

Former Wurtsmith AFB  
**Restoration Advisory Board (RAB) Meeting**  
 5 December 2018  
 5:30 – 7:45 p.m. Eastern Daylight Time  
 Robert J. Parks Public Library  
 6010 N. Skeel Ave., Oscoda Township, MI 48750

**Meeting Minutes**

<b>Members Present</b>	<b>Organization</b>
Tim Cummings	Oscoda Township
Robert Delaney	Michigan Department of Environmental Quality (MDEQ)
Abiy Mussa	Michigan Department of Health and Human Services (MDHHS)
Bill Gaines	Community Member
Arnie Leriche	Community Co-Chair
Denise Bryan	District Health Department #2 (DHD2)
Matt Marrs	Air Force Civil Engineer Center/Air Force Co-Chair
Jason McInteer	U.S. Department of Agriculture Forest Service (USFS)
Joe Maxwell	Community Member
Jeff Moss	AuSable Township
Mike Munson	Oscoda-Wurtsmith Airport Authority (OWAA)
Dan O'Connor (Alternate)	Community Member
Dan Stock (Alternate)	Community Member
Robert Tasiar	Community Member
Aaron Weed (Alternate)	Oscoda Township
Cathy Wusterbarth	Community Member
Catherine Larive (Alternate)	Community Member
Joe Plunkey	Community Member
John Nordeen (alternate)	Oscoda Township
Irene Dunn (alternate)	Community Member
<b>Members Absent</b>	<b>Organization</b>
Matthew Hegwood (Primary)	Community Member (Voting Replaced by Alternate Dan Stock)
James Davis	Community Member
Jerry Schmidt (Primary)	Community Member (Voting Replaced by Alternate Irene Dunn)
<b>Other Attendees</b>	<b>Organization</b>
Saamih Bashir	Wood (Air Force contractor)
Dale Corsi	DLZ (MDEQ contractor)
Jenny Haglund	Oscoda Press
Breanne Humphreys	Cherokee (Air Force contractor)
Bill Palmer	Trustee of Oscoda Township Board
Paul Rekowski	AGEISS (Air Force contractor)
Russ Williams	Oscoda Community Member

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Jean Freeling	Tawas City Community Member
Rex Vaughn	Cedar Lake Improvement
Mike Jury	MDEQ
Greg Cole	NOW Group, Community Member
Gene Kirvan	Lake Huron Sport Fishing
Lynn Winn	NOW Group, Community Member
Dave Winn	NOW Group, Community Member
Troy Techlin	Saginaw Chippewa Indian Tribe
John Servinski	Community Member
Charlie Bauer	MDEQ
Marilyn Overholt	
Matt Siler	MDEQ
<b>Facilitator</b>	<b>Organization</b>
Malcolm McClendon	Air Force Installation and Mission Support Center

### Attachments

Attachment 1: Agenda

Attachment 2: Air Force Presentation

Attachment 3: MDEQ Presentation

Attachment 4: Pease Risk Screening Slide

Attachment 5: Congressman Kildee Letter

Attachment 6: Meeting Evaluation Form

**Link to video:** <https://www.youtube.com/watch?v=8vHYR5dnxLQ>

### Welcome and Introductions

Mr. Malcolm McClendon, facilitator, began the RAB meeting at 5:30 pm and welcomed RAB members and others in attendance. RAB members took turns introducing themselves and the agencies they represent. Mr. McClendon introduced Mr. Matt Marris, the Air Force Co-Chair and the Base Realignment and Closure (BRAC) Environmental Coordinator (BEC). Mr. Marris welcomed the RAB members to the meeting and asked the group to take a moment of silence before beginning presentations and other updates.

Greater than 50% of community RAB members, greater than 50% of government RAB members, and both co-chairs were present, so a quorum was present.

### Stakeholder Updates

**Air Force (00h:00m:35s)**

Mr. Marrs highlighted progress since the last RAB meeting (8/30/18); to include installing seven monitoring wells (MWs), sampling 81 groundwater (GW) MWs, installing 18 transducers to measure water levels, sampling 25 drinking water (DW) supplies and awarding a contract for the Landfill (LF) 30/31 project.

#### **Michigan Department of Environmental Quality (00h:02m:00s)**

Mr. Mike Jury provided an update on foam collection. Mr. Jury stated that their initial plan for foam collection did not work as planned. MDEQ is now pursuing a different approach, using local HAZMAT-trained individuals to serve as local response, for foam removal.

Mr. Jury said MDEQ shared recent sampling results with the RAB, the Van Etten Lake Association and at the Oscoda Public meeting held 4 Dec 2018. The results were from sampling conducted in September and October 2018.

Regarding the Township dump located on Kings Corner Road, he said MDEQ staff recently conducted multiple borings at the site and took GW samples. Those results should be available in January 2019.

Mr. Bob Delaney said MDEQ pulled sediment samples from the mouth of the AuSable River before the Corps of Engineers potentially uses those sediments for a beach nourishment project. He said they pulled samples vertically at six sites at a depth of four feet. Mr. Delaney said the results were good — the sediments were not accumulating PFAS and it was virtually all-clean sand.

Mr. Matt Siler, MDEQ Water Resources Division/ Surface Water, provided an update on a notice of violation (NOV) MDEQ issued to the Air Force for PFOS discharge exceedances from the Granular Activated Carbon Pump and Treat System (GAC PTS) at Former Fire Training Area #2 (FT-02) into Clark's Marsh. He said MDEQ is requesting the Air Force extend the capture zone of the plume and increase treatment flow in order to reduce contaminant levels to 12 nanograms per liter or less, which is a water quality standard, he said. Siler said the agency expects a response from the Air Force by Friday (7 December 2018).

#### **MDHHS (00h:08m:38s)**

Mr. Abiy Mussa discussed the recent Do Not Eat Meat advisory issued for deer taken within approximately five miles of Clark's Marsh. One deer out of 20 taken for sampling had high levels of PFOS in the muscles of the deer. The agency is working with the Department of Natural Resources to better understand the situation and discuss the potential for additional sampling.

In regard to fish sampling, MDHHS is still awaiting results for Atlantic Salmon from the AuSable River and Yellow Perch from Van Etten Lake and Cedar Lake.

#### **Oscoda Township (00h:10m:06s)**

Mr. Tim Cummings, Oscoda Township Trustee, said they have completed the water main extension; however, there has been a delay in hooking residences up to the water main. They've been making progress on reimbursements for connection fees. He said they plan to complete more connections in the spring.

#### **AuSable Township**

No updates.

#### **USDA Forest Service (00h:10m:56s)**

Mr. Jason McInteer, temporary USDA FS representative, said their Memorandum of Understanding with the Air Force has expired and they are currently working to update it. He said they are awaiting response from Air Force lawyers regarding that agreement.

**District Health Department No. 2 (00h:11m:20s)**

Ms. Denise Bryan will be replacing Chuck Lichon who is retiring in February 2019.

**Oscoda-Wurtsmith Airport Authority (00h:11m:40s)**

Mr. Mike Munson said the Brownfield Project — an environmental study to help protect future development — is progressing.

**Community RAB Members (00h:12m:06s)**

Ms. Cathy Wusterbarth said the community action group, Need Our Water (NOW), continues to meet monthly. The NOW group has an active social media group and many RAB members use that forum to pass along information.

Ms. Wusterbarth said much of the community is concerned about funds being diverted to other Department of Defense (DoD) sites, despite the history of contamination at Wurtsmith for the past several years. Members of the community are also concerned that the Air Force is not going to take responsibility for contamination that extends beyond the boundary of the base.

Ms. Wusterbarth noted that NOW and other community activists are monitoring legislation that could affect standards set for PFAS levels in DW.

Mr. Marrs took a moment to encourage members of the community interested in RAB membership to submit an application. He said they want to maintain their numbers on the community side and have a repository of prospective replacements available in the event any current primary or alternate members wish to step down.

Mr. Arnie Leriche, RAB community co-chair, said that he's attended several PFAS-related events, including:

- Providing testimony on Senate Sub-committee hearing in Washington D.C. (9/26/18)
- EPA late summit in Kalamazoo
- Another field hearing by Senator Gary Peters' in Grand Rapids (11/13/18)
- Participated in National PFAS Contamination Coalition leadership retreat

He said he also met with the community co-chair for the Pease BRAC base in New Hampshire. He said the EPA and the Air Force took the next step at Pease AFB to do a study of the human and health risks to the environment and off-base swimming holes, deer, fish, turkey, etc. He said he shared copies with MDEQ (10/29/18) and the Air Force Wurtsmith team (11/1/18) and he's hoping for future discussion.

RAB members were given a two-page handout entitled USAF presentation of Human Health/Environmental Risk Screening around Pease AFB, Link to report in Pease RAB presentation: [https://www.afcec.af.mil/Portals/17/documents/BRAC/Pease/181010\\_Pease\\_RAB/181010\\_Pease\\_RAB%20Flyer-Agenda-Slides.pdf?ver=2018-10-12-155605-910](https://www.afcec.af.mil/Portals/17/documents/BRAC/Pease/181010_Pease_RAB/181010_Pease_RAB%20Flyer-Agenda-Slides.pdf?ver=2018-10-12-155605-910)

Mr. Leriche has begun developing a joint map that includes materials from both the Air Force and MDEQ. He invited attendees to view the map, ask questions and take a handout during the break.

Mr. Robert Tasior noted that two community RAB members were absent, as well as their alternates. He asked if the RAB co-chairs would allow two other alternates to take their places. Mr. Leriche and Mr. Marrs agreed, and Ms. Irene Dunn and Mr. Dan Stock took seats at the table. Public Affairs (PA) recorded an action item to update the Operating Procedures to permit alternates to stand in for any missing primary member.

**Technical Presentations**

### **Air Force (00h:22m:58s)**

Mr. Marrs said the Air Force connected the Benzene Plant to the central GAC treatment system on October 17, 2018. He reiterated that they constructed the central treatment building with extra space to accommodate expanded treatment capacity, if necessary.

He said they've noticed they have to backflush the system every three days or so due to the solids being pumped through the system from the Benzene Plant. To reduce the need to backflush, he said they are looking to modify a contract to install a green sand filter system at the front of the plant to help filter out solids.

Regarding the Mission Street Plant, the Air Force is weighing the costs and benefits of a couple options for using that plant for additional PFOS/PFOA groundwater (GW) treatment:

- Repurpose existing building by removing air strippers and replacing with a GAC and or Resin unit for treatment, or
- Run the piping down the easement to pump groundwater to the central plant for treatment.

Marrs said he will continue to update the RAB as the Air Force moves forward with the Supplemental Site Inspection (SSI). He said the data the AF is gathering from the SSI helps them conduct cost-benefit analysis and reach informed decisions regarding not only prospective treatment technologies, but also for extraction wells (horizontal vs vertical) and capture zones.

### **Air Force/MDEQ (00h:28m:00s)**

Ms. Beth Place, MDEQ, and Mr. Marrs provided a joint presentation on a Vapor Intrusion study. Ms. Place said VI, which is the migration of vapor-forming chemicals from any subsurface source into an overlying building, is becoming a more urgent issue nationwide as they learn more about it. Ms. Place discussed factors affecting VI, including source and building factors.

Mr. Marrs said the Air Force is looking at 25 potential sites for VI at Wurtsmith. Slides 16-18 (attachment 2) includes a list of those sites. He said the AF is meeting on a monthly basis and working collaboratively with MDEQ on this issue. He explained the screening procedure used for all active sites for potential VI.

Mr. Marrs briefed the way ahead for phase 1 assessment. Mr. McClendon noted that the hard-copy handouts provided to the RAB included an error on slide 20. The VI Phase 1 assessment schedule range should be from November 2018 — May 2019.

Mr. Bill Gaines pointed out that the presentation indicated 16/25 sites are considered less likely to have VI exposure and nine are considered for VI exposure pathway, and he asked that future presentations include more details about how each site was determined to have a pathway or not.

### **MDEQ (00h:38m:55s)**

Mr. Delaney provided an update on groundwater sampling findings and progress bounding plumes. He showed a map (attachment 3) identifying GW and residential sampling results for total PFAS, not just PFOS/PFOA. Key takeaways included:

- Plumes from the base do not reach the south side of the AuSable.
- They attribute detections south of the AuSable to other releases/sources.

Mr. Delaney said they want to find where the plumes are coming out from groundwater and entering surface water in Van Etten Lake. He identified locations where PFOS is entering Van Etten Lake from groundwater.

Mr. Delaney also discussed PFAS sampling results for the AuSable River and Clark's Marsh. He highlighted findings from both Pore sampling and surface water sampling results.

A member of the public asked about a red dot on the map at the southeast end of Cedar Lake. Mr. Delaney said it is one of their soil boring wells that recorded a detection around 90 ppt. Another resident asked for clarification about the sediment sample findings at the mouth of the AuSable. He asked if the non-detect results was only for PFOS/PFOA. Mr. Delaney said the sediment was clear of all PFAS chemicals.

Mr. Aaron Weed, Oscoda Township Supervisor, asked if MDEQ has looked at the stratification PFAS detections in the surface water of Van Etten Lake. Mr. Delaney said they haven't conducted that type of study at this point. He said they do know the longer chain fluorosurfactants are less soluble and rise to the surface.

Mr. Jeff Moss asked if the AuSable River sample results presented were from previous sampling, or the more recent sampling conducted. Mr. Delaney said it was from earlier sampling and that MDEQ will share results from recent sampling once they're available. Mr. Moss also inquired about data collection for the protected areas and marshland. Mr. Delaney said they do have some residential well data from that area. Mr. Moss asked about the extent of evaluation further down the river in the bayou area. Mr. Jury confirmed that MDEQ has not sampled that far down the river. He said there is a hot spot near the state park launch area, but he said the contamination does not appear to be associated with the former Wurtsmith AFB.

Mr. Marrs reminded RAB members to notify AFIMSC Public Affairs if they wish to present at upcoming meetings, and to send presentation files and materials to AFIMSC/PA (Ms. Breanne Humphreys and/or Mr. Malcolm McClendon) one week ahead of the meeting so they can disseminate all meeting materials to the RAB in advance of the meeting.

#### **RAB Business (00h:58m:00s)**

Per the Wurtsmith RAB Operating Procedures, voting commenced for the RAB community co-chair position. No primary community members volunteered to run for the position; Mr. McClendon asked Mr. Leriche if he was interested in serving another year in the co-chair position.

Mr. Leriche highlighted his involvement in the PFOS/PFOA contamination issue over the past four years, as well as during co-chair tenure over the past year.

- Mr. Leriche talked about the importance of community involvement and pushing legislators to make changes, and the importance of ensuring the RAB remains engaged in remediation.
- Mr. Leriche expressed his opinion that the EPA's HA threshold of 70 ppt for drinking water is not protective of human health and needs to be lower. He said the Air Force won't voluntarily move to a lower threshold and that if the community wants to see a more stringent DW standard, they need to engage ATSDR and the state's health department to encourage them to convince legislators to reduce the HA.
- Mr. Leriche asked fellow community RAB members to identify their top one or two priorities and focus on learning about and advocating for those priorities. He said he was disappointed to receive only two priorities to highlight in his verbal testimony when he traveled to Senator Gary Peters' hearing earlier this year.
- Mr. Leriche expressed a desire to build upon the joint representation poster board of all contamination sites.
- Mr. Leriche agreed to continue serving in the community co-chair position, but he asked for a team effort to ensure members get the product out the RAB that they, and the community, deserve.

#### **Public Comment**

##### **Mr. Greg Cole (01h:06m:46s)**

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Mr. Cole thanked the Air Force for fulfilling the request he made at the August 30, 2018, RAB meeting to help the Township pay for video/audio support at RAB meetings.

Mr. Cole asked the Air Force to implement a training program for the RAB. He said learning about CERCLA would help the public and RAB members understand the rules and regulations the Air Force has to follow and make RAB meetings more effective. Mr. Marrs provided a high-level informational handout on the CERCLA process. Mr. McClendon said he is working with his government RAB counterpart to develop standardized RAB training materials. He said the Air Force has tentative plans to hold

Mr. Leriche thanked the Air Force and the Township for their respective contributions to continue funding video support. He said he submitted an application to the Chippewa Tribal Nation for more funding support. He anticipated they would be reviewing his application the next day. He also thanked the Steelheader's group for chipping in the money needed to add a fourth camera.

Referencing the CERCLA handout, Mr. Cummings asked if the Air Force would do a bit deeper dive into CERCLA when training takes place.

Mr. Marrs said they are trying to put a greater emphasis on training and providing resources and information the RAB needs to do its job.

Mr. Marrs asked Air Force Contractor Paul Rekowski to step forward for recognition. Mr. Marrs announced that Mr. Rekowski would be retiring in February 2019 and thanked him for his tenure supporting Wurtsmith as both an active base and following base closure.

Mr. Rekowski did not submit a public comment, but said he wanted to ask a question — as a resident Oscoda Township, not as a representative of the Air Force. Mr. Rekowski said his well was tested in June 2016 and MDHHS told him not to drink his water after the results yielded 14 ppt PFAS. He said at the August 30, 2018, meeting the Township of Oscoda confirmed the municipal water supply hadn't been sampled in a few years, but Mr. Cummings said it would be sampled within the following week. Mr. Rekowski expressed concern that the Township is pushing municipal water on residents without informing them of concentrations. Mr. Rekowski said he saw a sample result from the same day his well was sampled in 2016 and that recorded 76 ppt PFAS. He asked the Township to provide municipal water supply sampling results.

Mr. Aaron Weed, Oscoda Township Supervisor, clarified that the township is not pushing municipal water on people, he said they are providing that water to people because a lot of people want it. He said if people don't want it, they don't have to connect to it. He said the municipal supply was tested last week and that results wouldn't be available for four to six weeks. Mr. Cummings said testing was slated to take place within the next month or two from the last RAB meeting, not the next week. He said the period between sampling events was just over 12 months, not two years. Ms. Wusterbarth spoke up and said the latest municipal supply sampling was in 2016. Mr. Rekowski asked if the township had made previous sampling results available to the public. Mr. Weed said results are available online, mailed to municipal supply users and available on the health department website.

### **Mr. Dan O'Connor (01h:18m:49s)**

Mr. O'Connor said it's his opinion that it's impressive Oscoda Township has received assistance for providing alternate water for residents. He said it's his opinion that the science used to develop HA's for PFAS are not adequate. His bottom line is that the RAB should focus on the highest concentration plumes.

### **Mr. Val Delafuente (01h:25m:56s)**

Mr. Delafuente, BRAC Program Execution Branch Chief, stepped forward to correct the data referenced by Mr. Rekowski regarding the Township's municipal DW supply. He said based on the data he was able

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to find, the total concentrations for PFOS and PFOA were 12 ppt and total PFAS concentrations were less than 30 ppt, based on 13 samples collected in 2015 and 2016.

Mr. Cole provided background on the Huron Shore Regional Utility Authority (HRSUA). He said they meet the first Tuesday of every month. The meetings, which are open to the public, are attended by Oscoda Township Superintendent, Dave Schaeffer, and Mr. Weed.

He said due to drinking water issues across the state and limited resources, sampling and receiving lab results are frequently delayed. Mr. Cole expressed a need for more labs to support the number of impacted sites popping up across the state.

### Conclusion

Mr. Marris thanked RAB participants and reiterated the tentative plan to provide more in-depth training and RAB process improvement in a meeting that would be held in conjunction with the spring 2019 RAB meeting.

Mr. Leriche expressed a desire to continue accepting new applicants to the RAB to maintain a repository if interested community members in the event any primary or alternates choose to step down. An action item was tracked to update the Wurtsmith RAB application hosted on the Wurtsmith BRAC webpage and provide the updated file to Oscoda and AuSable Township.

Mr. Jeff Moss asked if the Air Force would start doing environmental assessments in the Clark's Marsh area to progress that site to remediation. An action item was tracked to address Mr. Moss' question.

Mr. Cummings recommended the RAB conduct a formal vote to re-elect Mr. Leriche.

Mr. McClendon asked community RAB members to raise their hand to vote in favor of re-electing Mr. Leriche to the community co-chair position for another year. All nine of the community RAB members voted to re-elect Mr. Leriche's. An action item was recorded to update the OP to include Community Co-Chair voting procedures.

The RAB meeting adjourned at approximately 7:45 p.m.





### RESTORATION ADVISORY BOARD (RAB) MEETING

**DATE/TIME:** Wednesday, 5 December 2018, 5:30-7:35 p.m. EST  
**LOCATION:** Robert J. Parks Public Library, 6010 N. Skeel Ave., Oscoda, MI 48750

[Note: This meeting will be conducted as a teleconference in the event of inclement weather.]

**GROUND RULES:**

1. Respect one another and maintain an atmosphere of open dialogue and exchange of ideas.
2. Use our time together efficiently, wisely, and respectfully.
3. Listen and remain open to each other's varying points of view.
4. Speak clearly and succinctly one person at a time; avoid interrupting others.
5. Share information early, openly, and honestly.
6. Maintain a propensity for progress: prepare, discuss, document, and move forward.
7. Accurately and objectively relay to others the discussions that occur at board meetings.

Topic	Purpose	Presenter	Time
Introductions			
Welcome	<ul style="list-style-type: none"> <li>• Air Force and community co-chairs welcome RAB members and attendees</li> <li>• Participants introduce themselves and read ground rules</li> <li>• Facilitator summarizes agenda</li> </ul>	Matt Marris Arnie Leriche All Malcolm McClendon	5:30-5:35
Stakeholder Updates			
Stakeholder/RAB Member Updates	<ul style="list-style-type: none"> <li>• Government RAB members provide brief update for their stakeholder organizations</li> <li>• Community RAB members provide brief update regarding matters pertinent to the RAB</li> </ul>	Government RAB members Community RAB members	5:40-6:00
Air Force Technical Presentation(s)			
Central GAC Treatment System	<ul style="list-style-type: none"> <li>• Update: Benzene addition to central GAC PTS</li> <li>• Update: FY19 plans for Mission Street tie-in to central GAC PTS</li> <li>• Treatment technologies and advancements</li> </ul>	Matt Marris	6:00-6:20
Stakeholder Organization Technical Presentation			
Vapor Intrusion	<ul style="list-style-type: none"> <li>• Background on scope and intent of VI evaluation</li> </ul>	MDEQ/AF	6:20-6:35
<b>10-minute break</b>			
MDEQ investigation update	<ul style="list-style-type: none"> <li>• Update on ground water and surface water sampling/findings</li> </ul>	Bob Delaney	6:45-6:55



Former Wurtsmith AFB  
 Restoration Advisory Board Meeting  
 5 December 2018  
 Final Agenda

Topic	Purpose	Presenter	Time
RAB Business			
RAB Community Co-Chair	<ul style="list-style-type: none"> <li>Highlight community co-chair role and responsibilities</li> <li>Annual vote for RAB community co-chair</li> </ul>	Malcolm McClendon	6:55-7:15
Public Comment			
Public Comment	<ul style="list-style-type: none"> <li>Public participants provide three-minute verbal comments to the RAB.</li> <li>[Note: Public participants may also choose to provide written comments.]</li> </ul>	Public participants	7:15-7:30
Conclusion			
Conclusion	<ul style="list-style-type: none"> <li>Co-chairs offer closing remarks.</li> </ul>	Co-chairs	7:30-7:35
RAB Meeting Adjourns			

# Air Force Civil Engineer Center

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## Wurtsmith Restoration Advisory Board Meeting

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Matt Marrs  
AFCEC/CIB



# Wurtsmith RAB



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# Welcome





# Wurtsmith RAB Agenda



## Welcome



- Introductions
- Ground rules

## Updates



- Stakeholder updates

## Presentations



- Central GAC PTS
- Vapor Intrusion
- MDEQ sampling

## Break



## RAB Business



- Co-chair R&Rs
- Co-chair vote

## Public Comment



- Three-minute limit
- Written comments



# 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.



Attachment 2

# Wurtsmith RAB





# Wurtsmith RAB Stakeholder Updates



Since the last RAB meeting...



Installed **7**  
monitoring  
wells



Sampled **81**  
GW  
monitoring  
wells



Installed **18**  
transducers  
to measure  
water levels



Sampled **25**  
drinking  
water  
supplies



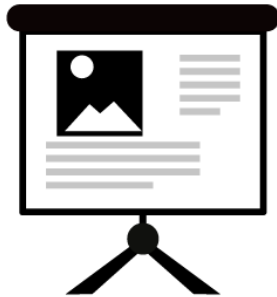
Awarded  
LF30/31  
project





# Wurtsmith RAB Stakeholder Updates





# Presentations



# Wurtsmith RAB Central GAC PTS Update

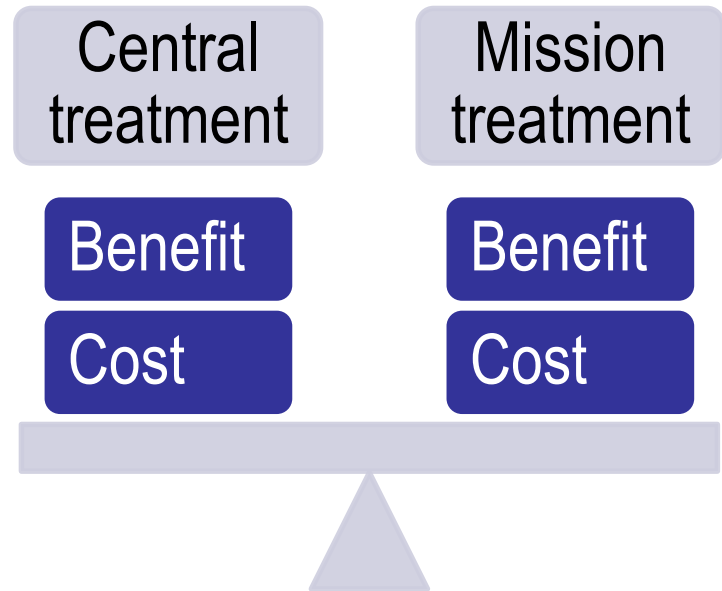


## Central GAC PTS

- ✓ Arrow Street
- ✓ Benzene Plant
- Mission Street



*SSI data feeds cost-benefit analysis for maximizing capture and treatment*

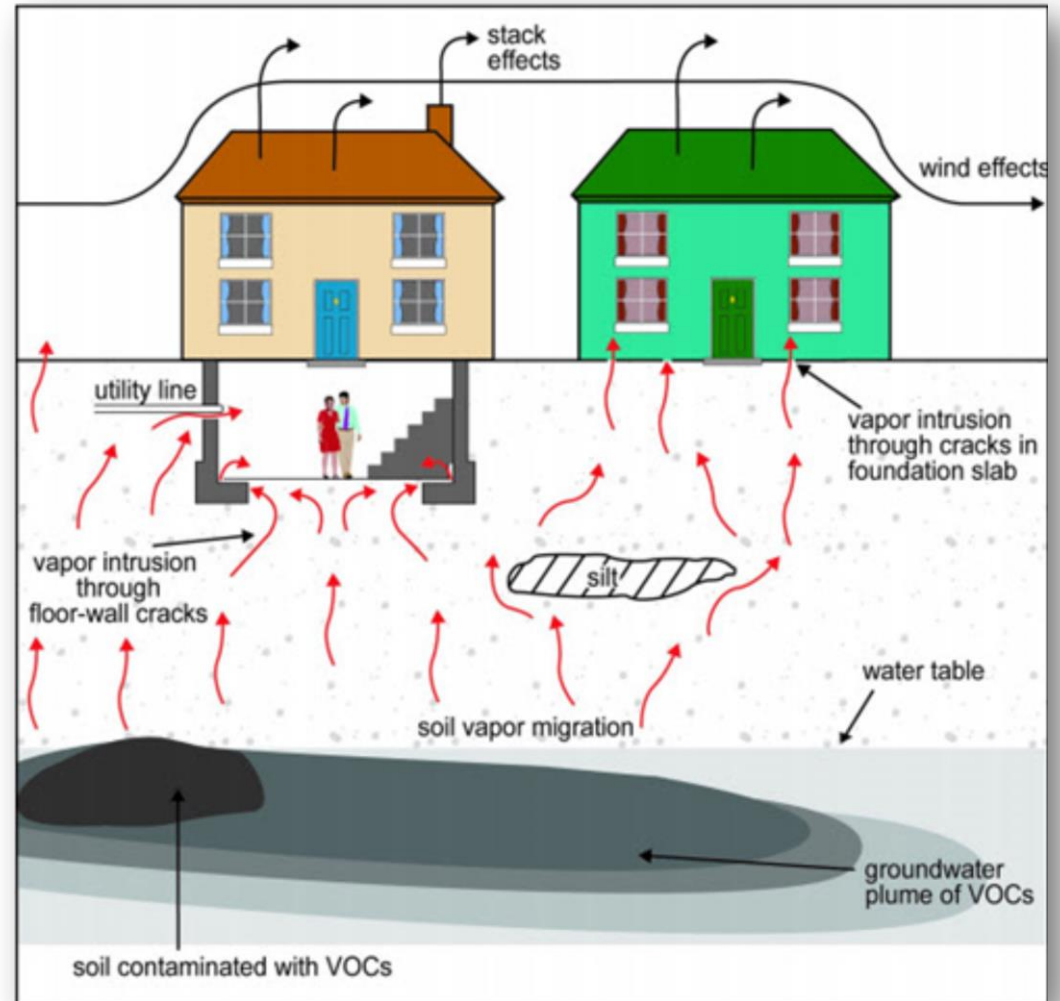


# Vapor Intrusion Assessment

## What is VI?

Migration of vapor-forming chemicals from any subsurface source into an overlying building.

- volatile organic compounds such as PCE, TCE and benzene
- select semi-volatile organic compounds, such as naphthalene
- elemental mercury





# Vapor Intrusion Investigation

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## Why Do We Care?

- VI can impact a broad range of land use settings and buildings of any foundation type
- Vapor accumulations may pose:
  - Near-term safety hazards
  - Acute and chronic health effects
  - Aesthetic problems
- What we know about vapor intrusion has been increasing over the years. The potential risks from these chemicals that are linked to vapor intrusion are better understood today



# Vapor Intrusion Investigation

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## Why Do We Care? (cont.)

- Before, our biggest concern with underground chemicals was the safety of drinking water.
- But we know that some of these chemicals can get into buildings through the air
- Because of our increased knowledge of the risks, vapor intrusion has become a more urgent issue. Vapor intrusion is a national problem, and state and federal agencies across the country are continuing to learn more about it



# Vapor Intrusion Investigation

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## Factors Affecting Vapor Intrusion

### Source Factors

- Volatility
- Toxicity
- Phase
- Amount
- Location
  - Depth
  - Proximity to building

### Building Factors

- Foundation
- Openings
- Pressure differentials
- Entry rates
- Air exchange
- Mixing



# Wurtsmith RAB Vapor Intrusion



## Vapor Intrusion Investigation Objectives

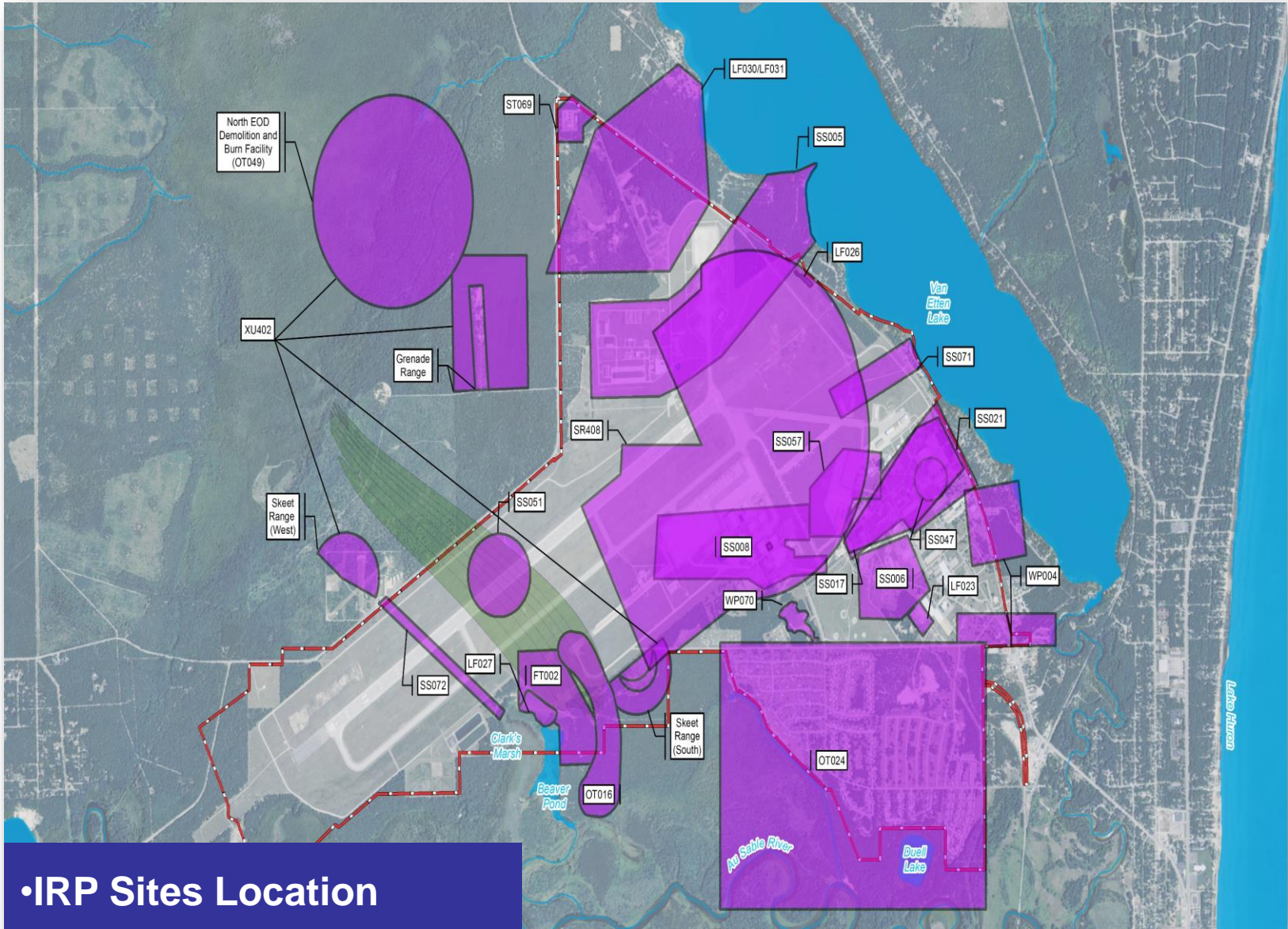
Assess VI human health exposure pathway for all sites with volatile contaminant of concern in a phased approach:

- Phase 1:** VI screening evaluation (presence/absence) for the 25 currently open sites
- Phase 2:** Further evaluation, remediation or mitigation
- Phase 3:** VI screening evaluation (presence/absence) for appropriate closed sites
- Phase 4:** Further evaluation, remediation or mitigation (Follow up work as needed)





# Wurtsmith RAB VI Investigation: Sites



•IRP Sites Location



# Wurtsmith RAB VI Investigation: Sites



	Site ID	Site Name
1	FT002	Active Fire Training Area
2	WP004	Inactive Waste Treatment Plant Sludge Drying Beds
3	SS005	TCE Spill, Southwest of SAC Alert Apron
4	SS006	Fuel Spill, POL Bulk Storage Area
5	SS008	TCE and Fuel Spill, SAC Nose Doc and Operational Apron
6	OT016	Jet Engine Test Cell Building 5098
7	SS017	Fuel Oil Spill Near Building 25
8	SS021	TCE Spill Northeast of Building 43
9	LF023	Landfill, SE of POL Bulk Storage



# Wurtsmith RAB VI Investigation: Sites



	Site ID	Site Name
10	OT024	Three Pipes Drainage Ditch
11	LF026	Landfill, East of Alert Apron
12	LF027	LF South of the Center of SAC Instrument Runway
13	LF030/LF031	Landfill, Northern (Perimeter Road) Area
14	SS047	Base Gas Station
15	SS051	KC-135 Crash Site
16	SS057	Old Apron Hydrant Fuel System
17	ST068	Oil/Water Separator, Facility 5067
18	ST069	TCE Plume DRMO



# Wurtsmith RAB VI Investigation: Sites



	Site ID	Site Name
19	WP070	Sand-Fill Storage and Borrow Area
20	SS071	Building 5045 Drain Field
21	SS072	PCE Plume discharging to Clark's Marsh
22	SR408	Bombing and Strafing Area
23	XE404	Weapons Storage Area
24	XU402	Former Grenade Range
25	OT049	EOD Range



# Vapor Intrusion Investigation

## VI Phase 1 Procedure:

Screen active sites (25) for potential VI



Sites with potential VI

Evaluate nature and extent

Identify potential receptors

100 ft radius

Or 30 ft radius (petroleum contaminants)



Pathway Analysis

Further investigation: phase 2

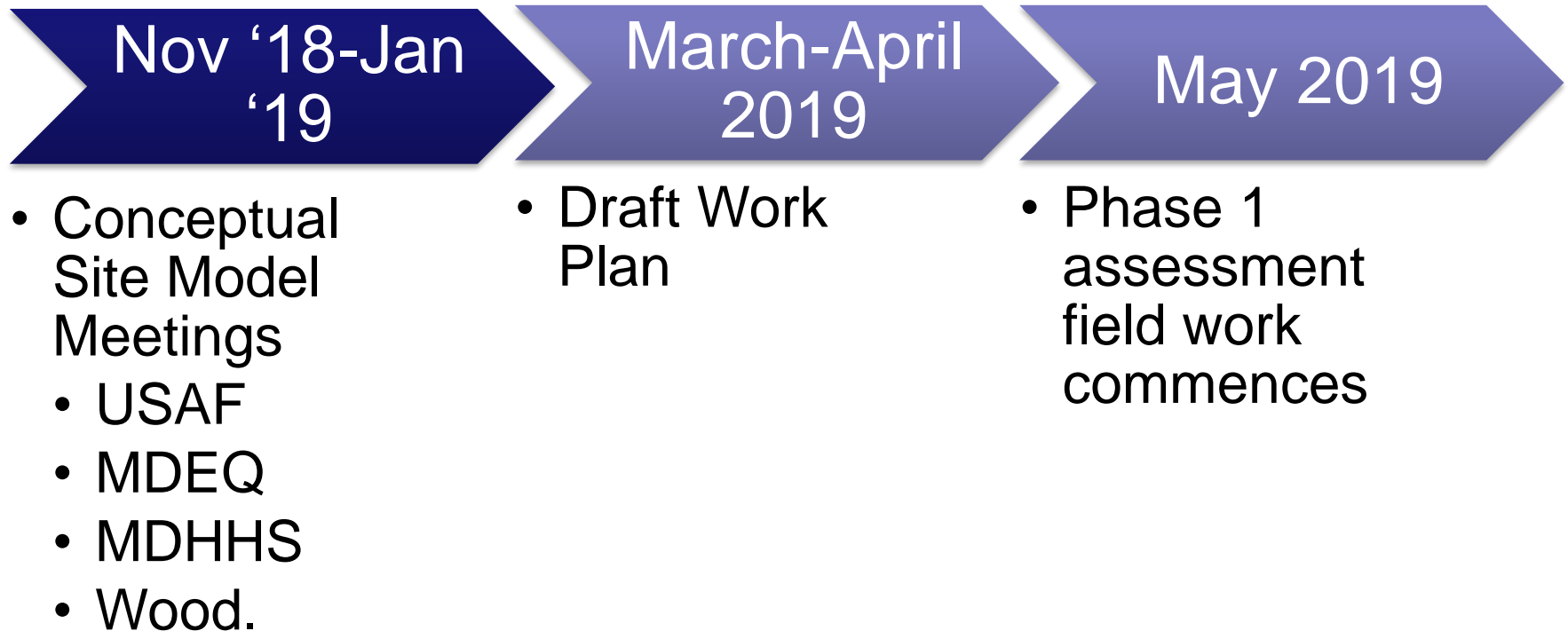
Or no further investigation



# Wurtsmith RAB VI Investigation



## VI Phase 1 Assessment Schedule





# Vapor Intrusion Investigation

---

## VI Phase 1 Assessment (Preliminary)

### What we know so far:

- Collaborative approach: USAF, MDEQ and MDHHS
- 16/25 Sites are less likely to have VI Exposure Pathway because of at least one of the following:
  - Absence of volatile contaminants
  - Current and future land use (no buildings)
  - Contaminant is below a layer of clean GW
  - 9/25 Sites considered for VI Exposure Pathway
    - Under review by MDEQ and MDHHS

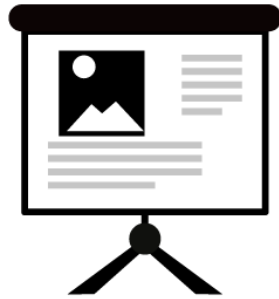


# Wurtsmith RAB



 **Break**





## **Presentations (MDEQ)**



Attachment 2

# Wurtsmith RAB



## RAB Business



# Wurtsmith RAB Co-Chair R&Rs



## Wurtsmith RAB Community Co-Chair

### REPRESENT

- Represent Oscoda community
- Ensure relevant community concerns are raised

### COMMUNICATE

- Help provide info to the public
- Report back to the community

### COORDINATE

- Work with AF and community RAB to prepare agendas

### SUPPORT

- Help ensure meetings / participation remain open and constructive



# Wurtsmith RAB



## 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



Attachment 2

# Wurtsmith RAB



## Conclusion & Adjournment



# FORMER WURTSMITH AIR FORCE BASE – RAB MEETING

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# GROUNDWATER AND RESIDENTIAL HEAT MAPS

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DRAFT

11/29/2018

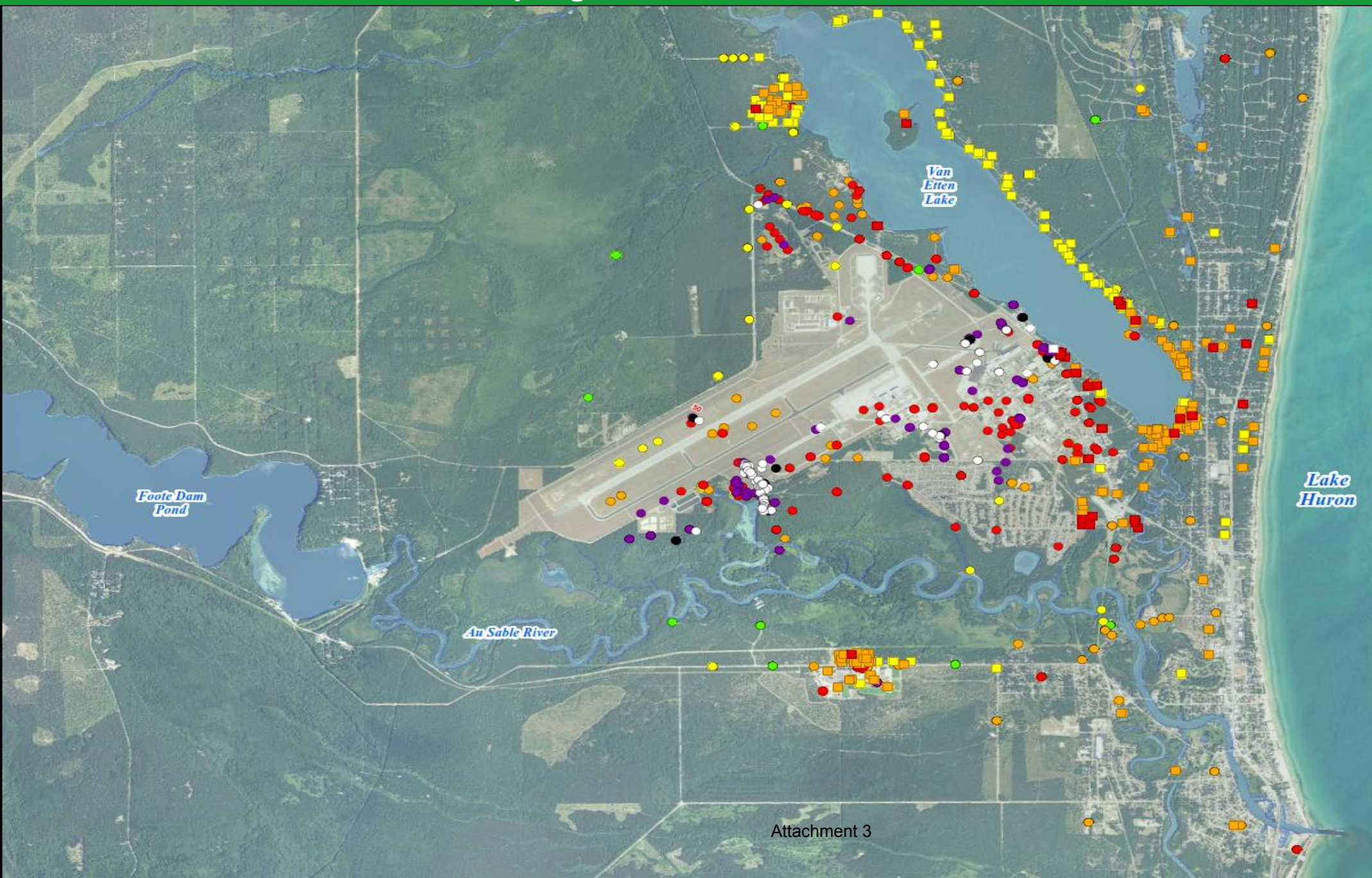
## Total PFAS (ppt)

### Residential Wells

- Non-Detect
- <10
- 10 - <70
- 70 - <1,000
- 1,000 - <5,000
- 5,000 - <10,000
- >10,000

### Groundwater Samples

- Non-Detect
- <10
- 10 - <70
- 70 - <1,000
- 1,000 - <5,000
- 5,000 - <10,000
- >10,000



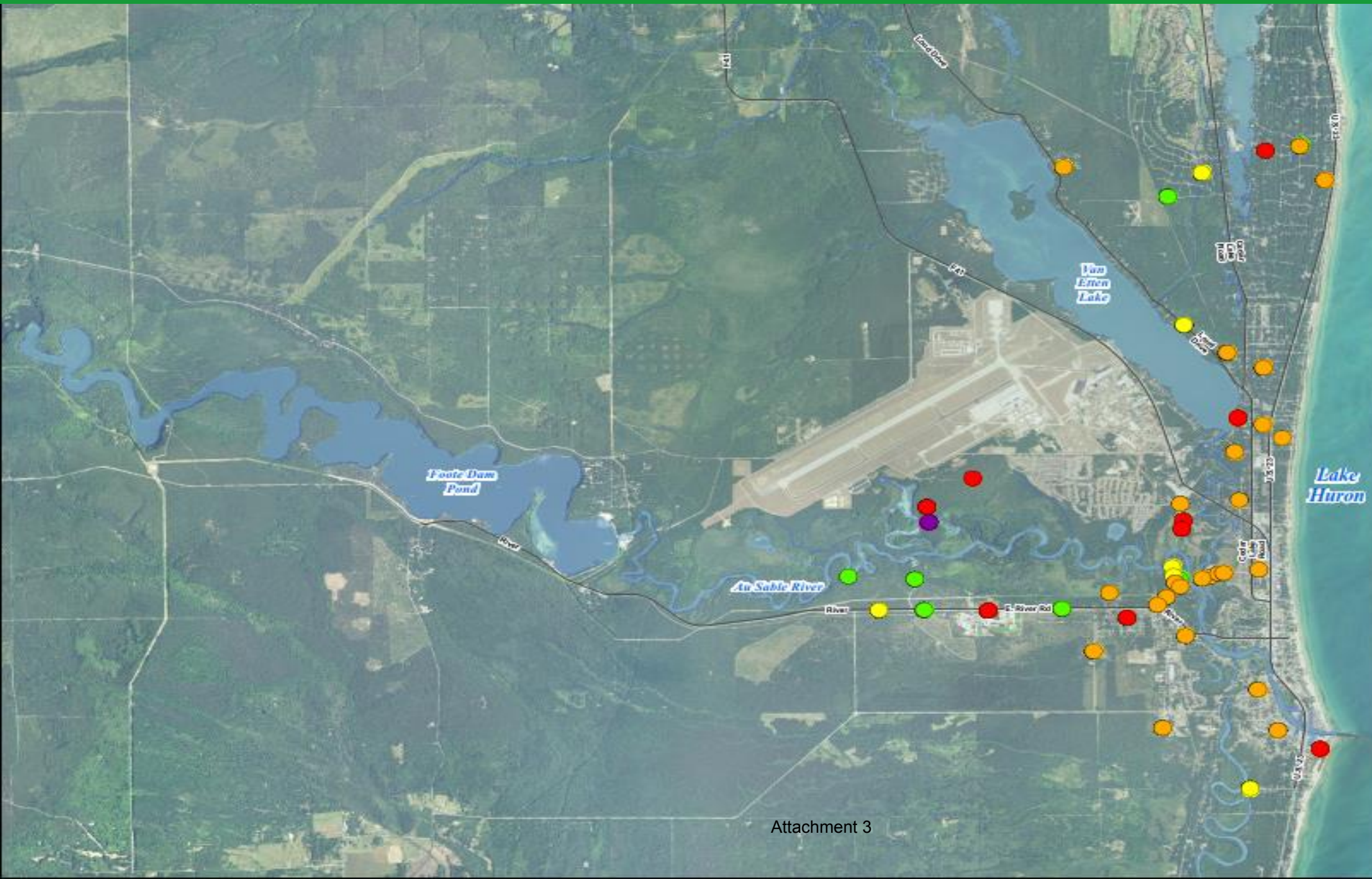
GROUNDWATER AND RESIDENTIAL SAMPLING RESULTS TOTAL PFAS

FORMER WURTSMITH AIR FORCE BASE  
IOSCO COUNTY,  
MICHIGAN



# MDEQ REMEDIAL INVESTIGATION HEAT MAPS

---



DRAFT

11/29/2018

**Total PFAS (ppt)  
2017-2018 RI Borings**

- Non-Detect
- <10
- 10 - <70
- 70 - <1,000
- 1,000 - <5,000
- 5,000 - <10,000
- >10,000

2017-2018 RI BORINGS  
RESULTS TOTAL PFAS

FORMER WURTSMITH  
AIR FORCE BASE  
IOSCO COUNTY,  
MICHIGAN



# MDEQ PORE WATER SAMPLE RESULTS, VAN ETTEN LAKE MAP

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**DRAFT** 11/30/2018

**Legend**

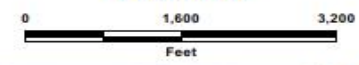
- Pore Water Sample PFOS (ppt)**
- ▲ Non-Detect
  - ▲ >0 to 12 (Below Surface Water Criterion)
  - ▲ >12 (Above Surface Water Criterion)

ID
PFOS   PFOA   TOTAL PFAS

\*Pore water samples collected between 1.5-3 ft below ground surface

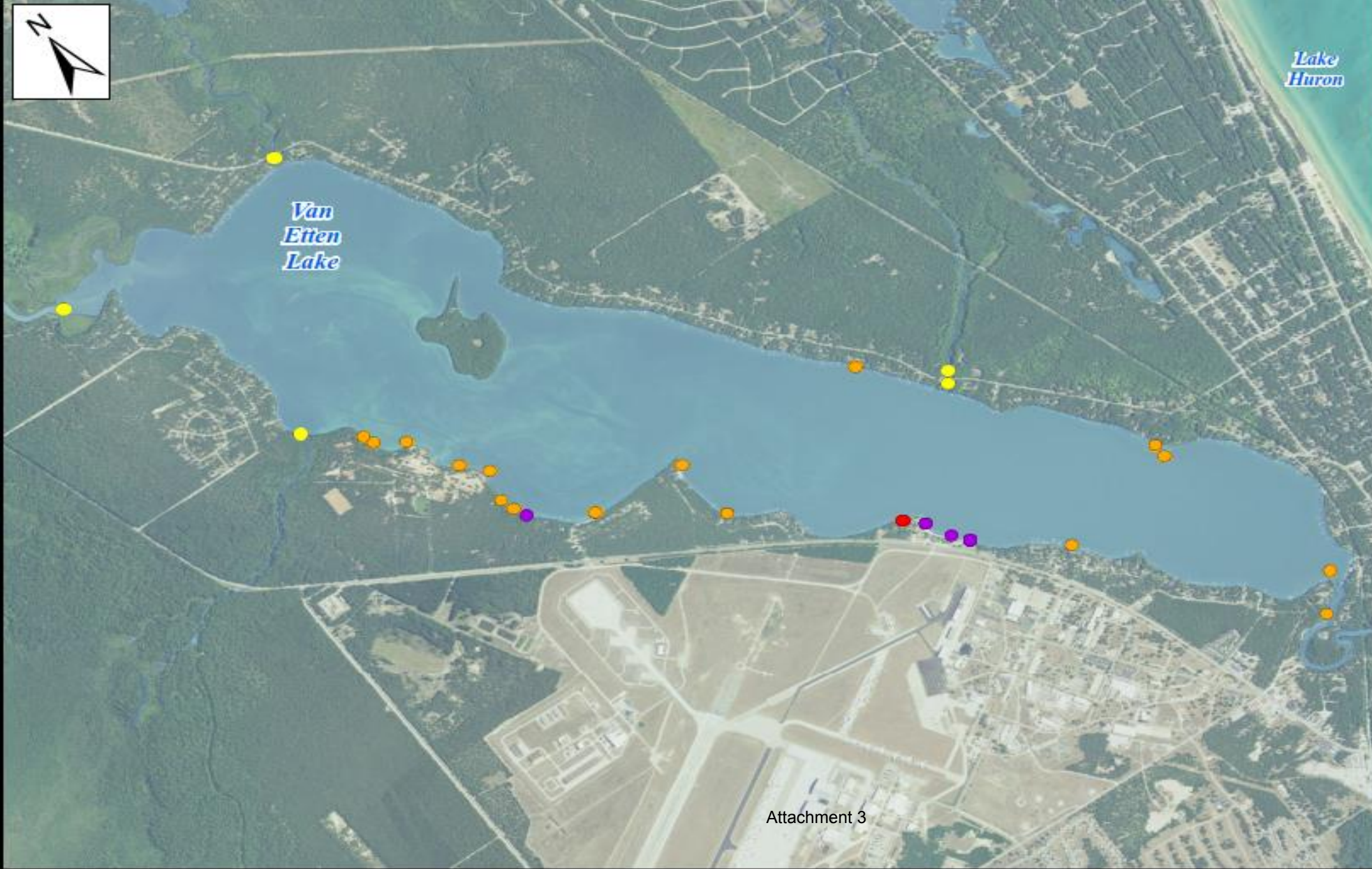
**2018 PORE WATER SAMPLING RESULTS - VAN ETTEN LAKE**

**FORMER WURTSMITH AIR FORCE BASE  
IOSCO COUNTY,  
MICHIGAN**



# VAN ETTEN LAKE SURFACE WATER RESULTS

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**DRAFT** 11/30/2018

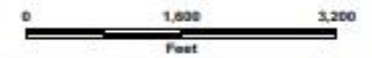
**Legend**  
**Surface Water Sample**  
**Total PFAS (ppt)**

- Non-Detect
- <12
- 12 - <50
- 50 - <100
- 100 - <1,000
- 1,000 - <2,500
- >2,500

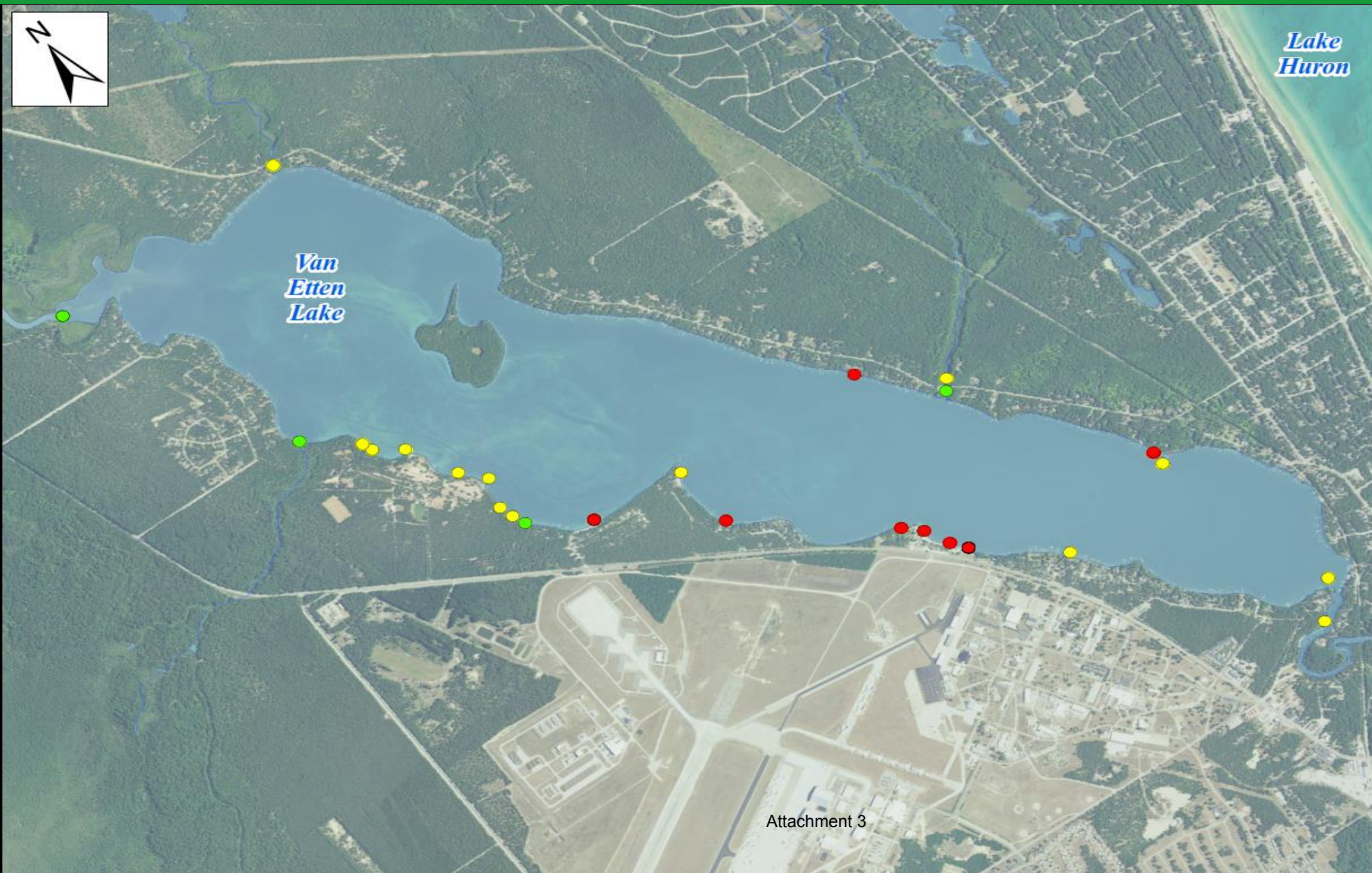
\*Samples collected between 2012-2018, Highest concentration shown

**VAN ETTEN LAKE  
SURFACE WATER  
TOTAL PFAS  
SAMPLING RESULTS**

**FORMER WURTSMITH  
AIR FORCE BASE  
IOSCO COUNTY,  
MICHIGAN**







**DRAFT** 11/30/2018

**Legend**  
**Surface Water Sample**  
**PFOS Concentration (ppt)**

- Non-Detect
- >0 - 12  
(Below Surface Water Criterion)
- >12  
(Above Surface Water Criterion)

\*Samples collected between 2012-2018, Highest concentration shown

**VAN ETTEN LAKE  
SURFACE WATER  
PFOS  
SAMPLING RESULTS**

**FORMER WURTSMITH  
AIR FORCE BASE  
IOSCO COUNTY,  
MICHIGAN**



# MDEQ PORE WATER SAMPLE RESULTS, AU SABLE AND CLARKS MARSH MAP

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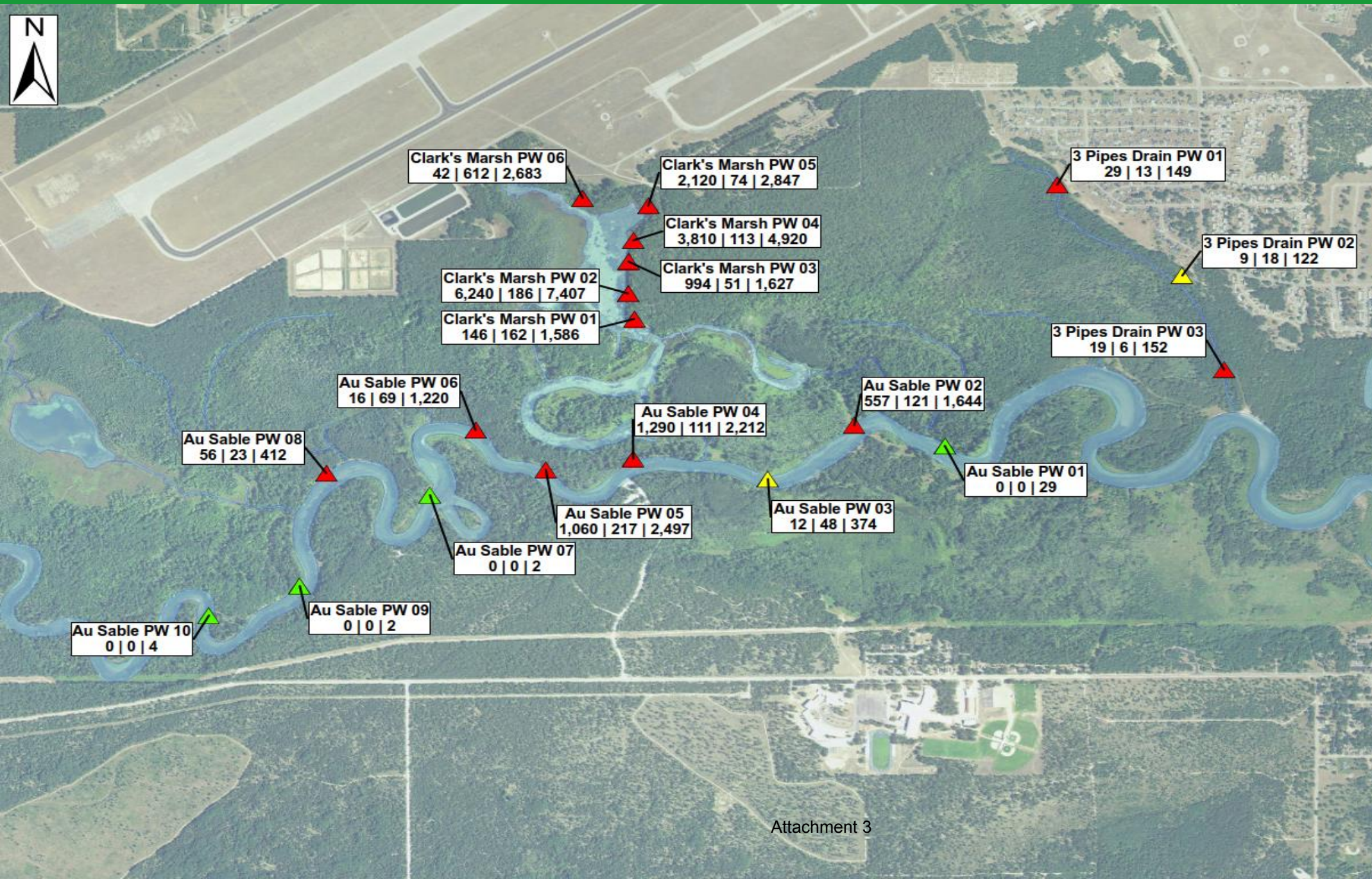
**DRAFT** 11/30/2018

**Legend**

- Pore Water Sample**  
**PFOS (ppt)**
- ▲ Non-Detect
  - ▲ >0 to 12 (Below Surface Water Criterion)
  - ▲ >12 (Above Surface Water Criterion)

ID
PFOS   PFOA   TOTAL PFAS

\*Pore water samples collected between 1.5-3 ft below ground surface



**2018 PORE WATER SAMPLING RESULTS - AU SABLE RIVER AND CLARK'S MARSH**

**FORMER WURTSMITH AIR FORCE BASE  
 IOSCO COUNTY,  
 MICHIGAN**



# AU SABLE RIVER & CLARK'S MARSH SURFACE WATER RESULTS

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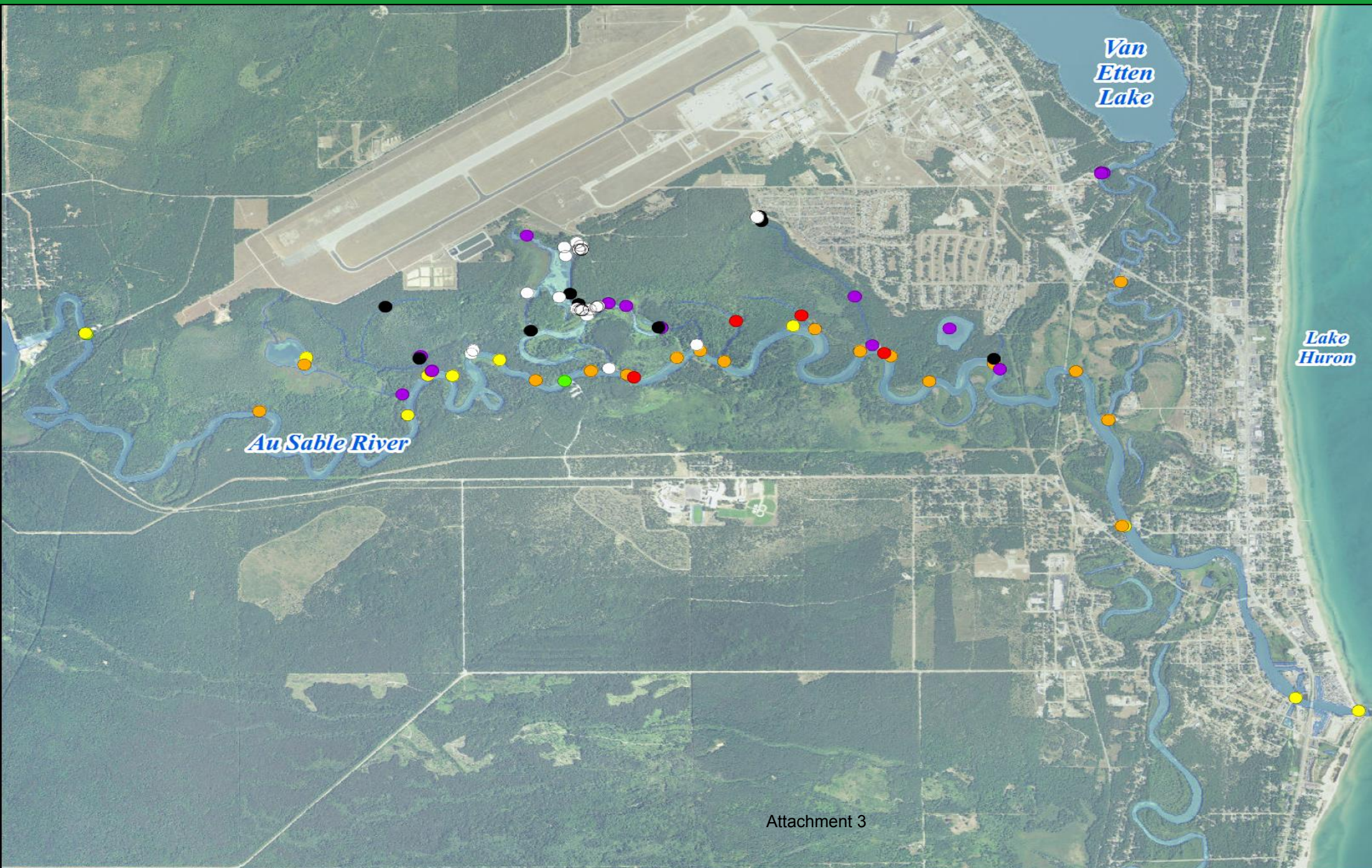
**DRAFT** 11/30/2018

### Legend

Surface Water Sample  
Total PFAS (ppt)

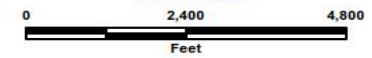
- Non-Detect
- <12
- 12 - <50
- 50 - <100
- 100 - <1,000
- 1,000 - <2,500
- >2,500

\*Samples collected between 2012-2018,  
Highest concentration shown



AU SABLE RIVER,  
CLARK'S MARSH  
& VAN ETTEN CREEK  
SURFACE WATER  
TOTAL PFAS  
SAMPLING RESULTS

FORMER WURTSMITH  
AIR FORCE BASE  
IOSCO COUNTY,  
MICHIGAN



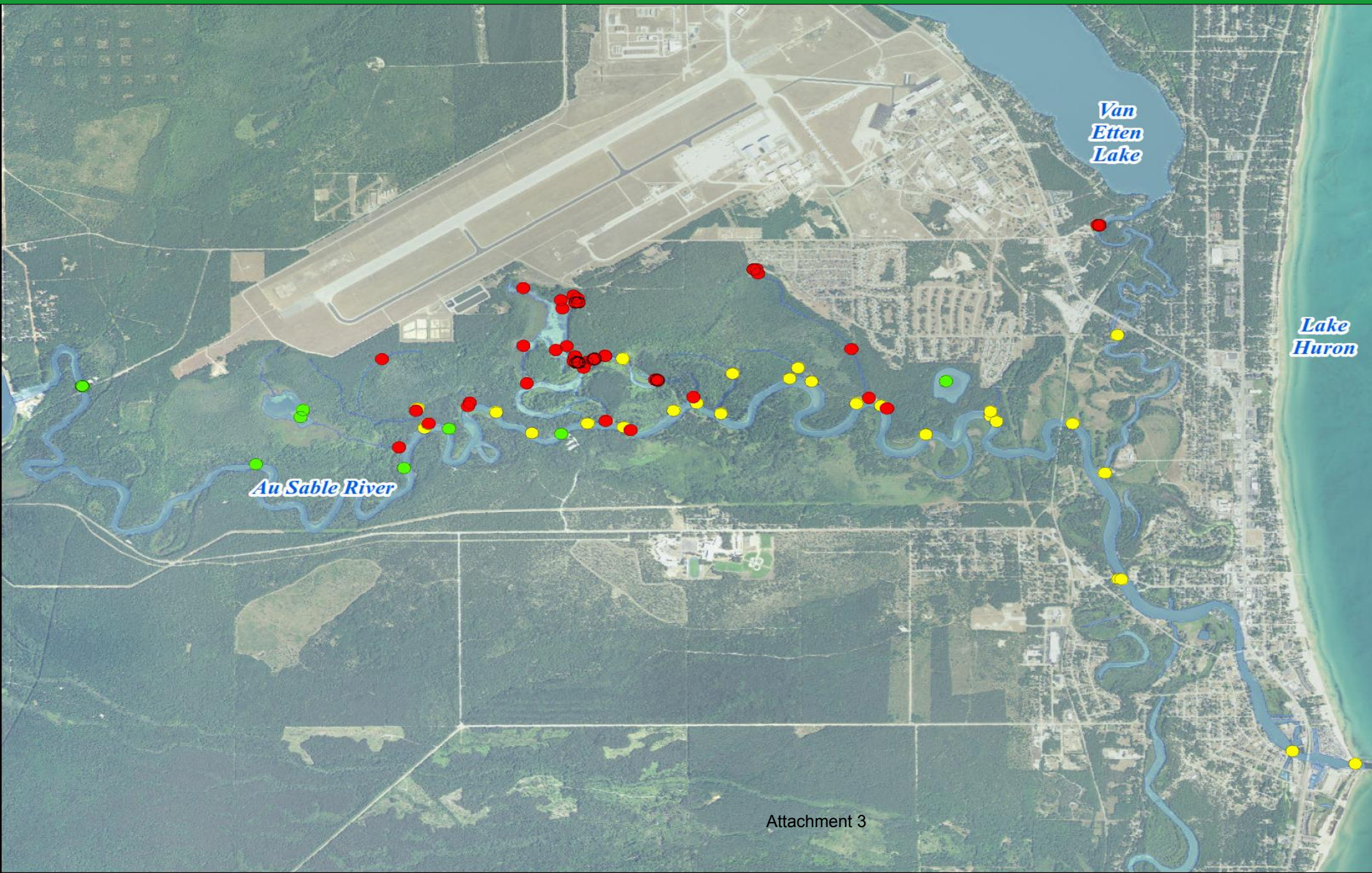


**DRAFT** 11/30/2018

**Legend**  
Surface Water Sample  
PFOS Concentration (ppt)

- Non-Detect
- >0 - 12 (Below Surface Water Criterion)
- >12 (Above Surface Water Criterion)

\*Samples collected between 2012-2018, Highest concentration shown



**AU SABLE RIVER,  
CLARK'S MARSH  
& VAN ETTEN CREEK  
SURFACE WATER  
PFOS  
SAMPLING RESULTS**

**FORMER WURTSMITH  
AIR FORCE BASE  
IOSCO COUNTY,  
MICHIGAN**

0 2,400 4,800  
Feet





Go to AF website: [www.afcec.af.mil/Home/BRAC/Pease](http://www.afcec.af.mil/Home/BRAC/Pease) Then Documents

# Pease PFOS/PFOA/PFBS Human Health Risk Screening

10/10/18  
RAB  
mtg.

Site History

Sources

Environmental  
Sampling Data

Access

- Where are PFOS/PFOA/PFBS coming from and going to?
- How and where might people come into contact with PFOS/PFOA/PFBS?
- How much is present at those locations?
- Are the levels at those locations unsafe?

**Battle Ready...Built Right!**



# USEPA PFOS/PFOA/PFBS Screening Levels - Pease

Screening levels developed for use at Pease by USEPA for PFOS/PFOA/PFBS – November 2017. Results in parts per trillion (ppt)

Receptor & Exposure Pathway	Adult		Child	
	PFOS/PFOA	PFBS	PFOS/PFOA	PFBS
Child Recreator (wading – sediment ingestion/dermal contact)			609,000	609,000,000
Child Recreator (swimming – surface water ingestion)			2,030	2,030,000
Adult Recreator (swimming – surface water ingestion)	18,300	18,300,000		
Fish Consumption (in fish tissue)	7,220	7,220,000	5,210	5,210,000
Shellfish Consumption (in shellfish tissue)	6,780	6,780,000	5,590	5,590,000
Composite Worker	1,640,000	1,640,000,000		

***Battle Ready...Built Right!***





# CONGRESSMAN DAN KILDEE

Working with Republicans and Democrats, Congressman Dan Kildee has successfully:

- Introduced legislation to provide health care and disability benefits for Wurtsmith veterans exposed to per- and polyfluoroalkyl substances (PFAS) and volatile organic compounds.
- Funded a national health study on the impacts of PFAS exposure on veterans and their families;
- Secured \$1 million in federal funding to connect Oscoda homes to municipal drinking water.
- Attained federal funding to provide safe drinking water for Oscoda schools.
- Pushed the federal government and U.S. Department of Defense (DoD) to act more quickly to clean up Wurtsmith and all federal facilities.

## **Health Benefits for Military Families**

In September 2018, Congressman Kildee, along with Michigan's U.S. Senators Debbie Stabenow and Gary Peters, introduced two bills to ensure that veterans and their families exposed to toxic chemicals at military installations get the health care services and benefits they need through the U.S. Department of Veterans' Affairs (VA).

The *Veterans Exposed to Toxic PFAS Act* (VET PFAS Act) would require the VA to cover treatment of certain health conditions related to per- and polyfluoroalkyl substances (PFAS) exposure. Under this bill, illnesses associated with PFAS exposure will be considered a service-connected disability, making veterans and their families exposed to PFAS eligible for disability payments and medical treatment from the VA.

The *Care for Veterans Act* would ensure that veterans exposed to volatile organic compounds including trichloroethylene (TCE) at the former Wurtsmith Air Force Base will also receive related health and disability benefits.

## **Health Study**

Congressman Kildee secured \$20 million to conduct a study on the health impacts of exposure to PFAS at military installations like the former Wurtsmith Air Force Base. The study is currently being conducted through the Centers for Disease Control and Prevention's Agency for Toxic Substances and Disease Registry and will take at least five years to complete. The study will link the health issues veterans and their families are experiencing from PFAS exposure so they can be provided with the health care they need.

## **USDA Rural Development Emergency Water Grants and Funding to Clean Up PFAS**

Congressman Kildee secured \$1 million in federal funding to connect homes to municipal drinking water, providing safe drinking water to residents more quickly.

Congressman Kildee secured federal funding to ensure Oscoda schools have access to safe drinking water.

Congressman Kildee has repeatedly asked the DoD to expedite PFAS clean up around Wurtsmith and has met with the Secretary of the Air Force to secure more funding. This year, Congressman Kildee introduced bipartisan legislation with Reps. Upton, Dingell and Walberg to require federal entities, including the Air Force, to submit plans on how they plan to clean up PFAS contamination more quickly.

## **Need Help?**

If you are experiencing an issue with your drinking water or receiving your veterans' benefits, please contact Jacob Bennett in Congressman Kildee's Flint office at 810-238-8627.



# AIR FORCE CIVIL ENGINEER CENTER

## Restoration Advisory Board Comment Form

### Former Wurtsmith Air Force Base 5 December 2018

Thank you for serving on the former Wurtsmith AFB RAB. Your service and participation is a key component in the restoration process. Your feedback will help us improve future RAB orientations, training sessions and meetings. Please take a moment to complete this short comment form. Leave completed forms at your seat at the end of the meeting or return to a member of AFIMSC Public Affairs. Thank you!

#### INSTRUCTIONS

Below is a guide for rating the effectiveness of the RAB meeting. Check the corresponding box that best describes your feelings about each statement listed:

#### MEETING EVALUATION

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Agenda content was comprehensive and relevant.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Presenters were effective.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Satisfied with meeting venue and set-up.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Overall, the meeting was worthwhile.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

#### OVERALL FEEDBACK

##### STRENGTHS

What is the idea/topic you heard during the meeting that you found the most valuable and/or would like to discuss more?



# AIR FORCE CIVIL ENGINEER CENTER

## Restoration Advisory Board Comment Form

### OVERALL FEEDBACK

#### STRENGTHS

What did you like best about the meeting?

#### IMPROVEMENTS

What did you like least about the meeting?

What topics would you like to see discussed at future RAB meetings or training sessions?

What specific topics do you think would be helpful to have training sessions on?

#### ADDITIONAL COMMENTS

Please leave any additional questions here regarding RAB processes and rules and/or the ongoing restoration activities at Wurtsmith.