

WURTSMITH AIR FORCE BASE – PUBLIC MEETING

Robert Delaney

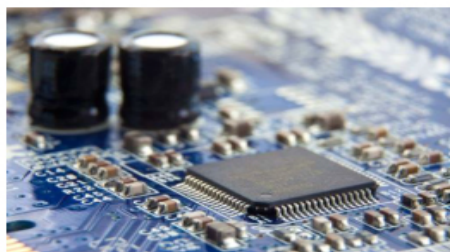
Remediation and Redevelopment Division (MDEQ)

June 14, 2016



PFC Use in Different Industries

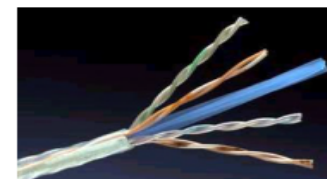
Examples of Fluoropolymer Applications



Semiconductor Manufacturing



Non-stick Coatings for Cookware and Small Electrical Appliances



Data Wire & Cabling



Low Permeable Automotive Fuel Hose



Electronics



Chemical and Pharma Processing Valves, Lined Piping, Tanks



Aerospace Materials - Hydraulic Tubing Wire & Cabling

- <http://fluorocouncil.com/PDFs/Industrial-Reliance-on-FluoroTechnology.pdf>
- OECD (2013) Synthesis Paper on Per- and Polyfluorinated Chemicals (PFCs) (https://www.oecd.org/env/ehs/risk-management/PFC_FINAL-Web.pdf)

PFC Use in Different Industries

Examples of Fluorinated Polymer and Non-Polymer (Surfactants) Applications



**Protective Health
Care Garments**



**Architectural
Coatings**



**Protective Finishes on
Apparel and Textiles**



Industrial Firefighting



Paint

- <http://fluorocouncil.com/PDFs/Industrial-Reliance-on-FluoroTechnology.pdf>
- OECD (2013) Synthesis Paper on Per- and Polyfluorinated Chemicals (PFCs) (https://www.oecd.org/env/ehs/risk-management/PFC_FINAL-Web.pdf)

PFCs at Wurtsmith

- The primary source of PFCs at Wurtsmith are attributed to AFFF* use.
- Prior to the invention of AFFF, Protein Foam was widely used – but not as effective.
- The Fluorine and Carbon bond is a very strong chemical bond, which makes PFCs resistant to heat, oxidation and reduction.
- PFCs are persistent in the environment (i.e. very difficult to remediate and remove).

* - Aqueous Film Forming Foam

Why AFFF?

1967 – USS Forrestal fire
Protein Foam



134 sailors **died**, 161 sailors **injured**

1978 – DC-10 Crash LAX
3M AFFF



196 lives **saved** out of 200

Former Wurtsmith Air Force Base

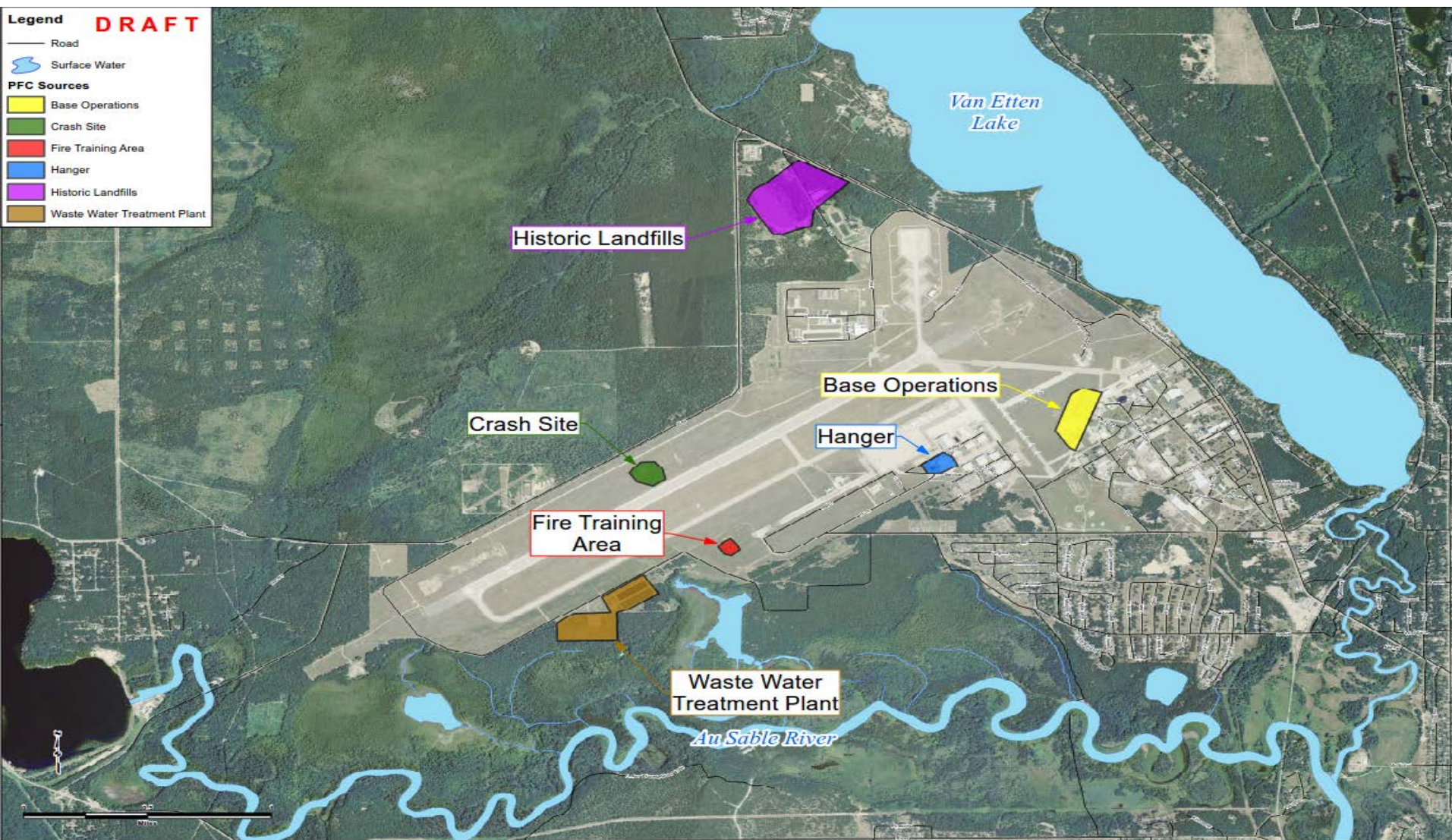
Site Layout
DRAFT

Legend

- Former Wurtsmith AFB Installation Boundary
- Road
- Surface Water



Identified PFC Sources

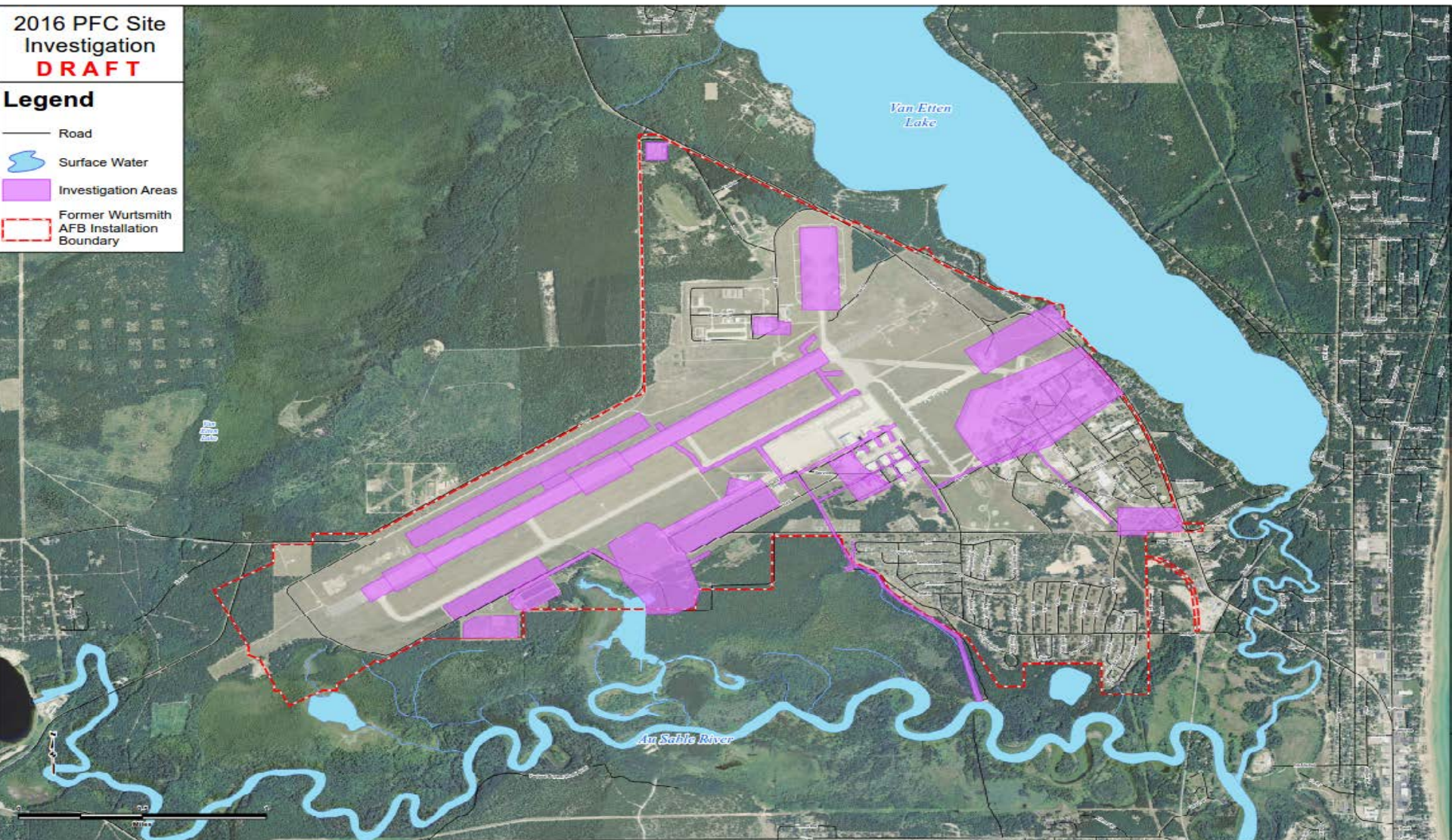


2016 PFC Site Investigation

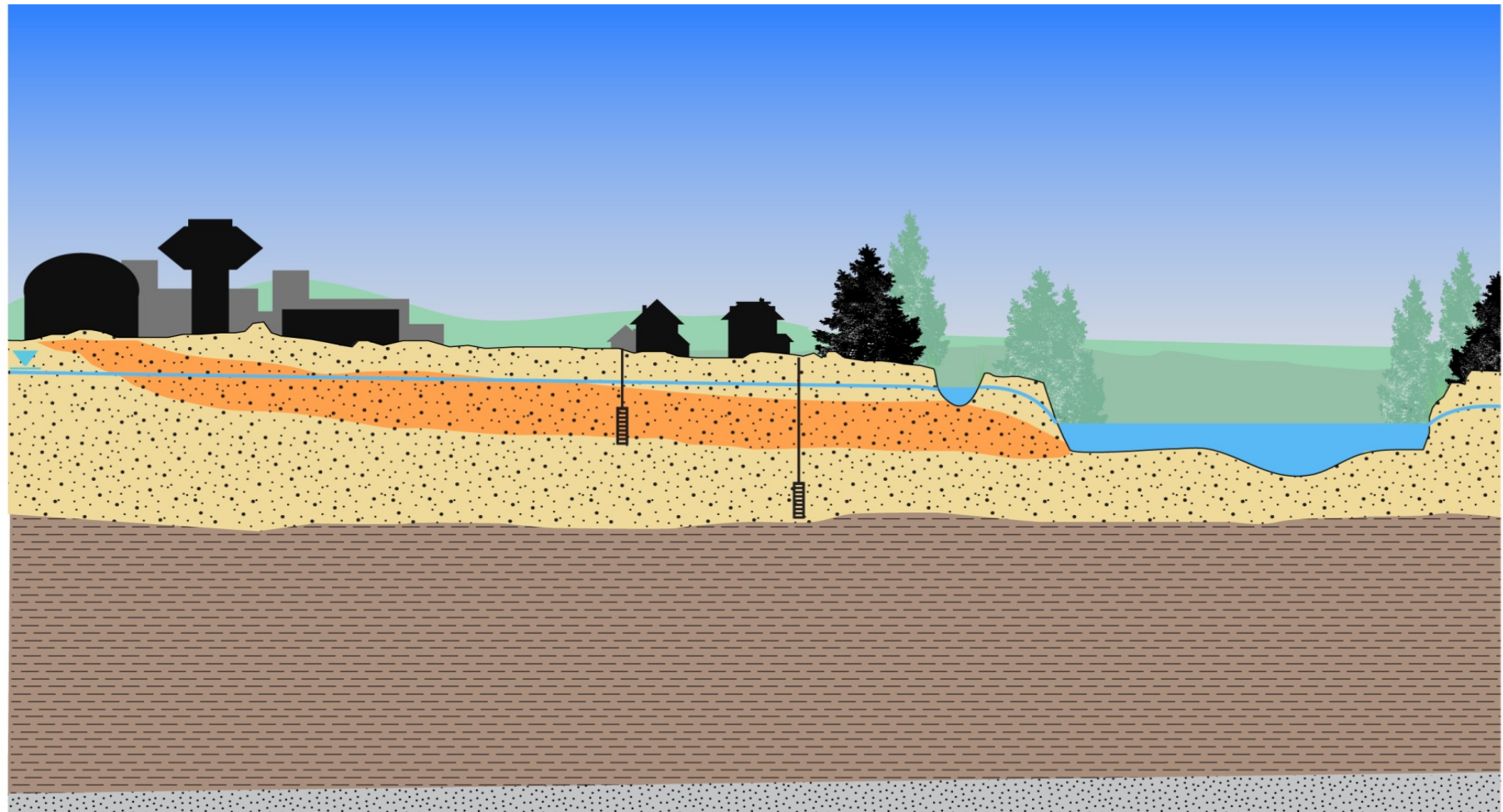
2016 PFC Site
Investigation
DRAFT

Legend

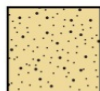
- Road
- Surface Water
- Investigation Areas
- Former Wurtsmith AFB Installation Boundary



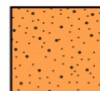
Conceptual Contaminant Migration



Surface Water



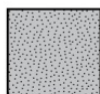
Coarse Grained
Sediment



Coarse Grained
Sediment With
Contaminant
Plume



Fine Grained
Sediment



Bed Rock



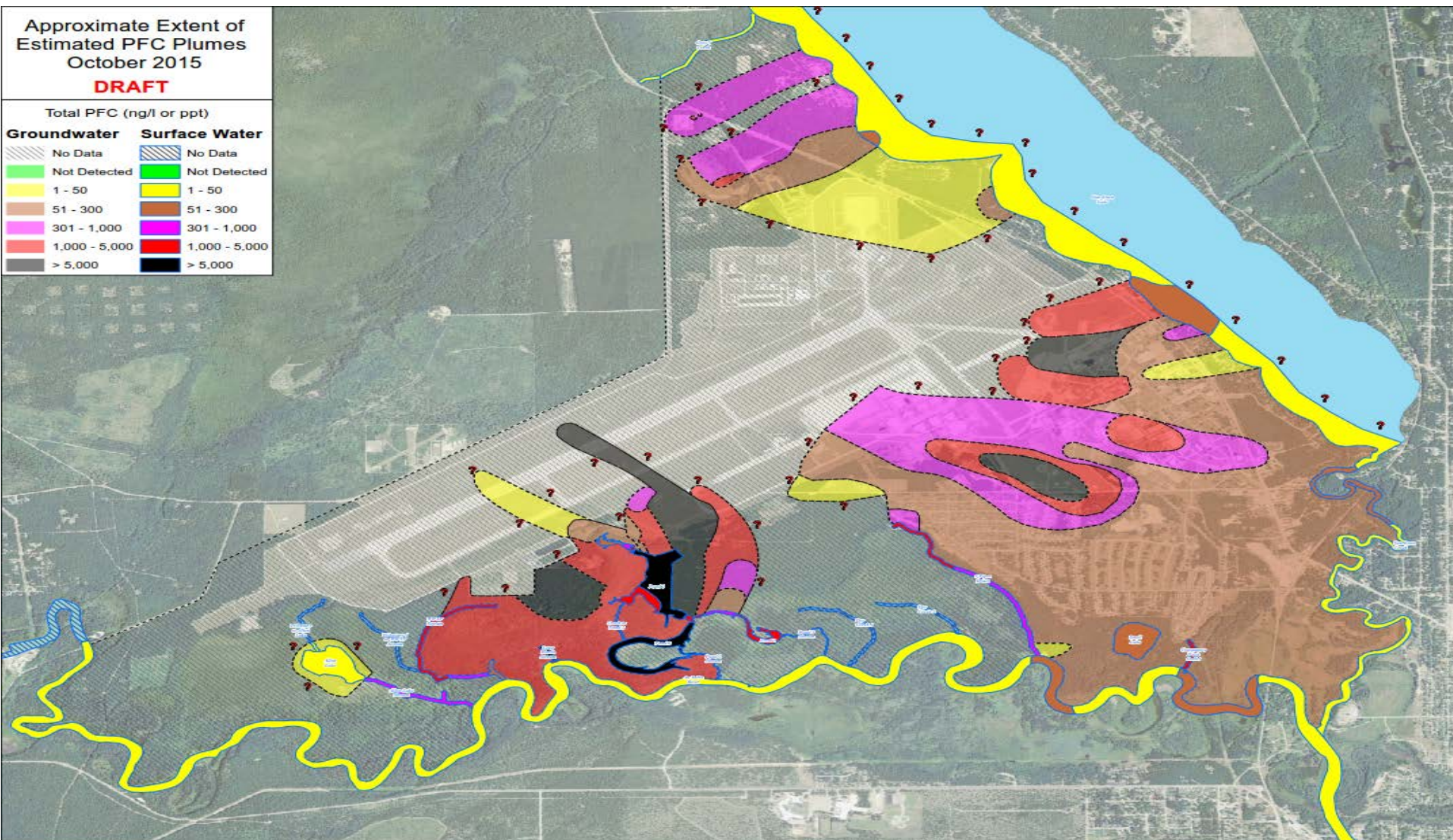
Groundwater Surface



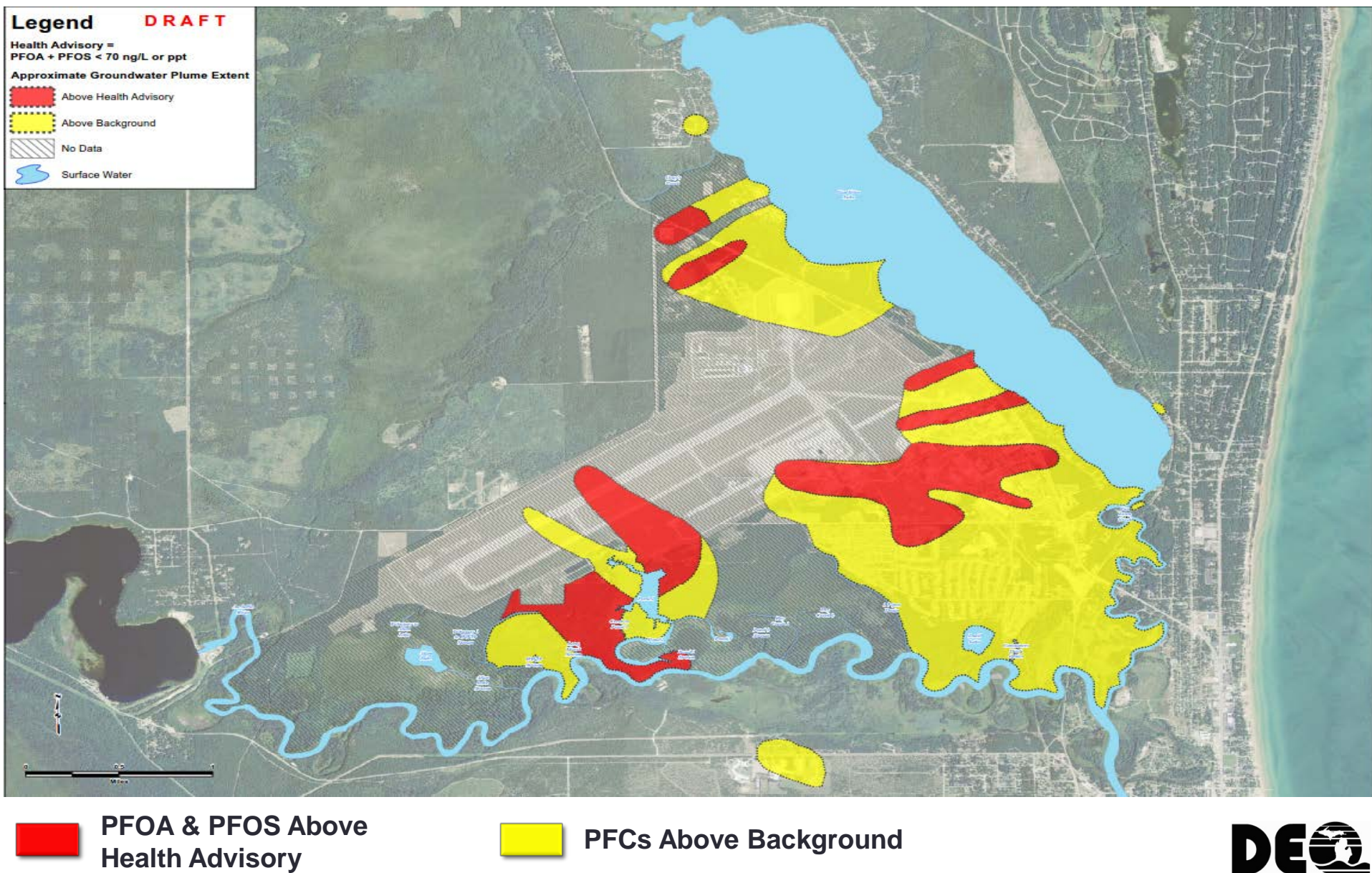
Well



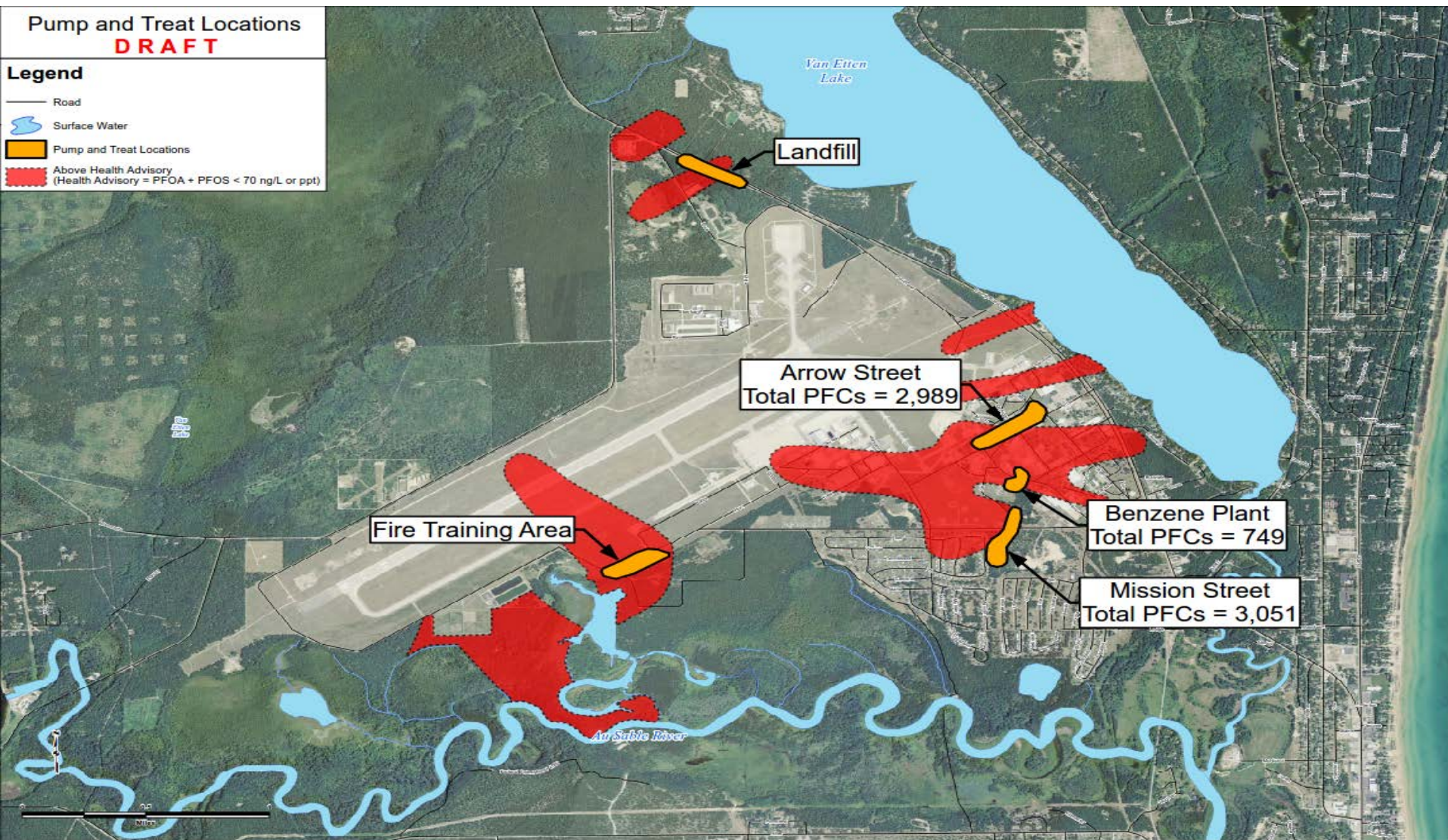
Approximate Extent of PFC Contamination



PFC Contamination Above Health Advisory



WAFB Pump and Treat Systems (1978 - Present)








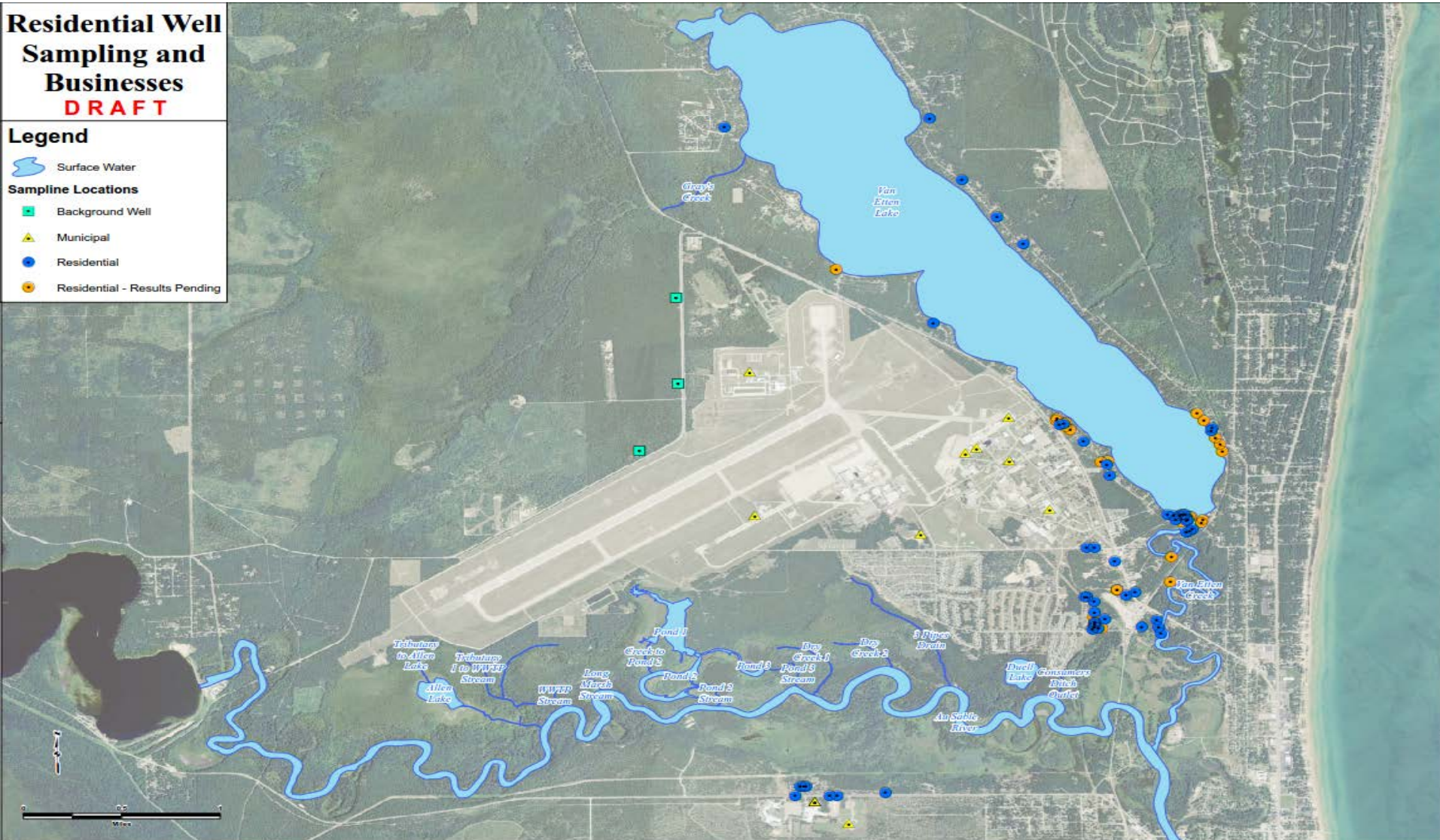
 Above Health Advisory

Drinking Water Sampling to Date

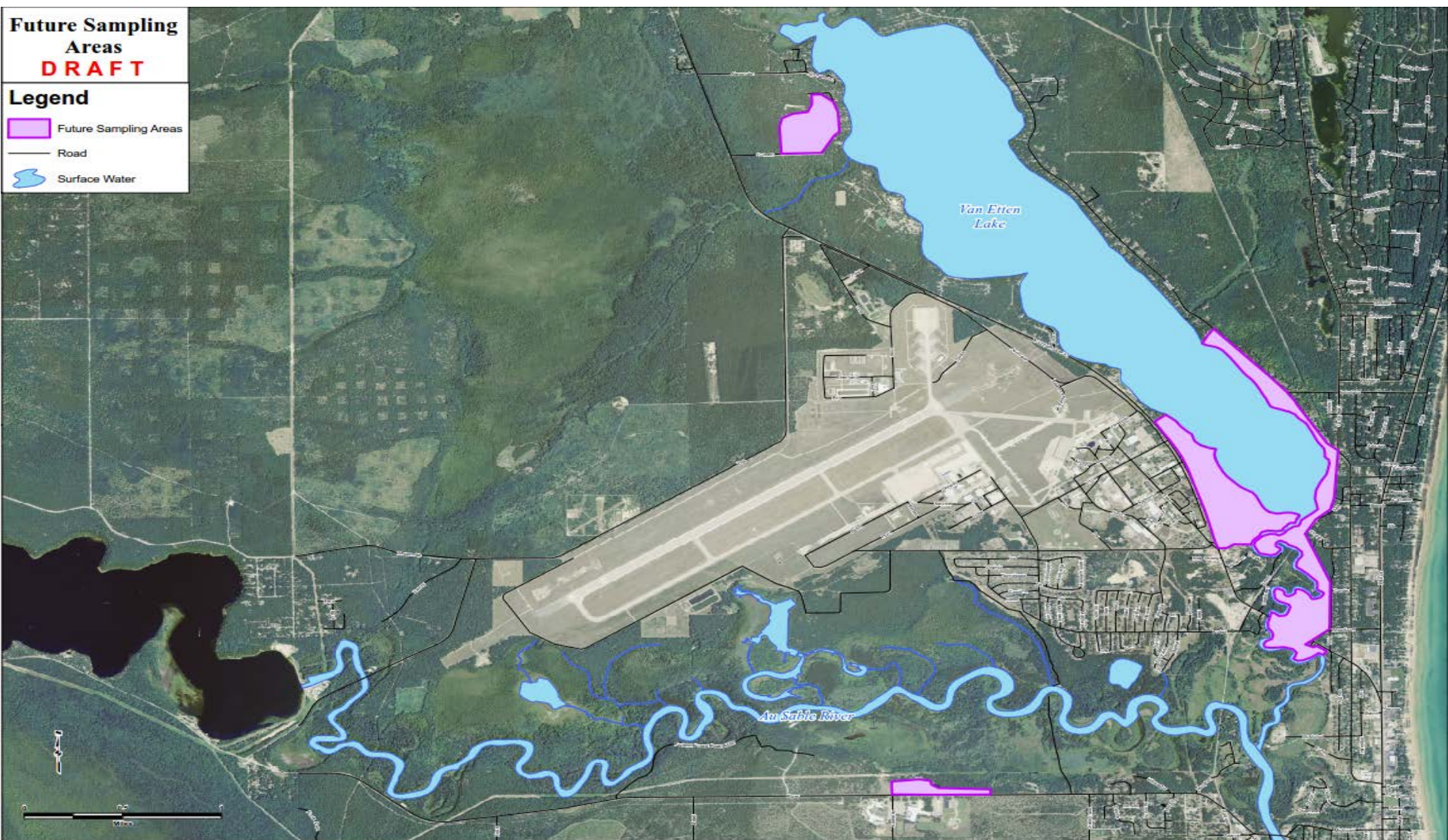
Residential Well Sampling and Businesses DRAFT

Legend

-  Surface Water
- Sample Locations**
 -  Background Well
 -  Municipal
 -  Residential
 -  Residential - Results Pending



Targeted Areas for Drinking Water Sampling



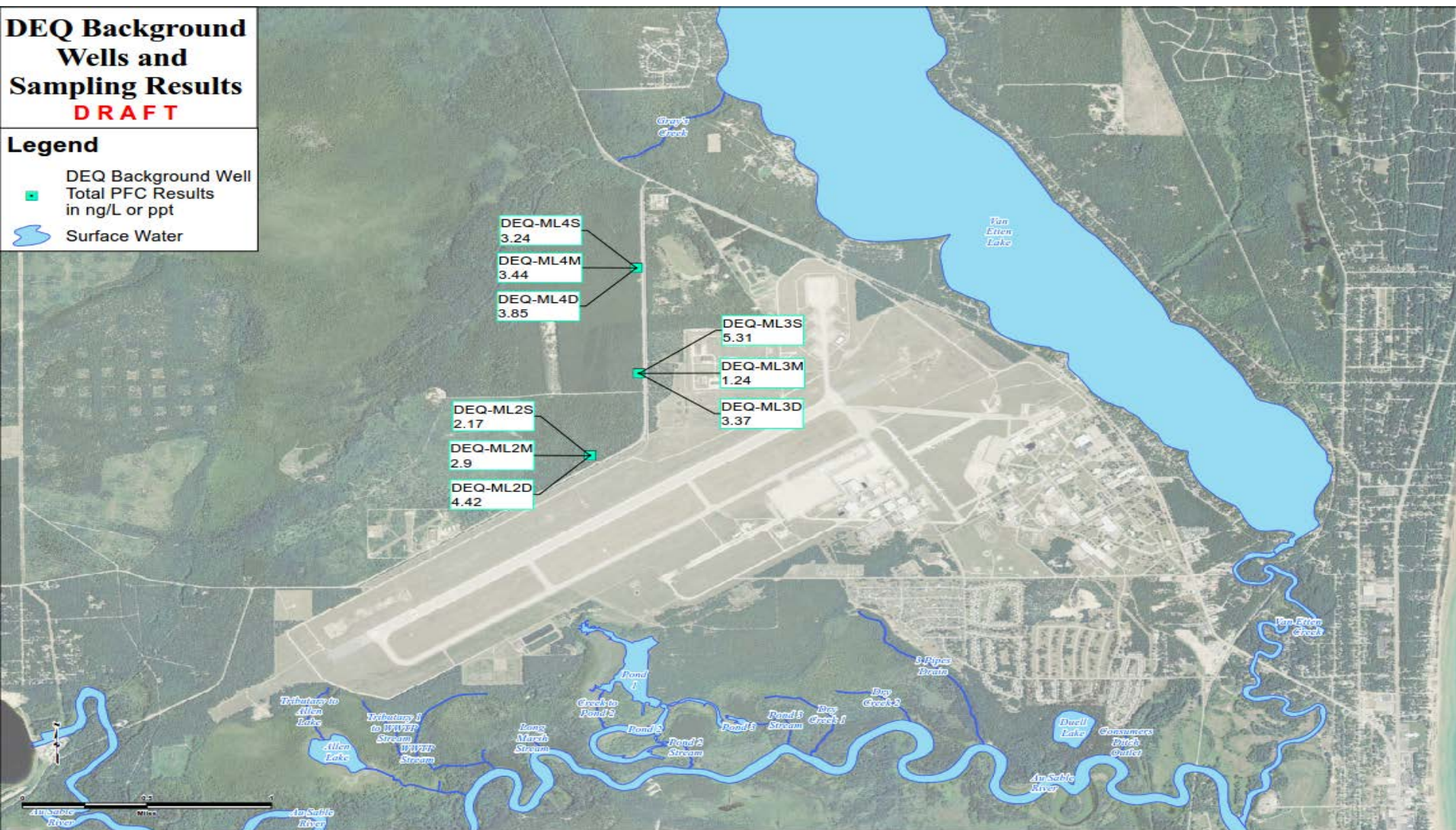
Background PFC Concentrations

DEQ Background Wells and Sampling Results DRAFT

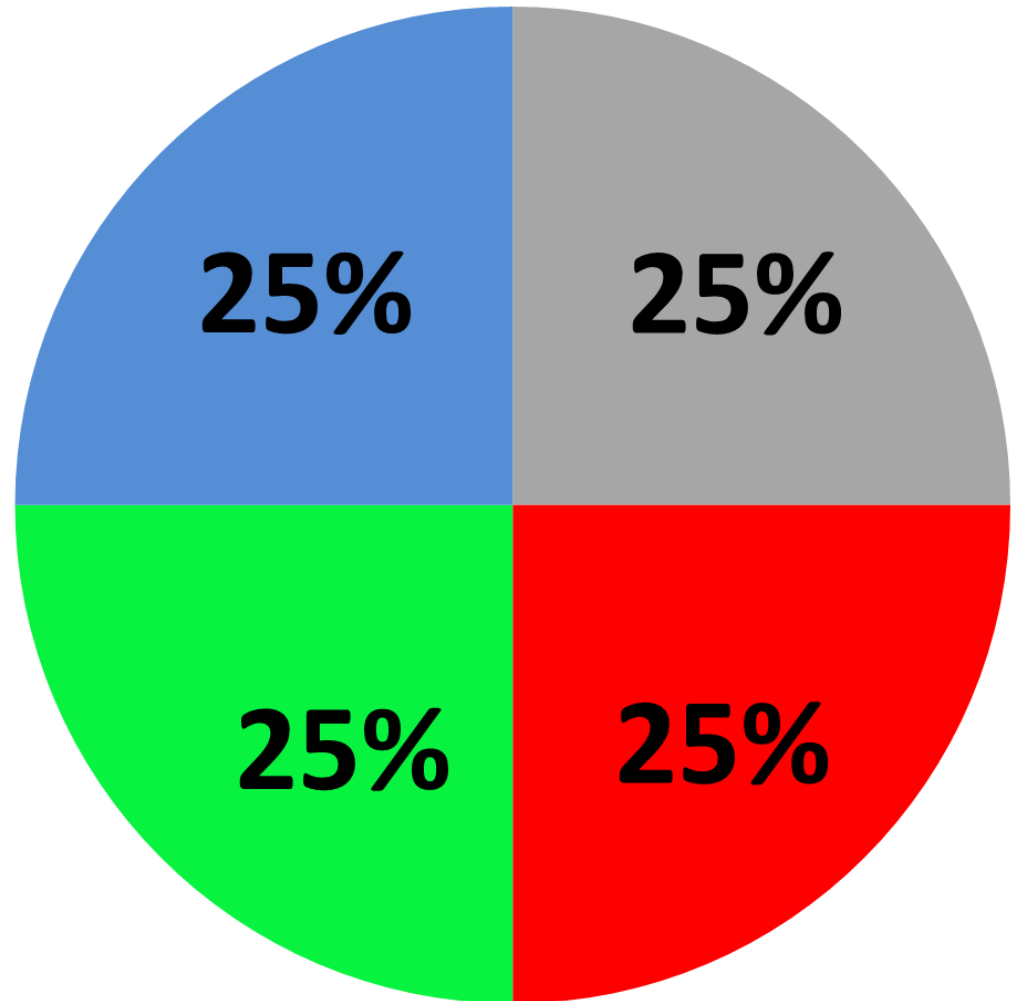
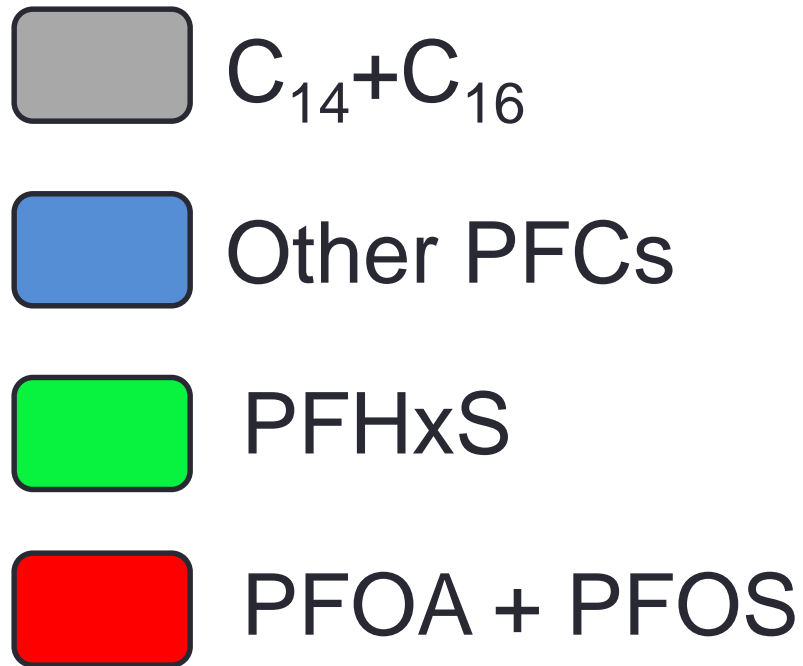
Legend

DEQ Background Well
Total PFC Results
in ng/L or ppt

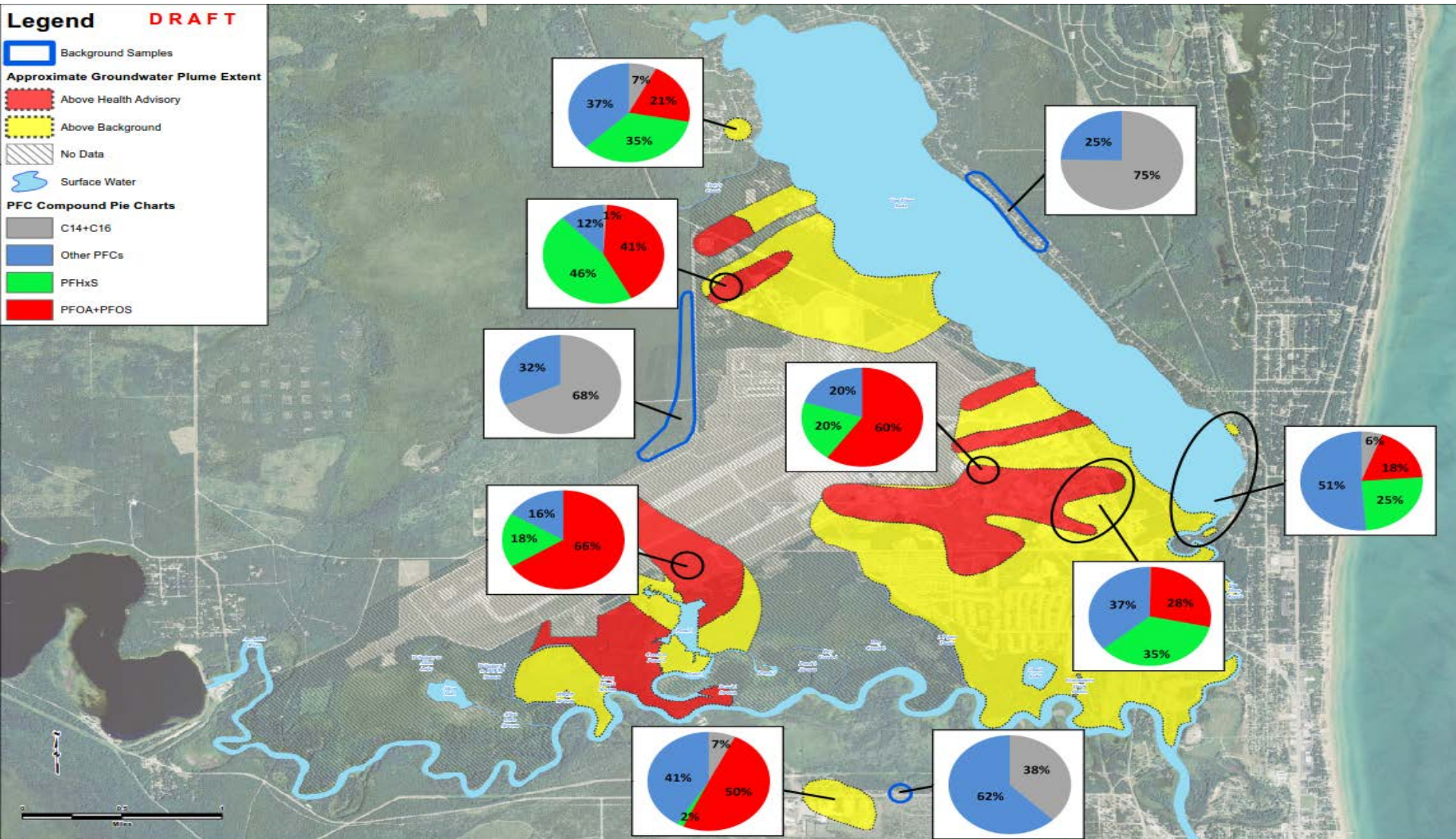
Surface Water



PFC Fingerprinting



PFC Fingerprinting

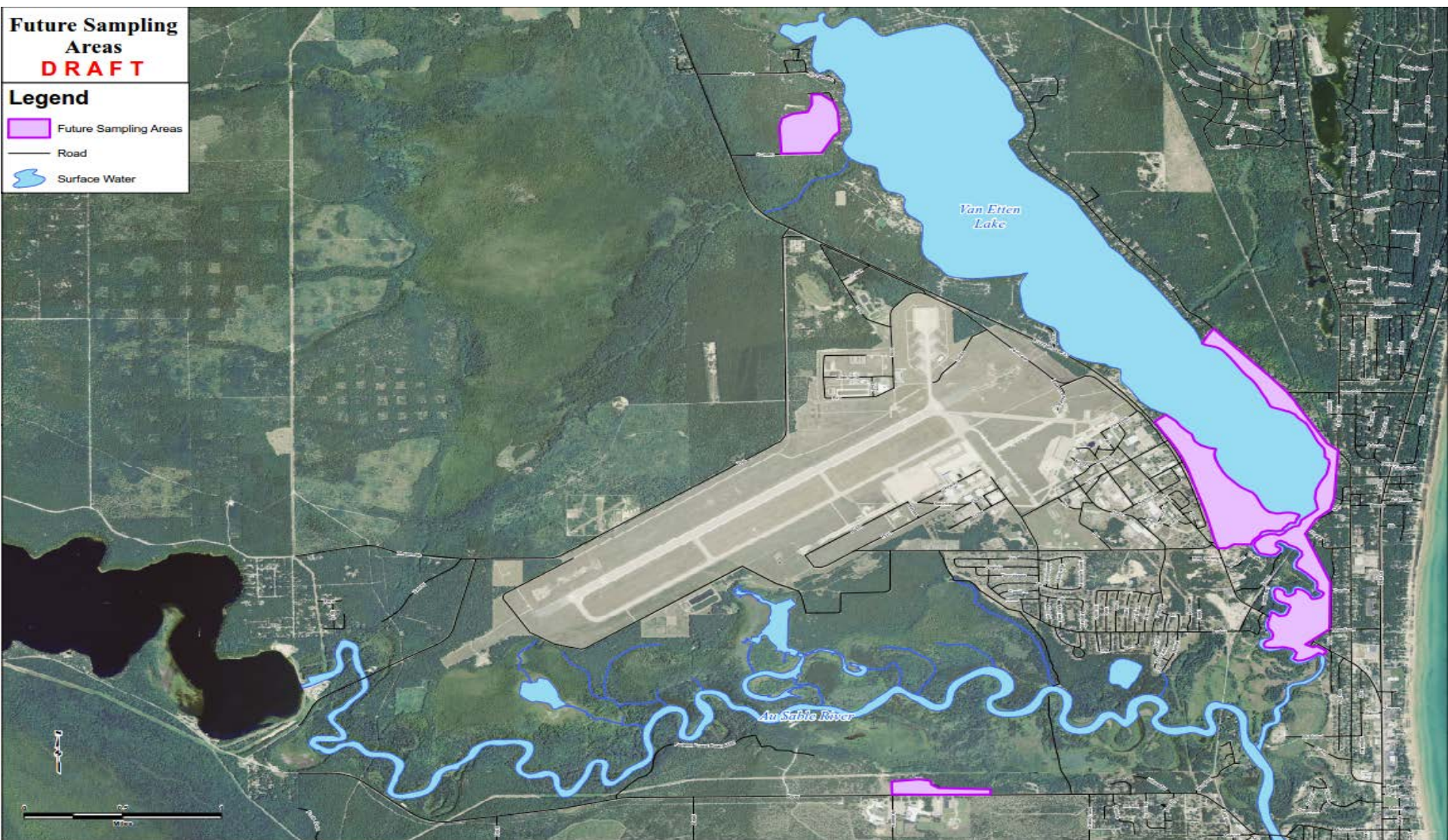


Targeted Areas for Drinking Water Sampling

**Future Sampling
Areas**
DRAFT

Legend

- Future Sampling Areas
- Road
- Surface Water



Questions?

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send an email request to:

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