

Oscoda Area and Former Wurtsmith Air Force Base PFAS Update Meeting

April 20, 2021

The webinar will begin at 6:00 pm

Agenda

| | |
|---------|----------------------------------|
| 6:05 pm | Zoom Instructions |
| 6:10 pm | EGLE Updates |
| 6:40 pm | MDHHS Update |
| 6:50 pm | Comments, Questions, and Answers |
| 8:00 pm | Meeting Conclusion |

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 *9 to raise your hand.

#2



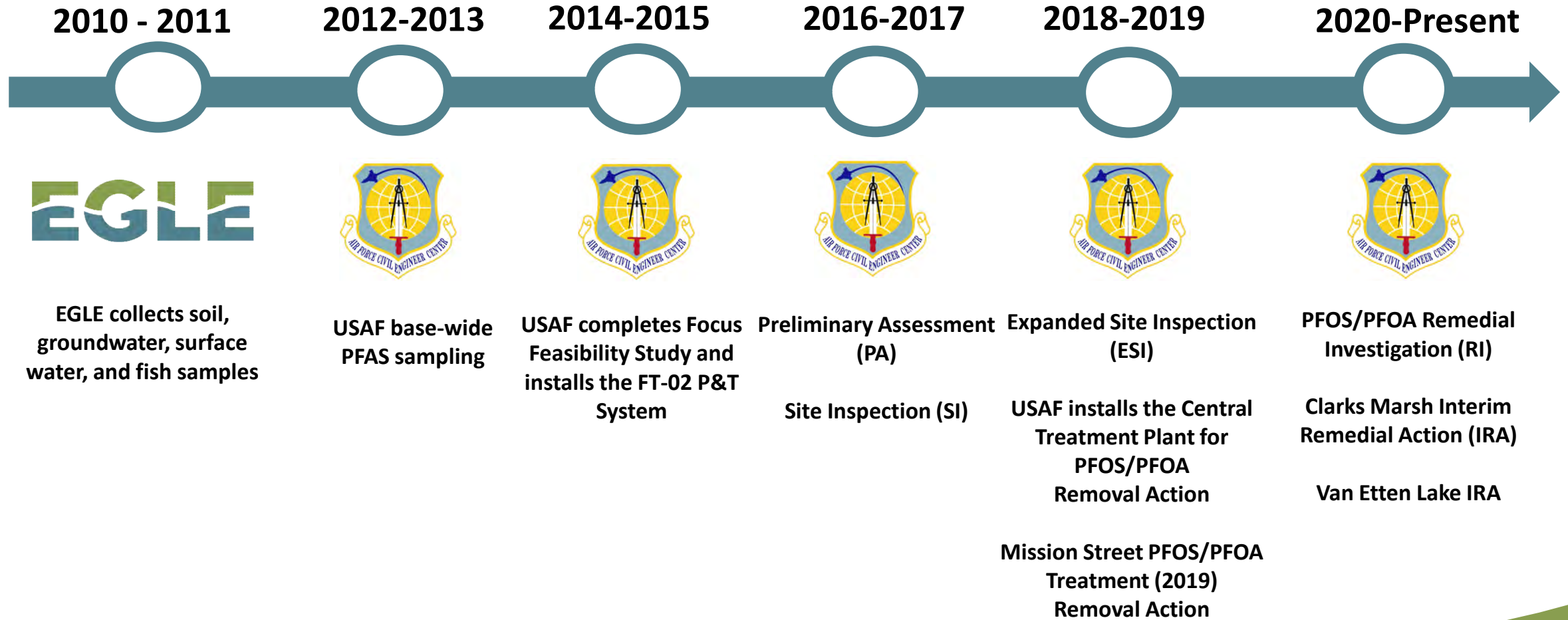
Former Wurtsmith Air Force Base

Beth Place, Project Manager
Remediation and Redevelopment Division
517-899-7924 | PlaceB1@Michigan.gov

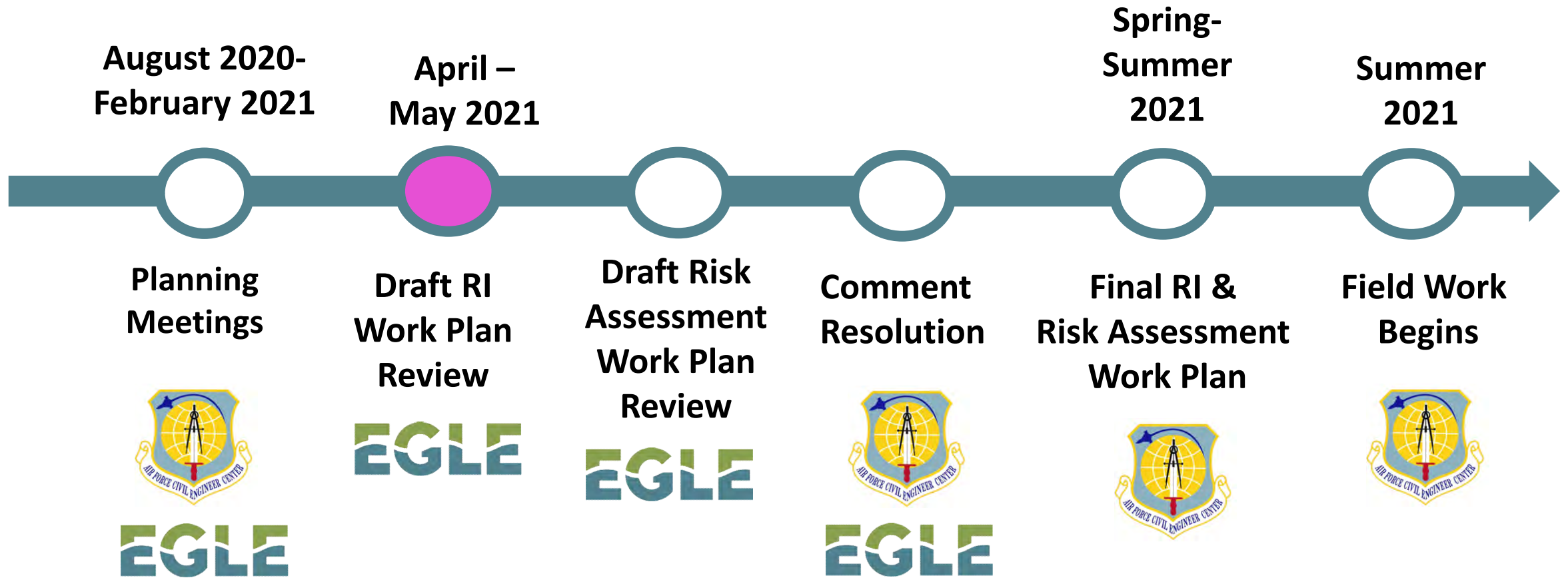
Former Wurtsmith Air Force Base

- 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)

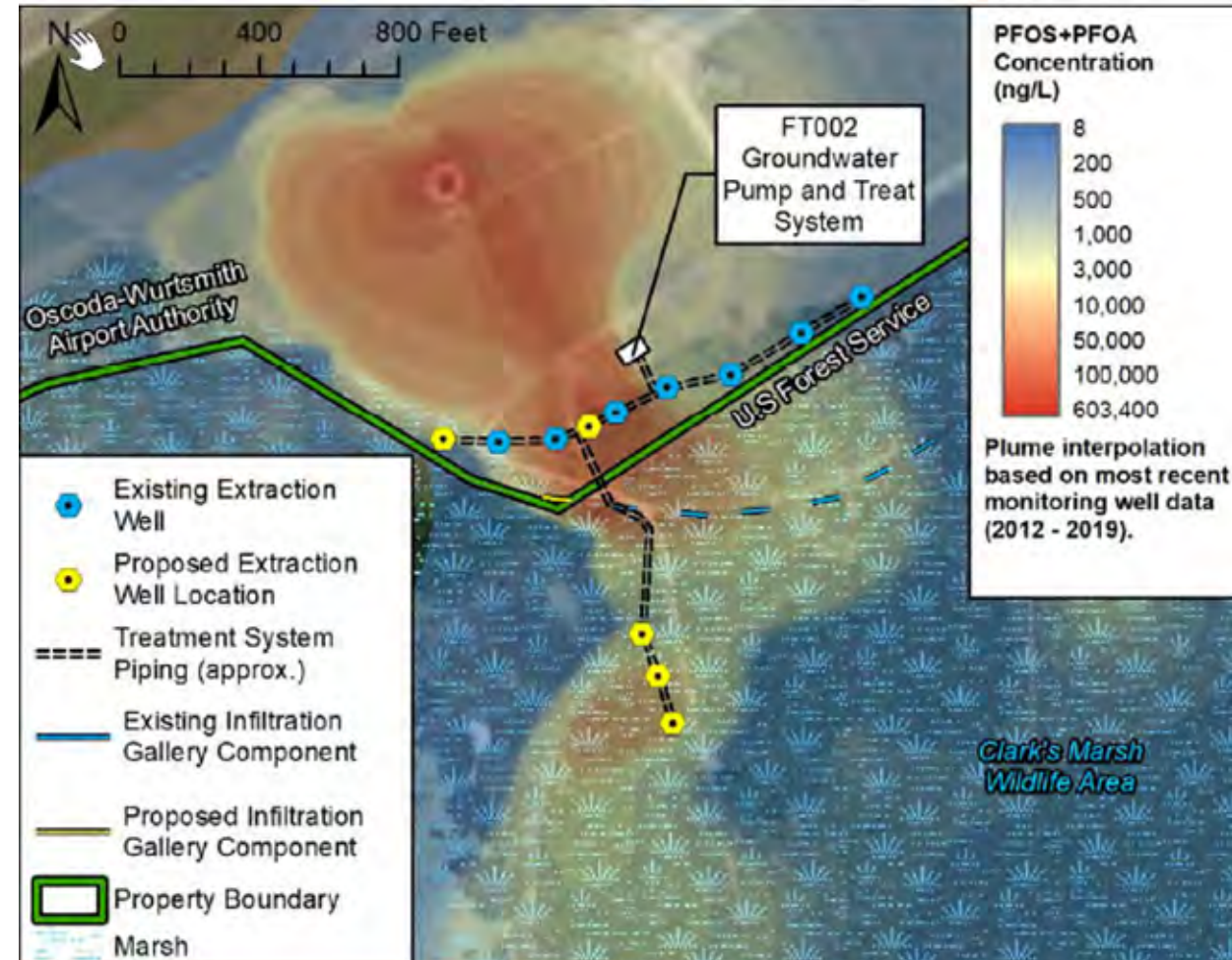
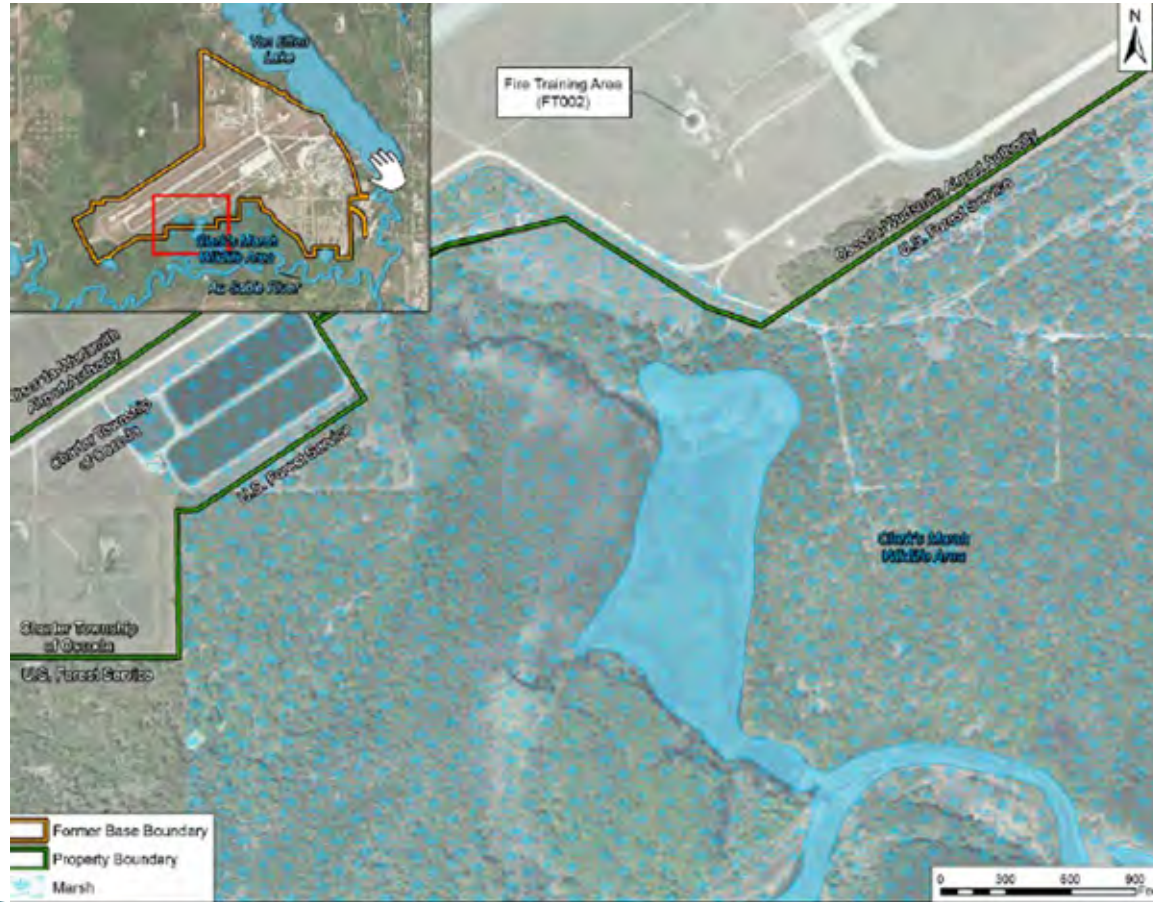
PFAS



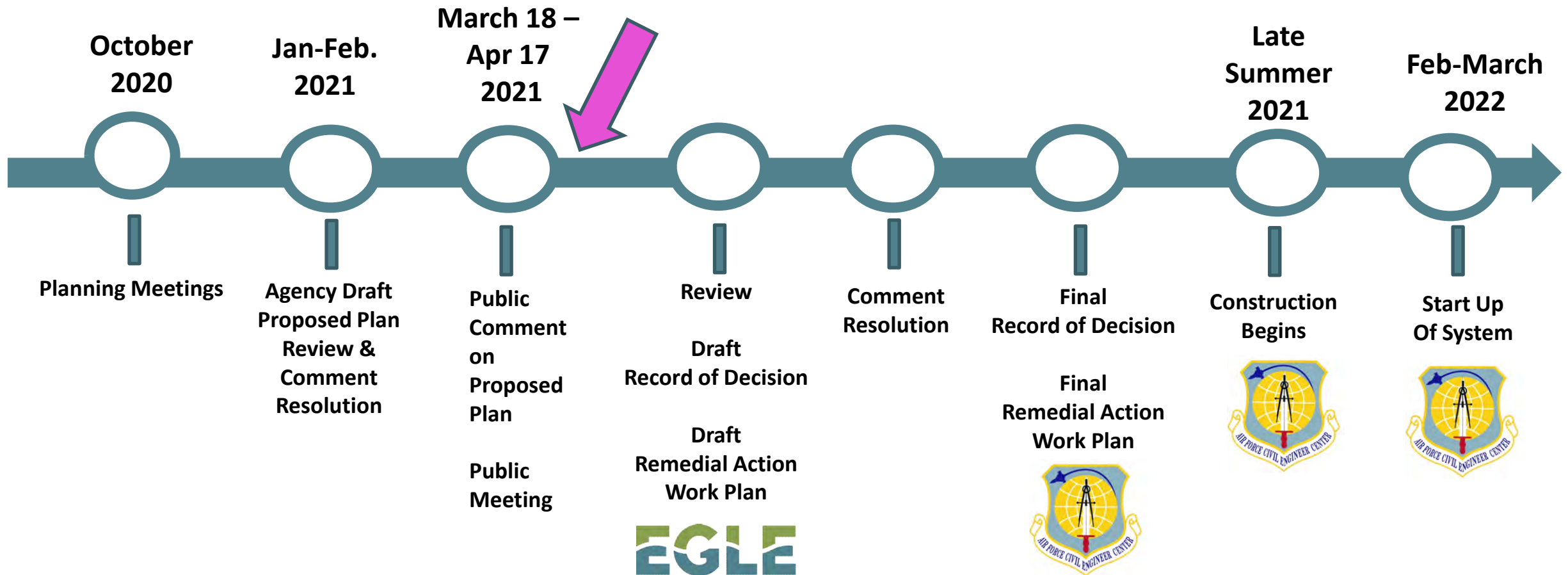
Remedial Investigation



Clarks Marsh Interim Remedial Action



Clarks Marsh Interim Remedial Action



Van Etten Lake Interim Remedial Action



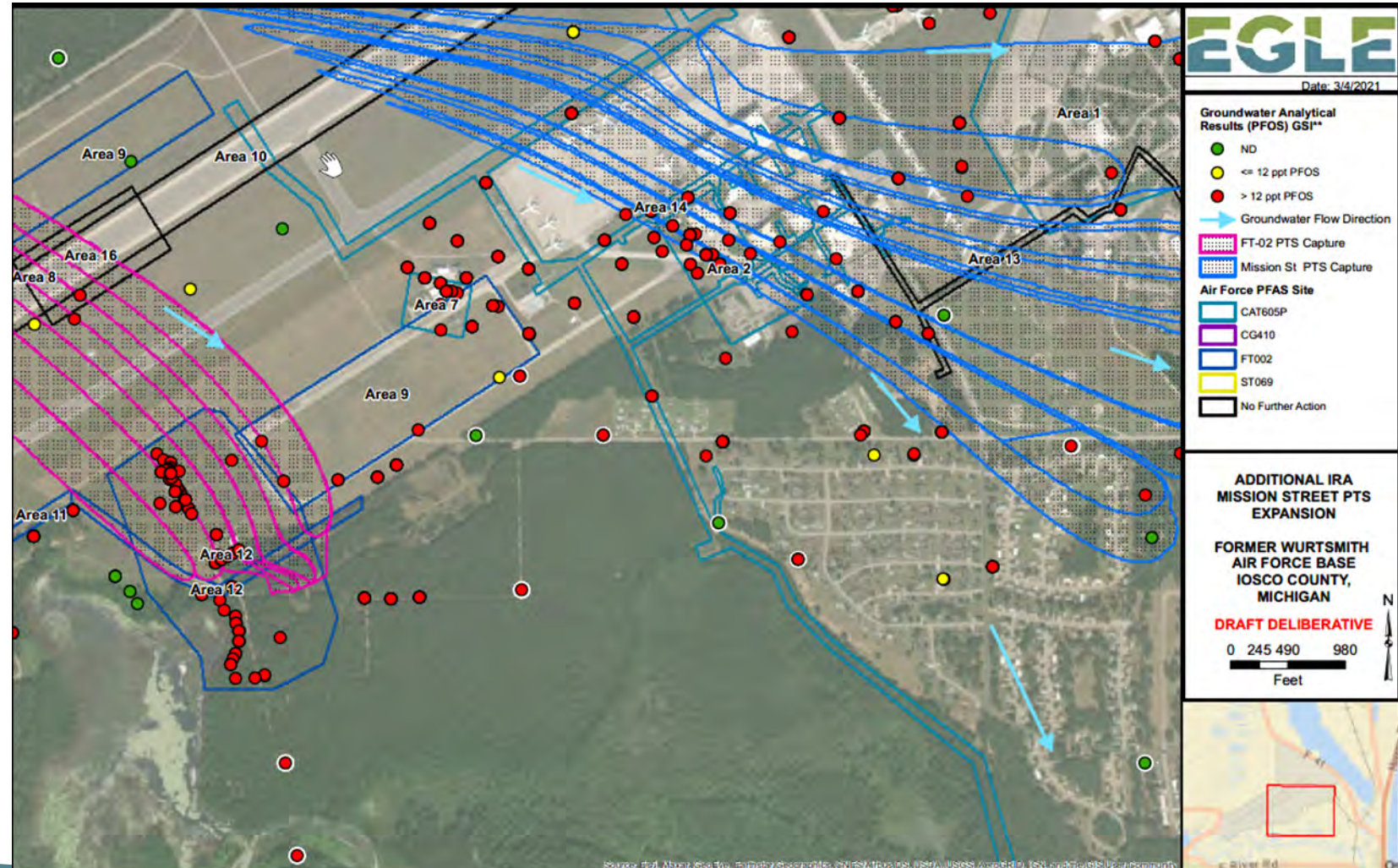
Other Updates

February 19, 2021

EGLE requested Air Force sample PFAS in the Engineered Wetland treatment System at LF30/31.

March 23, 2021

Additional Interim Remedial Action Request





MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY

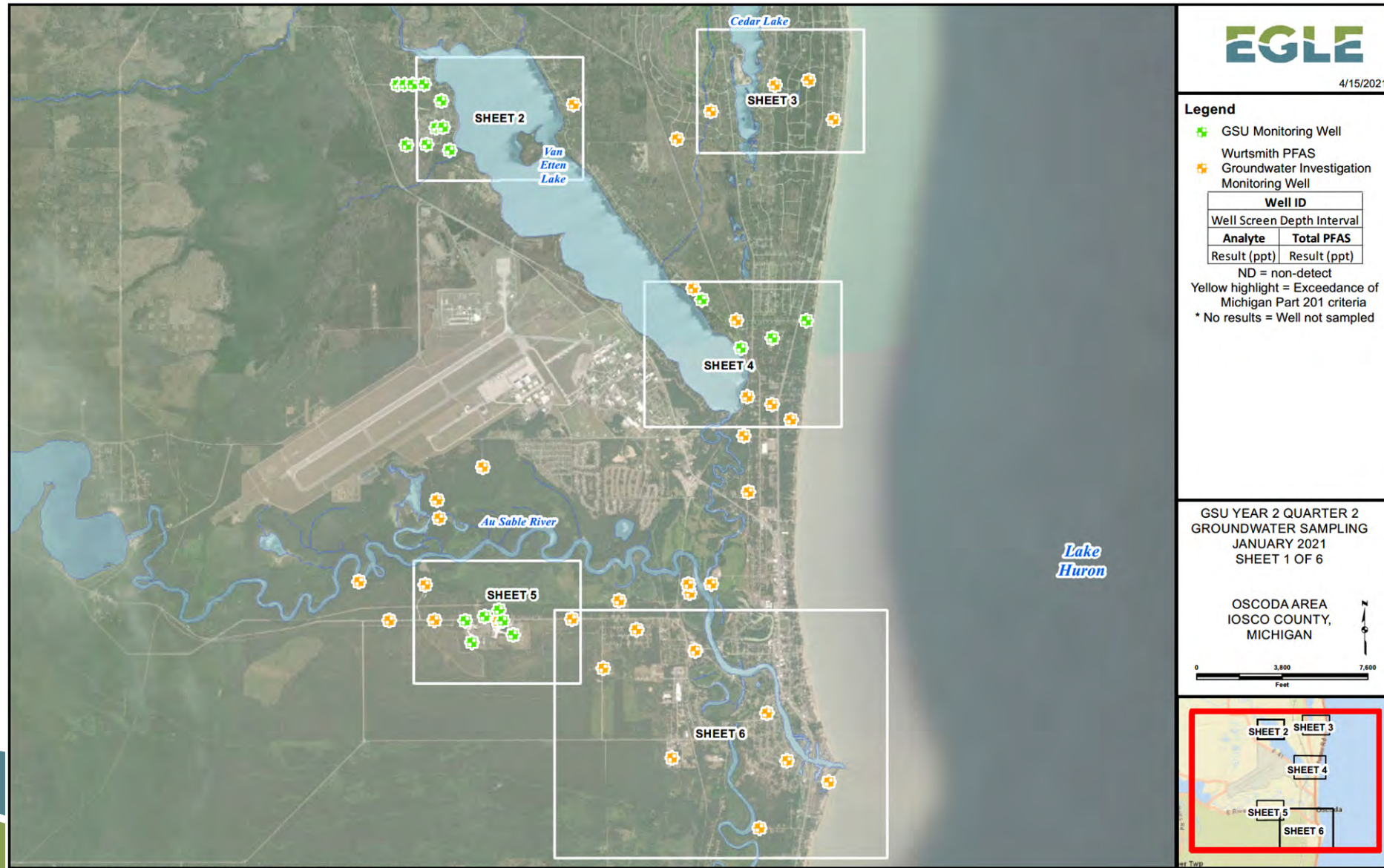
Oscoda Area Sites

Amanda Armbruster, Geologist

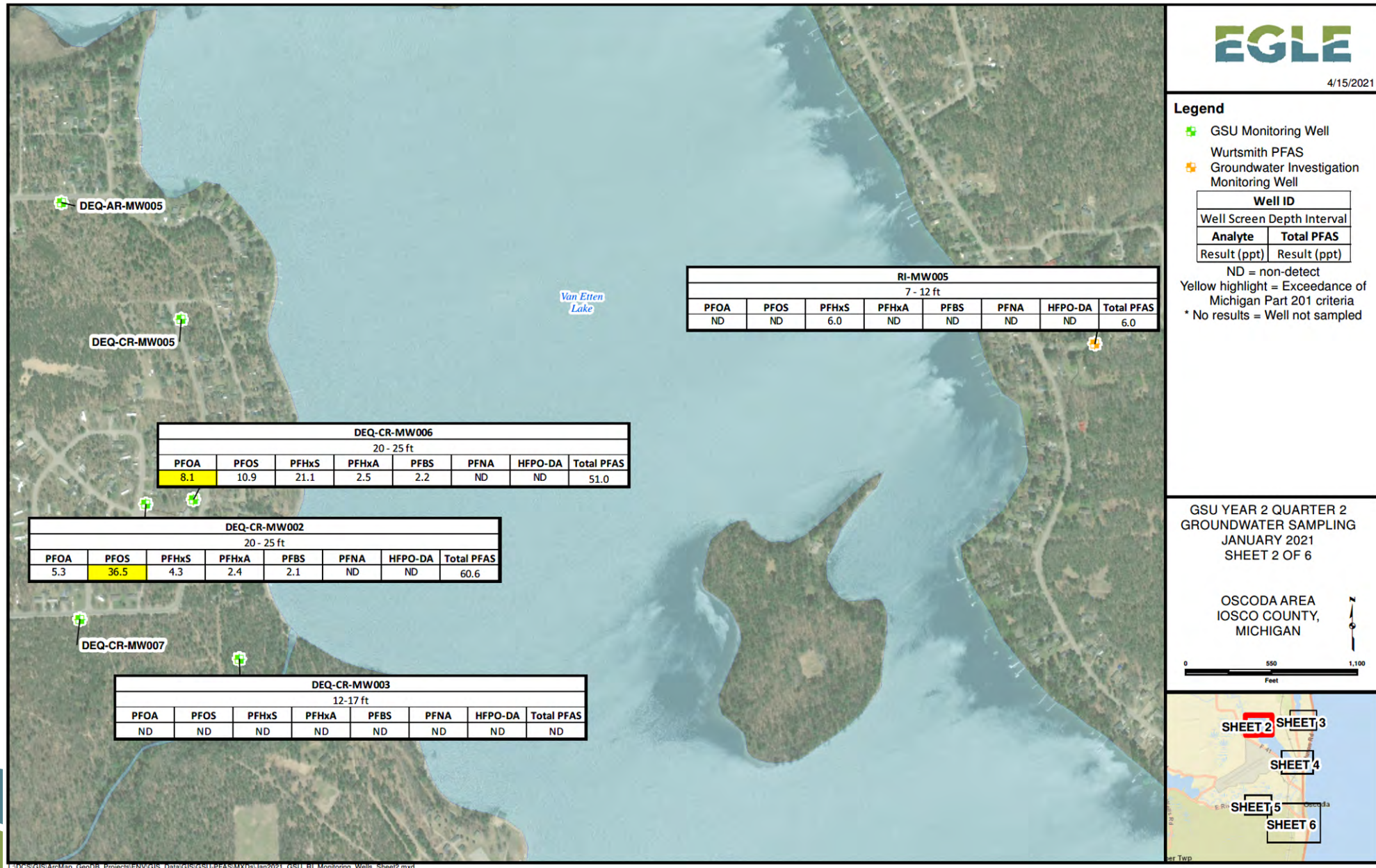
Remediation and Redevelopment Division

989-450-6377 | ArmbrusterA@Michigan.gov

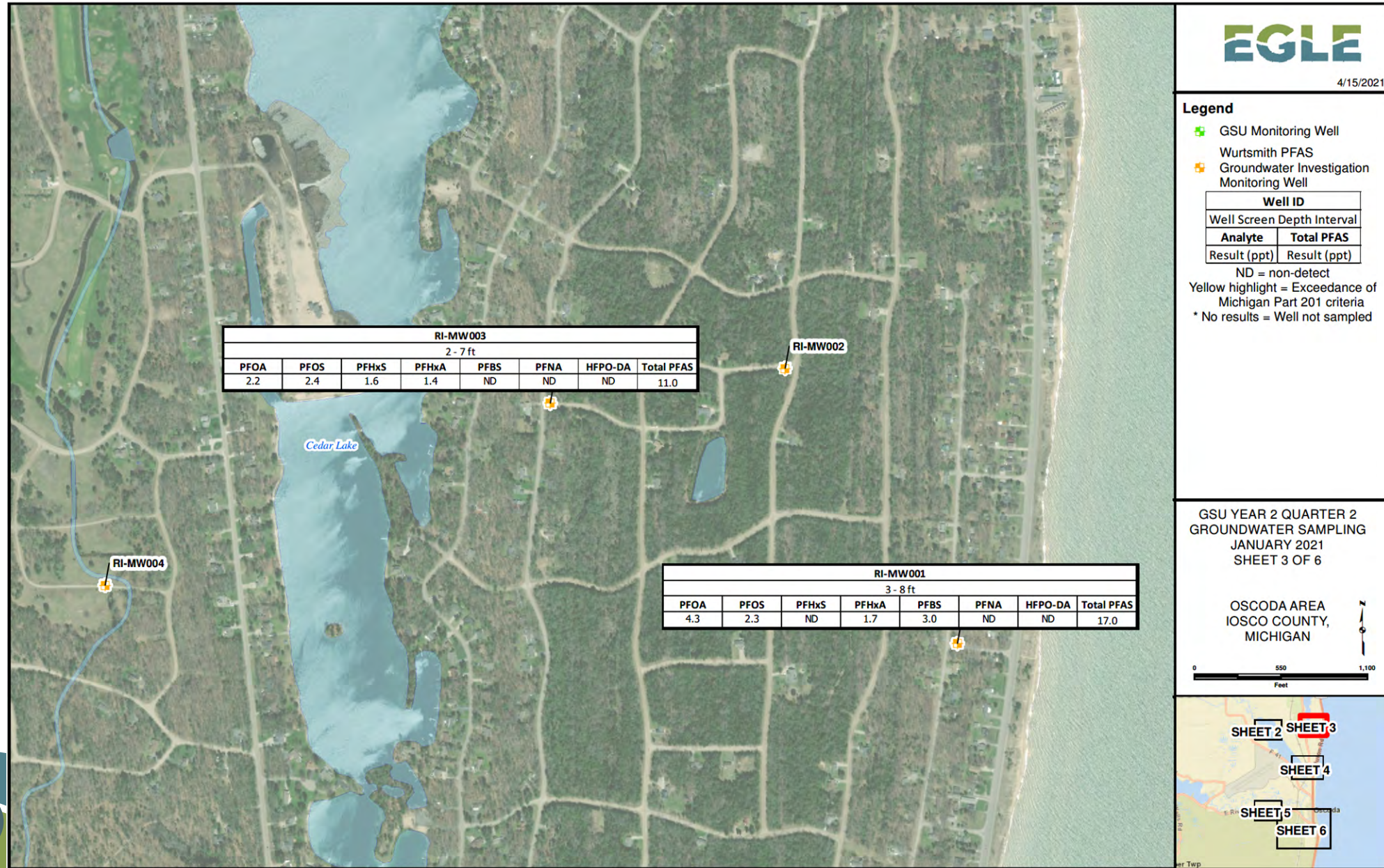
Oscoda Township & Au Sable Township Groundwater Monitoring Well Locations



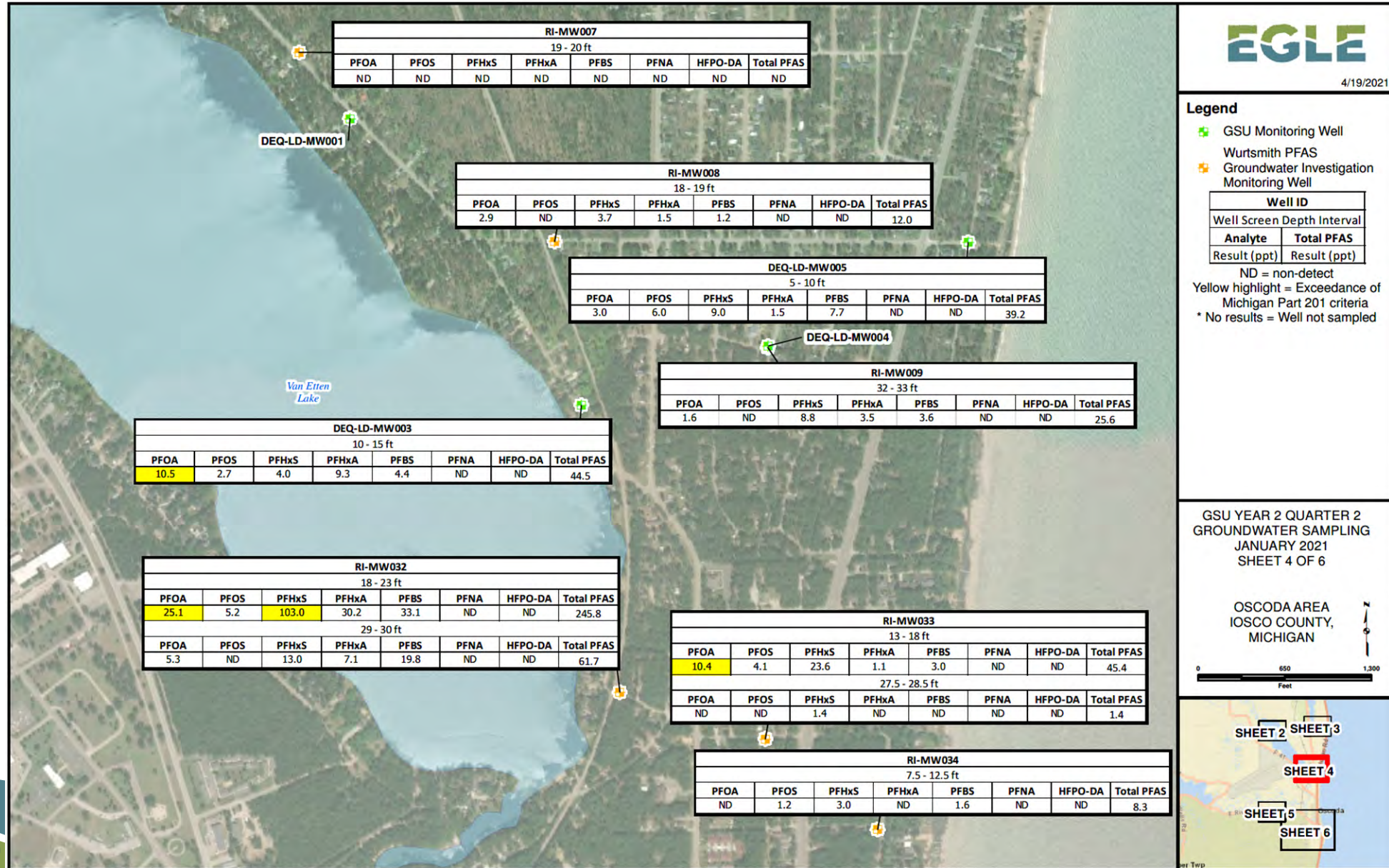
Colbath Road Area



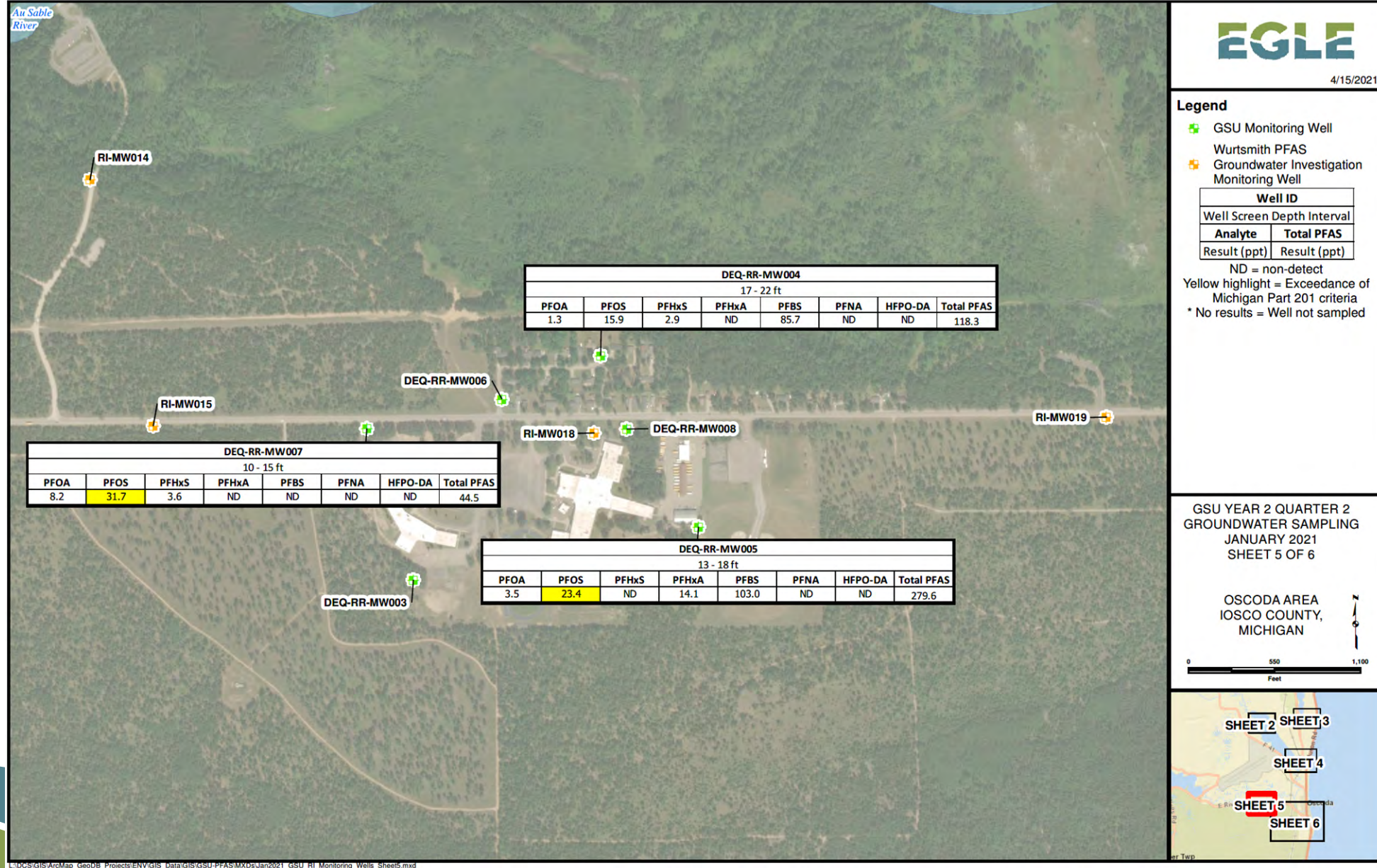
Cedar Lake Area



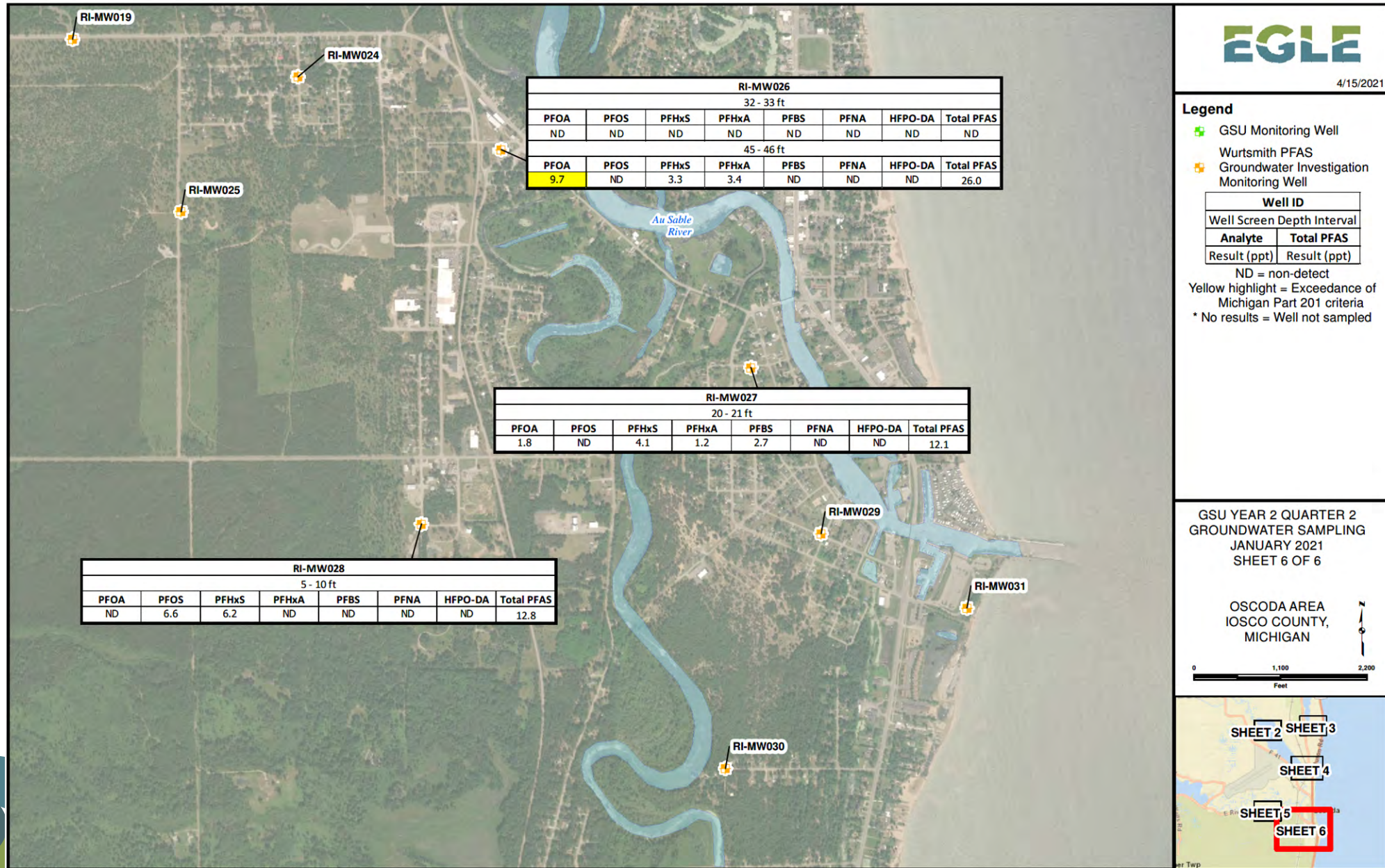
Loud Drive Area



River Road Oscoda Schools Area



Au Sable Township Area



Wurtsmith FT02, CTS, MSPT Discharge Monitoring Data Summary

Charles Bauer, Bay City District Supervisor
Water Resources Division (WRD)
989-439-3845 | BauerC@Michigan.gov

Role of Water Resource Division at Wurtsmith

1. Water Quality Assessment and Fish Assessment – Brandon Armstrong, Surface Water Assessment Section
2. Development of Substantive Requirement Documents (SRDs) – Tarek Buckmaster, Permits Section
3. Compliance and Enforcement of SRDs - Matt Siler, Bay City District

Overview of the Data

- Reviewed the Discharge monitoring data submitted by USAF for the three treatment systems with Substantive Requirements Documents (SRDs) at the sites (FT02, CTS, and MPTS) that WRD does compliance on
- In general, All 3 systems are working as expected.
- Effluent results for PFOS, PFOA and the PFAS compounds with recent MCLs developed are generally below MCLs and/or Water Quality Standards with a few exceptions.

Systems install/operation date

1. FT02 was installed in 2014-15.
2. CTS was installed and operating in 2018
3. MPTS was installed and operating in 2019.

TABLE 2
 FT-02 PUMP AND TREAT SYSTEM TOTAL PFOA AND PFOS MASS REMOVAL SUMMARY
 2017 ANNUAL RAO REPORT
 WURTSMITH AIR FORCE BASE, OSCODA, MICHIGAN

| Year | Average PFOS Influent Concentration (µg/L) | Average PFOS Effluent Concentration (µg/L) | Total Flow (gallons) | Mass of PFOS Removed from Liquid Stream (lbs) |
|--|--|--|----------------------|---|
| 2015 | 8.03 | 0.002 | 59,760,000 | 4.00 |
| 2016 | 6.51 | 0.008 | 109,131,323 | 5.92 |
| 2017 | 3.97 | 0.019 | 104,990,766 | 3.46 |
| Cumulative Mass of PFOS Removed June 2015-December 2017 | | | | 13.38 |

| Year | Average PFOA Influent Concentration (µg/L) | Average PFOA Effluent Concentration (µg/L) | Total Flow (gallons) | Mass of PFOA Removed from Liquid Stream (lbs) |
|--|--|--|----------------------|---|
| 2015 | 1.56 | 0.009 | 59,760,000 | 0.77 |
| 2016 | 1.24 | 0.015 | 109,131,323 | 1.12 |
| 2017 | 0.91 | 0.026 | 104,990,766 | 0.77 |
| Cumulative Mass of PFOA Removed June 2015-December 2017 | | | | 2.67 |

Notes:

µg/L = micrograms per Liter

lbs = pounds

Non-detect sample results were not included in the data set used to calculate the average concentrations of PFOS and PFOA.

FT02 Data 2018-Present

| Parameter | Average Influent | Average Effluent | MCL/WQS | Max. Effluent | Number of Samples |
|-----------|------------------|------------------|---------|---------------|-------------------|
| PFOS | 5929 | 9 | 16/12 | 20.7(141) | 78 |
| PFOA | 958 | 11 | 8/440 | 32.3 | 78 |
| PFBS | 19 | ND | 420 | ND | 26 |
| PFHxS | 2196 | 8.57 | 51 | 24.3 | 26 |
| PFHxA | 490 | 19.85 | 400,000 | 102 | 26 |
| PFNA | 20 | ND | 6 | ND | 26 |
| PFHpS | 92 | 3.69 | | 3.69 | 26 |
| PFHpA | 124 | 2.98 | | 3.99 | 26 |
| PFBA | 55 | 28.52 | | 61.6 | 26 |
| PFPeA | 216 | 27.61 | | 108 | 26 |

CTS Data from 2018 - Present

| Parameter | Average Influent | Average Effluent | MCL/WQS | Max. Effluent | Number of Samples |
|-----------|------------------|------------------|---------|---------------|-------------------|
| PFOS | 1031 | 2.52 | 16/12 | 9.2 | 43 |
| PFOA | 221.5 | ND | 8/440 | ND | 43 |
| PFBS | 15 | ND | 420 | ND | 43 |
| PFHxS | 810 | 1.58 | 51 | 1.79 | 43 |
| PFHxA | 127 | 2.6 | 400,000 | 2.6 | 43 |
| PFNA | 3 | ND | 6 | ND | 43 |
| PFOSA | 3 | ND | | ND | 43 |
| PFHpA | 58 | ND | | ND | 43 |
| PFBA | 30 | 27.6 | | 50.8 | 43 |
| PFPeA | 102 | 21.33 | | 59 | 43 |
| 6:2 FTS | 312 | 3.56 | | 10.7 | 43 |
| 8:2 FTS | 7 | ND | | ND | 43 |

Mission Street Data from 2019-Present

| Parameter | Average Influent | Average Effluent | MCL/WQS | Max. Effluent | Number of Samples |
|-----------|------------------|------------------|---------|---------------|-------------------|
| PFOS | 369.85 | 7.09 | 16/12 | 18 | 61 |
| PFOA | 51.41 | ND | 8/440 | ND | 61 |
| PFHxS | 638.07 | 4.59 | 51 | 4.59 | 60 |
| PFBS | 35.04 | ND | 420 | ND | 4 |
| PFHxA | 60.2 | 1.95 | 400,000 | 1.95 | 4 |
| PFNA | ND | ND | 6 | ND | 4 |
| PFHpA | 16.48 | ND | | ND | 4 |
| PFBA | 12.3 | 2.47 | | 2.47 | 4 |
| PFPeA | 22.02 | 23.05 | | 43.4 | 4 |
| 6:2 FTS | 16.71 | ND | | ND | 4 |

What Do We Do With This Data?

1. Compliance Process

- Discharge Monitoring Reports (DMRs)
- Inspection Process
- Compliance Sampling Inspection (August 21, 2019)

2. Enforcement Actions

- VN-007964 (January 16, 2018)– requiring AF to install CTS
- CC-001009 (March 23, 2018) – requiring AF to meet SRD monitoring requirements
- VN-008900 (October 19, 2018) – requiring AF to improve FT02 capture and treatment
- CC-002372 (December 9, 2019) – requiring AF to provide all PFAS data

Contact Information

- Charles Bauer, Bay City WRD District Supervisor
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- Matt Siler, Bay City WRD Compliance Manager
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Michigan Department of Health and Human Services (MDHHS)

Puneet Vij, Ph.D., Toxicologist

Division of Environmental Health

517-582-4104 [|VijP@Michigan.gov](mailto:VijP@Michigan.gov)

The Role of MDHHS

- 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

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

MDHHS PFAS Comparison Values

| Specific PFAS | MDHHS Screening Levels | Approved MCLs | MDHHS Comparison Values |
|---------------|------------------------|---------------|-------------------------|
| PFOA | 9 ppt | 8 ppt | 8 ppt |
| PFOS | 8 ppt | 16 ppt | 8 ppt |
| PFNA | 9 ppt | 6 ppt | 6 ppt |
| PFHxS | 84 ppt | 51 ppt | 51 ppt |
| PFBS | 1,000 ppt | 420 ppt | 420 ppt |
| PFHxA | | 400,000 ppt | 400,000 ppt |

Summary: MDHHS Round 1 Resampling Effort

Round 1 Resampling Summary

- Total number of wells sampled: 277
 - Number of non-detects: 136
 - Number of Detections: 141
 - Of the detections, 20 exceeded MDHHS Comparison Values
- Range PFOA + PFOS: 2.05 – 263.62 ppt
- Range Total PFAS: 2.01 – 2514.02 ppt

Round 2: Resampling effort

- Recruitment letters
- Three phone calls
- Door knocking (first-time samples)
- Appointments with sanitarians
- Will capture seasonal homes



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



Do-Not-Eat Advisories in Clark's Marsh

- Fish (2012)
- Deer (2018)
- Resident aquatic and semi-aquatic wildlife (2019)
- No one eat organs from any fish, deer, and other wild game
- Eating fish or wildlife caught from Clark's Marsh is a concern. Catch and release is OK.
- High levels of PFAS, mainly PFOS, measured in fish and deer

Fish sampling/results updates

- **Van Etten Lake**

- Mercury and PFAS results
 - Yellow perch: Collected from Van Etten Lake in 2018 and 2019
- Currently, yellow perch from Van Etten Lake are covered under
 - Statewide advisory of 4 servings per month (mercury)
- Draft guideline that is still undergoing internal review
 - Expected to change to 2 servings/month (PFOS and mercury)

Deer report updates

- Update to the existing Do Not Eat deer advisory
 - MDHHS is reducing the Do Not Eat deer advisory area around Clark's Marsh to an approximately three miles radius
 - March 2020: Muscle and liver samples were collected from 44 deer (14 male, 30 female)
 - Relationship between detections of PFOS in liver samples and the collection location distance from Clark's Marsh
- MDHHS continues to recommend not eating kidneys or liver from any deer

MDHHS Exposure Assessment

- Beginning stages of planning
 - Have formed a project team
 - Forming a community advisory team
- MDHHS would ask for a blood sample and test it for PFAS
- Participants would take a short survey about ways they could potentially be exposed to PFAS
- We will keep the community informed as we make progress

Additional Resources

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

Thank you

Comments, Questions, and Answer Session

How to ask a question in Zoom



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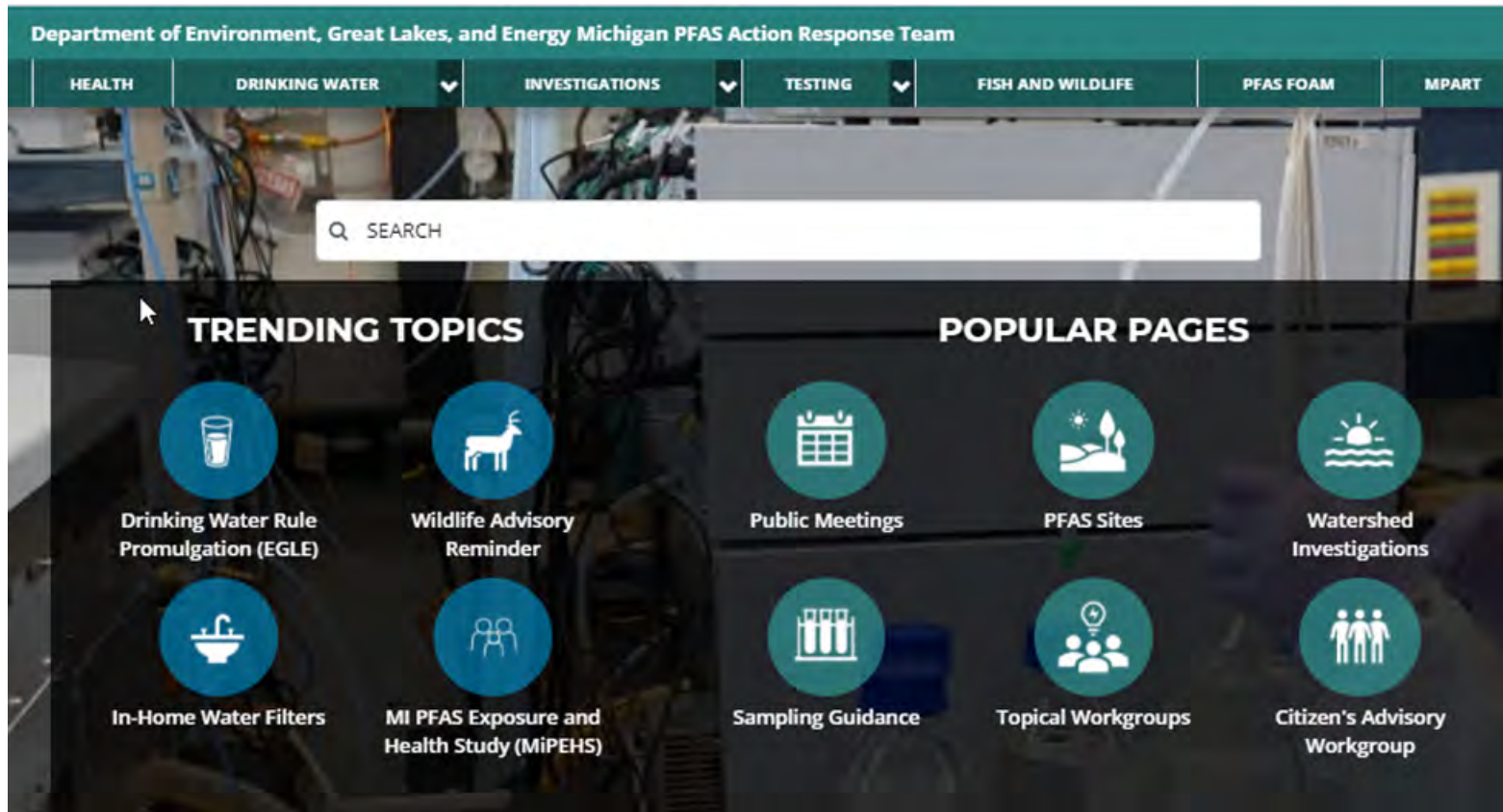


Type *9 to raise your hand.

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Restoration Advisory Board (RAB) Meeting

- Wednesday, April 22, 5:00 – 8:00 pm



Additional Resources

- Wurtsmith investigation page → michigan.gov/wurtsmith (Wurtsmith updates)
- MPART, Investigations, PFAS Sites → michigan.gov/pfasresponse (Oscoda Area site updates)

EGLE Contacts

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Thank you!

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