

Air Force Civil Engineer Center



Wurtsmith Restoration Advisory Board Meeting

5 December 2018
Matt Marrs
AFCEC/CIB



Wurtsmith RAB



Welcome





Wurtsmith RAB Agenda



Welcome



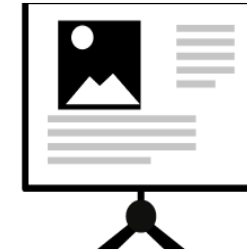
- Introductions
- Ground rules

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



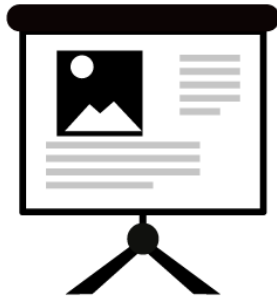
Awarded
LF30/31
project



Wurtsmith RAB Stakeholder Updates



Community RAB Members



Presentations



Wurtsmith RAB Central GAC PTS Update

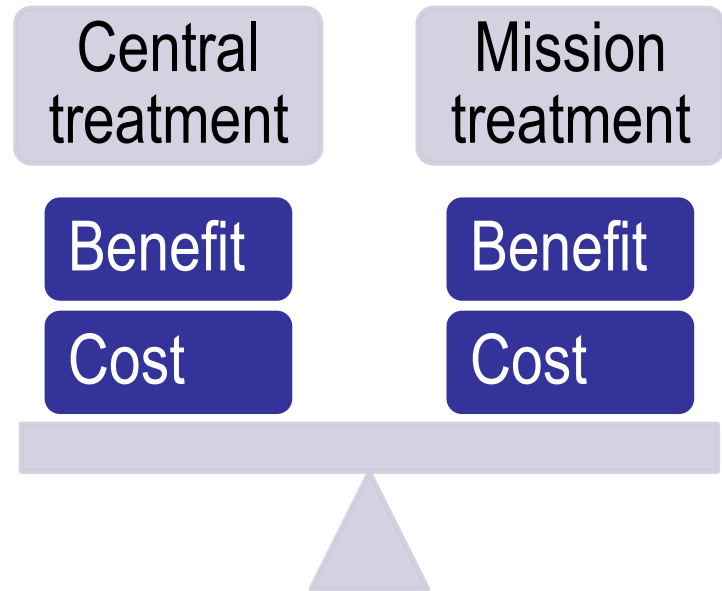


Central GAC PTS

- ✓ Arrow Street
- ✓ Benzene Plant
- Mission Street



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

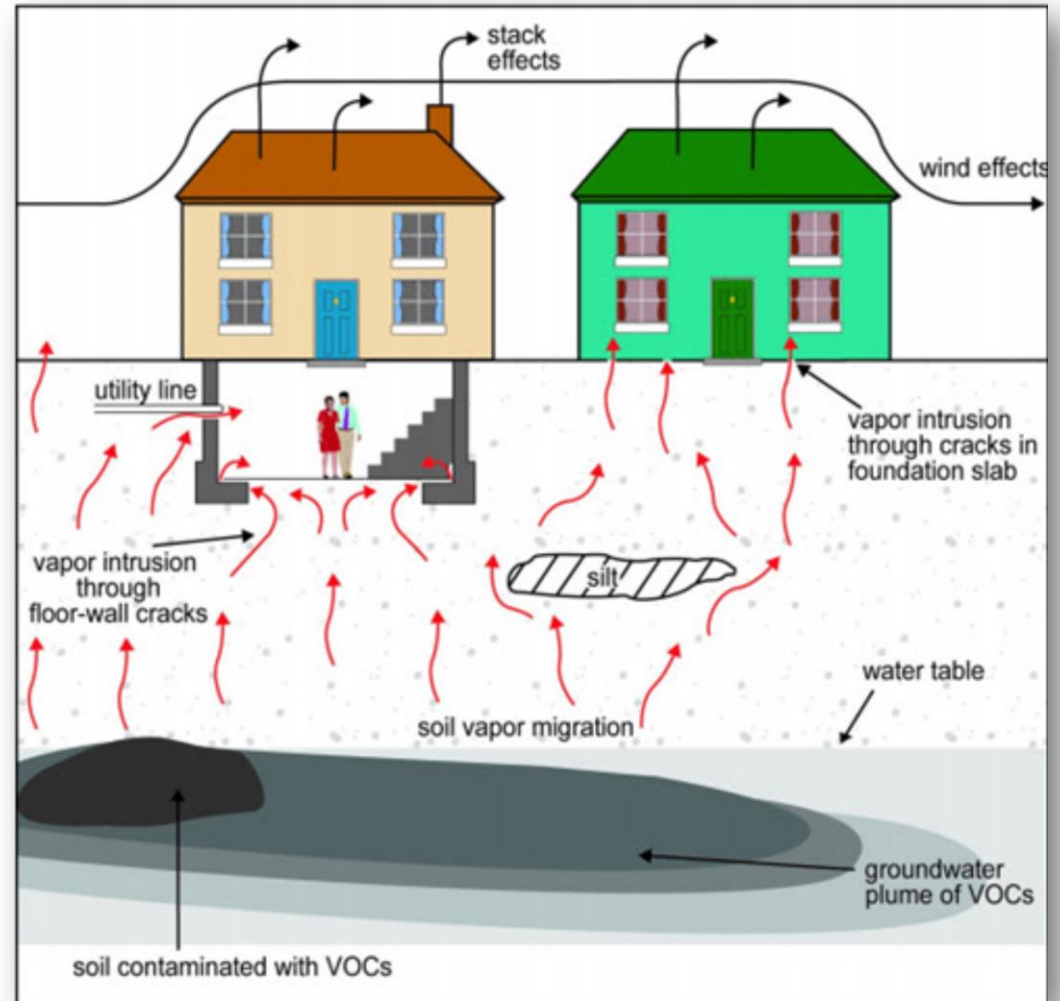


Vapor Intrusion Assessment

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

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

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

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



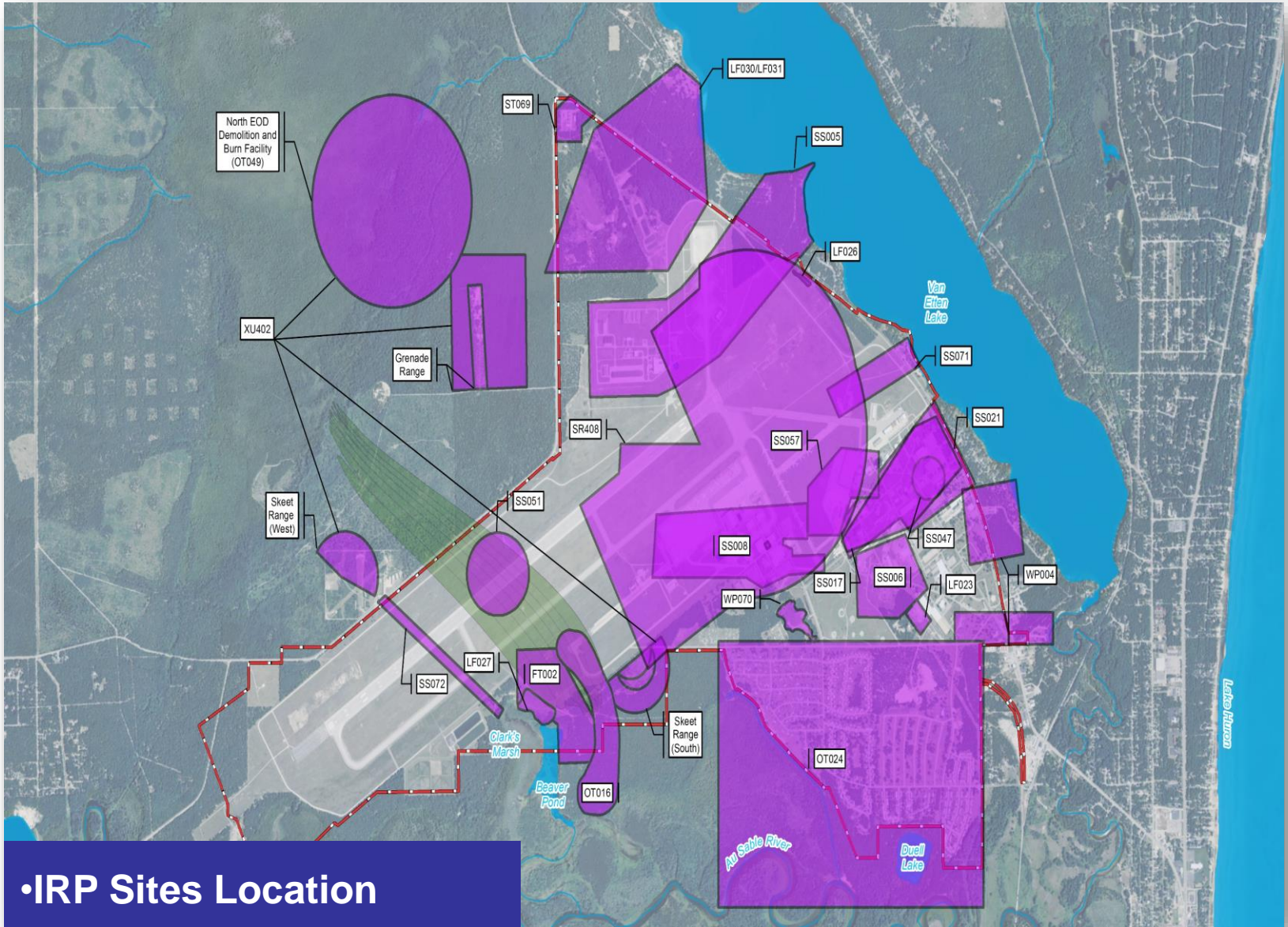
Vapor Intrusion Investigation Objectives

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

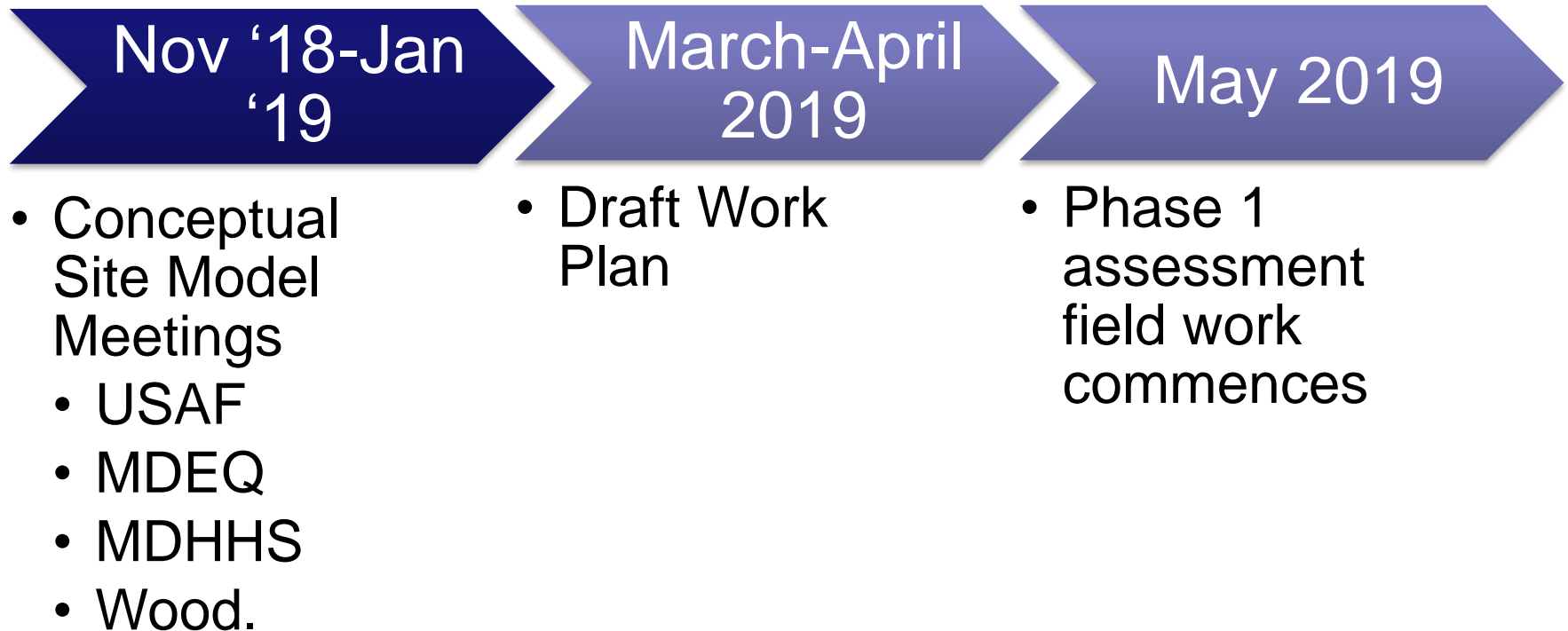
Or no further investigation



Wurtsmith RAB VI Investigation



VI Phase 1 Assessment Schedule





Vapor Intrusion Investigation

VI Phase 1 Assessment (Preliminary)

What we know so far:

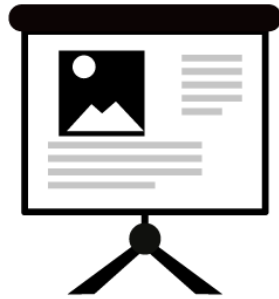
- Collaborative approach: USAF, MDEQ and MDHHS
- 16/25 Sites are less likely to have VI Exposure Pathway because of at least one of the following:
 - Absence of volatile contaminants
 - Current and future land use (no buildings)
 - Contaminant is below a layer of clean GW
 - 9/25 Sites considered for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



Wurtsmith RAB



 **Break**



Presentations (MDEQ)



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



Conclusion & Adjournment



FORMER WURTSMITH AIR FORCE BASE – RAB MEETING

GROUNDWATER AND RESIDENTIAL HEAT MAPS



DRAFT

11/29/2018

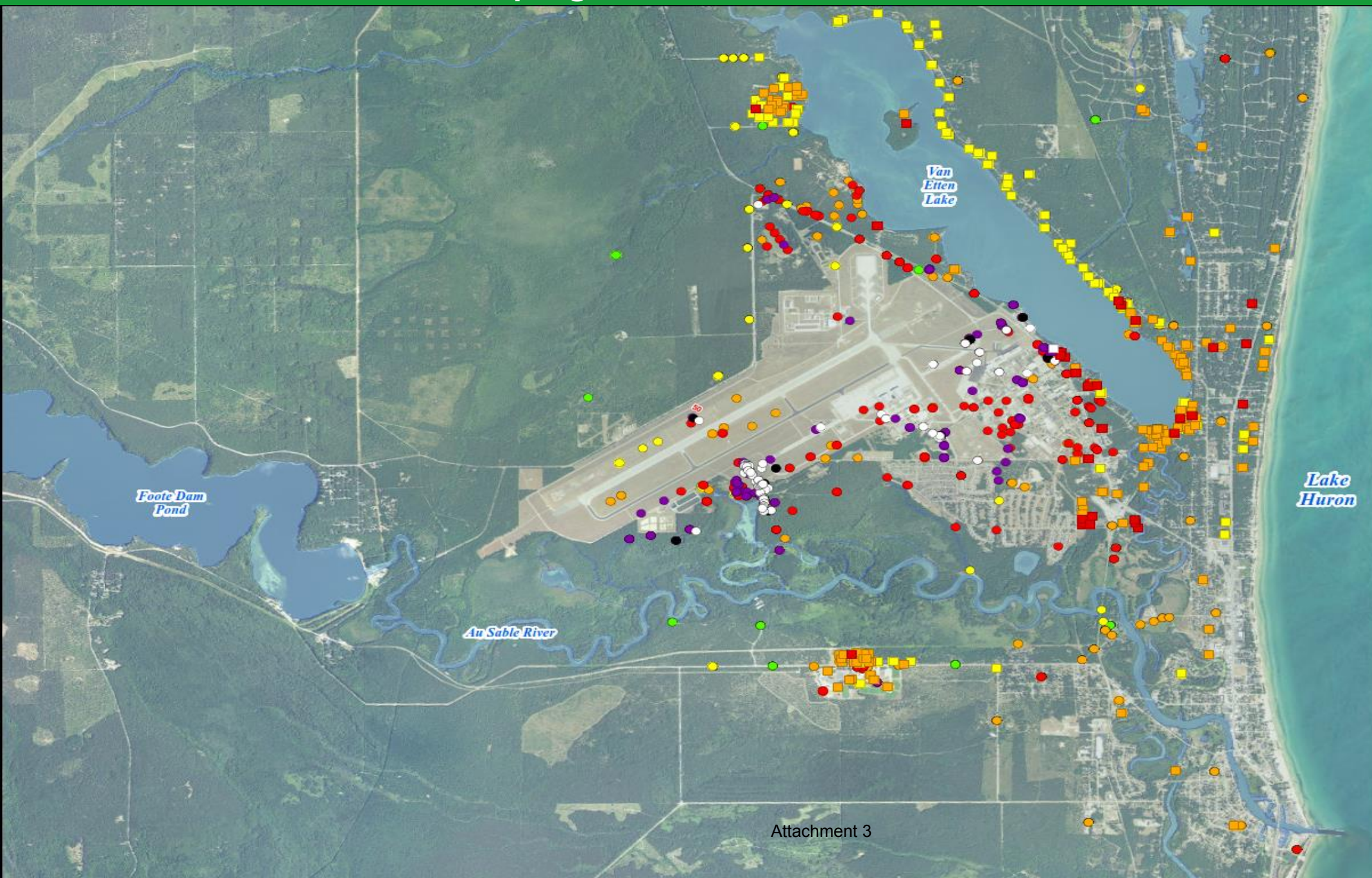
Total PFAS (ppt)

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

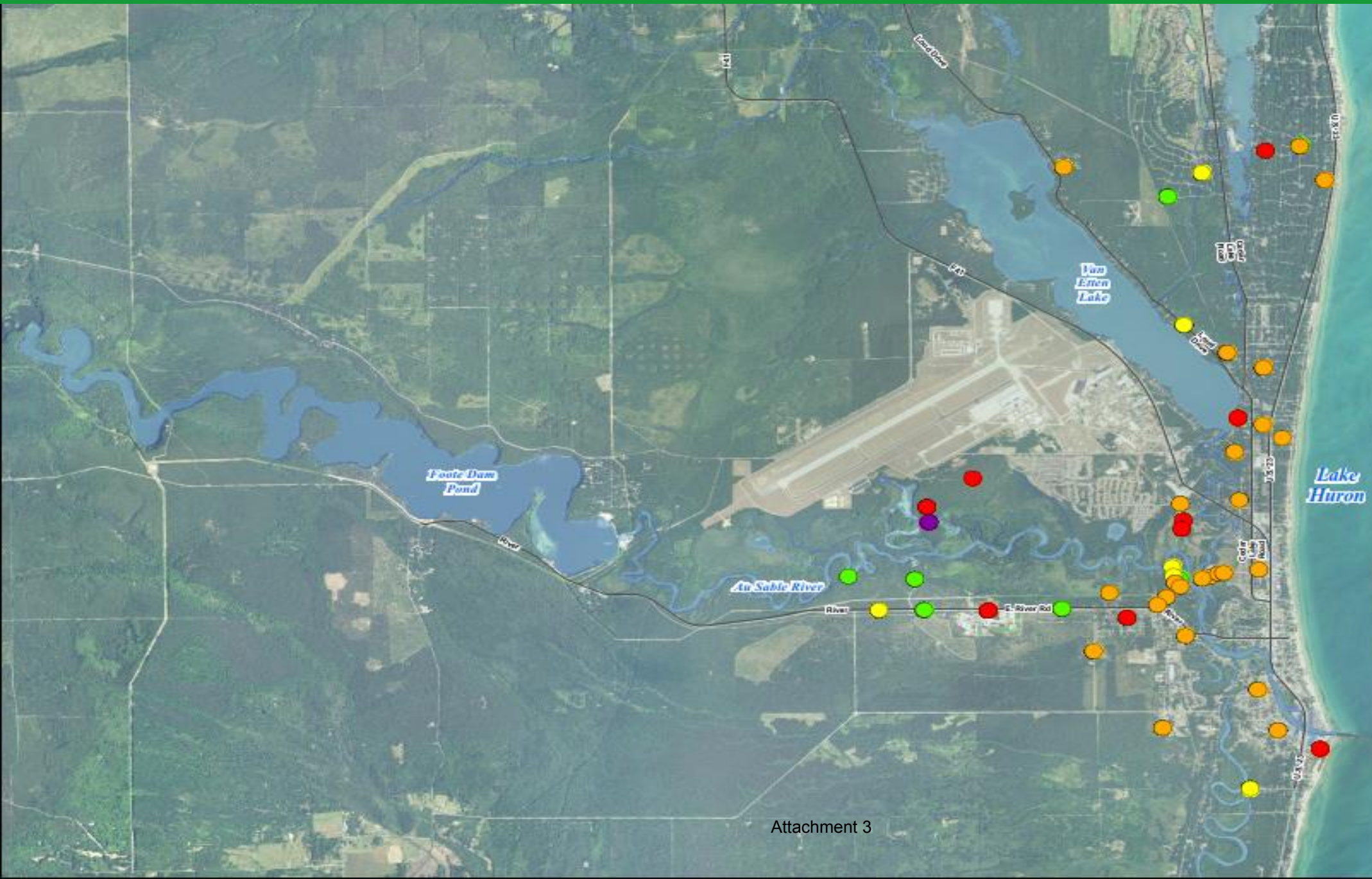


GROUNDWATER AND RESIDENTIAL SAMPLING RESULTS TOTAL PFAS

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



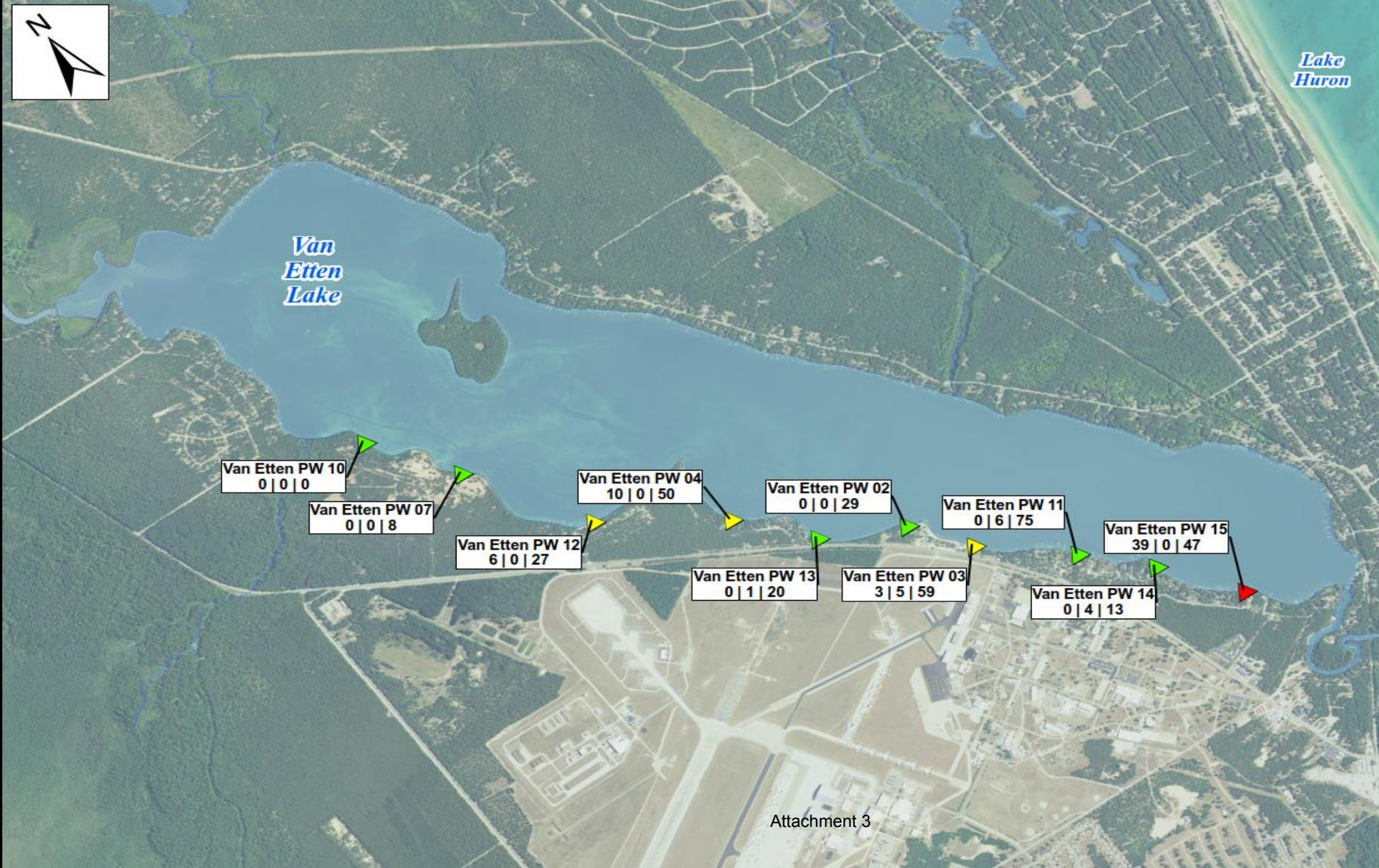
DRAFT 11/30/2018

Legend

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

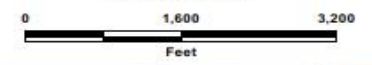
ID
PFOS PFOA TOTAL PFAS

*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 PW 10
0 | 0 | 0

Van Etten PW 07
0 | 0 | 8

Van Etten PW 12
6 | 0 | 27

Van Etten PW 04
10 | 0 | 50

Van Etten PW 13
0 | 1 | 20

Van Etten PW 02
0 | 0 | 29

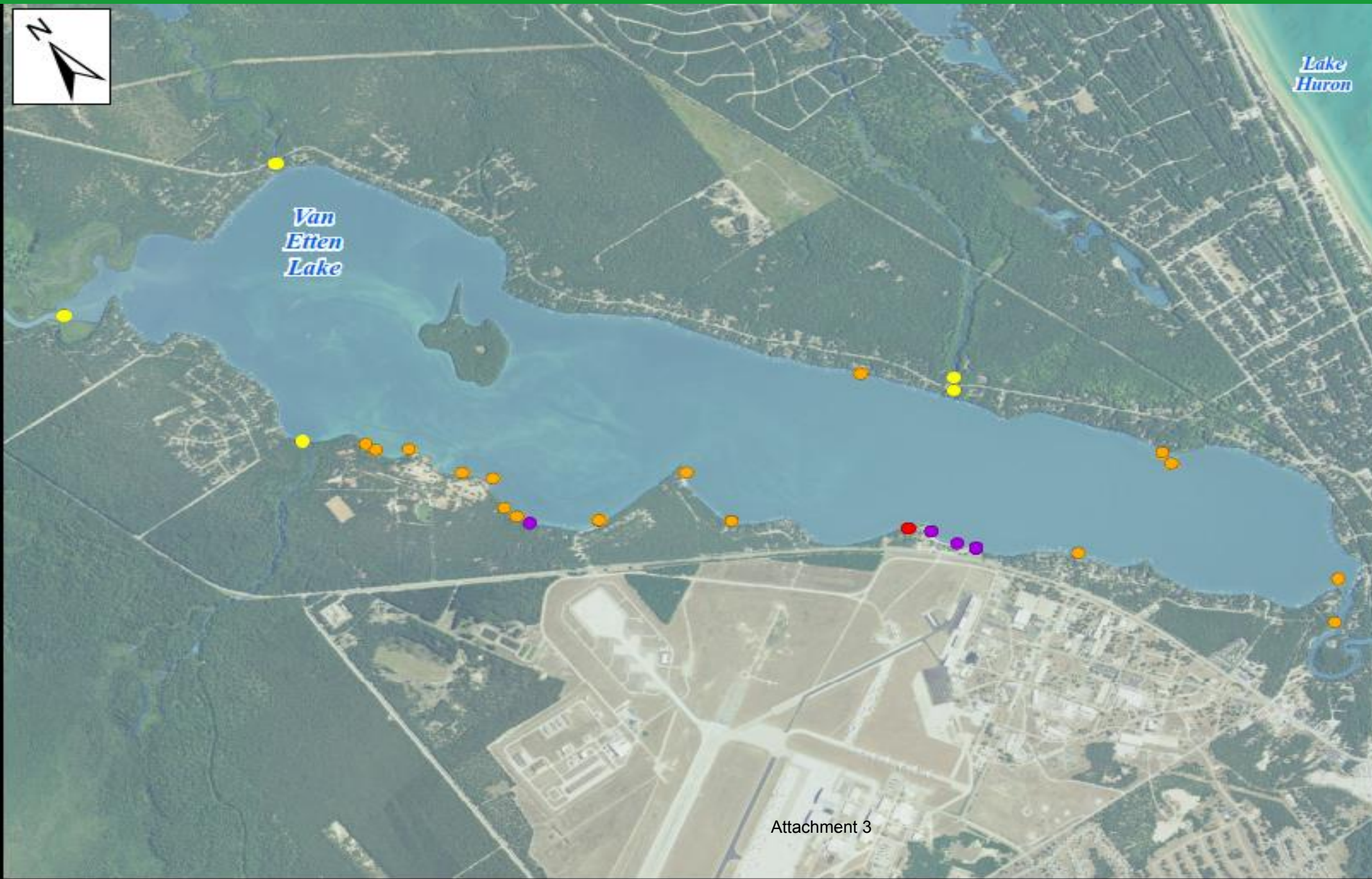
Van Etten PW 03
3 | 5 | 59

Van Etten PW 11
0 | 6 | 75

Van Etten PW 14
0 | 4 | 13

Van Etten PW 15
39 | 0 | 47

VAN ETTEN LAKE SURFACE WATER RESULTS



DRAFT 11/30/2018

Legend
Surface Water Sample
Total PFAS (ppt)

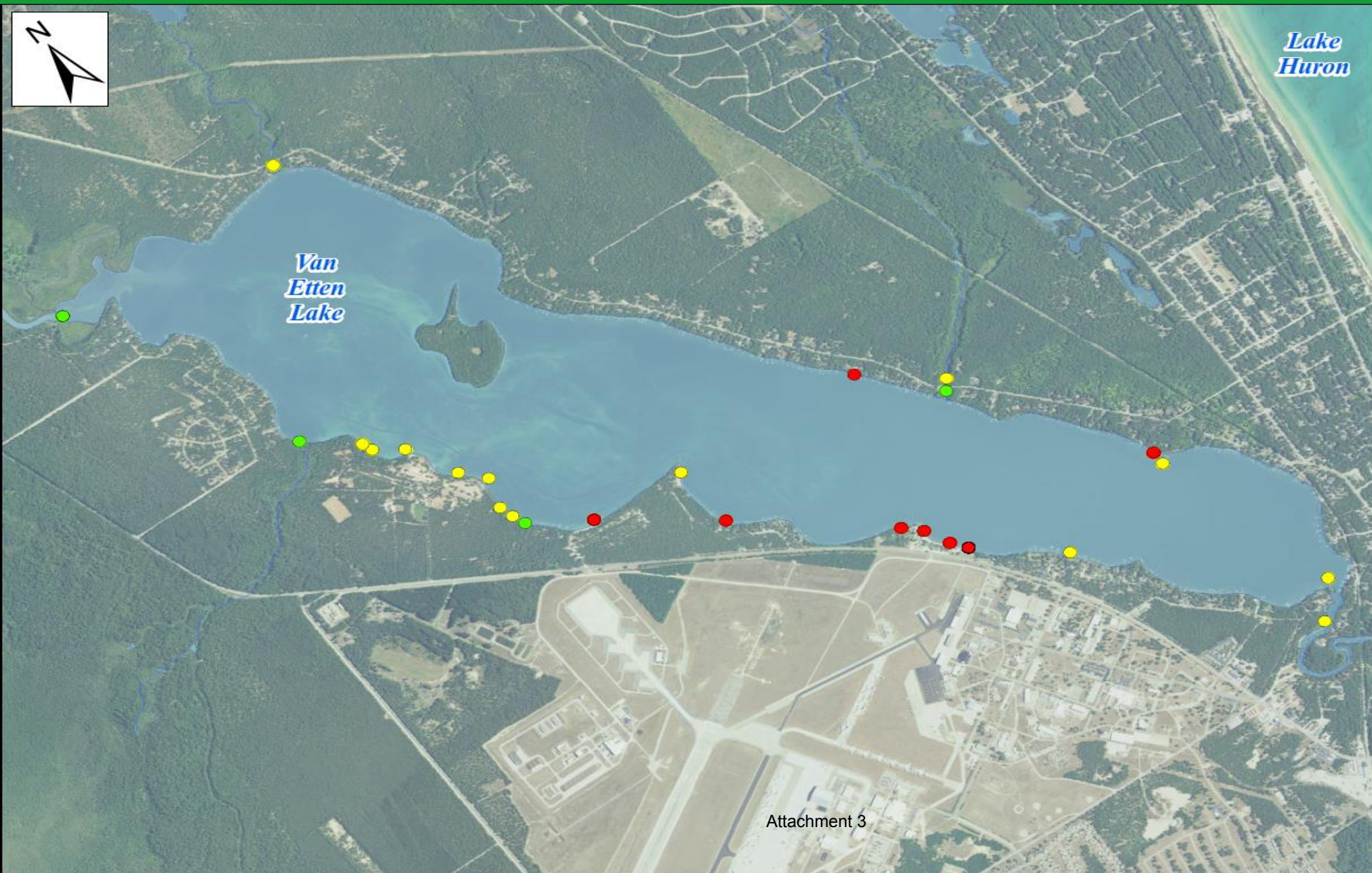
- Non-Detect
- <12
- 12 - <50
- 50 - <100
- 100 - <1,000
- 1,000 - <2,500
- >2,500

*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)

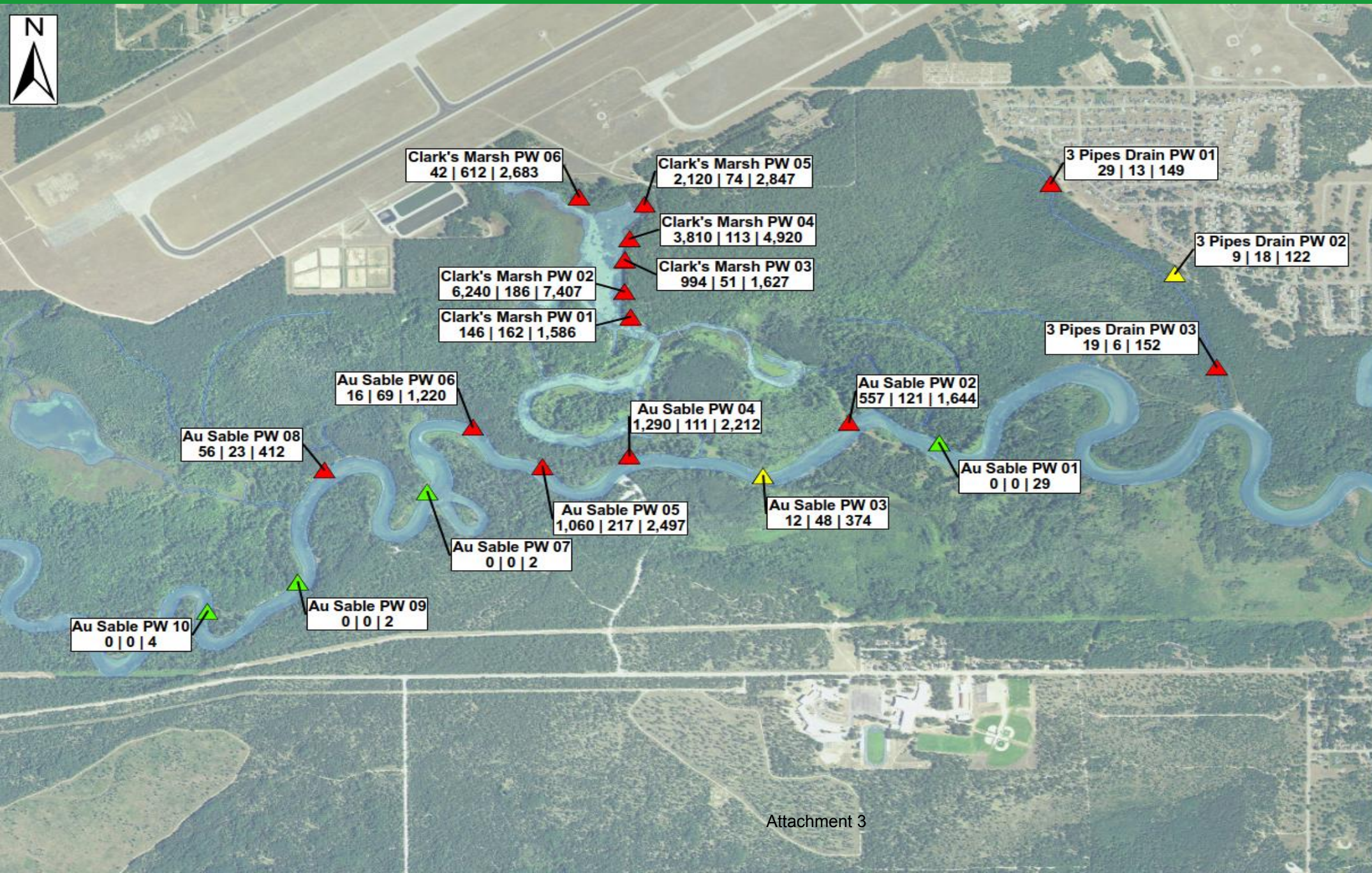
*Samples collected between 2012-2018, Highest concentration shown

**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



Legend

Pore Water Sample

PFOS (ppt)

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

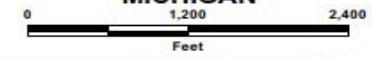
ID

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



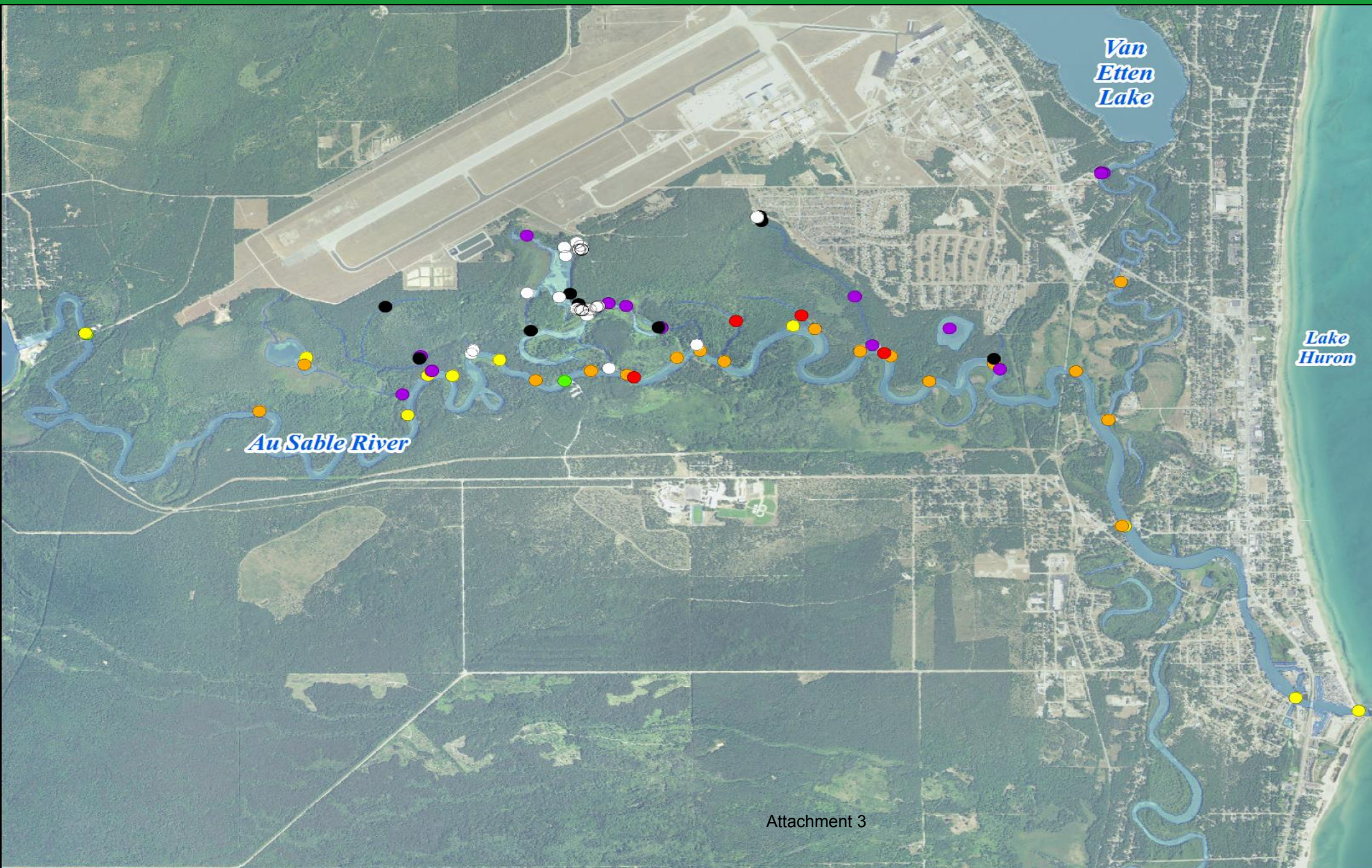
DRAFT 11/30/2018

Legend

Surface Water Sample
Total PFAS (ppt)

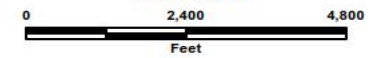
- Non-Detect
- <12
- 12 - <50
- 50 - <100
- 100 - <1,000
- 1,000 - <2,500
- >2,500

*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



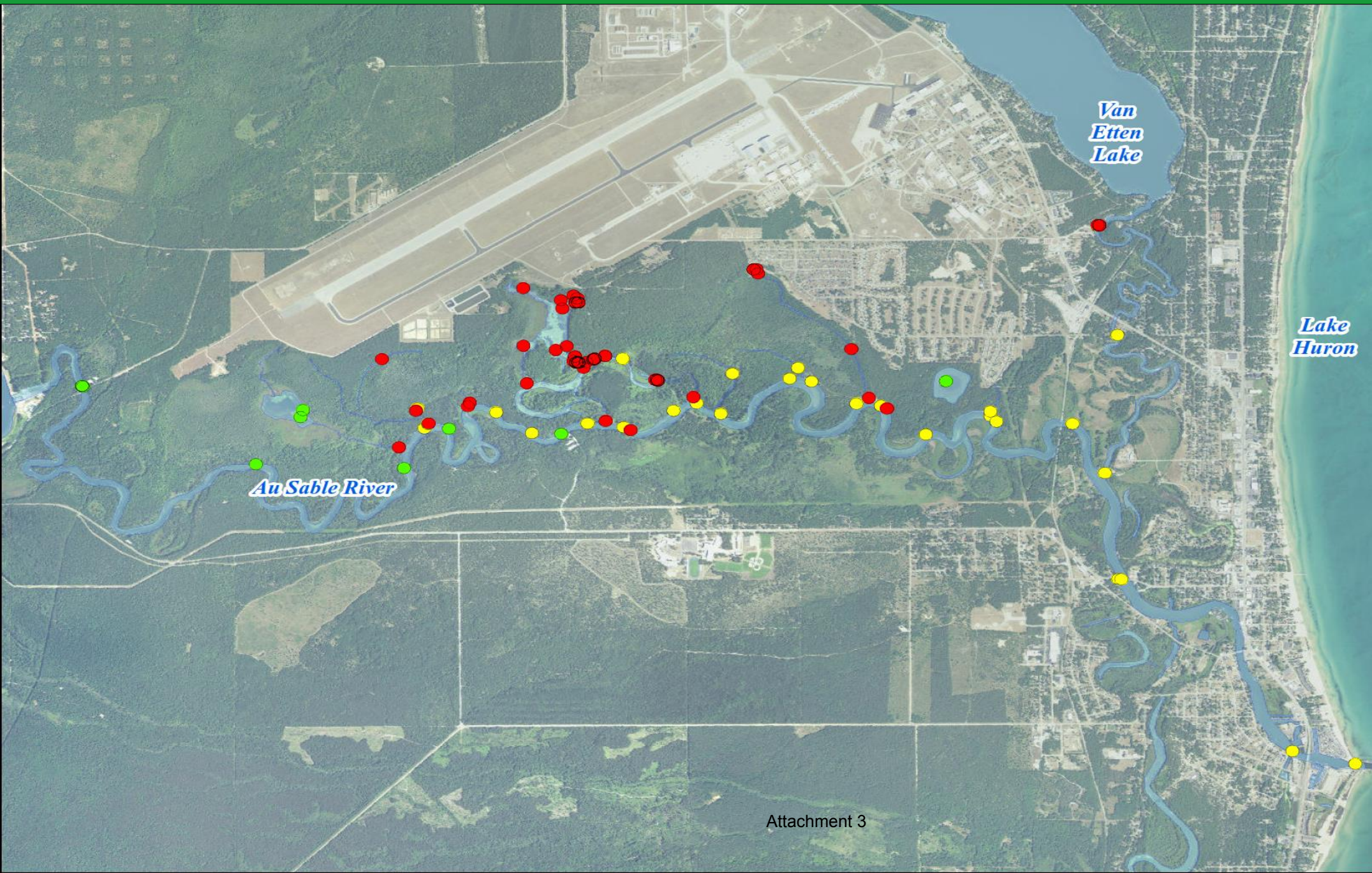


DRAFT 11/30/2018

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

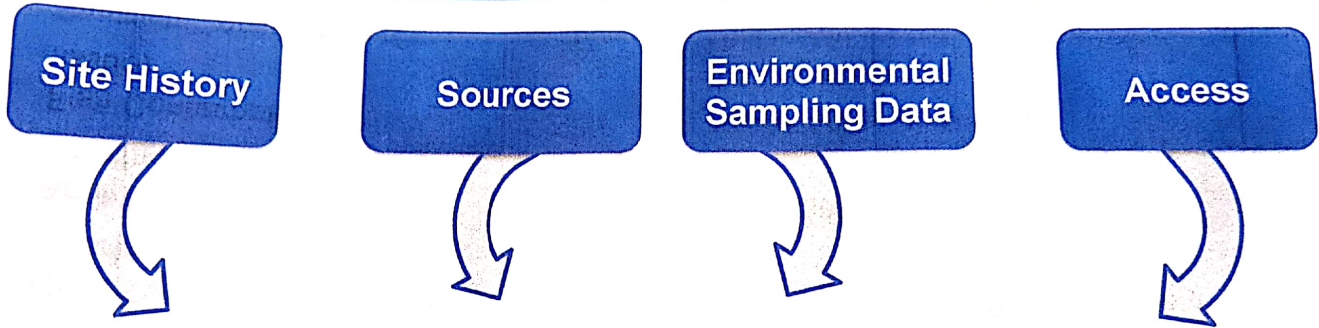




Go to AF website: www.afcec.af.mil/Home/BRAC/Pease Then Documents

Pease PFOS/PFOA/PFBS Human Health Risk Screening

10/10/18
RAB
mtg.



- 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?



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.