15,000 ug/l as a daily maximum.

## Technology-based effluent limitations (TBELs), Best Professional Judgement (BPJ):

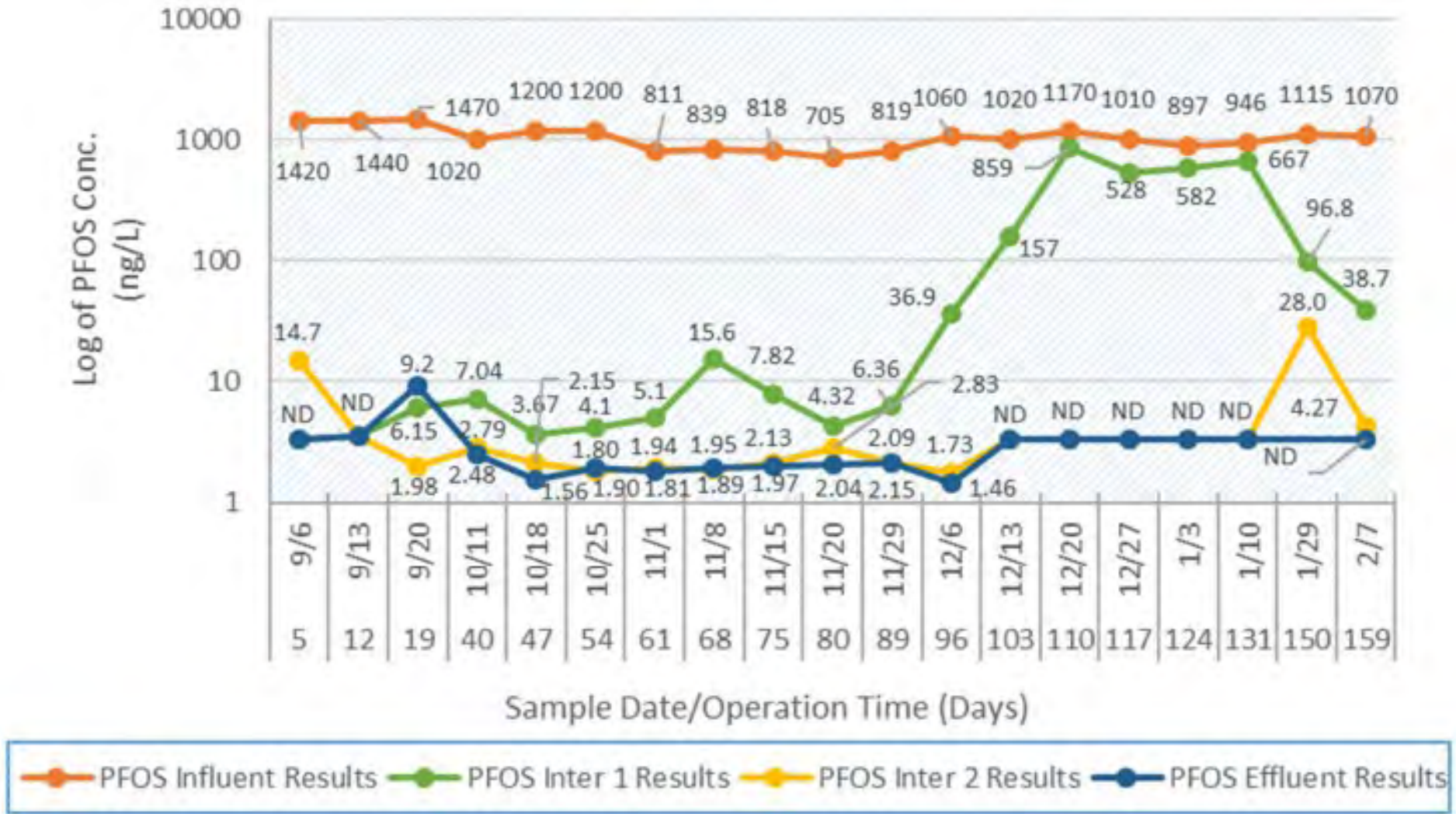
- PFOS: no monthly average value; 15 ng/l as a daily maximum.
- PFOA: no monthly average value; 40 ng/l as a daily maximum.

— -----**When setting permit effluent limitations, the most restrictive limitation is specified.**

# Monitoring Requirements

Parameter	Maximum Limits for Quality or Concentration			Monitoring Frequency	Sample Type
	Monthly	Daily	Units		
<b>Influent Monitoring</b>					
PFOS	report	report	ng/l	Monthly	Grab
PFOA	report	report	ng/l	Monthly	Grab
PFAS Analytes	report	report	ng/l	Monthly	Grab
<b>Intermediate Stage Monitoring</b>					
PFOS	report	report	ng/l	Monthly/Weekly <sup>1</sup>	Grab
PFOA	report	report	ng/l	Monthly/Weekly <sup>1</sup>	Grab
<b>Discharge Limitations</b>					
Flow	--	--	--	Daily	Report Total Daily Flow
PFOS	12	15	ng/l	Weekly	Grab
PFOA	report	40	ng/l	Weekly	Grab
PFAS Analytes	report	report	ng/l	Monthly	Grab

# Central Treatment System PFOS Results



# Contact Information

- Tarek Buckmaster, Industrial Permits Unit  
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- Charles Bauer, Bay City WRD District Supervisor  
[bauerc@michigan.gov](mailto:bauerc@michigan.gov); 989-439-3845
- Matt Siler, Bay City WRD Compliance Manager  
[silerm@michigan.gov](mailto:silerm@michigan.gov); 989-439-3461



# PFAS and Health

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Toxicologist, ATSDR Unit

Toxicology and Assessment Section

Division of Environmental Health

# Overview

- Health effects associated with PFAS
- Private Residential Well Resampling Effort
  - Round 1 (Summer 2020)
  - Round 2 (Summer 2021)
  - Round 3 (June to September 2022)
- Foam advisory reminder
- Deer advisory reminder
- Fish sampling/results updates



# 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, continued

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

\* PFOA only

# Round 1: Residential Private Wells Resampling Effort Summary

	MDHHS Resampling Effort (Round 1)
Sampling Season	Summer 2020
# Wells Sampled	277
# Non-Detect	136
# Detect below all CVs	121
# Detect at or above one or more CV	20
Range Total PFAS	2.0 to 2514.0 ppt

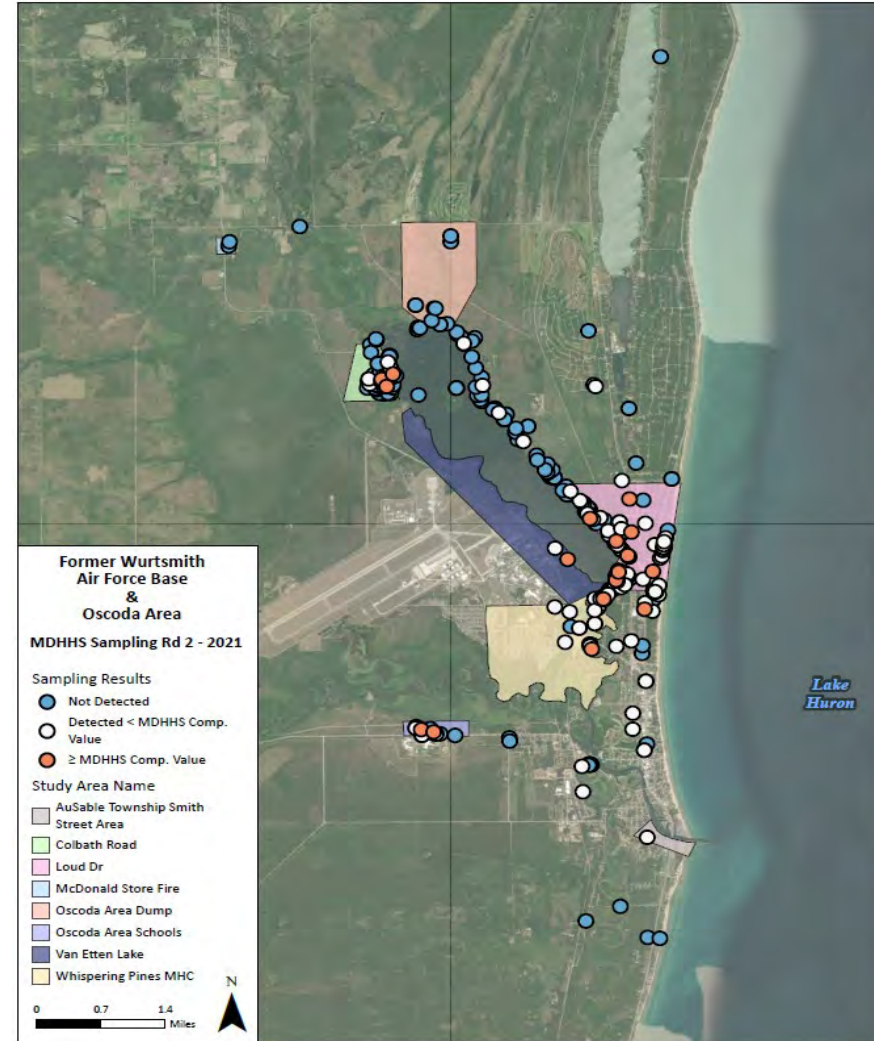
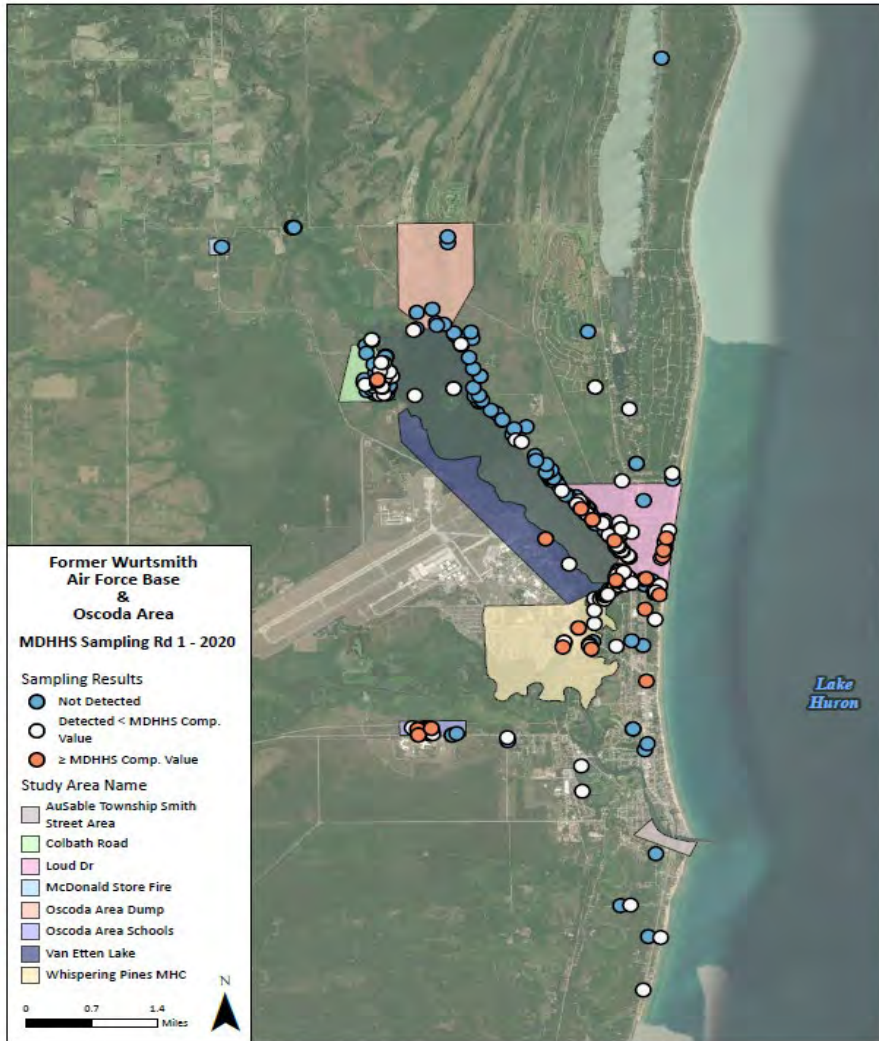
# Round 2: Residential Private Wells Resampling Effort Summary

	MDHHS Resampling Effort (Round 2)
Sampling Season	Summer 2021
# Wells Sampled	280
# Non-Detect	147
# Detect below all CVs	114
# Detect at or above one or more CV	19
Range Total PFAS	2.0 to 140.8 ppt

# Round 3: This Summer

- Timeline: June to September 2022
- Appointments with MDHHS sanitarians that agree to sampling
- Sampling available to seasonal homes as well

# Rounds 1 and 2 figures



# Avoid Foam

- Foam may have high amounts of PFAS
- Rinse off foam after contact
- Bathe or shower after the day's outdoor activities
- Recreational use of **water** is *not a concern*
- Incidental swallowing of **foam** with high levels of PFAS is a *concern*
- Do not allow pets to drink foamy water
- Rinse pets with fresh water after contact with foam



# Deer Advisory Reminder

- Do Not Eat deer advisory reminder
  - Do Not Eat deer advisory area around Clark's Marsh reduced to an approximately 3-mile radius
  - March 2020: Muscle and liver samples were collected from 44 deer (14 male, 30 female)
    - Only two PFAS (PFOS and PFHxS) were found in muscle samples
    - Seven PFAS (PFDA, PFOS, PFDS, PFHxS, PFNA, PFUnA, and PFOSA) were detected in liver samples



# Fish Sampling/Results Update

- Van Etten Lake (Collected in 2020)
  - Yellow perch (Sample size: 10)
  - Black crappie (Sample size: 10)

Species	Min PFOS (ppb)	Max PFOS (ppb)	Average PFOS (ppb)
Yellow perch	18.3	47.2	34.4
Black crappie	35.3	70.8	48.7

- ESF guides were released on May 2, 2022



# Additional Resources

- Michigan PFAS Action Response Team (MPART)  
[www.michigan.gov/pfasresponse](http://www.michigan.gov/pfasresponse)
- More info about ESF guidelines → [www.michigan.gov/EatSafeFish](http://www.michigan.gov/EatSafeFish)
- Agency for Toxic Substances and Disease Registry (ATSDR)  
<https://www.atsdr.cdc.gov/pfas/>



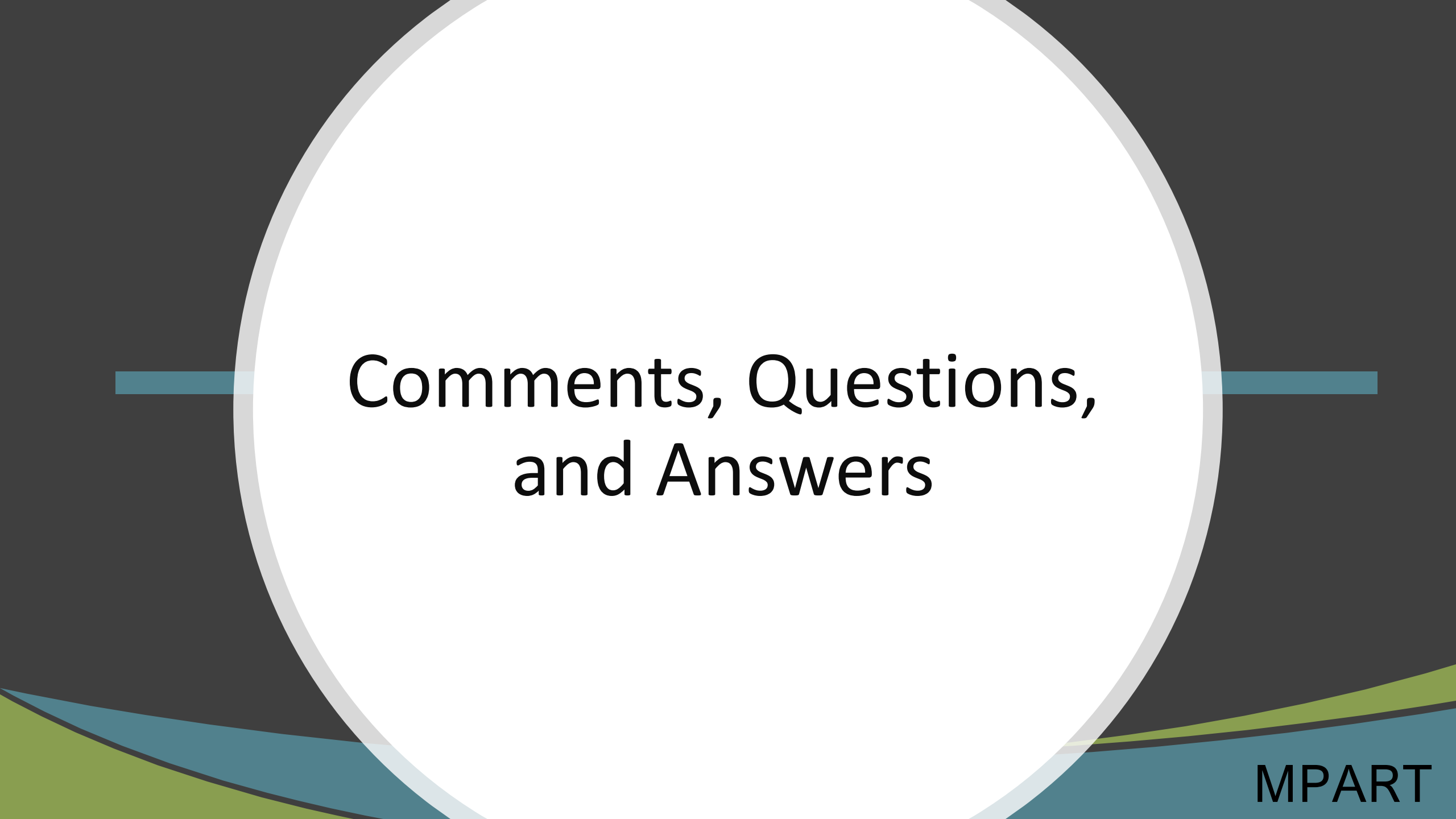
# Purdue University - Clark's Marsh Study

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Habitat Management Unit

DNR Fisheries Division



# Comments, Questions, and Answers



# How to ask a question in Zoom



Submit your questions using the “Q/A” box in at the bottom of your screen.



Click the “hand” icon at the bottom of your screen.



Type #2 to raise your hand.

**#2**

# Michigan.gov/PFASResponse website



## Michigan releases 2022 Eat Safe Fish Guides to help residents learn about and plan for local fish consumption

Updates include a 'Do Not Eat' fish advisory for bluegill and sunfish in parts of the Rouge River and lifting of a 'Do Not Eat' fish advisory for parts of the Huron River.

These guides can help Michiganders plan their fish consumption to minimize exposure to chemicals that can build up in fish, while still getting all the health benefits of eating fish.

The regional guides provide guidelines for eating locally caught fish. Guidelines are based on levels of chemicals found in the portions of fish that people eat – typically the filets.

[Read the full press release](#)

[Michigan.gov/EatSafeFish](https://Michigan.gov/EatSafeFish)



## MPART PFAS Geographic Information System

This app features several datasets as part of Michigan PFAS Action Response Team (MPART)'s efforts:

1. PFAS Sites (official list of PFAS sites in Michigan)
2. PFAS Surface Water Sampling (PFAS concentrations in surface water samples collected by EGLE)
3. Statewide Testing Initiative of Public Water Supplies Hexbins and Results Table (PFAS

# MICHIGAN PFAS ACTION RESPONSE TEAM (MPART)

[Michigan.gov/PFASResponse](https://Michigan.gov/PFASResponse)



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ENVIRONMENT, GREAT LAKES, AND ENERGY



# Thank you!

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We will post a recording and closed-captioned copy of tonight's conversation on our website in the next few days.