

Air Force Civil Engineer Center



Wurtsmith Restoration Advisory Board Meeting

11 September 2019
AFCEC/CIB



Wurtsmith RAB Agenda



Welcome

- Introductions
- Stakeholder updates



Presentations

- Dispute Resolution progress
- ESI Report Development
- Transducer Study

▶ BREAK

- EGLE GSI Investigation

Presentations (cont.)



- Operating Procedures
- RAB Community Membership
- Upcoming co-chair election

RAB Business



- Participants provide three-minute verbal comments

Public Comment





Wurtsmith RAB Ground Rules



- 01** | Respect one another and maintain an atmosphere of open dialogue and exchange of ideas.
- 02** | Use our time together efficiently, wisely and respectfully.
- 03** | Speak clearly and succinctly one person at a time; avoid interrupting others.
- 04** | Listen and remain open to differing points of view.
- 05** | Maintain a propensity for progress: prepare, discuss, document and move forward.
- 06** | Share information early, openly and honestly
- 07** | Accurately and objectively relay to others the discussions that occur at board meetings.



Stakeholder Updates



Wurtsmith RAB Stakeholder Updates: USAF



Completed



Conducted 4th quarter DW monitoring, collecting **19** private well samples

Awarded Mission Street ion-exchange treatment system contract on **23 Aug**



Began construction at SS-57 on **3 Sep** for supplemental VOC remedy



Completed final ESI fieldwork; collected **83** samples

In progress/Upcoming

- Preparing to install performance MWs to sample at SS-57
 - First remedy enhancement injection planned for late October
- Submitted draft feasibility study to EGLE for LF030 and LF031
- Drafting ESI report



Wurtsmith RAB Stakeholder Updates: USAF

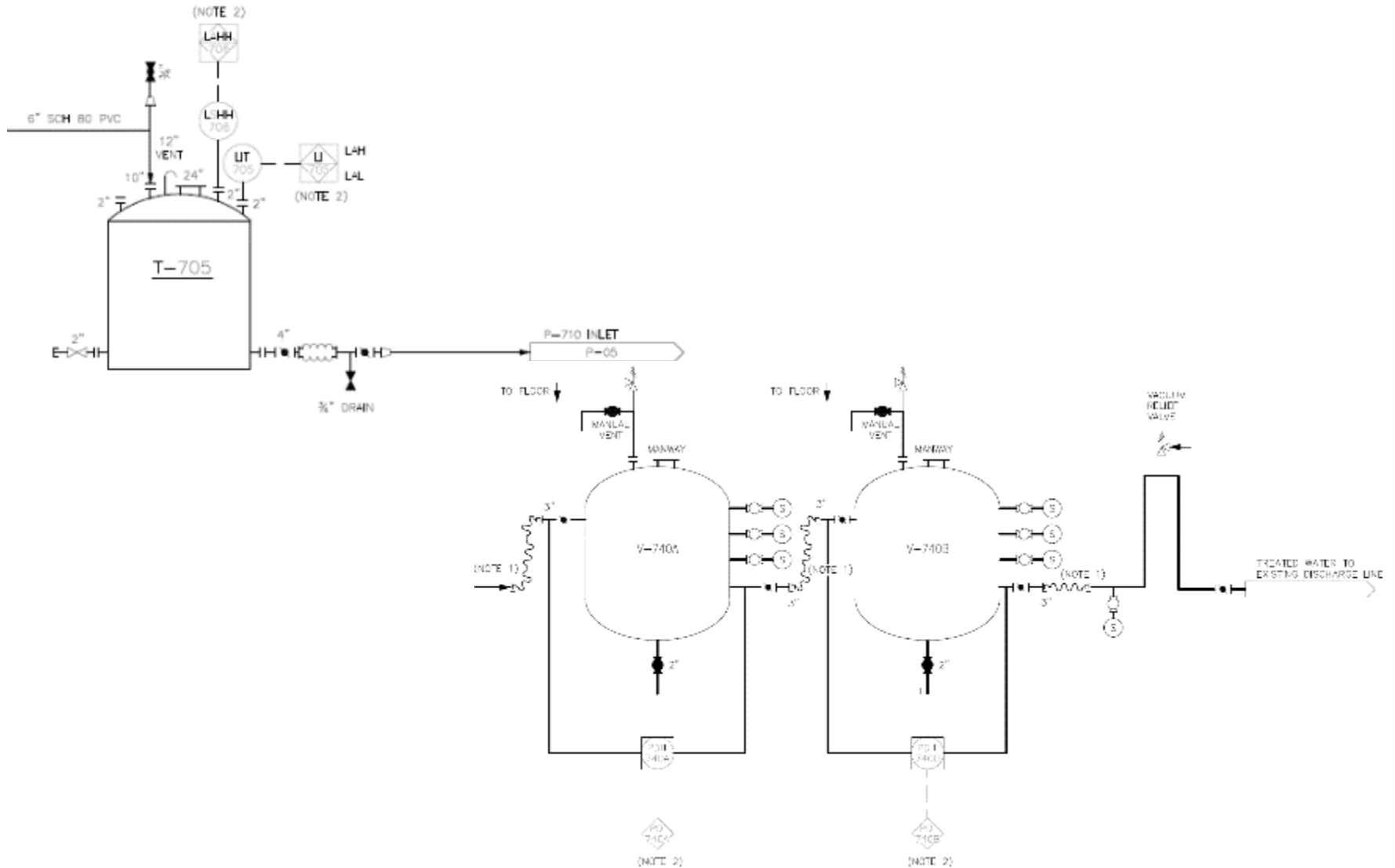


Objective: Address PFOS and PFOA in discharge from the Mission Street Pump and Treat System (MPTS).

- Latest influent concentrations: 318 ng/L (PFOS) and 48.5 ng/L (PFOA)
- Dismantle and remove existing air stripping system to increase available space in building
- Install ion exchange resin treatment system
- Continue to discharge to storm drain
- 200 gallons per minute (GPM) capacity
- One equalization tank and two IX resin beds

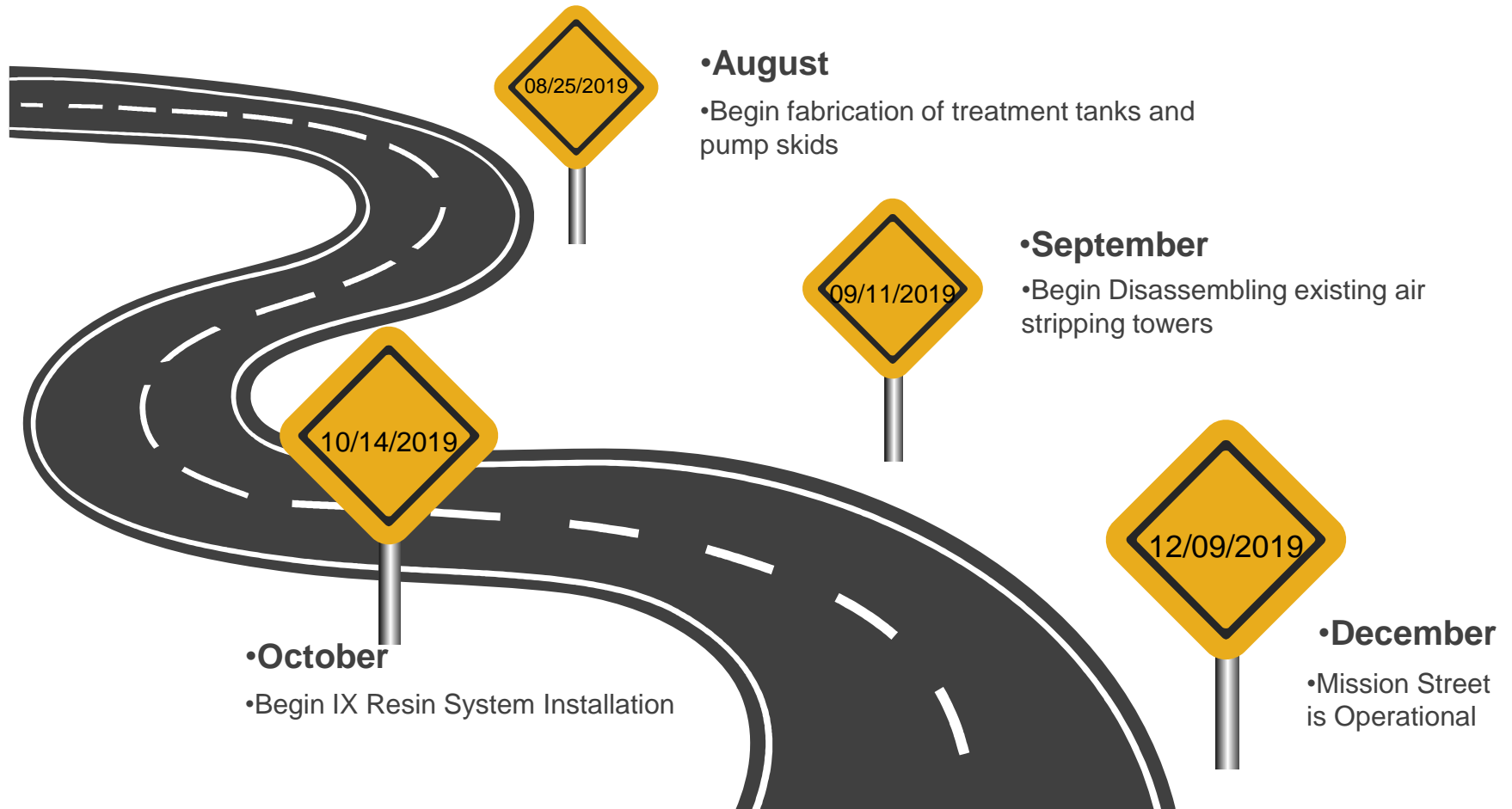


Wurtsmith RAB Stakeholder Updates: USAF





Wurtsmith RAB Stakeholder Updates: USAF





Wurtsmith RAB Stakeholder Updates



- Research permit issued to two university students out of Bowling Green University

EGLE RRD

- Local meetings; Rep Allor tour on 8/16; AG Nessel tour on 8/8

EGLE Water Resources

- Fish sampling continues September; WRD inspections

EGLE RRD Bay City District

- Mike Jury new role; new PMs for Oscoda area; sampling MWs

MDNR update

- University research
- Deer sampling



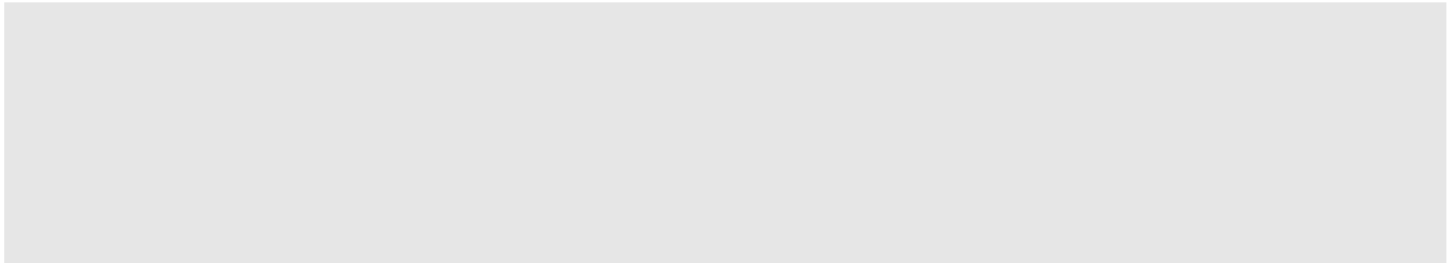
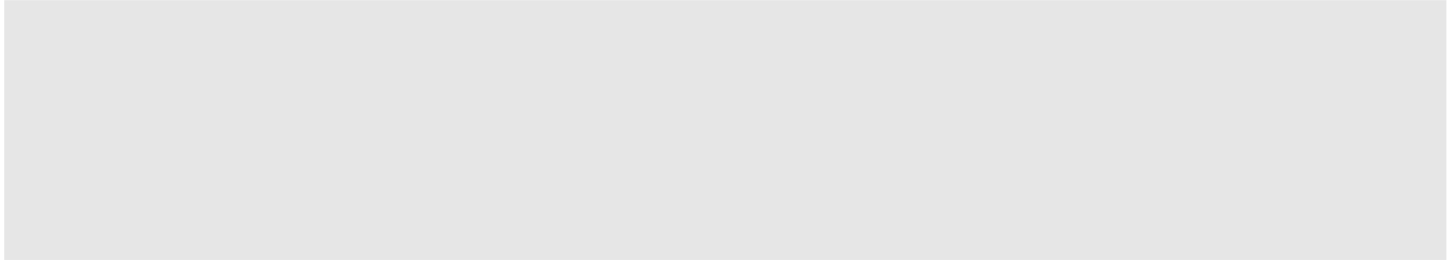
Community
RAB Members

- Community outreach
- Connecting with other RABs, community groups and agencies





Wurtsmith RAB Stakeholder Updates





Presentations



Wurtsmith RAB Dispute Resolution Recap



Timeline

11 Jan – 15 March 2018

Correspondence and meetings between EGLE, USAF regarding the seven DR items

28 June 2019

Correspondence: summary of meeting and USAF-recommended action for DR items

Present Day

Discussions ongoing

14 Dec 2017

EGLE initiates formal DR between the DoD and the State of Michigan. Seven dispute items identified

24 April 2019

EGLE and USAF DR committee members meet to discuss path forward

1 July 2019

EGLE and USAF issue joint press release regarding progress toward resolving issues raised in the DR



Wurtsmith RAB DR Press Release



On July 1, 2019, EGLE and USAF issued a joint press release announcing several areas of agreement that help accelerate PFOS/PFOA investigation and treatment at Former Wurtsmith.

Begin operating Mission Street GW treatment system by end of 2019

Evaluate Michigan GSI and other state requirements to determine if these are ARARs during RI

Submit draft ESI report to EGLE by end of 2019

Review possible Interim Remedial Actions, to include west side of Van Etten Lake

Implement base-wide RI following ESI report evaluation

*Notice of Violation (NOV) issued 16 Jan 2018 resolved/closed.

**Not a DR item*



Expanded Site Inspection (ESI)



Wurtsmith RAB Expanded Site Inspection (ESI)



CERCLA Investigation Recap

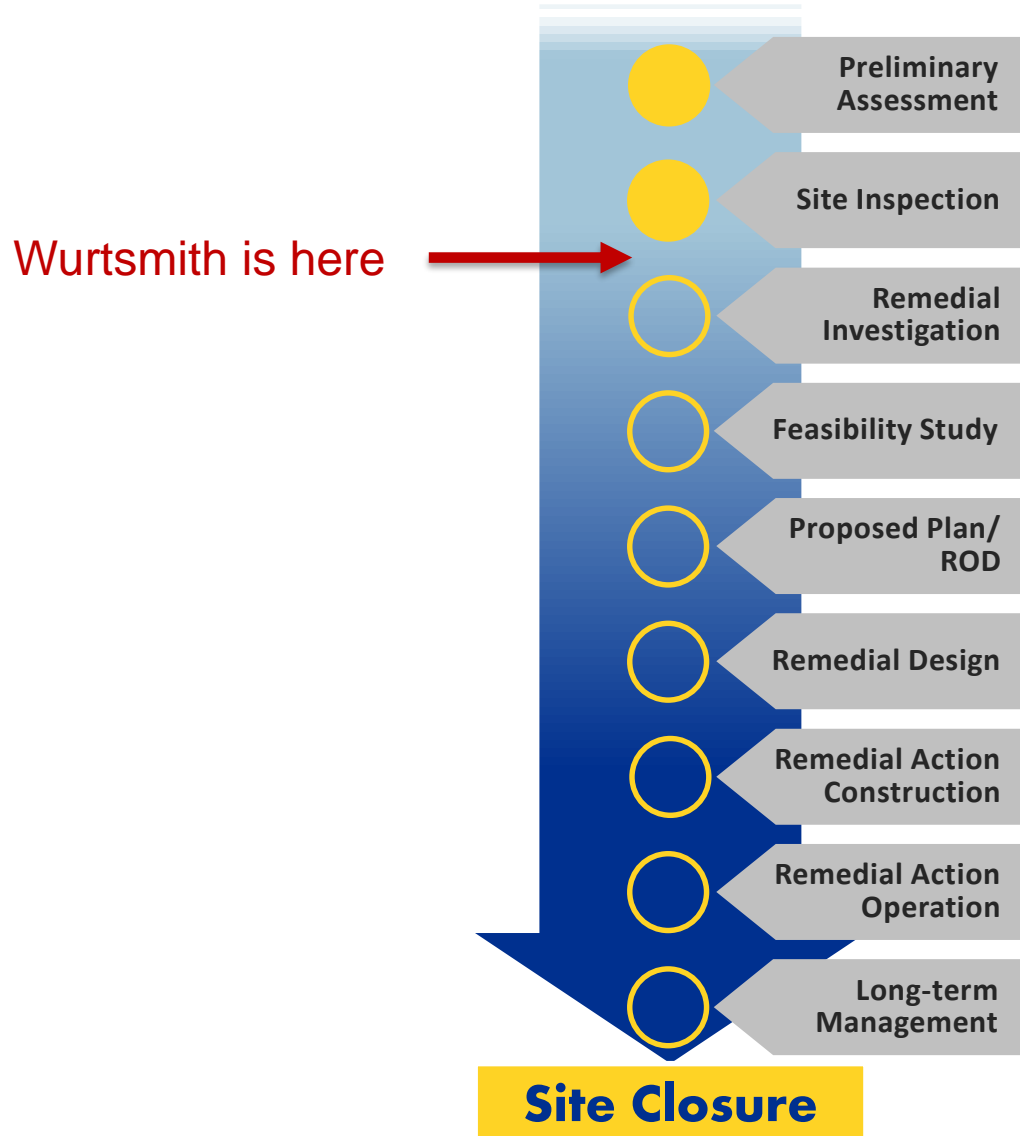
Final Report	Objective
Jan. 2016	Preliminary Investigation (PA): Identify areas with potential AFFF releases.
Oct. 2018	Site Inspection (SI): Conduct sampling to confirm AFFF releases; make recommendations regarding RI; sample DW down gradient from releases and respond if above LHA.
In Production	ESI: Evaluate pathways to DW sources; determine need for interim actions to protect DW from exceeding LHA. <i>*ESI was formerly called Supplemental Site Inspection (SSI)</i>



The ESI focused on **Priority Areas** identified during the SI.



Expanded Site Inspection (ESI)



CERCLA Investigation Recap



Wurtsmith RAB ESI



Areas **1**, **2**, **4**, **5**, **6**, **7** and **15** have potential pathways for contamination to reach human DW sources.

The ESI builds on SI data and helps develop a **conceptual site model** that represents site features, conditions and other factors that control transport, migration and potential impacts of contamination.

The final ESI report will include sampling data from SI and ESI.



- To date, the USAF has collected more than **350** samples from **131** wells, including up to **56** DWs. There are a total of **79** VAS locations in which **286** samples were collected.



Wurtsmith RAB ESI



Oversees site investigation and cleanup activities and ensures compliance with applicable environmental regulations.

- ◆ EGLE has collected several samples on Wurtsmith Air Force Base.
- ◆ EGLE reviews USAF field sampling designs, sampling collection methods and analytical methods prior to the work.
- ◆ Quality checks are incorporated into the sample and analysis methods.



Wurtsmith RAB ESI



ESI fieldwork gives the USAF the data needed to continue **protecting DW sources**.

Fate and Transport Model

- A three-dimensional GW model that evaluates where contamination goes based on various factors.

Evaluate Capture Zones

- Determine if GW treatment systems are capturing all contamination upgradient of potential DW pathways.

Evaluate Interim Response Measures

- Assess need for additional interim response actions to protect DW sources.

The lines of evidence demonstrate...

{ Conclusion Examples }

- The migration pathway is *complete / incomplete* and an imminent threat to DW is *present / not present*.
- Transducer study and GW modeling results indicate GW flow rate of XXX migrating toward X DW wells.



Wurtsmith RAB ESI



Why an ESI?

- Further evaluate priority areas, potential impacts to DW sources
- Supports risk prioritization to establish sequencing and funding
- Expanded sampling will help focus and direct RI

Expanded Site Inspection

Evaluate potential impacts to DW

✓ Sampling/studies at **priority** areas



Remedial Investigation

Determine nature and extent of contamination

✓ Sampling/studies at **all** release areas

✓ Conceptual site model

✓ Updated GW model

✓ Transducer study

✓ Evaluate capture zones

✓ Risk assessments

✓ Evaluate cleanup levels

✓ Determine need for remedial action



Wurtsmith RAB ESI Report Development



June

Collect final field samples and send to lab

- Sent 83 samples to lab on 30 June.

Data analysis and report development

- Validate analytical data from 3rd quarter (2-3 weeks).
- Establish data trend by comparing data against 2017-18 collected from VAS with the permanent wells installed in 2018.
- Review transducer data collected to identify potential changes in how GW flows throughout the year.
- Update the GW model with data from the newly installed MWs.
- Check if the current capture zone is preventing the PFOS/PFOA migration down-gradient into residential DWs.
- Summarize the findings and analytical results.
- Present conclusions and recommendations.

10-12 weeks

*once sample data is received from lab



Wurtsmith RAB ESI Report Development



5-7 weeks

USAF reviews draft report and submits comments

- Draft submittal expected by mid October.
- USAF typically needs 3-4 weeks for review.
- Contractor has 20 days to respond to comments.
- Five days to finalize once USAF accepts changes.

31 Dec. 2019

USAF submits draft report to EGLE

60-90 days

EGLE reviews draft report and provides comments

- EGLE technical review
- EGLE project management review
- EGLE management



Wurtsmith RAB ESI: Next Steps



ESI Outcomes

- Three potential outcomes following final ESI report:
1. No further action
 2. Additional interim DW response actions needed
 3. Proceed to RI (already committed for Wurtsmith)

Prioritize Sites

Prioritize BRAC bases requiring RI based on relative risk and establishes sequencing.

Begin RI



Wurtsmith RAB USAF-wide RI Prioritization



**Prioritize
Sites**



DoD Approach: Evaluate the relative risk to human health posed by the chemical contamination present at a site.



Begin RI

Sites



**Data
Assembly**



Source



Pathways



Receptors

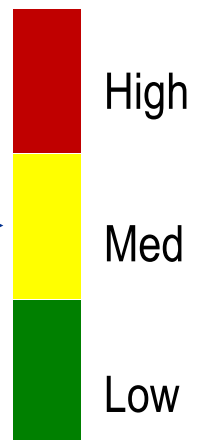
**Evaluation
Factors**

Contaminant
Hazard

Migration
Pathway

Human
Receptor

**Relative
Risk**





Wurtsmith RAB



True

- USAF shifted funds planned for other IRP projects to fund DW response actions & sampling
- IRP funds planned for other projects have been diverted to Wurtsmith for PFOS/PFOA response

False

- Pease received “earmarked” funds for PFOS/PFOA cleanup
- USAF diverted money from the Wurtsmith Landfill 30/31 site



Transducer Study



Wurtsmith RAB Transducer Study



Objective

Gain an understanding of the movement of PFOS/PFOA in GW by monitoring the change of the water table over time.

Transducers, or Level Loggers, measure the total water pressure over a set period of time.

Both EGLE and USAF conducted studies and are sharing data.



Joint approach provides:

- Complete data set and picture of GW flow directions.
- QA/QC through peer review



Wurtsmith RAB Transducer Study



EGLE collected water elevation information from transducers placed in Monitoring Wells along Van Etten Lake.

- Data and findings are still being analyzed and compiled into report.
- Preliminary Findings: data supports previous studies completed by the U.S. Geological Survey.



EGLE

Prepared 8/4/2019



FIGURE 1
TRANSDUCER LOCATIONS
FORMER WURTSMITH
AIR FORCE BASE
IOSCO COUNTY,
MICHIGAN



Transducers.jpg



Wurtsmith RAB Transducer Study



USAF collected water elevation information from transducers installed in 16 MWs.



AF Transducer Map

 Air Force Civil Engineer Center 2201 Hughes Ave Building 171, Ste 102 1654 Lockwood, Texas 75242	SYMBOL KEY Transducer Location	FIGURE X Transducer Well Locations Former Wurtsmith Air Force Base, Oscoda, Michigan

- Data will be reported in ESI and incorporated in updates to conceptual site model (one component).
- Data indicates GW flows toward Van Etten Lake from both west and east side of the lake; supports previous USGS studies.



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 **Break**



EGLE GSI Investigation



MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY

Groundwater Surface Water Interface – Van Etten Creek and Au Sable River

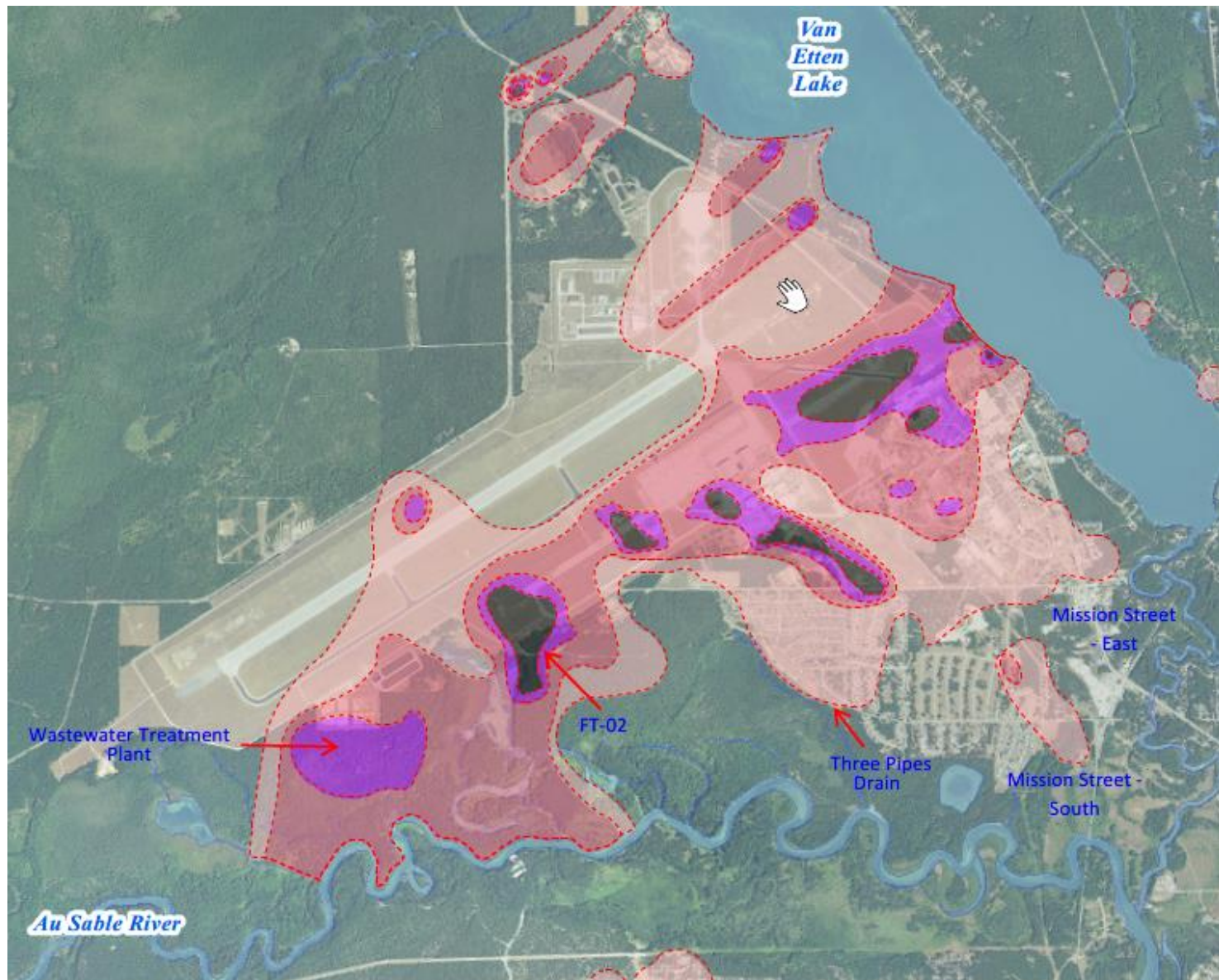
Matt Baltusis

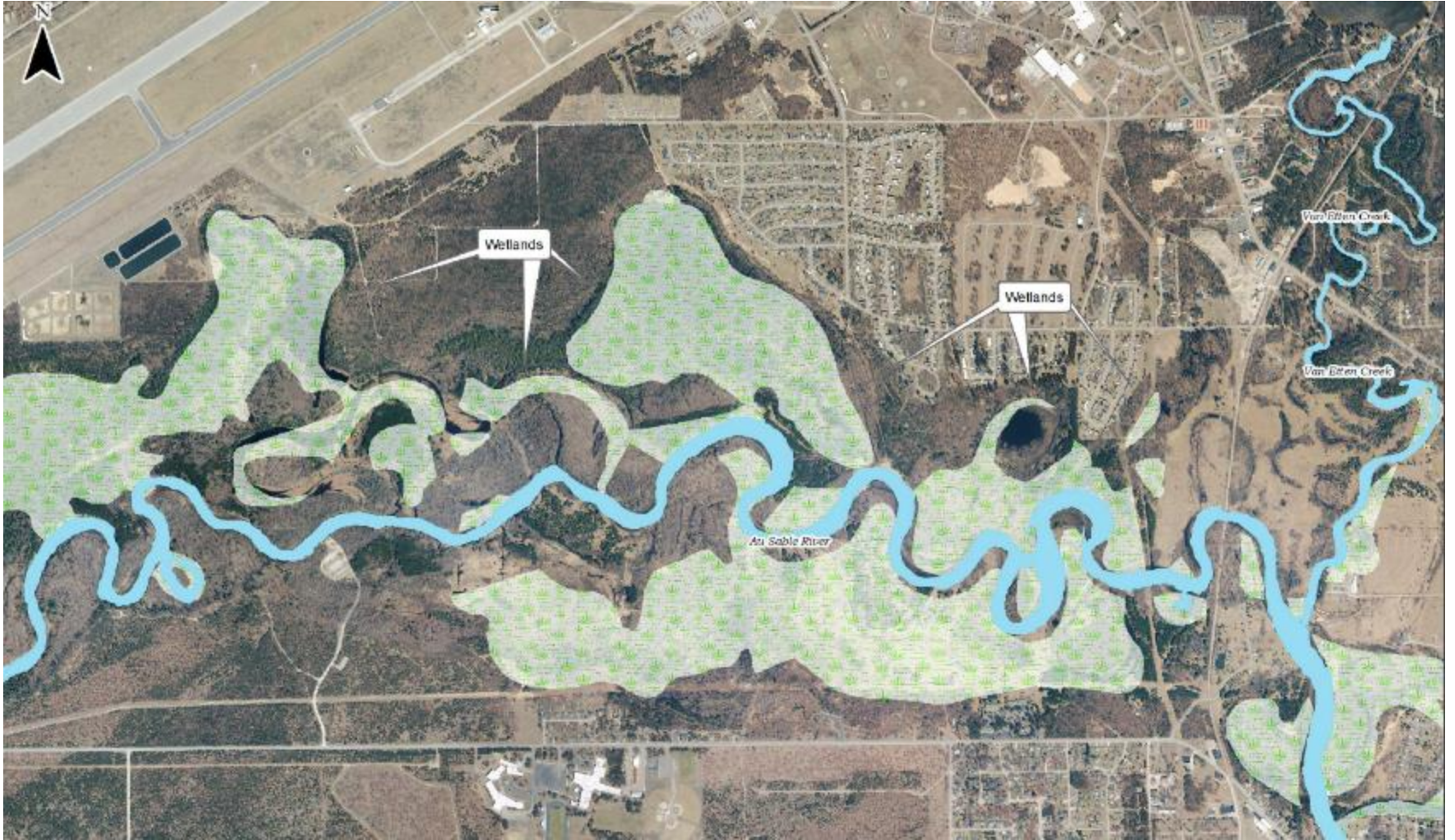
Remediation and Redevelopment

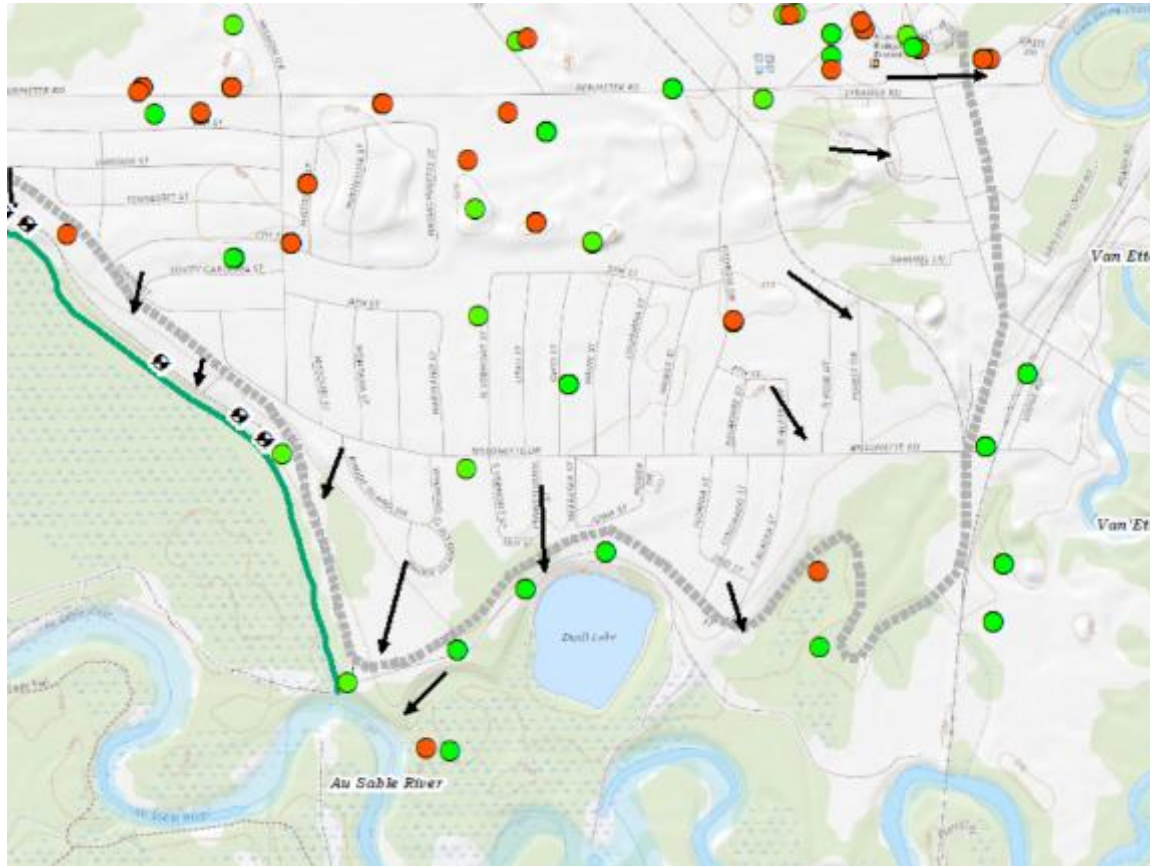
517-897-1748 | baltusism@michigan.gov

Groundwater Surface Water Interface

- What is GSI?
 - Groundwater Surface Water Interface that is the location at which groundwater enters a surface water body.

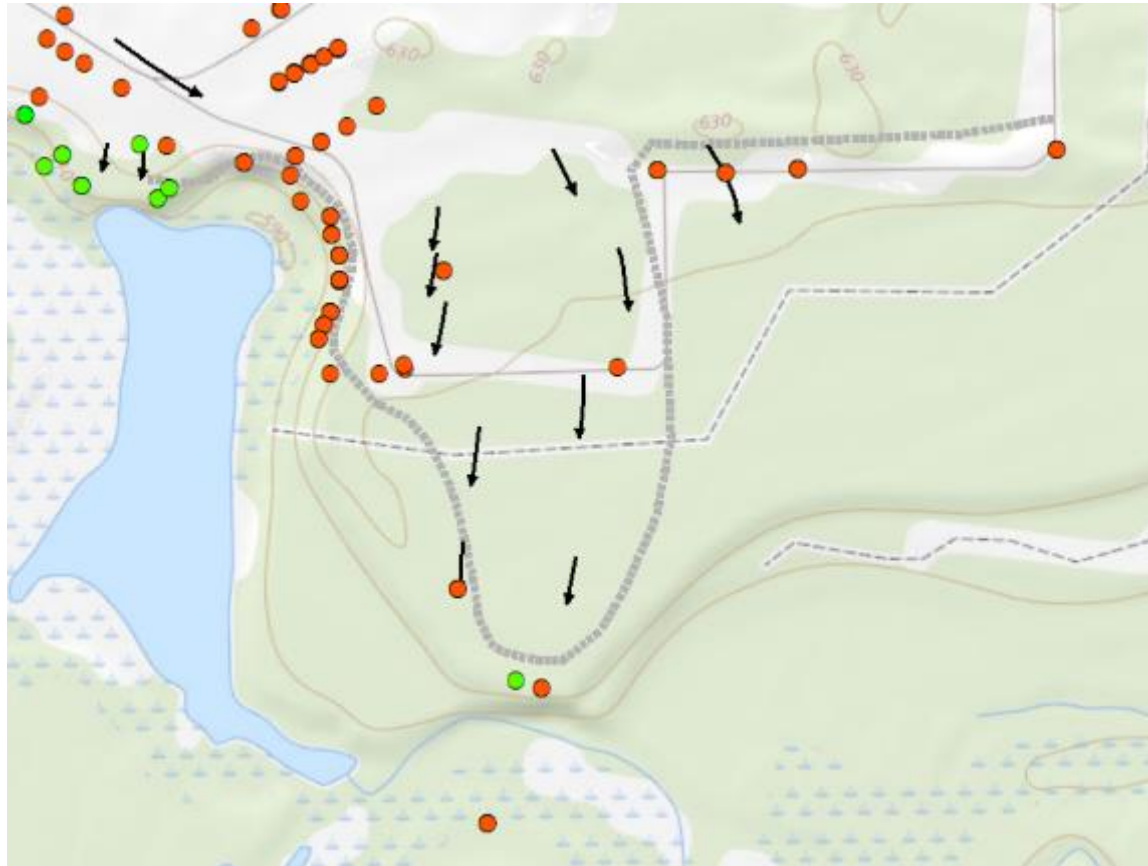






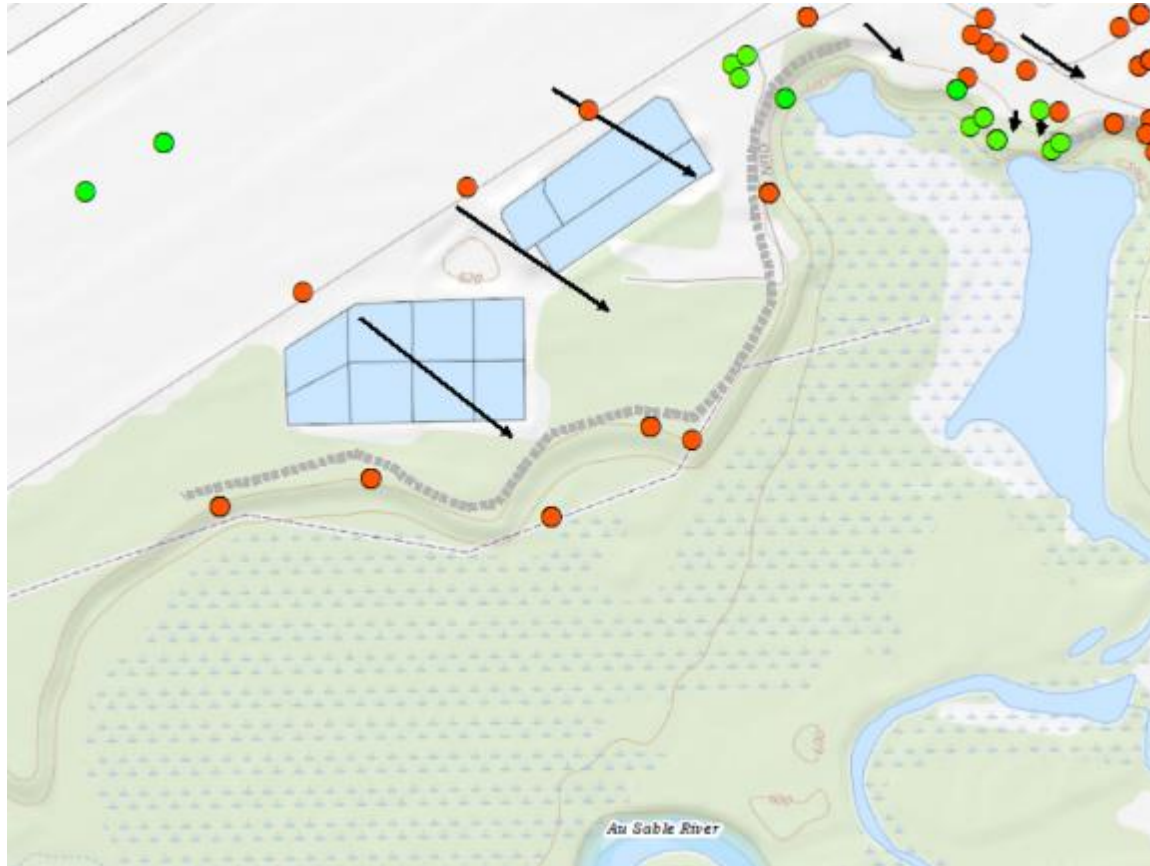
Mission Street and Three Pipes Drain

PFOS Concentration Above (Red) and Below (Green) GSI in Groundwater



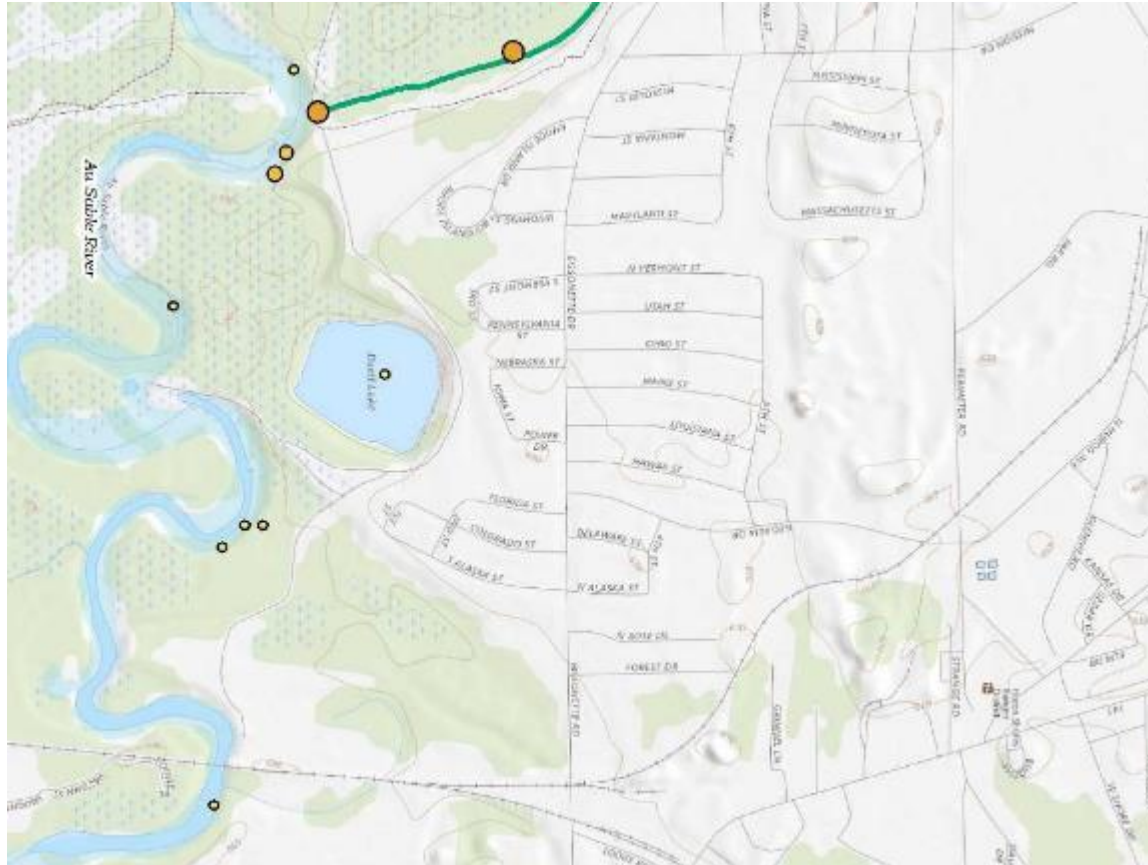
FT-02 – Fire Training Area

PFOS Concentration Above (Red) and Below (Green) GSI in Groundwater



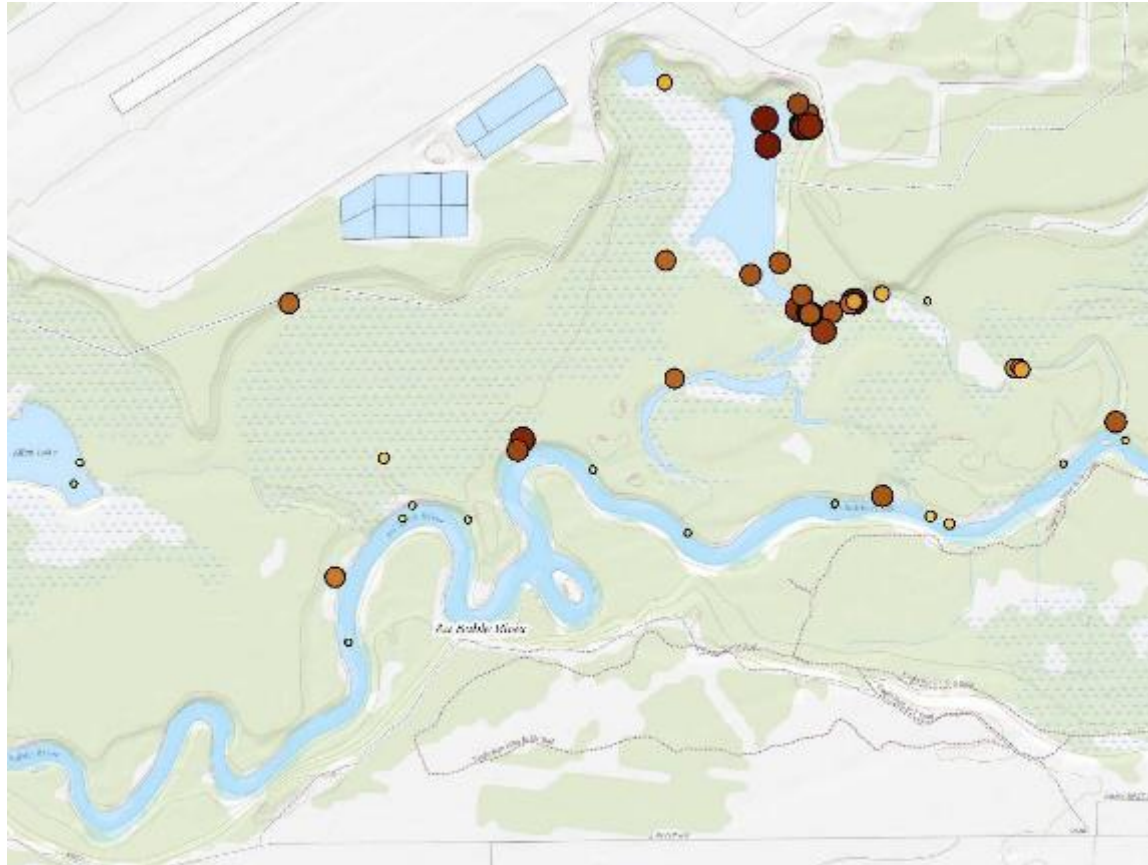
Wastewater Treatment Plant

PFOS Concentration Above (Red) and Below (Green) GSI in Groundwater



Surface Water Samples – Van Etten Creek and Au Sable River

PFOS Concentration in Surface Water



Surface Water Samples – Au Sable River

PFOS Concentration in Surface Water

Michigan Department of
**Environment, Great Lakes, and
Energy**

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Wurtsmith RAB



RAB Business



Wurtsmith RAB RAB Business



Operating Procedures

- Where we're at, next steps

Community Membership

Primary	Alternates	New Applicants
Daniel Stock *	Vacant	David Winn
Robert Tasiar	Vacant	Rex Vaughn
Joe Maxwell	Vacant	Greg Shulz
William Gaines	Vacant	Jeff Gottlieb
Ryan Mertz	Vacant	Scott Lingo
Catherine Larive *	Vacant	Mark Henry
Arnie Leriche	Vacant	
Cathy Wusterbarth	Martha Gottlieb	
Jerry Schmidt	James Davis	

Community Co-Chair Election

Annual vote
at next RAB
meeting.



Public Comment



Public Comment Period

- 01** | Sign in and write your name on a card
- 02** | Deliver your comments from the front of the room
- 03** | Three minute time limit
- 04** | RAB members will confer after your comment to see if a follow-up action is needed



Conclusion & Adjournment

