

DRAFT

Watershed Assessment Group Minutes

Administration Building Public Meeting Room and Zoom

Date: October 3, 2022

Recording:

https://us02web.zoom.us/rec/share/S-1zotuFzCIILbV6sp6F7MRVXk-rsAH76161-Xlr0unngFi8nm6TQ0U5F5Xjd2n.wfj_qLPiPbkMomoE

Passcode: 8Qg+P@5=

Committee members present: Mike Cox, Leanne Harter, Sara Carmichael, Scott Wall, Linda Murken, Andrea Wagner, Matt Boeck, Melissa Spencer, Kimberly Grandinetti, Darren Moon, Joby Brogden

Others present: Laura Johnston (Environmental Specialist)

Carmichael called the meeting to order at 2:00PM and introduced Matthew Graesch with IDNR. He presented on his work related to PFAS in Iowa. The presentation is after meeting notes.

I. Approval of Agenda

- Motion to Approve – Harter moved, Wall seconded. Approved

II. Presentation on PFAS...see above

III. Review Meeting notes from October 3, 2022

- Motion to Approve – Grandinetti moved, Boeck seconded. Approved.

IV. Old Business

a. Headwaters WMA 28E Agreement

- Harter explained all documents are signed and have been submitted to IDNR.
- Carmichael review the two open houses and that they were successful, approximately 30 people showed up. The next Headwaters meeting is December 7 in Roland. We will see the final report and should approve it and figure out next steps in implementing the plan.

b. WAWG Members – Joby Brogden, Facilities Management Director

- Brogden introduced himself and Carmichael will set up meeting to review the Matrix, Assessment, and identify goals for Facilities.

V. New Business

a. Manure Crossing Permit

- Moon brought forward the proposed Story County policy for road crossings for manure application using hoses or pipelines. He reviewed three other counties policies, including Hamilton, and wrote one for Story County.
- Good discussion from the group including questions on allotted timing for the hose placements and notification from contractors on when they will spread manure.
- Another question on notifying contractors and landowners on the policy was discussed. Carmichael will ask NRCS if they have a list and Grandinetti can see if IDNR has one.
- Policy will be brought forward to Board of Supervisors early 2023 for approval.

b. Action Items by Departments/Person

DRAFT

- Carmichael presented that the internal Matrix is now fully updated and each person has their action steps identified at the bottom of the excel document.
- Carmichael also referred to number 8 on the agenda regarding meetings. Moving forward the goal is to meet quarterly with the full group and every other month with the key departments (P&D, EH, Engineering, Facilities, etc.) that have action items in the matrix.

VI. Staff Updates and Assignments

- Murken reviewed the Iowa Drainage District Association meeting she attended on December 2. Two presentations on water quality that were interesting including drainage water recycling and edge of field practices. Story County was mentioned as one of the counties participating in the 'batch and build' edge of field program. Carmichael referenced that 10 practices, treating 22 tiles, will be installed by end of April 2023 and the second year is going well with engineering work.
- Harter asked if the county has joined ISWEP yet. The yearly fee has been approved. Carmichael will follow up with ISWEP.
- Cox addressed the Wicks oxbow restoration and how we can't move forward until Story City approves. Murken will set up a meeting with Story City to keep the discussion moving forward.

VII. Other Items Not on the Agenda - none

VII. Next Meeting Time and Date

- Carmichael will look at calendars and identify a date in March for next meeting.

IX. Adjournment – adjourned at 3:32PM motion by Grandinetti, Second by Harter

Iowa DNR PFAS Action Plan – Surveillance and Results

Matthew Graesch and Claire Hruby



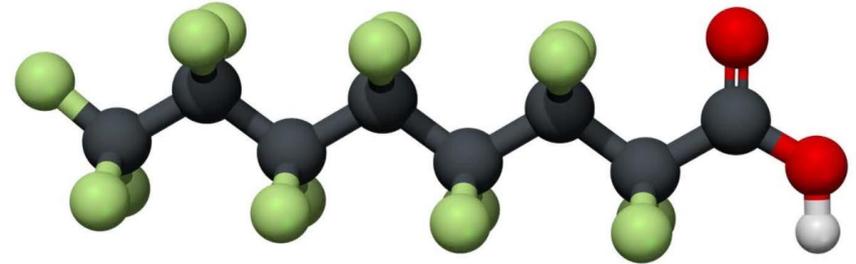
DNR Action PFAS Plan

- Goal: Identify and Minimize Exposure of Iowans to PFAS in Public Drinking Water

Initial Actions Taken

- Develop a surveillance project to evaluate the presence or absence of PFAS in Iowa drinking water

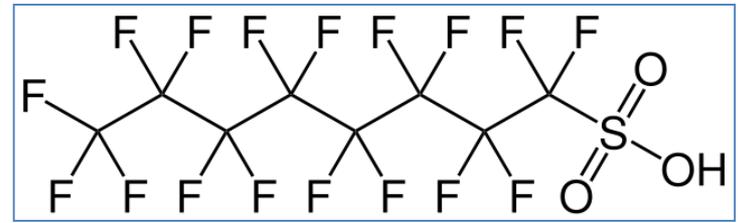
PFAS Action Plan



An example of a family of Perfluoroalkyl Substances: Perfluorooctanoic acid

January 23, 2020

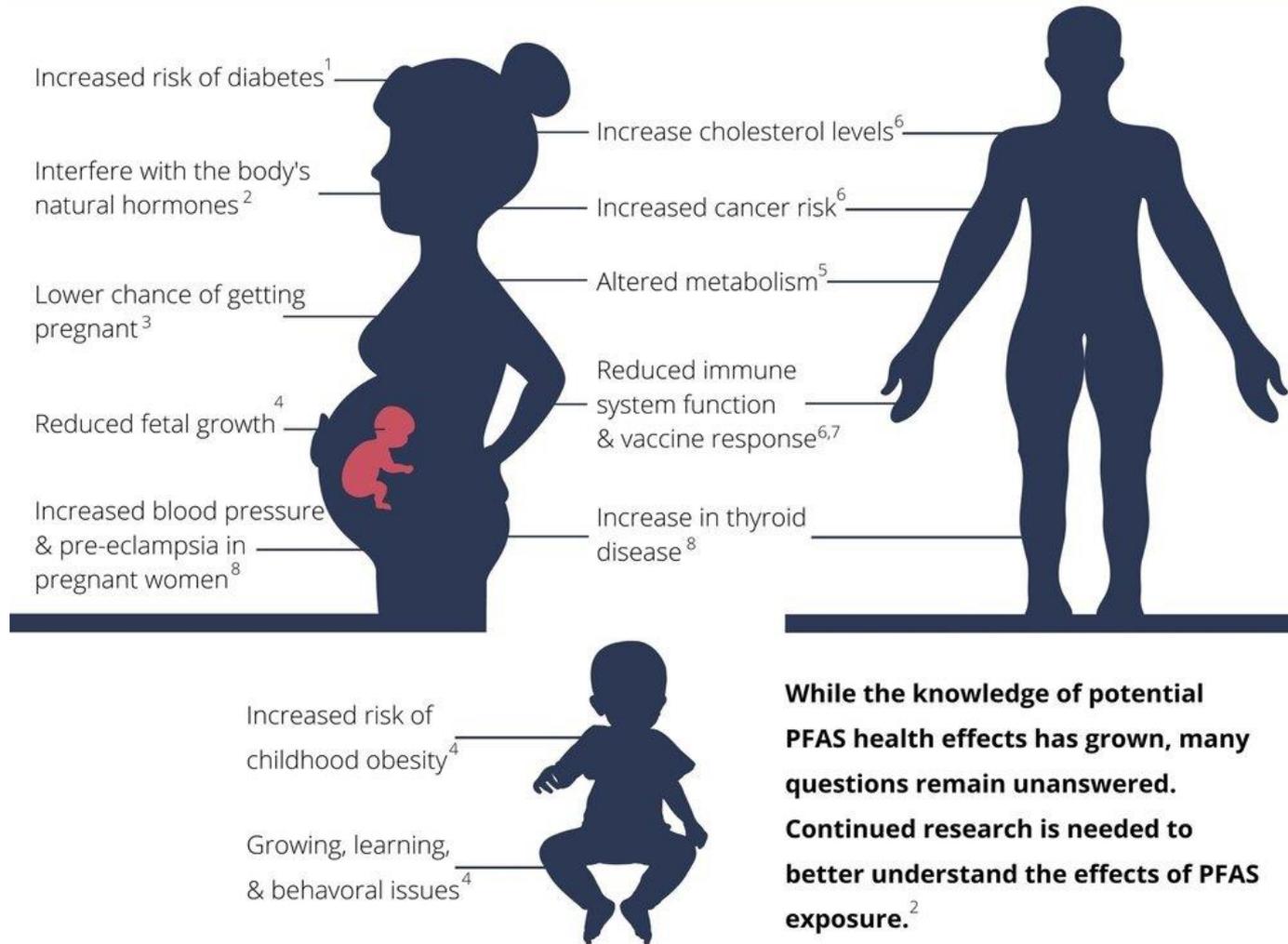
PFAS: Background



Per and poly-fluoro alkyl substances (PFAS)

- More than 12,000 compounds
- Persistent in environment
 - Do not degrade
 - C-F bond is one of the strongest known
 - Accumulates in the environment and in organisms
- Mobile - atmosphere, surface water, soil, etc.
- Exposure is considered a health risk
 - Known or suspected toxicity, especially for PFOS and PFOA
 - Very long half-lives (several years) in humans

HOW DO PFAS AFFECT YOUR HEALTH?



While the knowledge of potential PFAS health effects has grown, many questions remain unanswered. Continued research is needed to better understand the effects of PFAS exposure.²

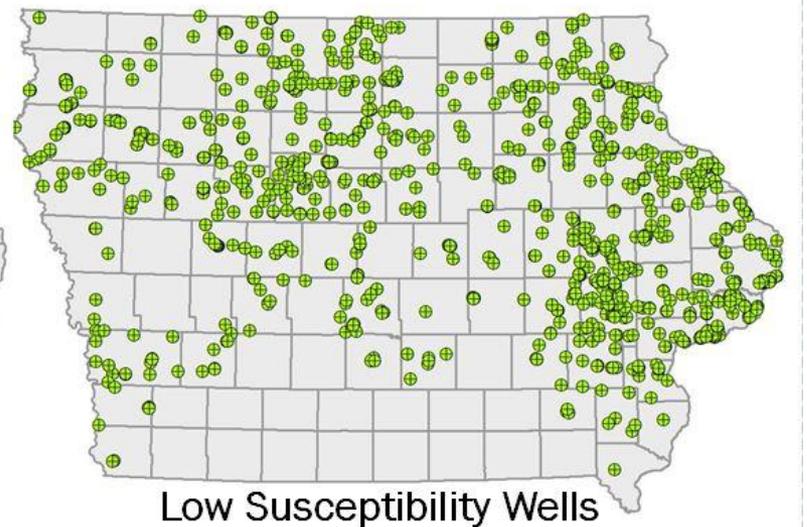
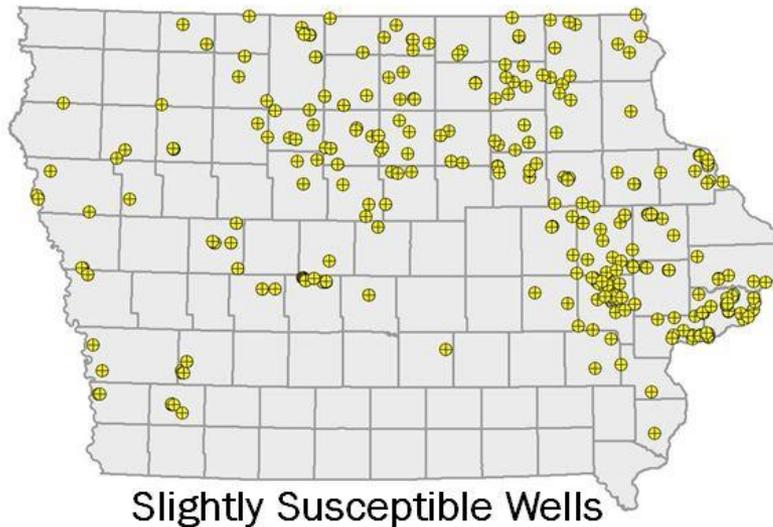
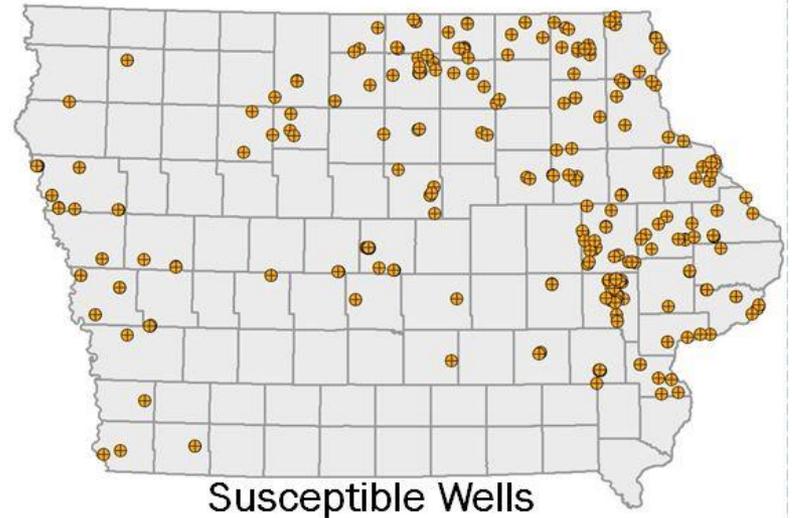
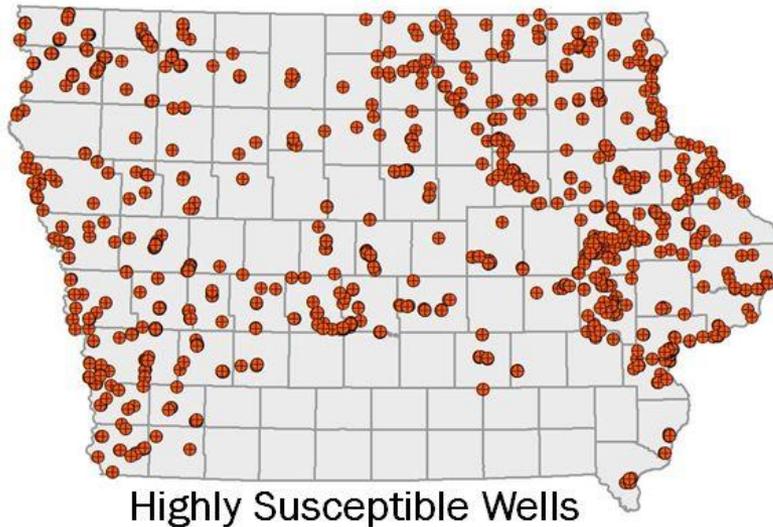
PFAS: Health Advisories for Drinking Water

- Until June 2022, EPA health advisory was 70 ppt for PFOA+PFOS
- Current EPA health advisories:
 - **Interim** Health Advisory for PFOA = 0.004 parts per trillion (ppt)
 - **Interim** Health Advisory for PFOS = 0.02 ppt
 - Final Health Advisory for GenX chemicals = 10 ppt
 - Final Health Advisory for PFBS = 2,000 ppt
- Proposed EPA PFAS Rule by end of 2022
- Final Rule planned for late 2023

Iowa DNR PFAS Study Design and Justification

- **Raw water** samples to assess patterns related to source susceptibility and to inform supplies about where PFAS are entering their systems
- **Treated water** to assess what is actually going to drinking water users and to prepare for anticipated federal standards
- **Unique:** Our study is unlike those from most other states. We have collected matching sample pairs of raw water and finished drinking water from each location
- **All surface water supplies**– susceptibility to potential sources across watersheds and atmosphere
- **Groundwater** – focus on higher vulnerability aquifers in close proximity to potential PFAS sources
- **Targeted** and **iterative** approach – biggest bang for the buck, learning as we go and when warranted, returning to some locations to gather more data or help communities in need.

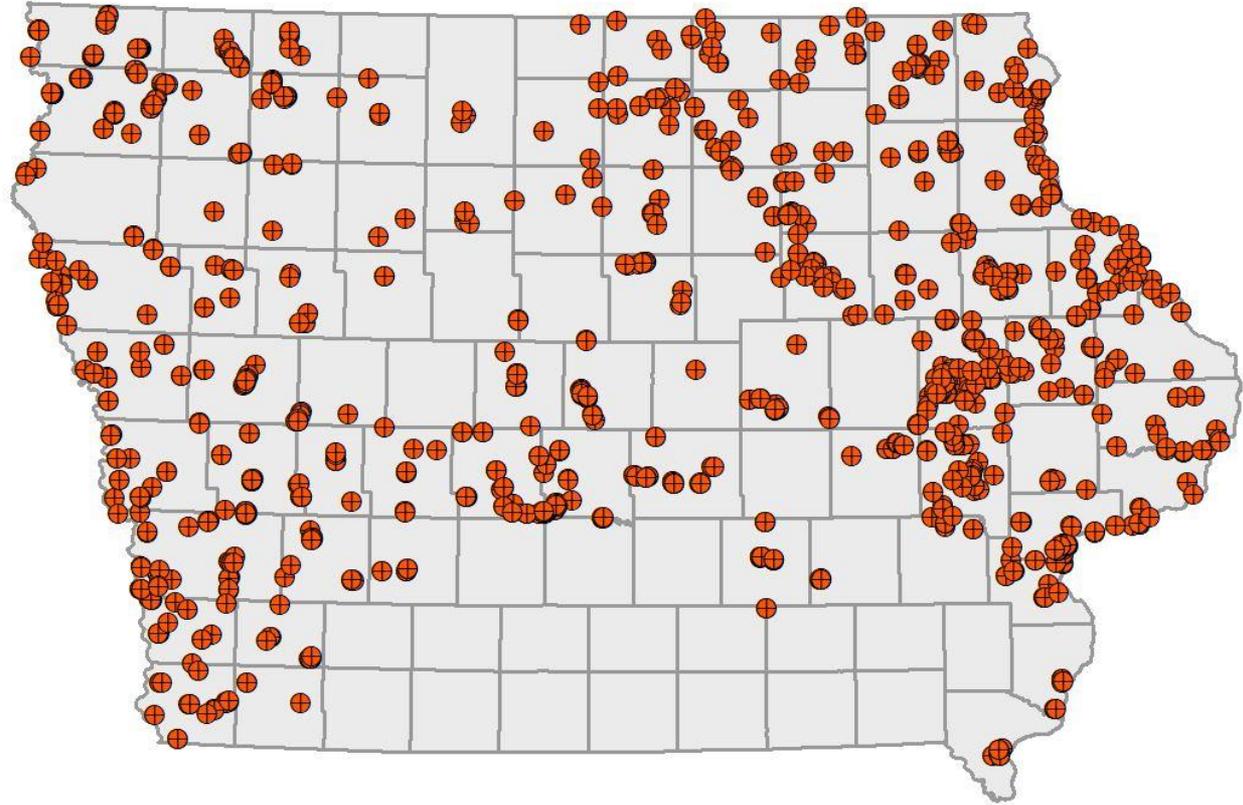
Over 7000 public water supply wells in Iowa



Well Prioritization

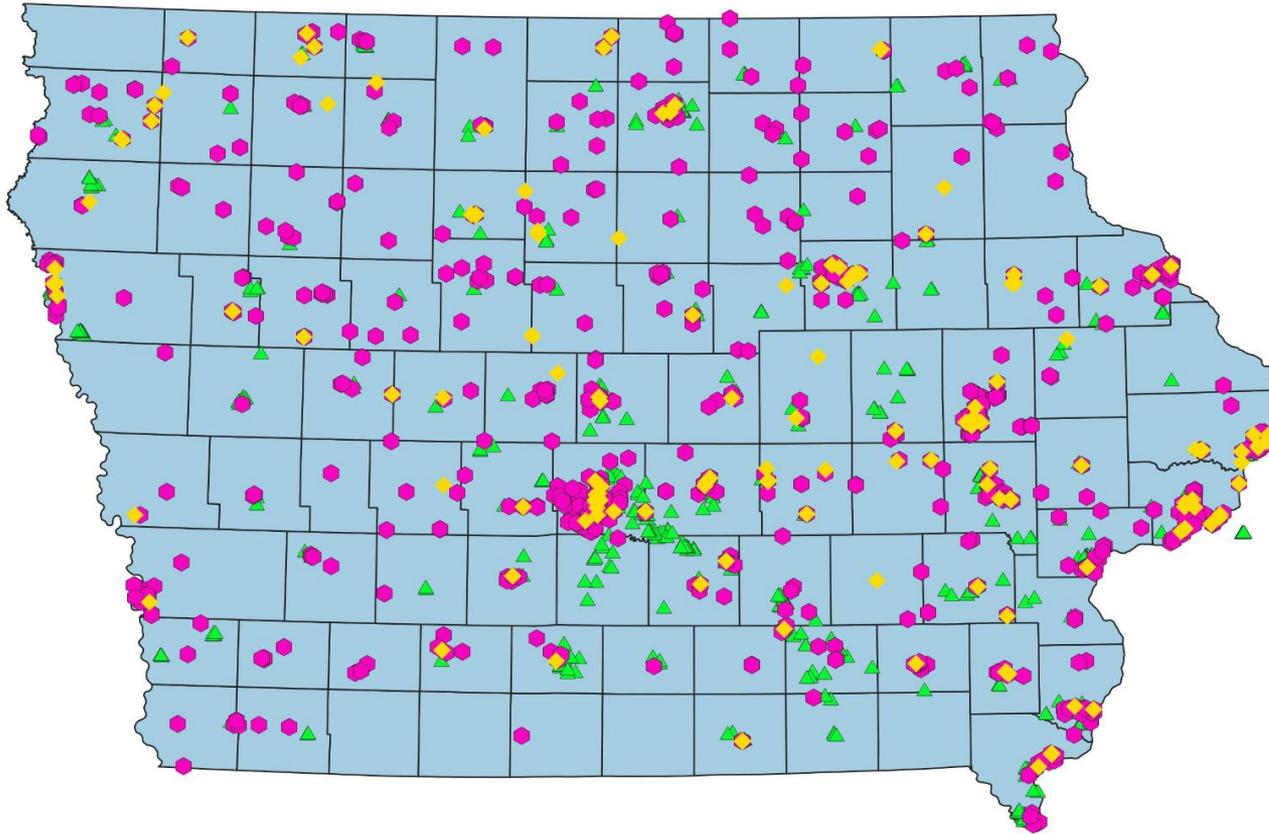
Sampling efforts concentrated on “highly susceptible” public wells

- Alluvial
- Buried sand/gravel
- Shallow
- No confining layer
- Karst
- Under the influence of surface water



Active Highly Susceptible
Public Wells in Iowa

Potential PFAS Sources



- Data from EPA ECHO and from EPCRA revealed ~1,000 potential unique locations where PFAS chemicals may be stored and/or used.
- DNR Biolsolids app sites
- Represent current or recent use only.

Scoring Public Wells to Maximize Efficiency

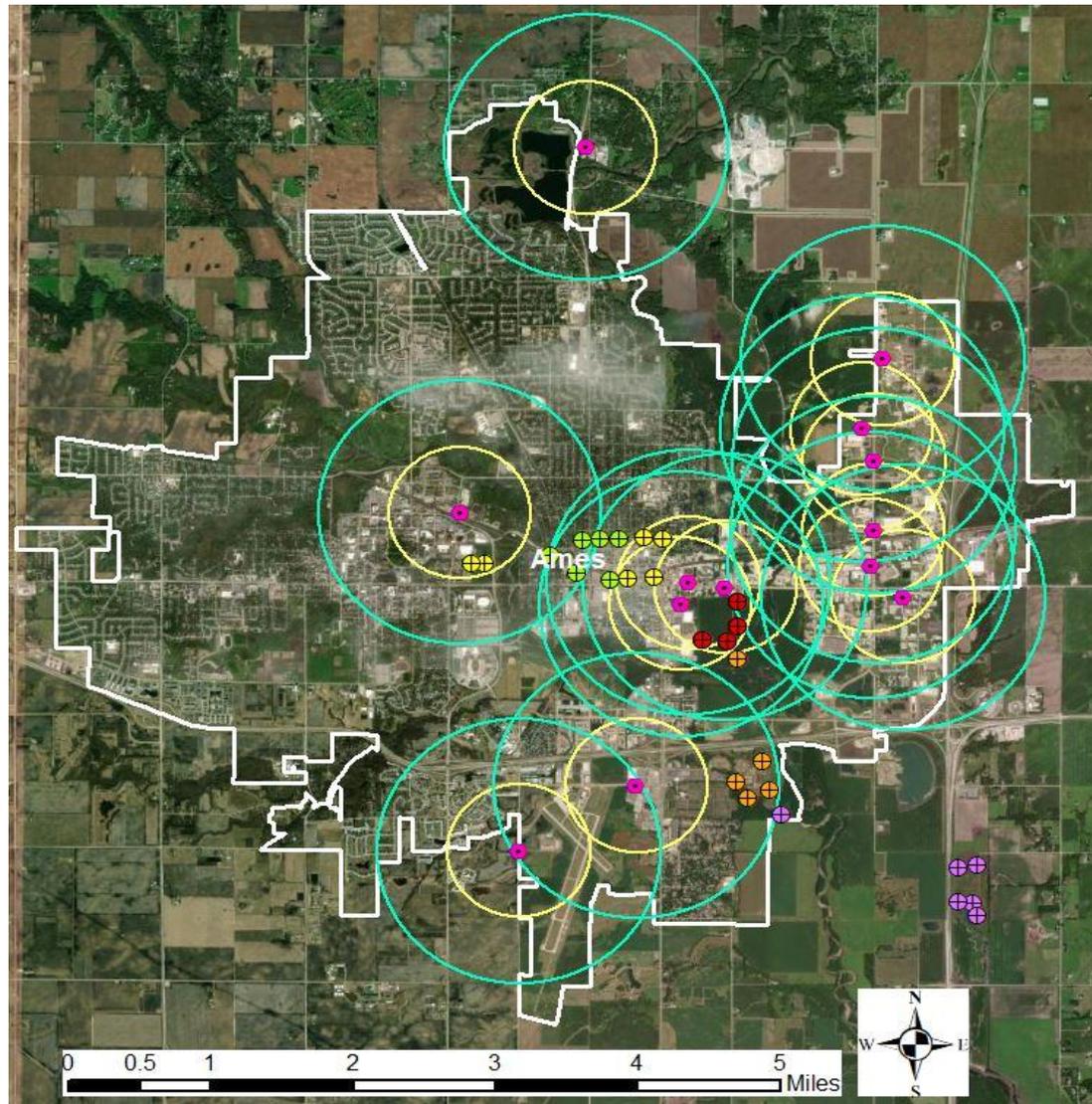
Confining bed thickness	Aquifer vulnerability risk	Susceptibility designation
None (surface intake)	4	Highly susceptible
<25 ft.	4	Highly susceptible
25 to 50 ft.	3	Susceptible
50 to 100 ft.	2	Slightly susceptible
>100 ft.	1	Not susceptible

Distance from PFAS Source	Wellfield risk	Susceptibility designation
<1/2 mile	3	Highly susceptible or Susceptible
1/2 to 1 mile	2	Moderate susceptibility
>1 mile	1	Low susceptibility

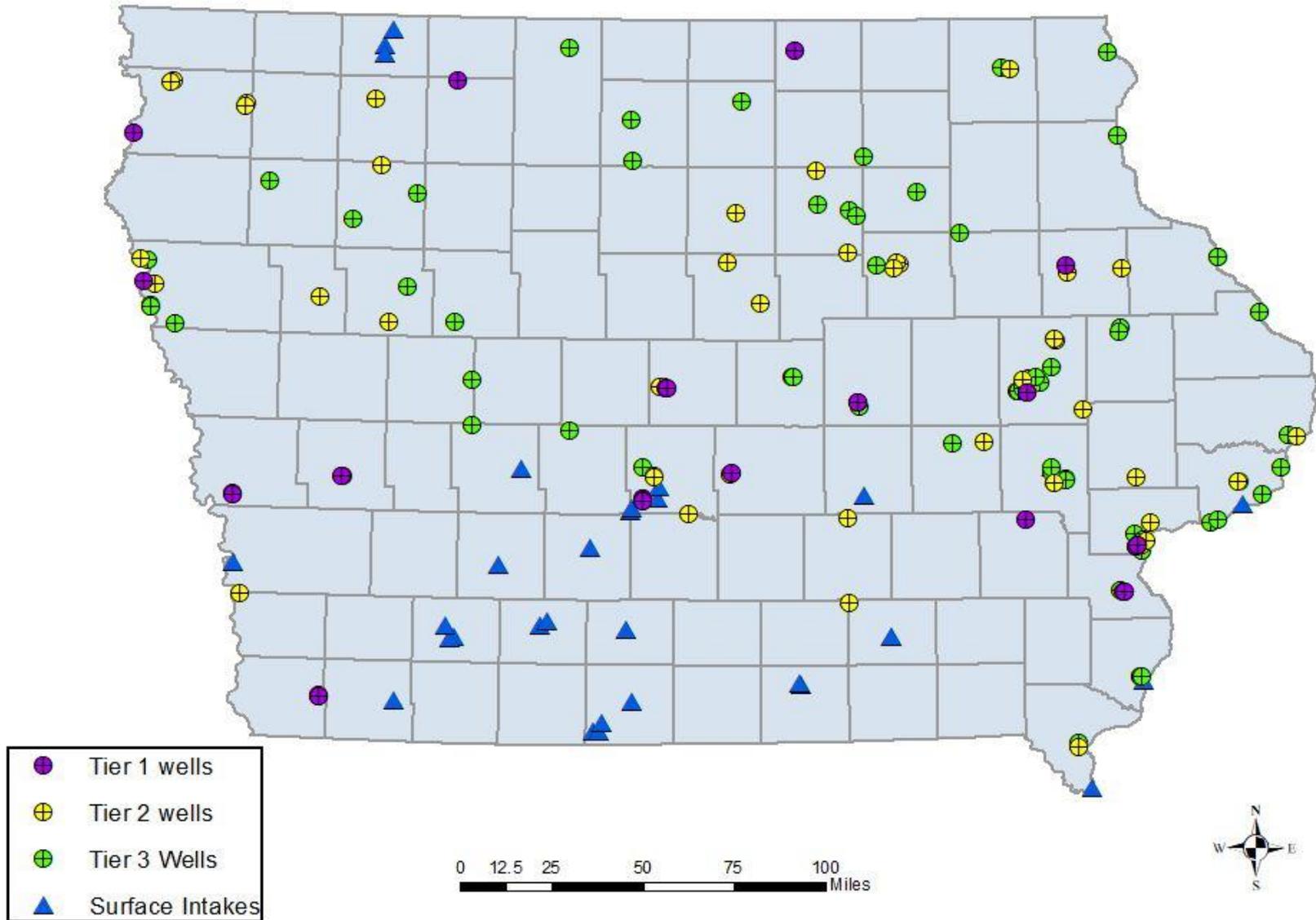
Composite Score	Number of Active Wells
2	872
3	418
4	348
5	1076
6	131
7	105



Well Selection: Vulnerability and Proximity



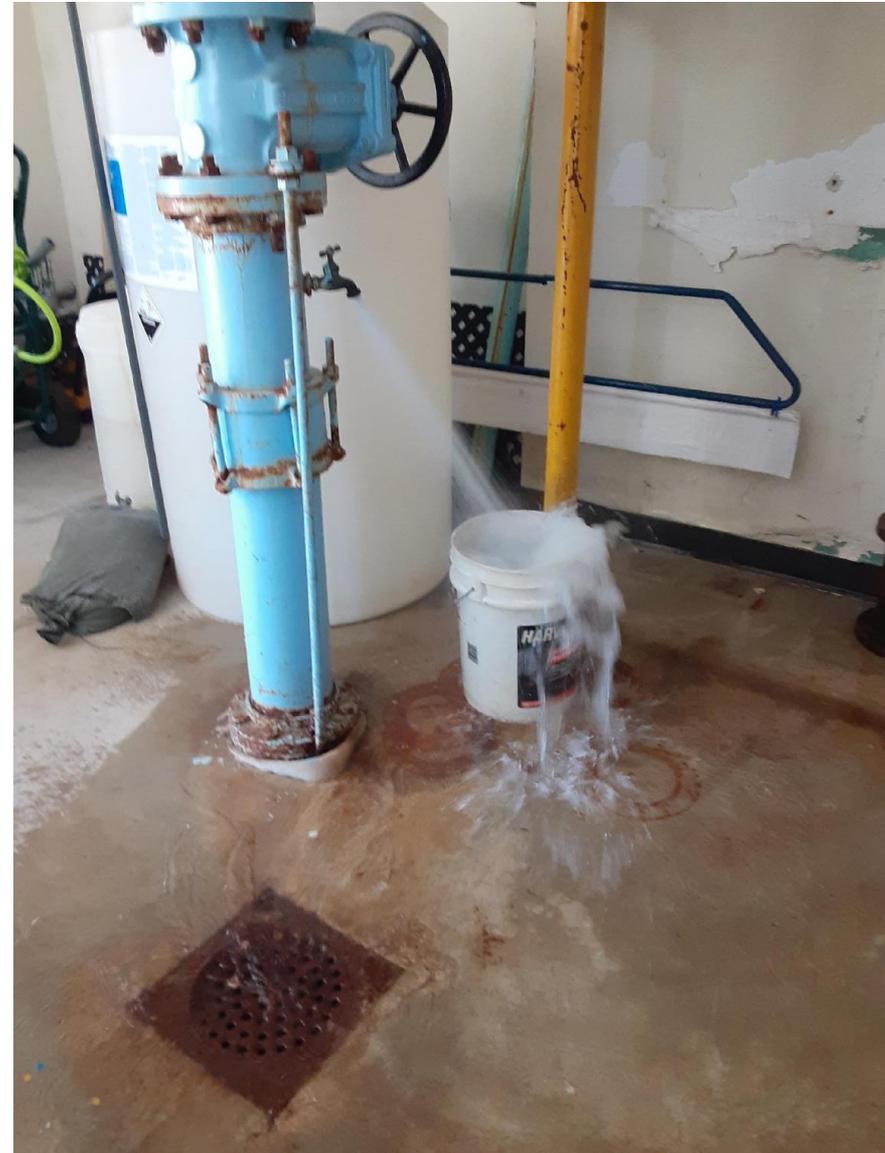
Tiers 1, 2, and 3 Sampling Sites





Sampling Method

- Samples were taken from each Tier 1, 2, and 3 site of both pre-treatment and finished water
 - Representative sample within normal pumping rates
 - Pumps run for 30 minutes, taps flushed prior to collection
 - Surface water samples through sample tap or direct sample
- Standard Operating Procedure (SOP)
 - PFAS-free clothing, personal-care products, PPE, etc.
 - No food or food packaging within the sampling zone
 - Bottles provided by lab
 - Clean-hands/Dirty-hands protocol (2 sample collectors)
 - New powderless nitrile gloves for each sample
 - Labeled bottles and chain-of-custody with ultra-fine sharpies
 - Sample bottles placed in Zip-loc bags, placed on ice, and shipped



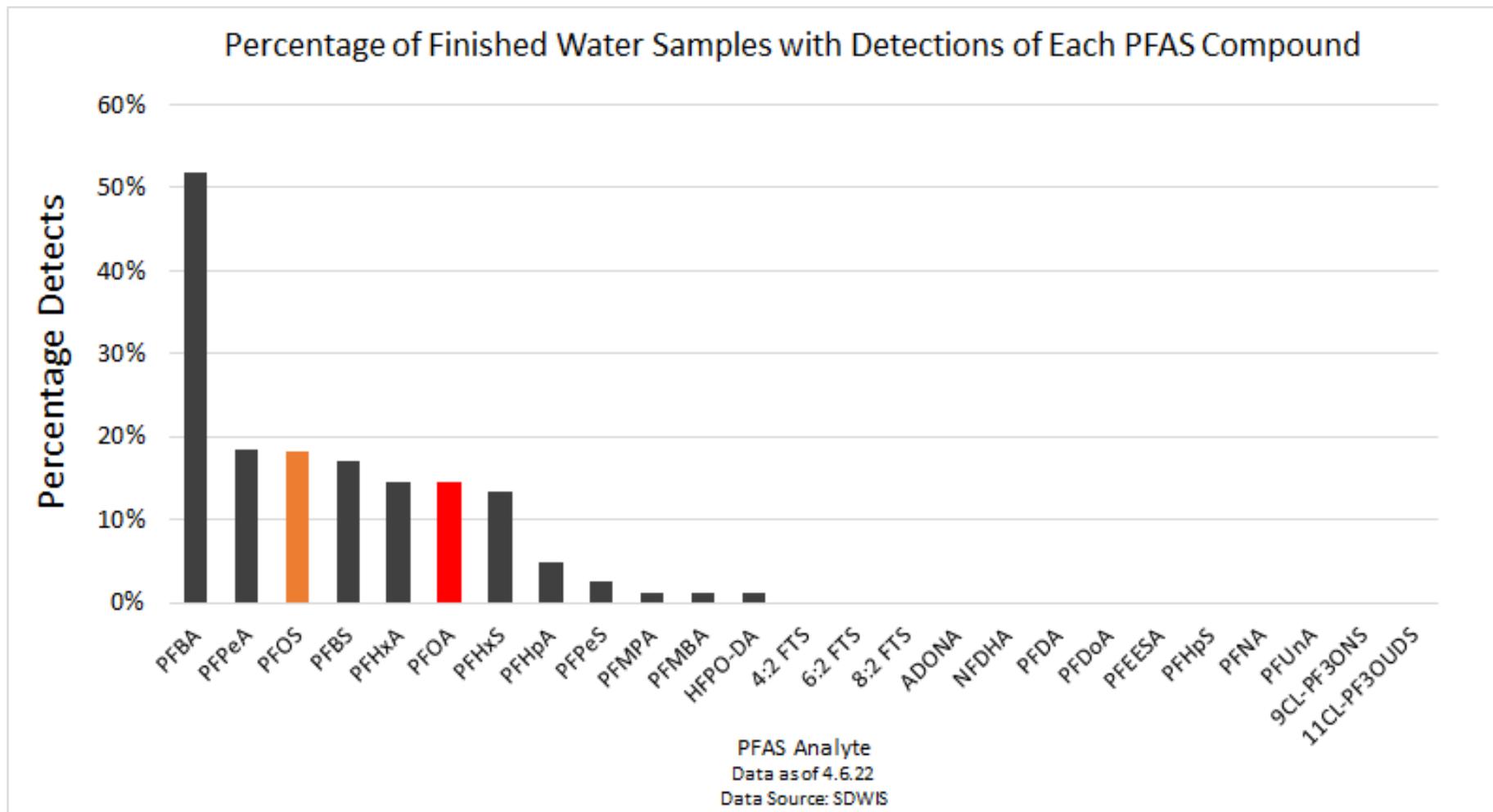


Quality Assurance

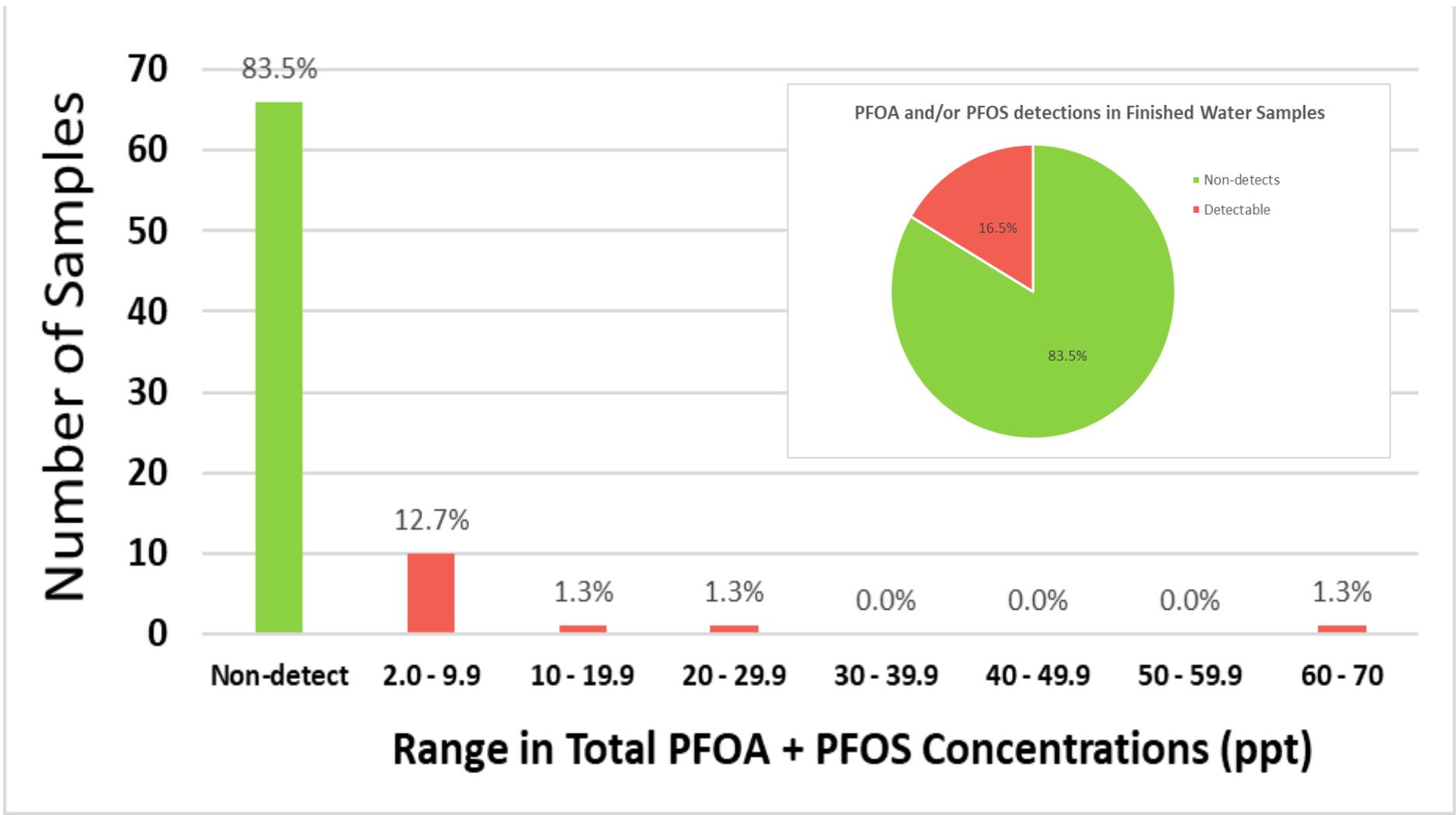
- 1 field blank per sample location
- 1 duplicate per finished water sample



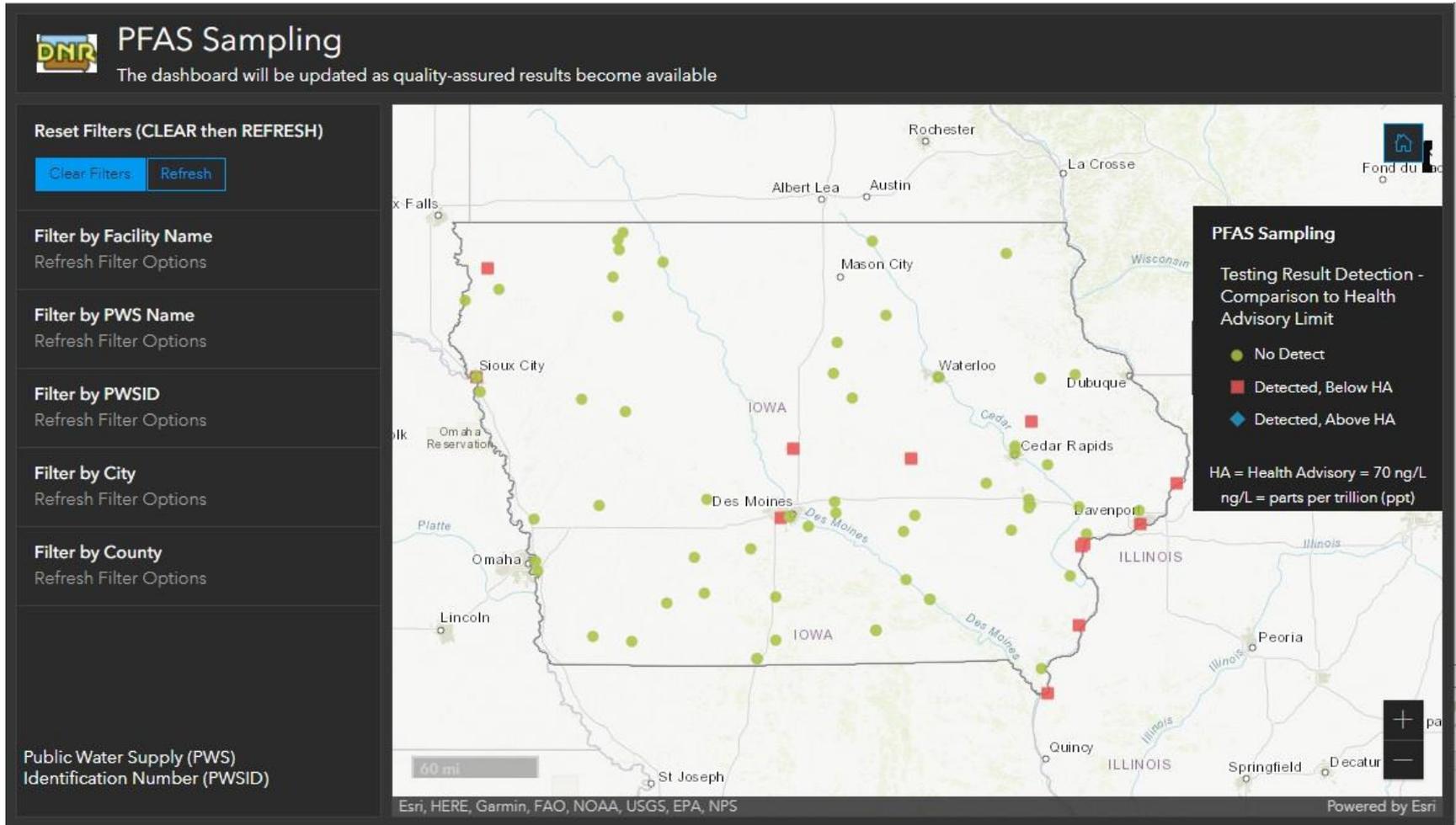
Tiers 1 and 2: PFAS Detections in Finished Water



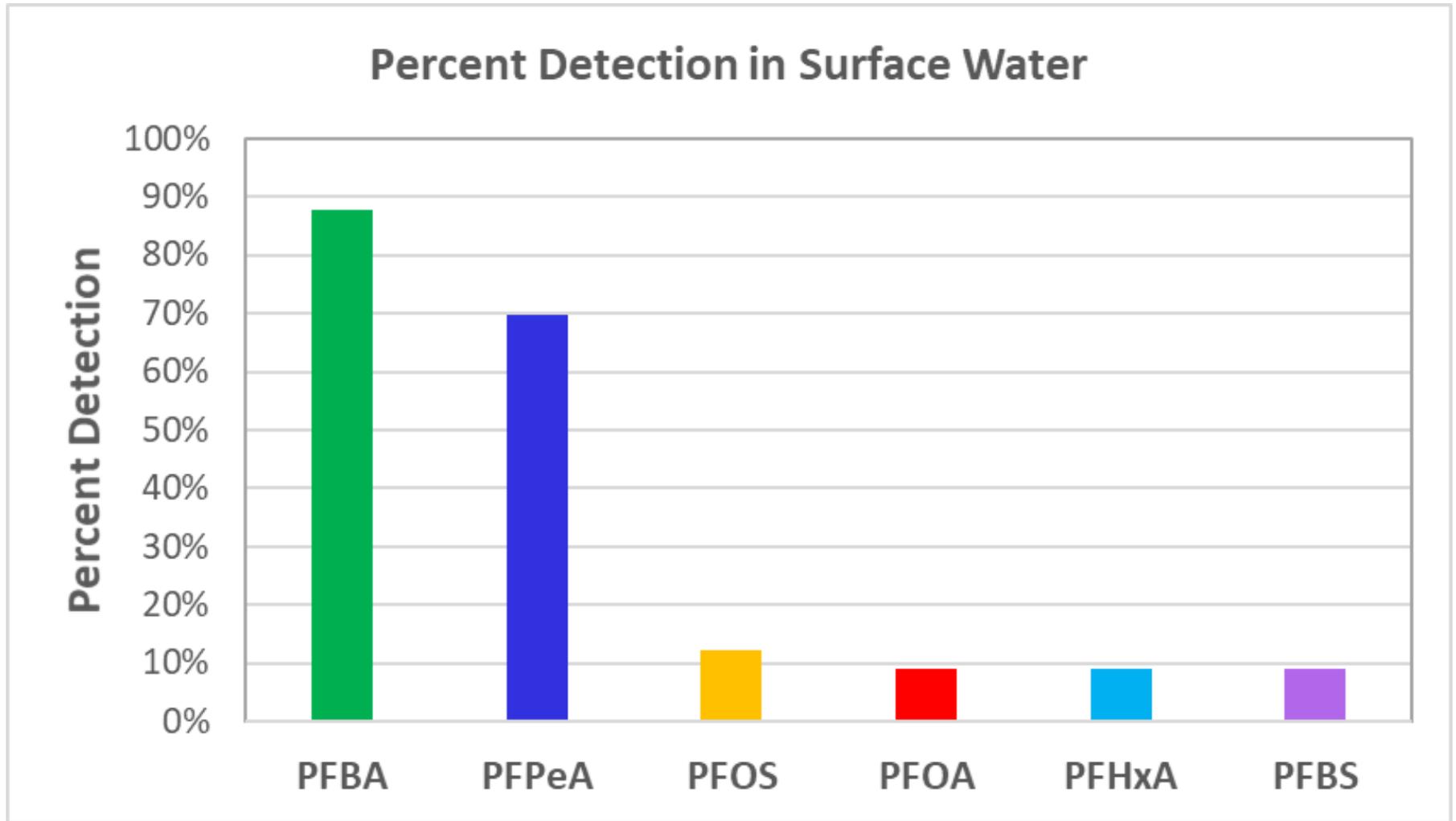
Tiers 1 and 2: Concentrations of PFOA+PFOS in Finished Water



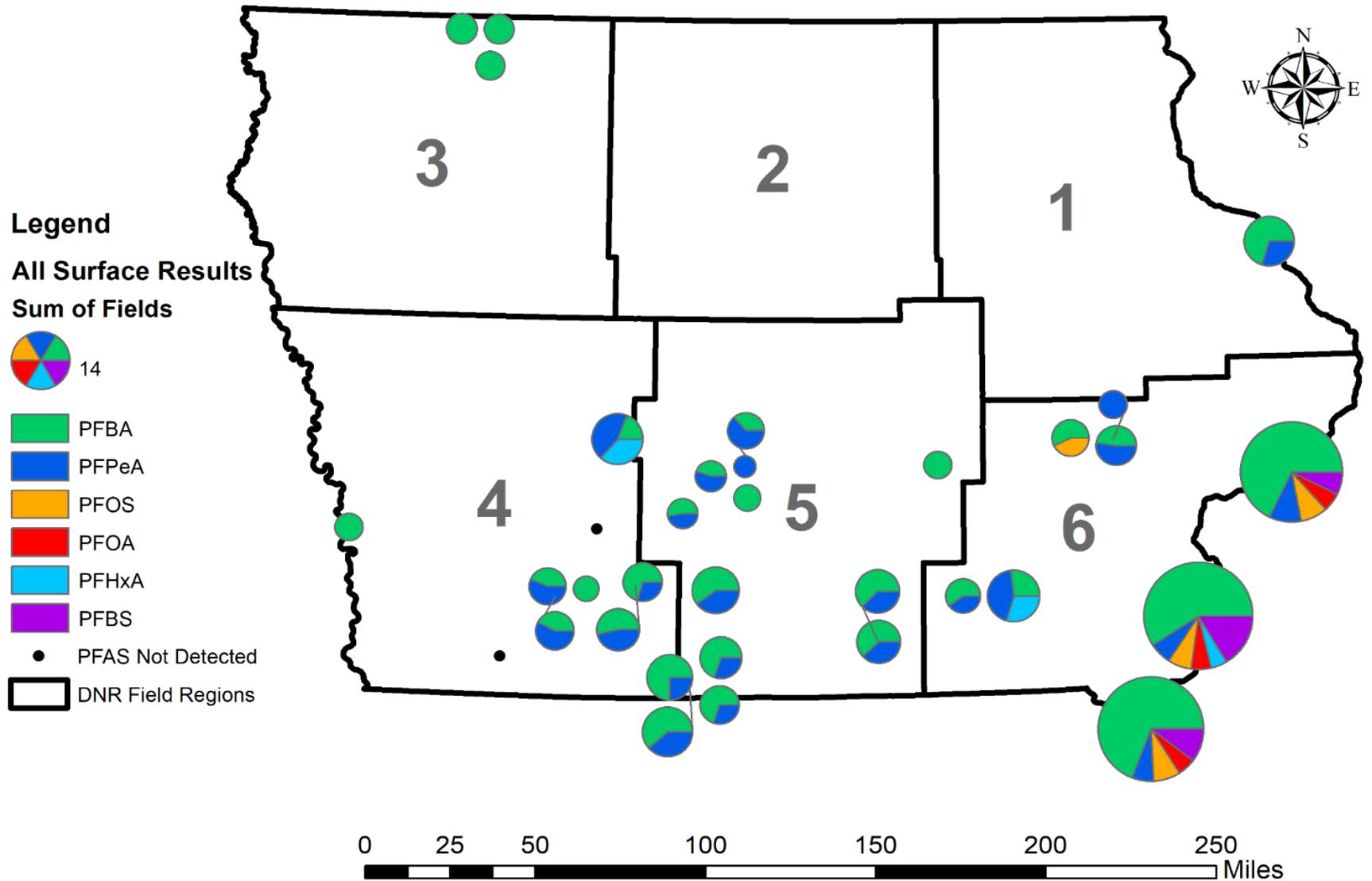
Where were PFOA and/or PFOS in Finished Water? - Interactive Map



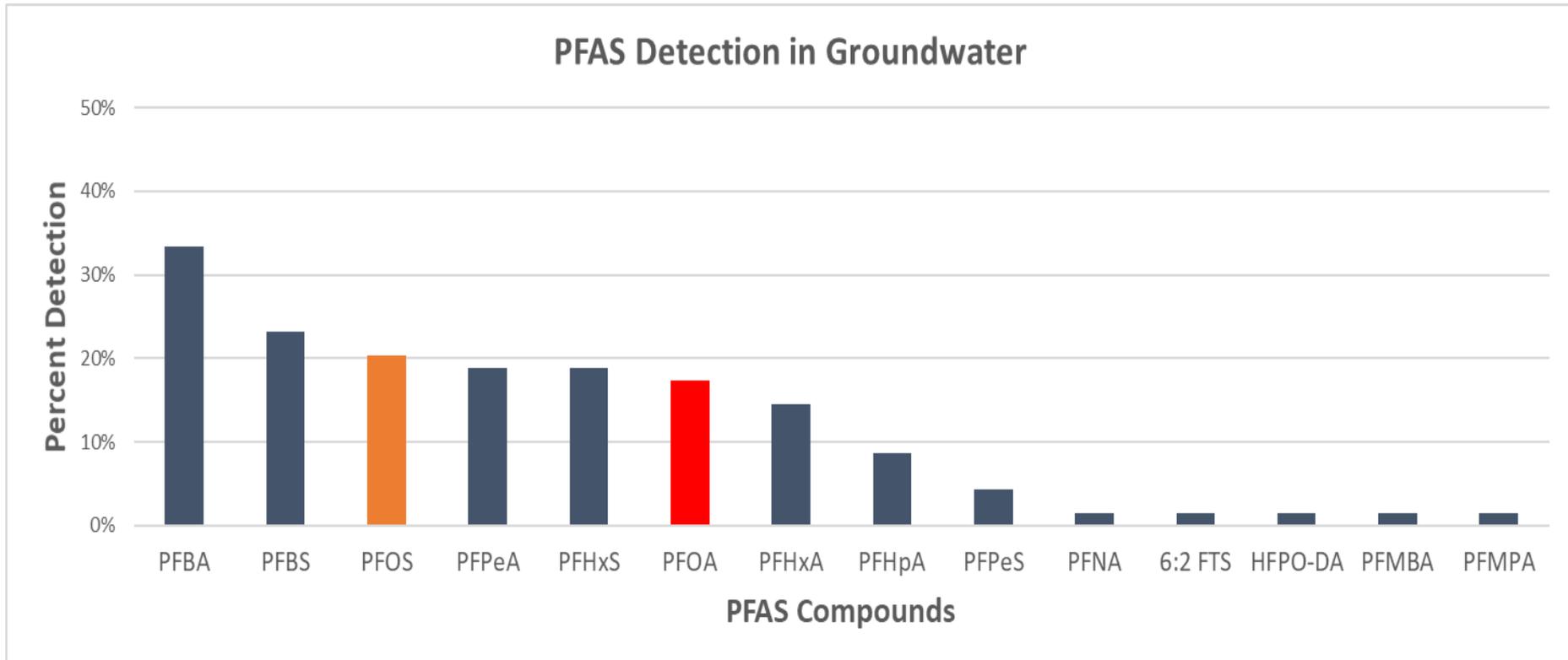
Raw Surface Water PFAS Detections



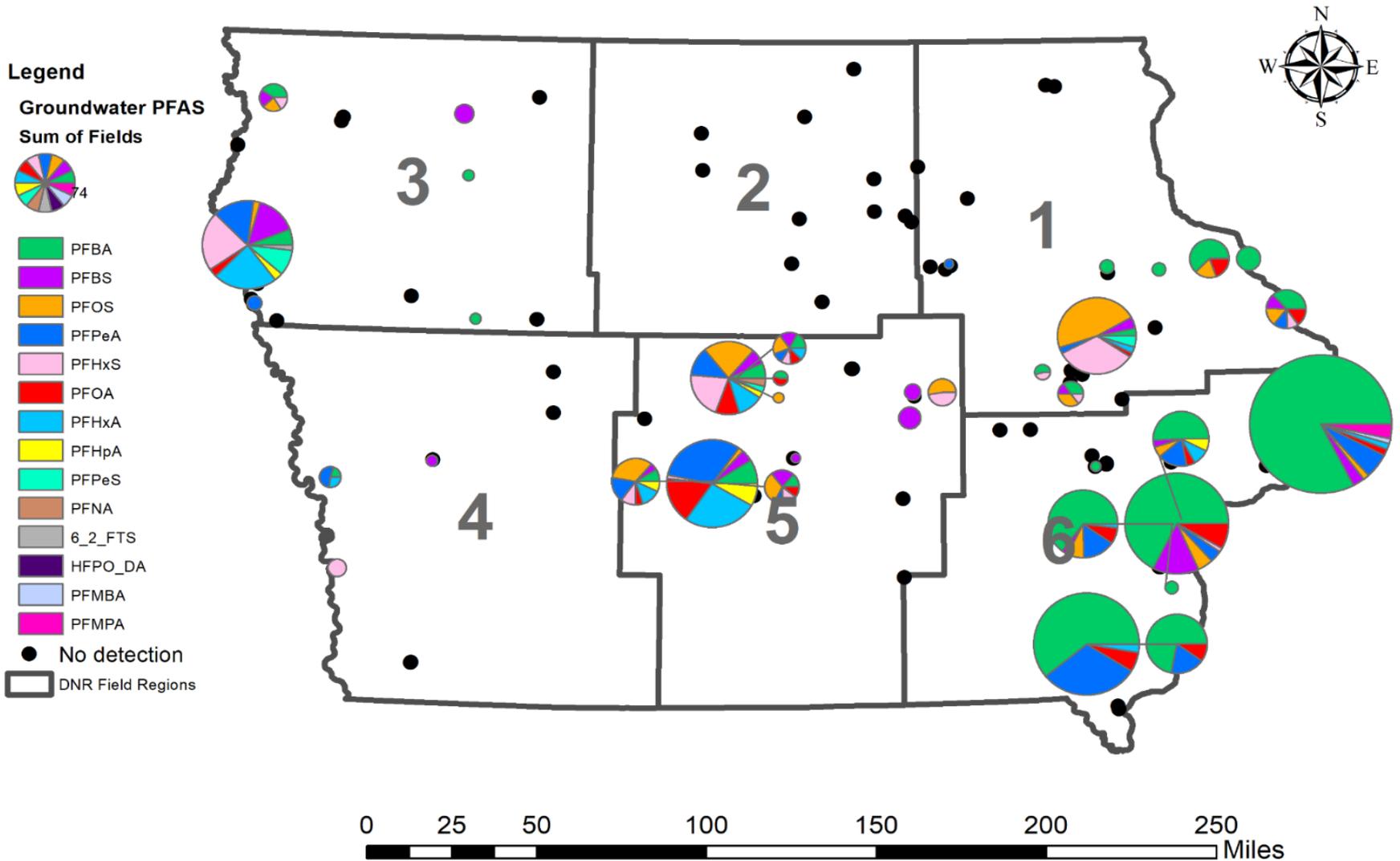
PFAS in Surface Waters (untreated river and lake water)



Raw Groundwater PFAS Detections



Raw Groundwater PFAS Detections

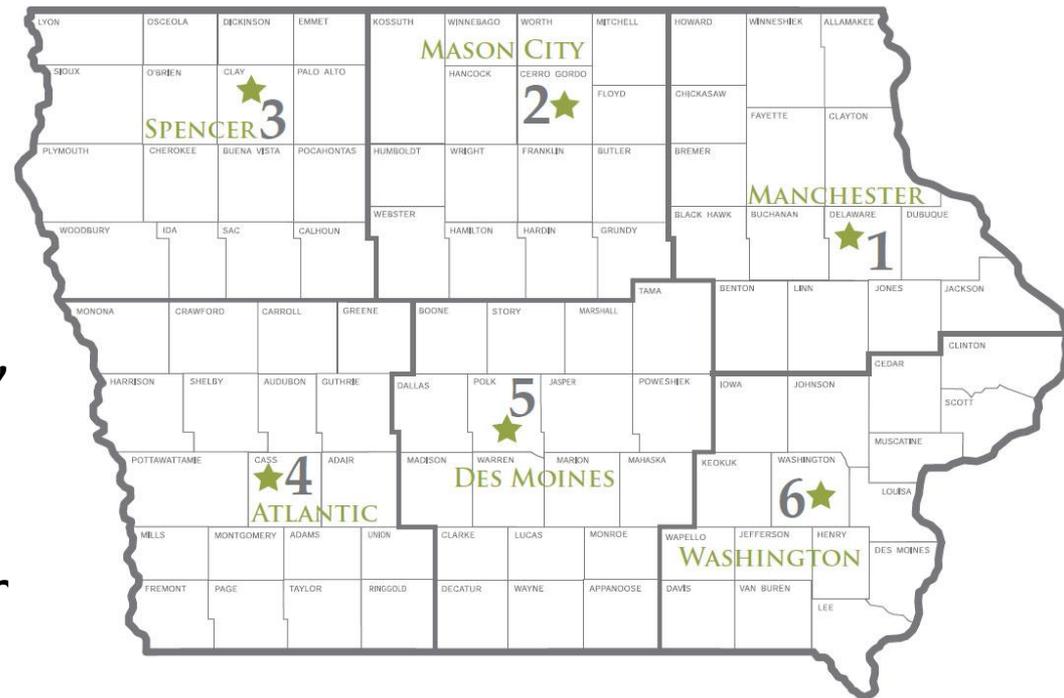


Take-Home Messages Thus Far (~600 sample results)

- Certain PFAS are **nearly ubiquitous in Iowa surface waters**, likely from atmospheric sources such as rainfall, snow, and particulates
- Despite ubiquity, PFAS in **surface waters tend to have simple mixtures** and low number of unique species (simple fingerprint)
- **Deeper bedrock, and confined bedrock** aquifers sampled in the study were essentially unaffected by PFAS
- **Alluvial, buried sand and gravel, and shallow, unconfined bedrock aquifers** are more likely to host PFAS (especially alluvial along major rivers)
- Groundwater aquifers were far less likely to test positive for PFAS compared to surface waters, but tended to have **many species of PFAS** (complex fingerprint)
- Overall, surface waters reflect a trend toward **non-point sources**, while groundwater tended to indicate **point sources** (with the exception of Mississippi River alluvium)
- Cross contamination is not a problem as long as **protocol is consistent**

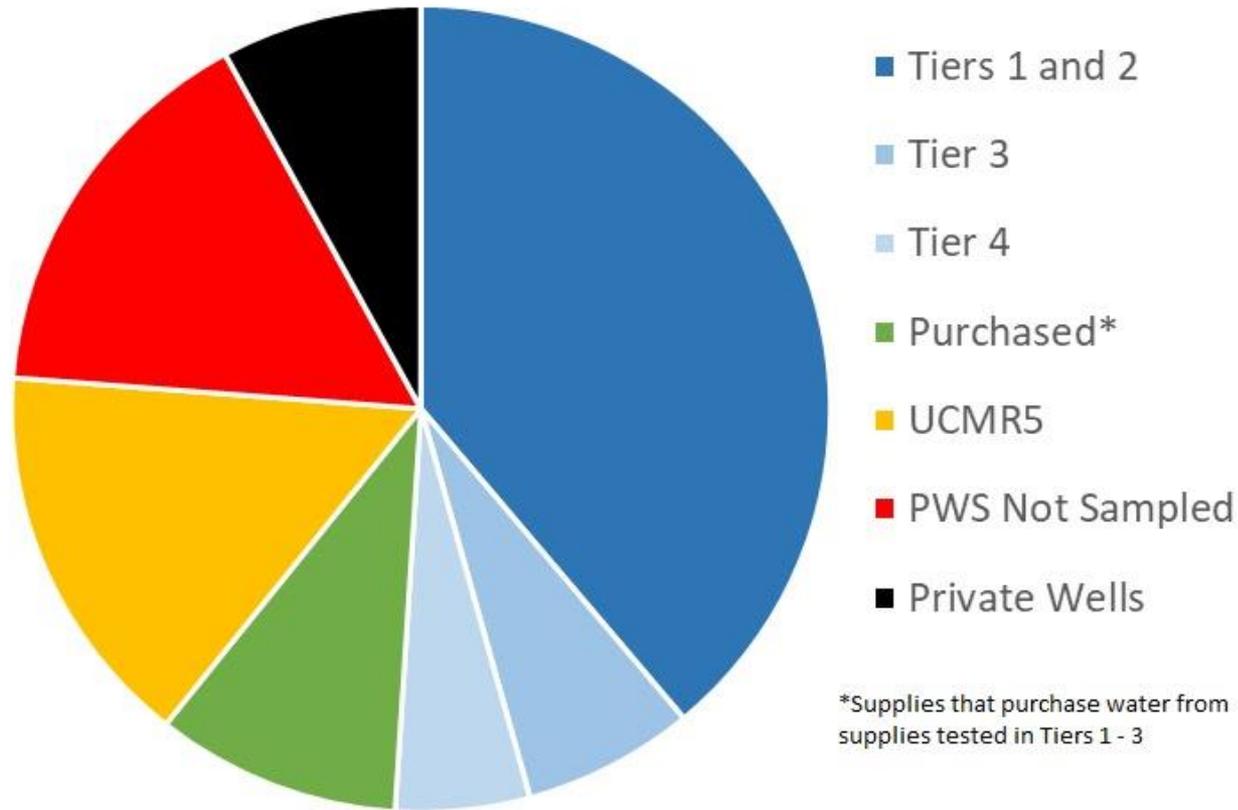
- **Field Office 1** - Cedar Rapids, Central City, [Dubuque](#)
- **Field Office 2** - none
- **Field Office 3** - Spencer, Rock Valley, [Sioux City](#)
- Field Office - Harlan
- **Field Office 5** - Colfax, Ames, West Des Moines, Tama
- **Field Office 6** - [Burlington](#), [Camanche](#), Iowa City, Keokuk, [Kammerer MHP](#), [Muscatine](#), Iowa American Davenport, [Bayer Crop Science \(Muscatine\)](#)

Public Water Supplies on Quarterly PFAS Monitoring



Iowa Population Represented by Sampling

Population of Iowa



Questions?

