

PFAS

A LEARNING EXPERIENCE

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OVERVIEW

- COLLABORATORY SAMPLING
 - OBSERVED CONCERNS
 - RESULTS
- HIGH POINT DRINKING WATER SOURCES
 - RESULTS COMPARISON
- INDUSTRY RESULTS

COLLABORATORY SAMPLE

Round 1

- Sampling Guidelines
 - Hygiene Products
 - Sampling Protocol
 - Place samples on ice
- Sample locations
 - Raw water sample collected from the raw water faucet in control room
 - Back-up lake sample was collected from the air-water interface at the shoreline of the lake



• COLLABORATORY SAMPLE

• Round 2

- Sample locations
 - Raw water sample was collected from the raw water faucet in control room
 - Back-up lake raw water sample was collected from boat ramp at the lake
- Sample technician was wearing waterproof boots and jacket.



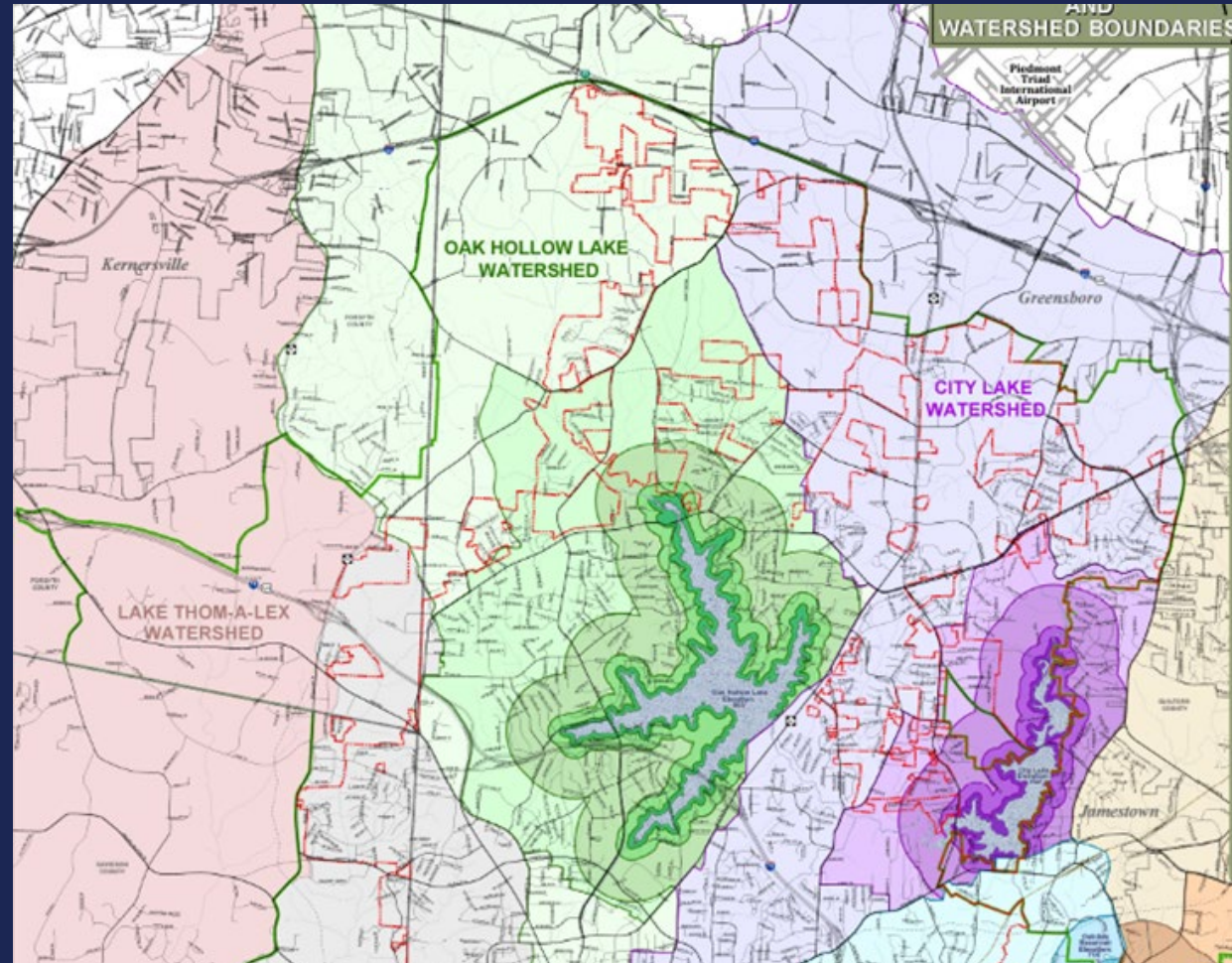
Collaboratory Baseline Results July 2019



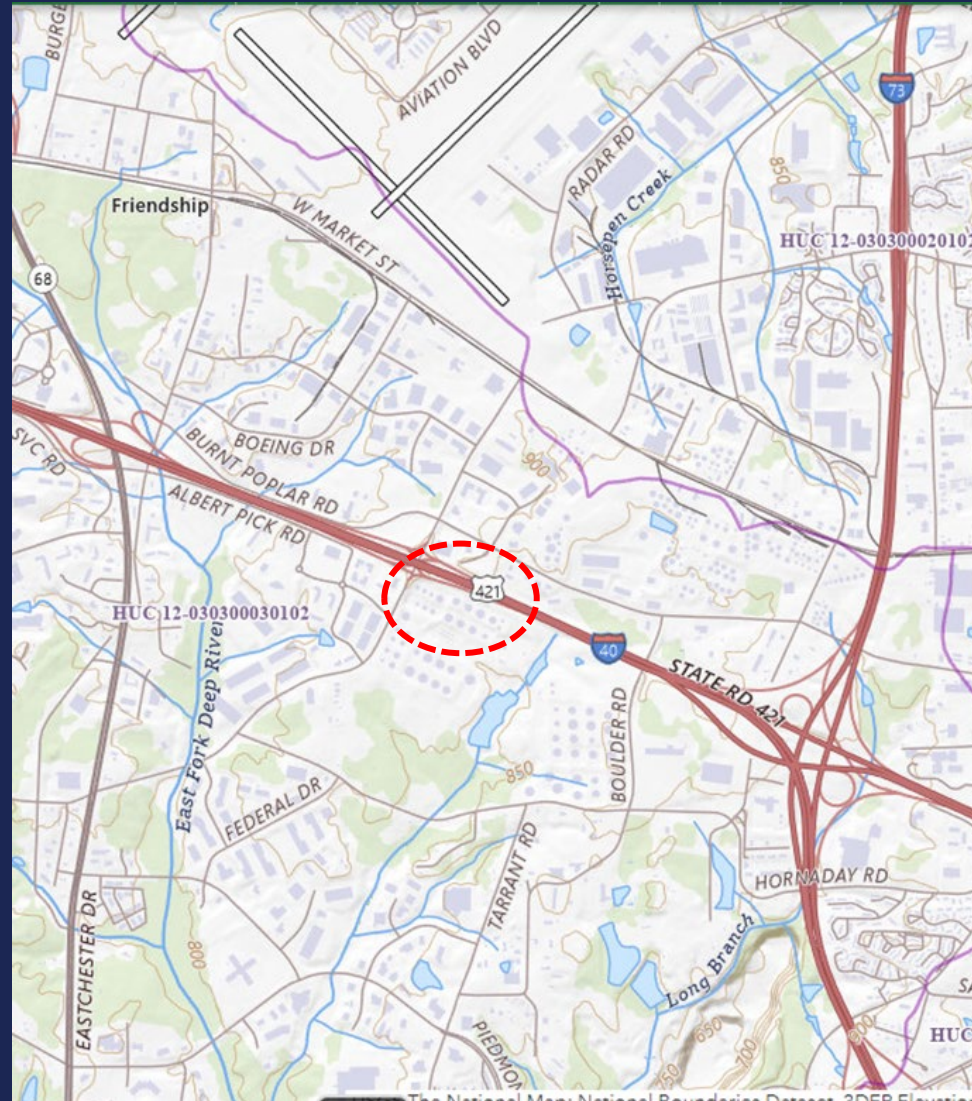
Where is the PFAS coming from?

Oak Hollow Watershed encompasses mostly residential and commercial

City Lake Watershed contains a mix of residential, commercial and light industrial.



CITY LAKE WATERSHED



POSSIBLE SOURCE?

JUNE 13, 2010

COLONIAL TANK FARM FIRE

- LIGHTNING STRUCK TANK #819
- TANK VOLUME ~ 1MG GASOLINE
- 2 MG WATER USED TO EXTINGUISH FIRE
- FOAM APPLIED AT 0.45 GPM/FT² @ 2000 GPM



WHAT TYPE OF FOAM WAS USED?

"The environmentally-mindful THUNDERSTORM W813A 1x3 AR-AFFF Concentrate formulation contains short-chain, C-6 fluorochemicals manufactured using a telomer-based process. The telomer process produces no PFOS, and these C-6 materials do not breakdown to yield PFOA. The fluorochemicals used in the concentrate meet the goals of the U.S. Environmental Protection Agency 2010/15 PFOA Stewardship Program."

Source: Product Fact Sheet





Photo credit: Firehouse.com



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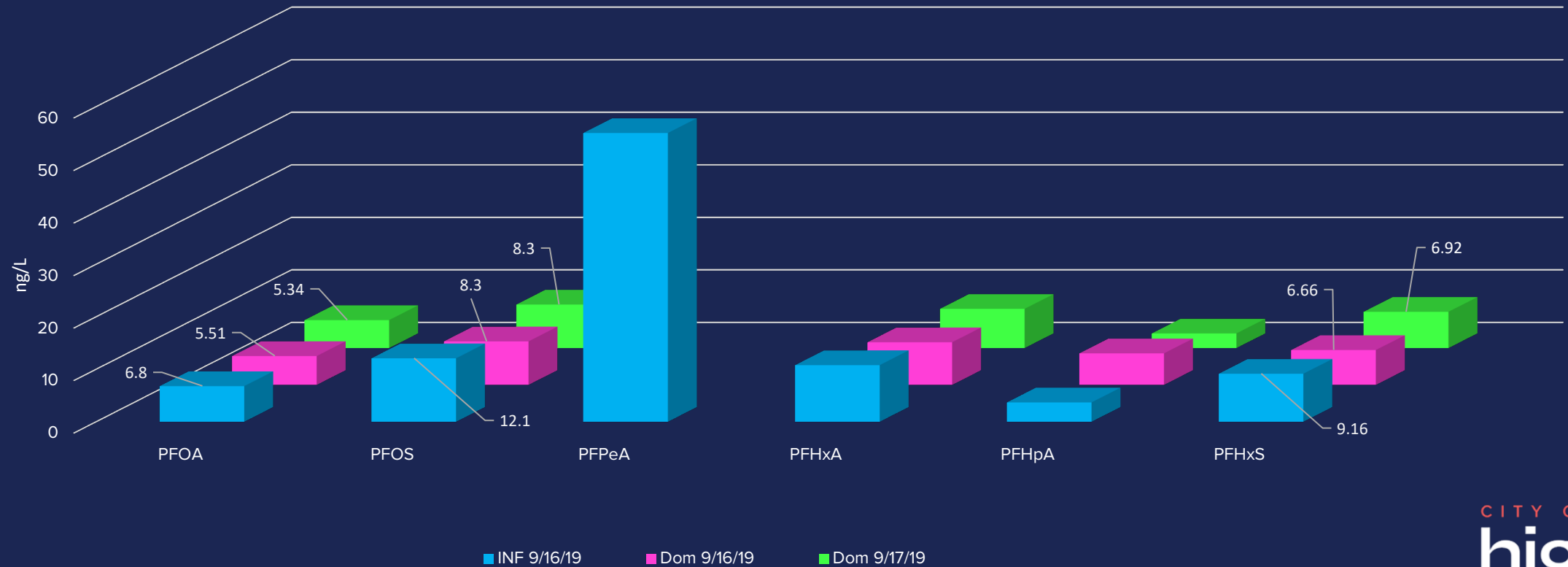
• Influent PFAS Sampling

- Non-coated Tyvek suits
- Nitrile gloves
- Shoe covers
- Hair covers
- Stainless steel dipper



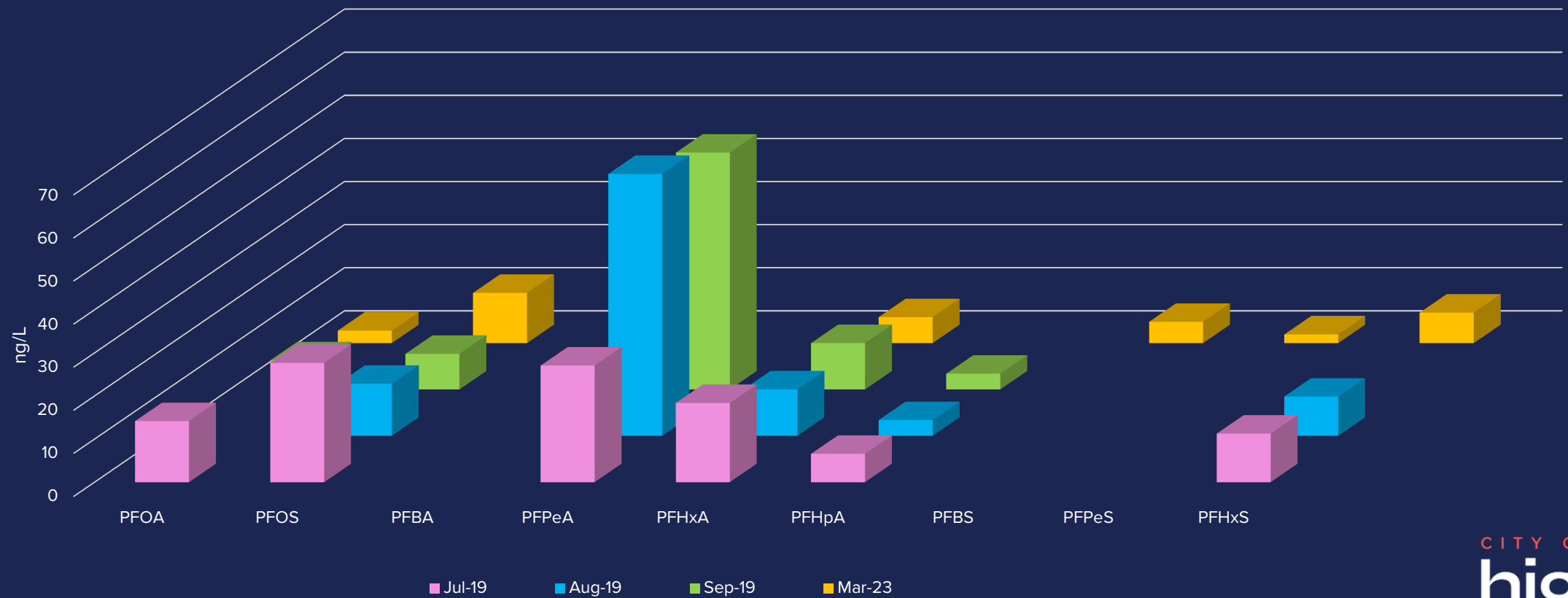
PFAS Summary

2019 Influent – Domestic Comparison



PFAS Results Summary - Influent

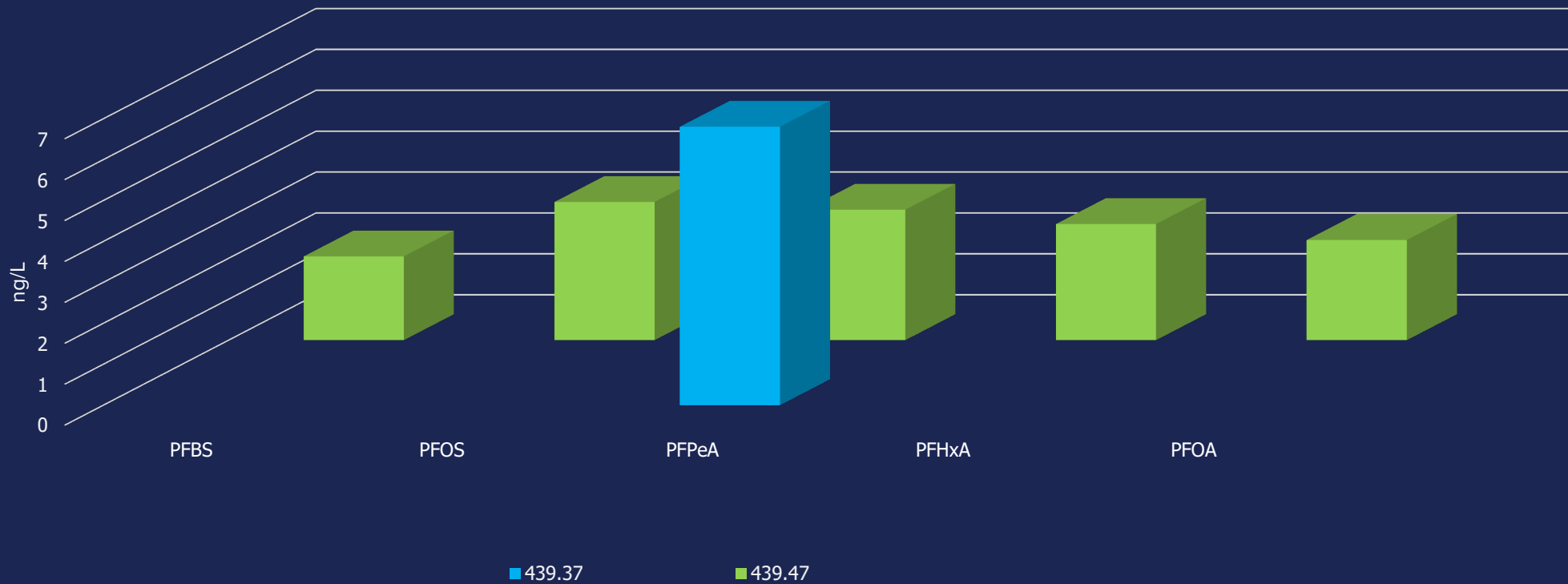
2019 – 2023 Comparison



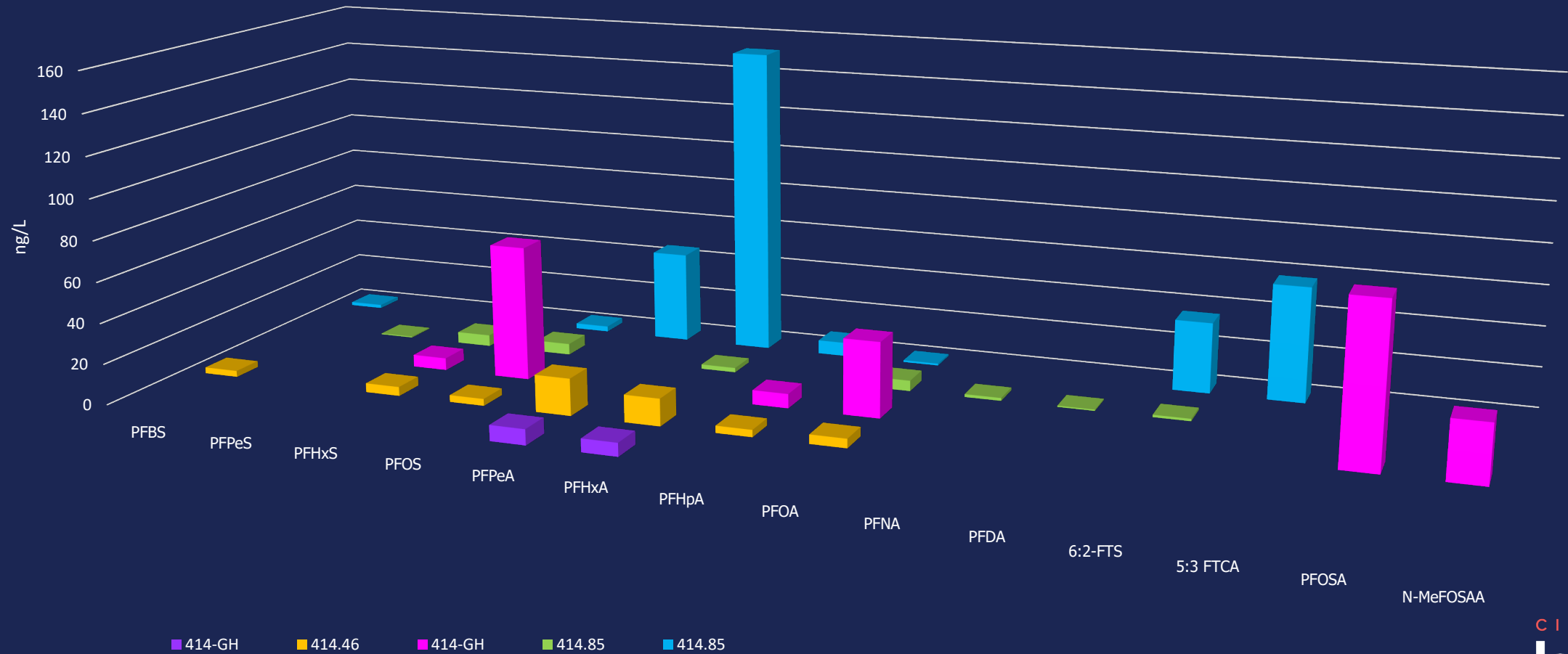
2023 High Point Industry Sampling

- Collected as part of Fall compliance sample
- Collected as a grab sample
- Used Isotope Dilution Method
- Normal clothes
- Stainless steel dipper
- Why not use EPA Method 1633?
- Limitations
 - Only 50 mg solids allowed per sample; requires more sample volume
 - Hinders accurate analysis of “dirty” samples; results in higher detection limits
 - More expensive
 - Using data for a “peek” knowing finished water had PFAS detections

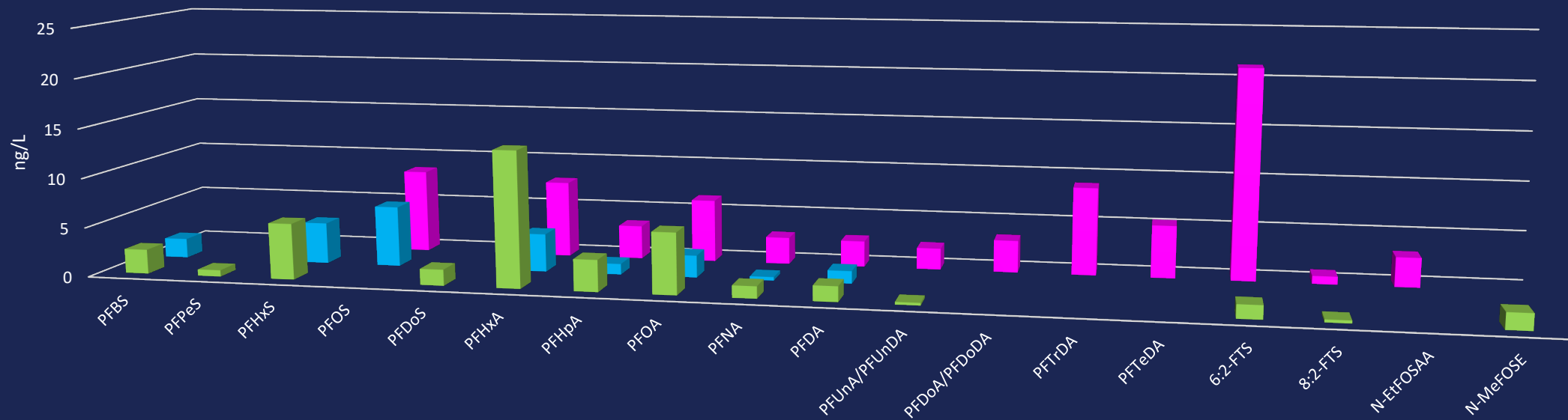
Results Summary - Pharmaceutical



Results Summary - OCPSF

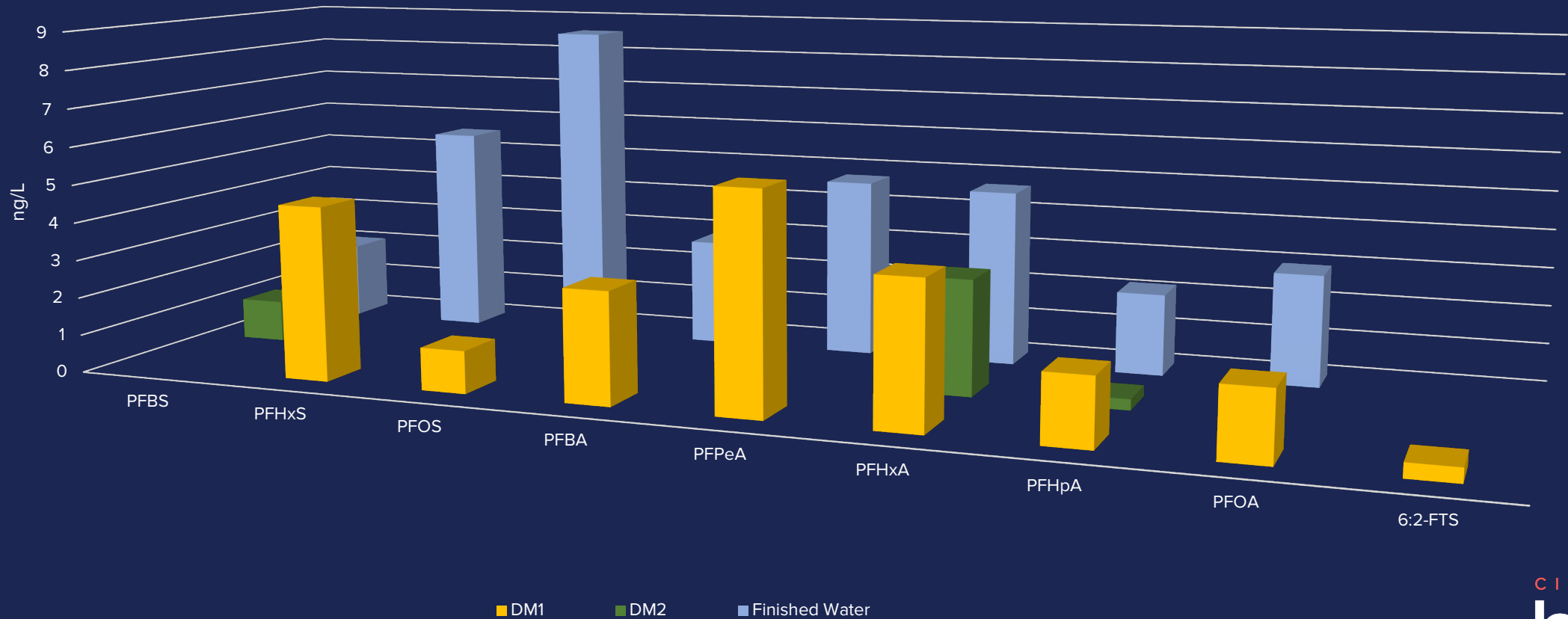


Results Summary – Laundry*

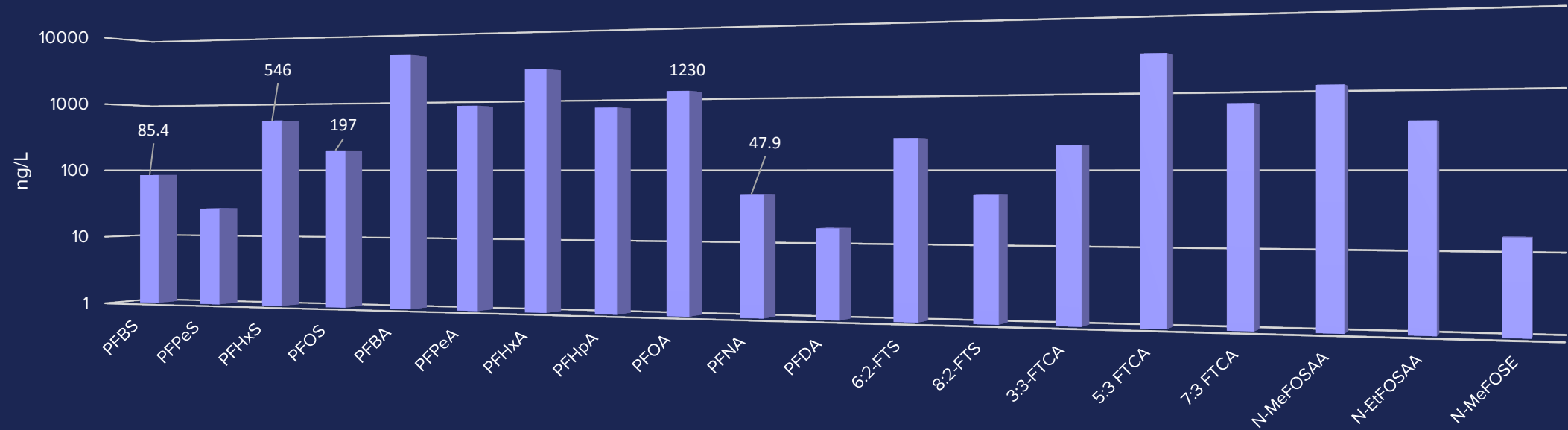


*includes non-SIU facility

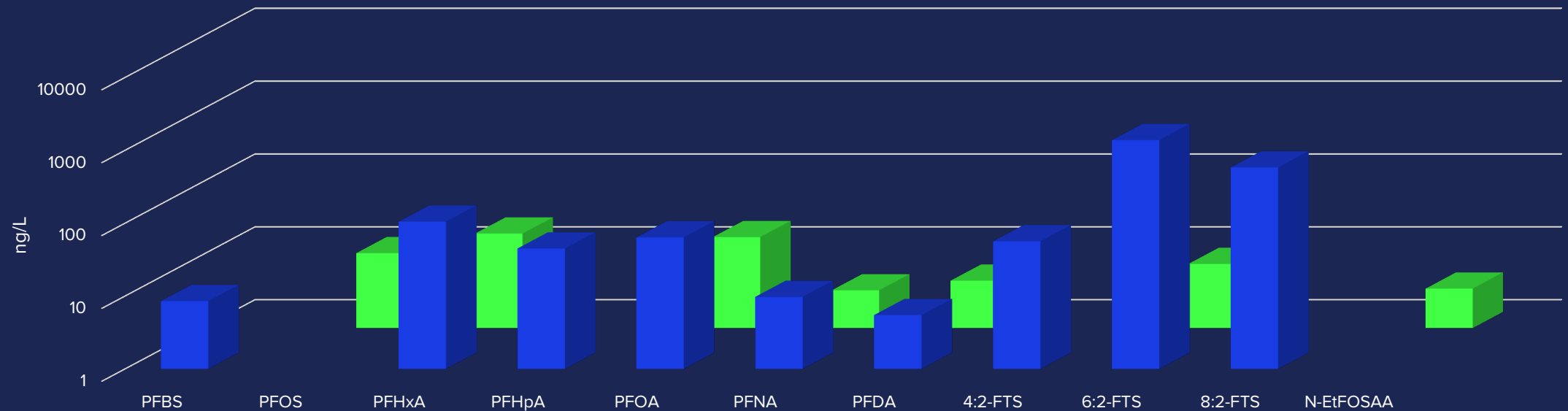
Results Summary – Dairy Manufacturing



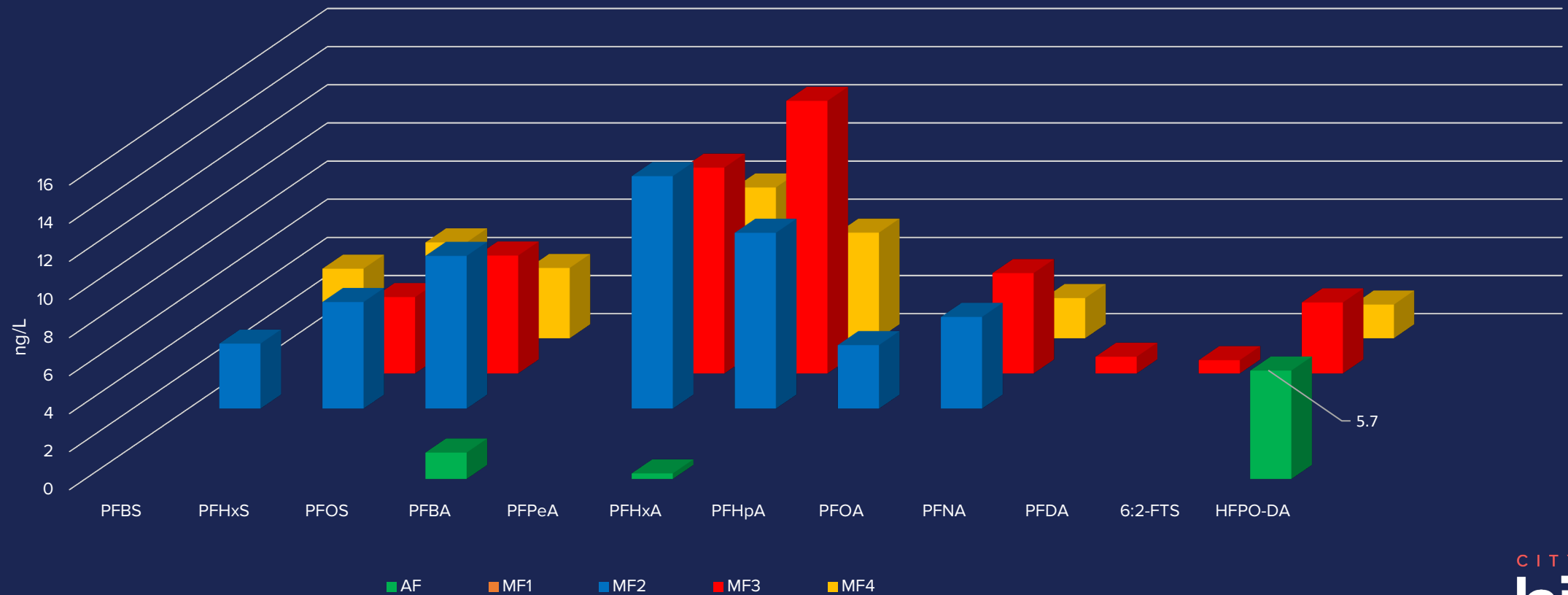
Results Summary – Landfill



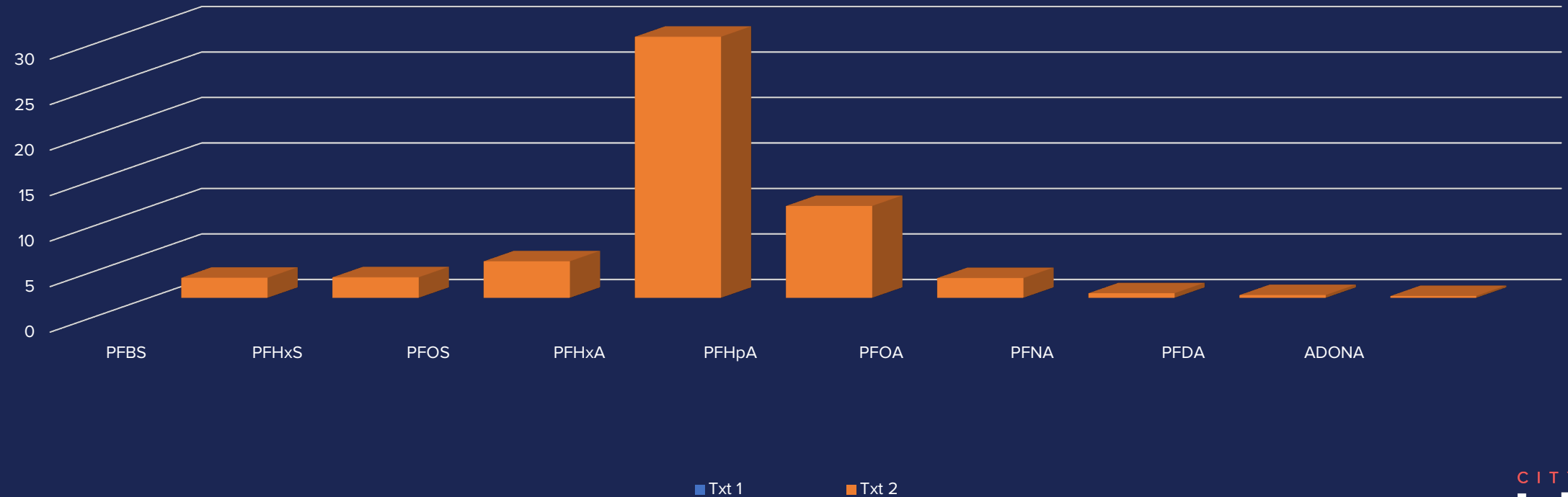
Results– Dye Manufacturing



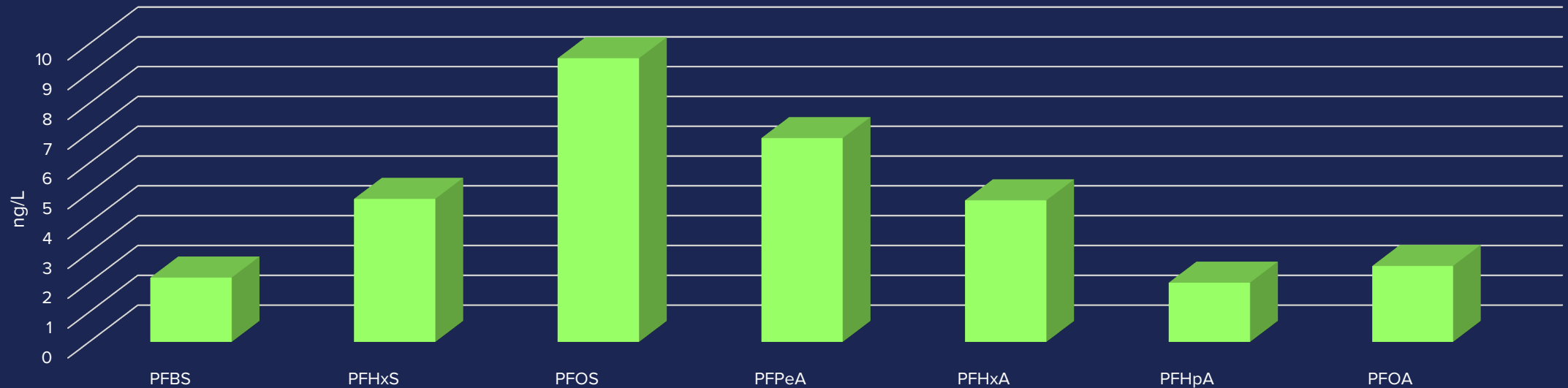
Results Summary – Metal Industries



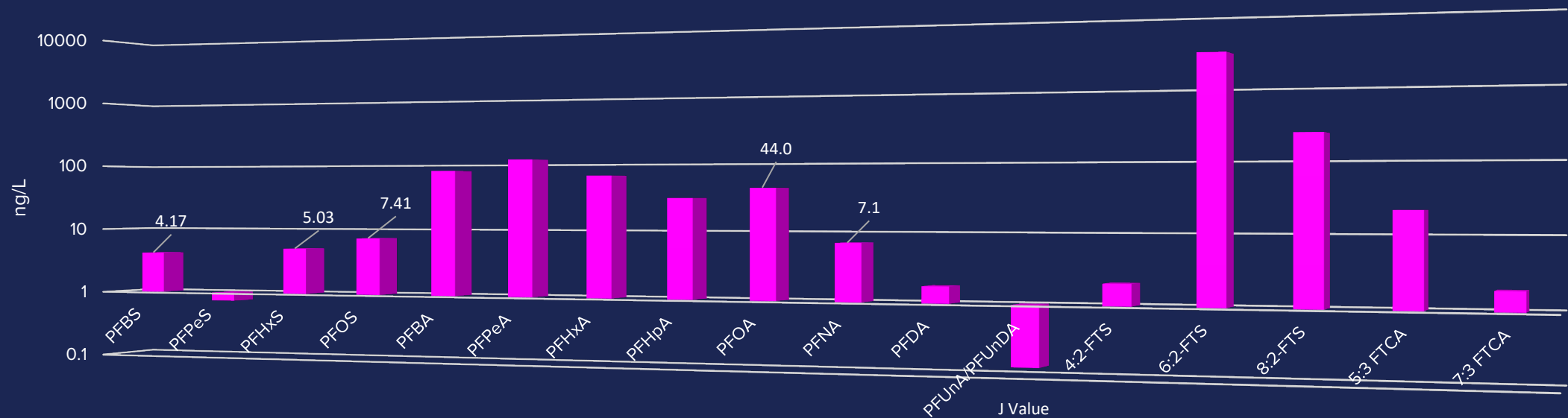
Results Summary – Textile Industries



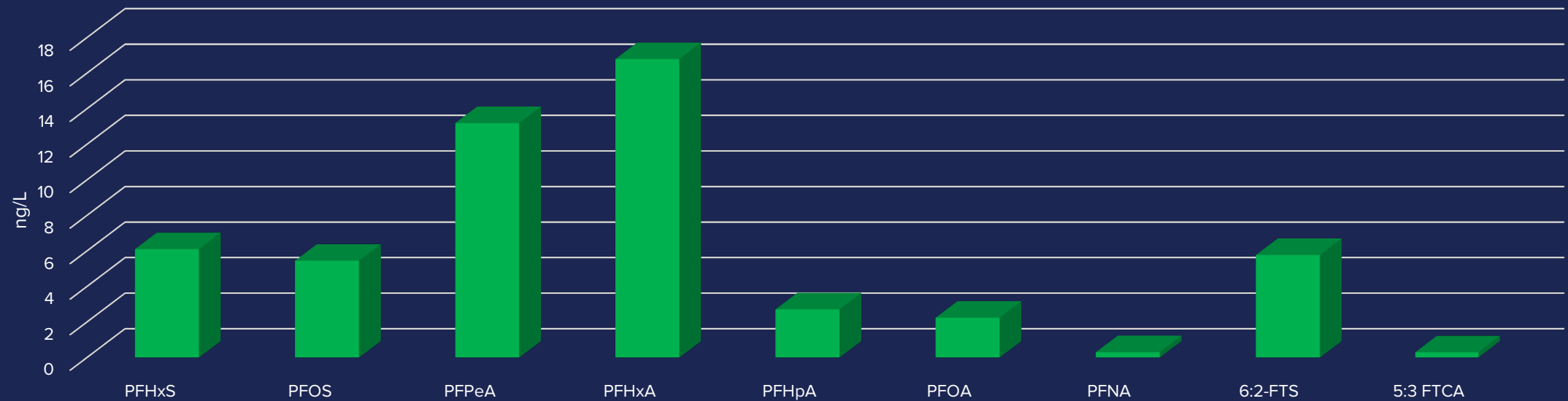
Results Summary – CWT (Oily Wastes only)



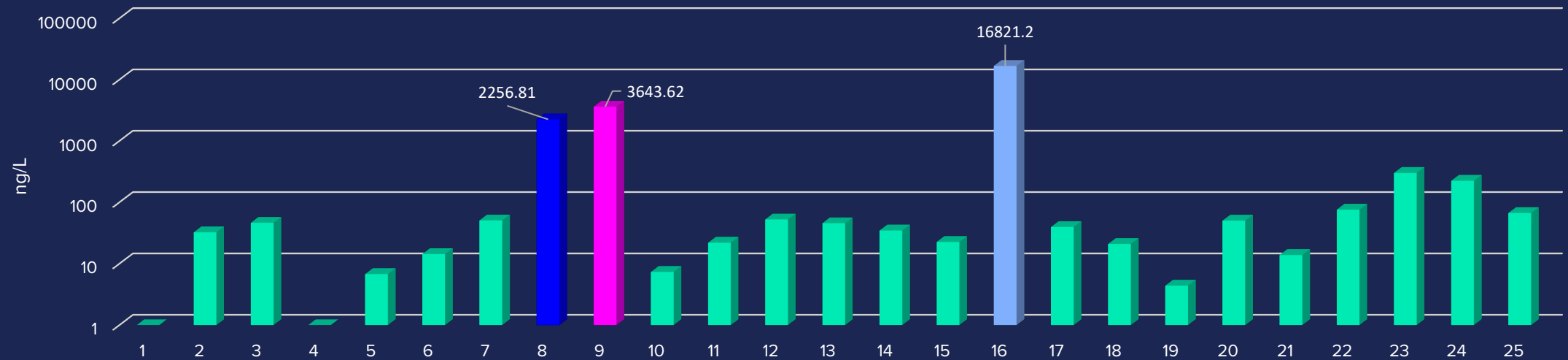
Results Summary – Drum Cleaner



Results Summary – Latex Paint & Coatings



Industry Summary – Total PFAS





FINAL THOUGHTS

- Determine the concentration(s) of PFAS in the finished water if the industry uses water in their process(es) their results will be affected.
- Draft Method 1633 does not REQUIRE a grab sample technique for collecting PFAS samples, it's just discouraged. If you choose to use an automatic composite sampler keep this requirement in mind:
 - *"Before use, each lot of tubing must be thoroughly rinsed with methanol, followed by repeated rinsing with reagent water to minimize sample contamination. The final reagent water rinse should be collected and analyzed for PFAS to confirm that the tubing is suitable for use."*

FINAL THOUGHTS...continued

Priority for SIU PFAS characterization:

- OCPSF
- CWTs
- Industrial Laundry
- Textiles/Metal Finishers (platers)
- SIUs with high discharge flow
- Landfills – As of July 2023, have a DWM requirement to sample for PFAS (Draft Method 1633) as part of their compliance monitoring.
 - *Note: DWM "considers "J" flags valid and relevant in the decision-making process and hence should be reported."*

QUESTIONS?

