



NC Department of Health and Human Services

GenX and PFAS Updates

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State Epidemiologist and Epidemiology Section Chief

July 26, 2022

What are PFAS?

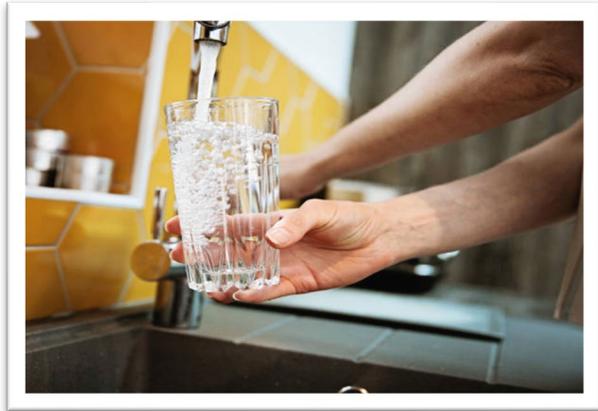
PFAS, or per- and polyfluoroalkyl substances, are a group of human-made chemicals that includes PFOA, PFOS, GenX, and many other chemicals.

Used since the 1950s to make products to resist stains, grease, and water and in some firefighting foams.



How can I be exposed to PFAS?

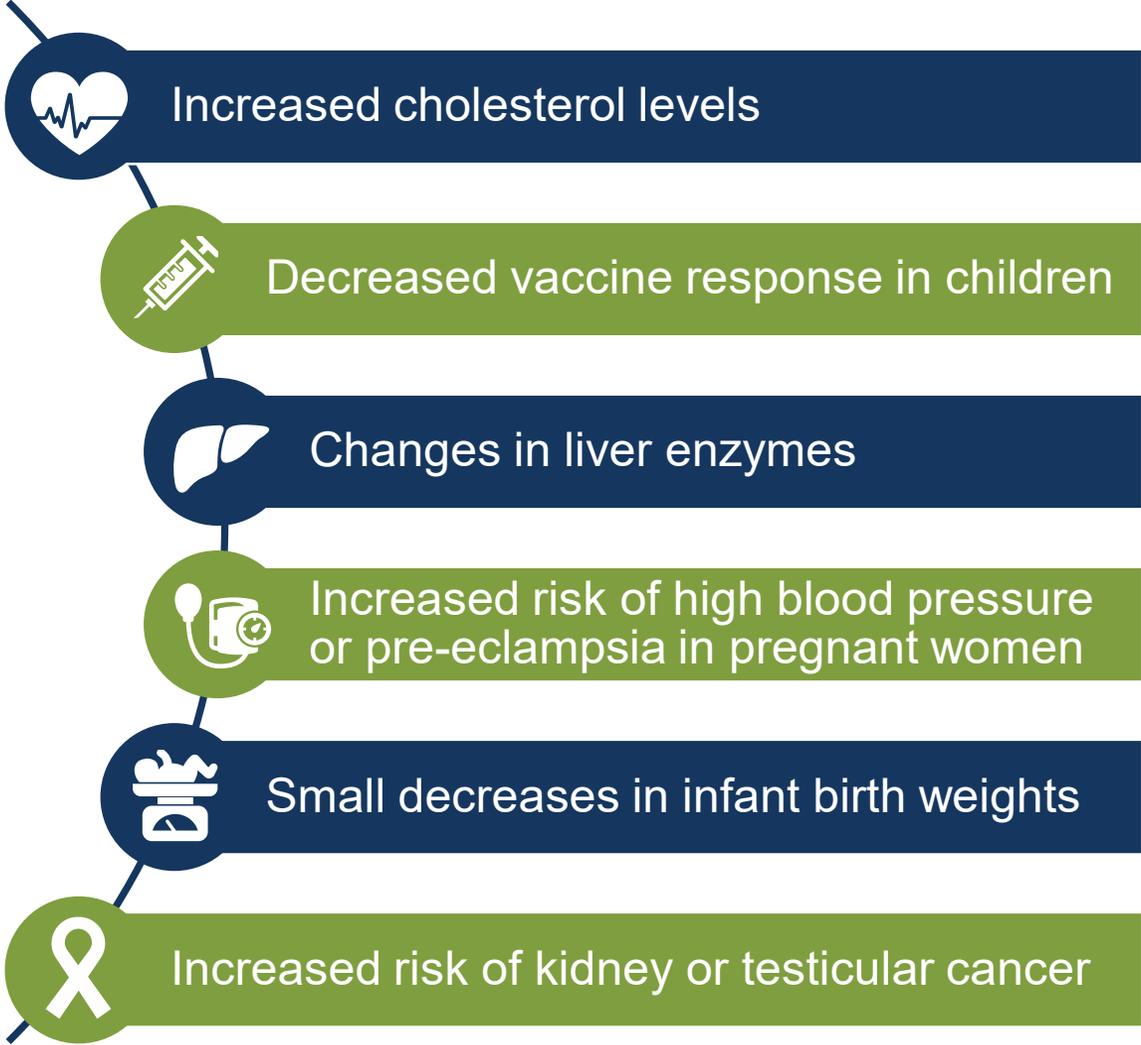
PFAS exposure can occur through contaminated drinking water, food, and indoor dust, as well as some consumer products and workplaces.



How can PFAS affect my health?



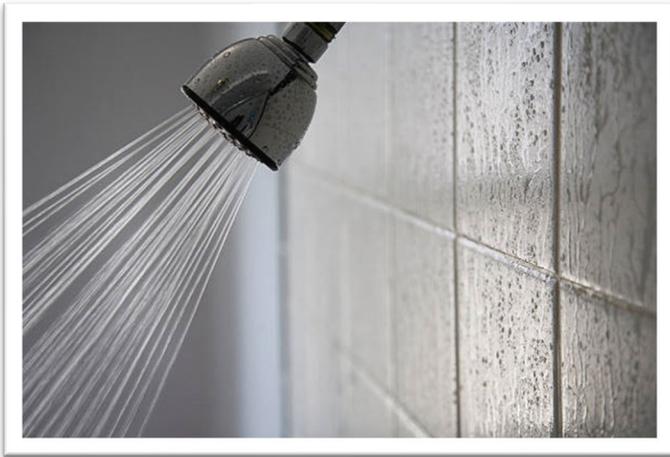
*In adults, children,
and pregnant women*



More research is needed to better understand the health effects associated with PFAS exposure.

PFAS and skin exposure

- Only a small amount of PFAS can get into your body through your skin, such as through bathing, showering and swimming.
- Limited data from animal studies show some PFAS may cause skin irritation at high levels.



Public health role

- Determine whether PFAS detected through environmental sampling could pose a risk to human health
- Provide health-based guidance on levels of exposure to such contaminants
- Conduct risk assessments and risk communication

EPA Drinking Water Health Advisories

Released June 2022

PFAS Chemical	Health Advisory Level (ppt)
PFOA	0.004 (interim)
PFOS	0.020 (interim)
GenX Chemicals	10
PFBS	2000

Ways to Reduce Exposure to PFAS

- If you live near known sources of PFAS contamination or your drinking water contains PFAS, you may want to use a different water source or filter your water before drinking, cooking, and preparing infant formula.
- Information about water testing and filtration resources is available on DHHS' website.

Epidemiology: Occupational and Environmental

PFAS



On June 15, 2022, the Environmental Protection Agency (EPA) released interim national drinking water health advisories for PFOA and PFOS and final national drinking water health advisories for GenX and PFBS. More information about PFAS is available on this [factsheet](#) along with information about [water testing and filtration options](#).

Per- and Polyfluoroalkyl Substances

https://epi.dph.ncdhhs.gov/oee/a_z/pfas.html

Ways to Reduce Exposure to PFAS

- Reduce your use of products containing PFAS (packaged foods, products with non-stick or stain resistant coatings, and some personal care products).
- If you have questions about the products you use in your home, contact the Consumer Product Safety Commission at (800) 638-2772.

Contact Information

NCDHHS Occupational and Environmental
Epidemiology Branch

Phone: (919) 707-5900

E-mail: oeeb@dhhs.nc.gov



Chemours Drinking Water Plan and Sampling Updates

North Carolina Department of Environmental Quality

July 26, 2022





Discussion Topics

- PFAS and GenX
- Groundwater sampling and the Consent Order
- DEQ June 15th letter
- Alternate Water Options
- Additional information

Emerging Compounds: GenX and PFAS

- **GenX = HFPO-DA or C3 Dimer Acid = $C_6HF_{11}O_3$**
- **GenX** is a trade name for a manmade, unregulated chemical used in manufacturing nonstick coatings and for other purposes.
 - Is an *emerging compound* in a family of chemicals known as per- and polyfluoroalkyl substances (PFAS)
 - Produced and emitted by one company in NC – Chemours (formerly Dupont)
 - Has been discharged into the Cape Fear River for 30+ years.
 - Until the past couple of years, labs couldn't measure it.

Emerging compounds:

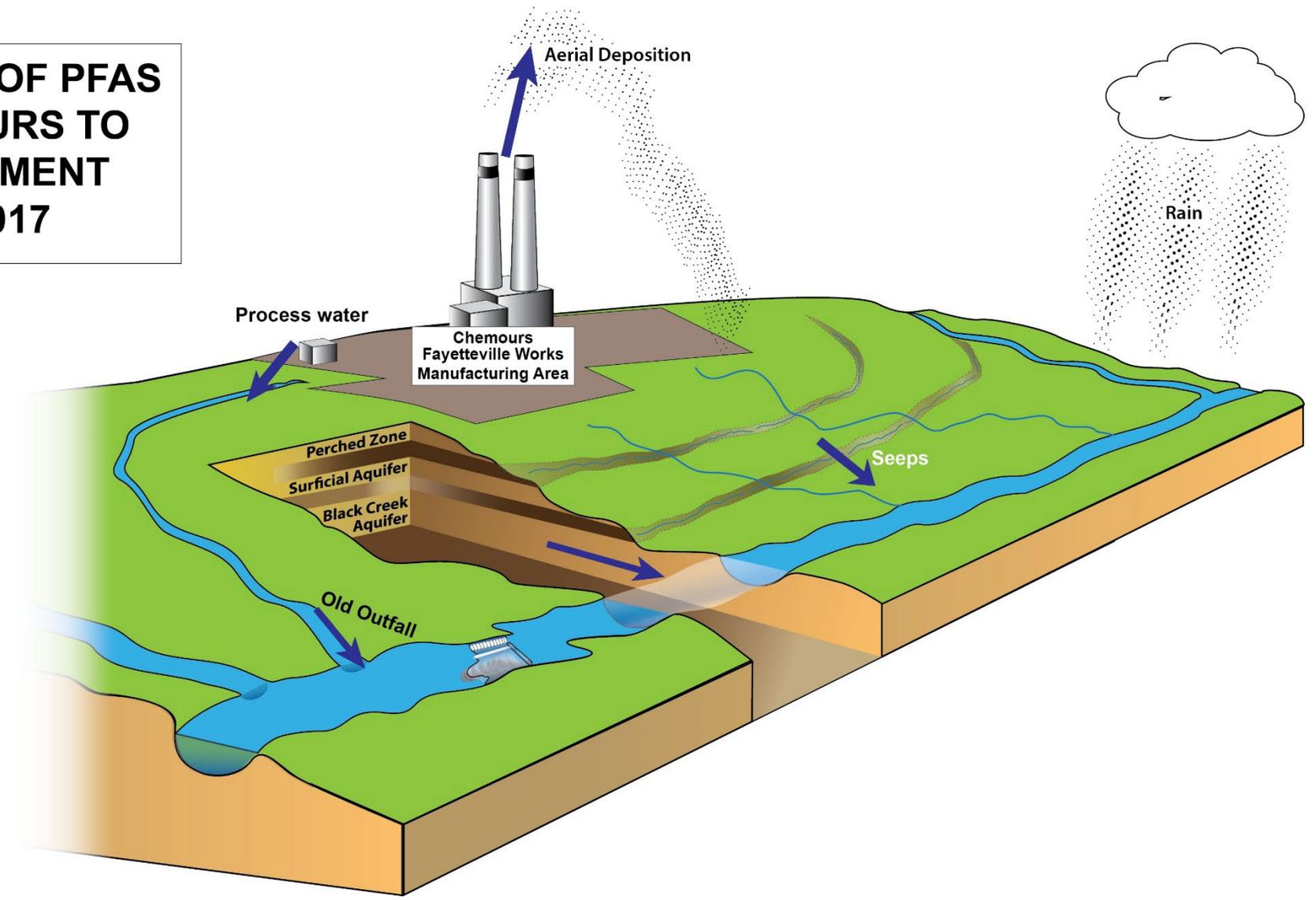
- No (or limited) specific limits in environmental regulations.
- Little is known about how they behave in the environment.
- Little known about their effects on human health and environment.
- Presents significant challenge for regulatory agencies.

Emerging Compounds – GenX Case History in NC

- **Early-mid 2017:** Focus on surface water issues
- **Mid 2017:** Groundwater issues discovered
- **Mid-late 2017:** Air emission contributions
- **Through 2018:** Testing of emissions and drinking wells
- **Feb. 2019:** Consent Order signed
- **Dec. 2019:** Thermal Oxidizer
- **2019-Present:** Ongoing private well testing around the plant
- **Early 2022:** Lower Cape Fear Region well sampling



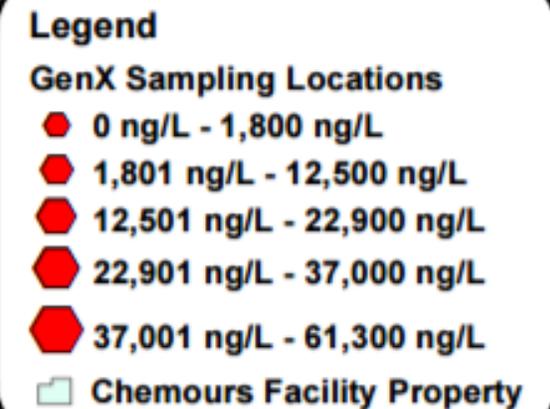
**MAIN SOURCES OF PFAS
FROM CHEMOURS TO
THE ENVIRONMENT
BEFORE 2017**



Note: Image is conceptual and is not to scale

Groundwater Testing

- Found high levels of PFAS compounds in onsite monitoring wells at the Chemours plant in Bladen County in 2017
- In 2017, NCDHHS established a GenX drinking water health goal of 140 ng/L (ppt)
- In 2022, EPA established a nationwide health advisory for GenX at 10ppt that has been incorporated into the Chemours Consent Order
- DEQ tested wells on properties adjacent to Chemours first and found high levels
- Asked Chemours to test additional wells in the area to determine extent of contamination
- November 3, 2021: DEQ letter stating that Chemours is responsible for contamination of groundwater monitoring wells and water supply wells in New Hanover County and potentially other counties



Chemours – Consent Order Feb. 2019

Addressing contamination

- NC DEQ signed a Consent Order with Chemours Feb. 26, 2019: <https://deq.nc.gov/news/hot-topics/genx-investigation>
- Consent Order included:
 - Requirements to reduce air emissions and to achieve maximum reductions of all remaining PFAS contributions to the Cape Fear River on an accelerated basis, including groundwater.
 - Notify and coordinate with downstream public water utilities when potential discharge of GenX compounds into the Cape Fear River.
 - Sample wells and provide drinking water
 - Additional penalties will apply if Chemours fails to meet the conditions and deadlines established in the order.



Implementing the Chemours Consent Order

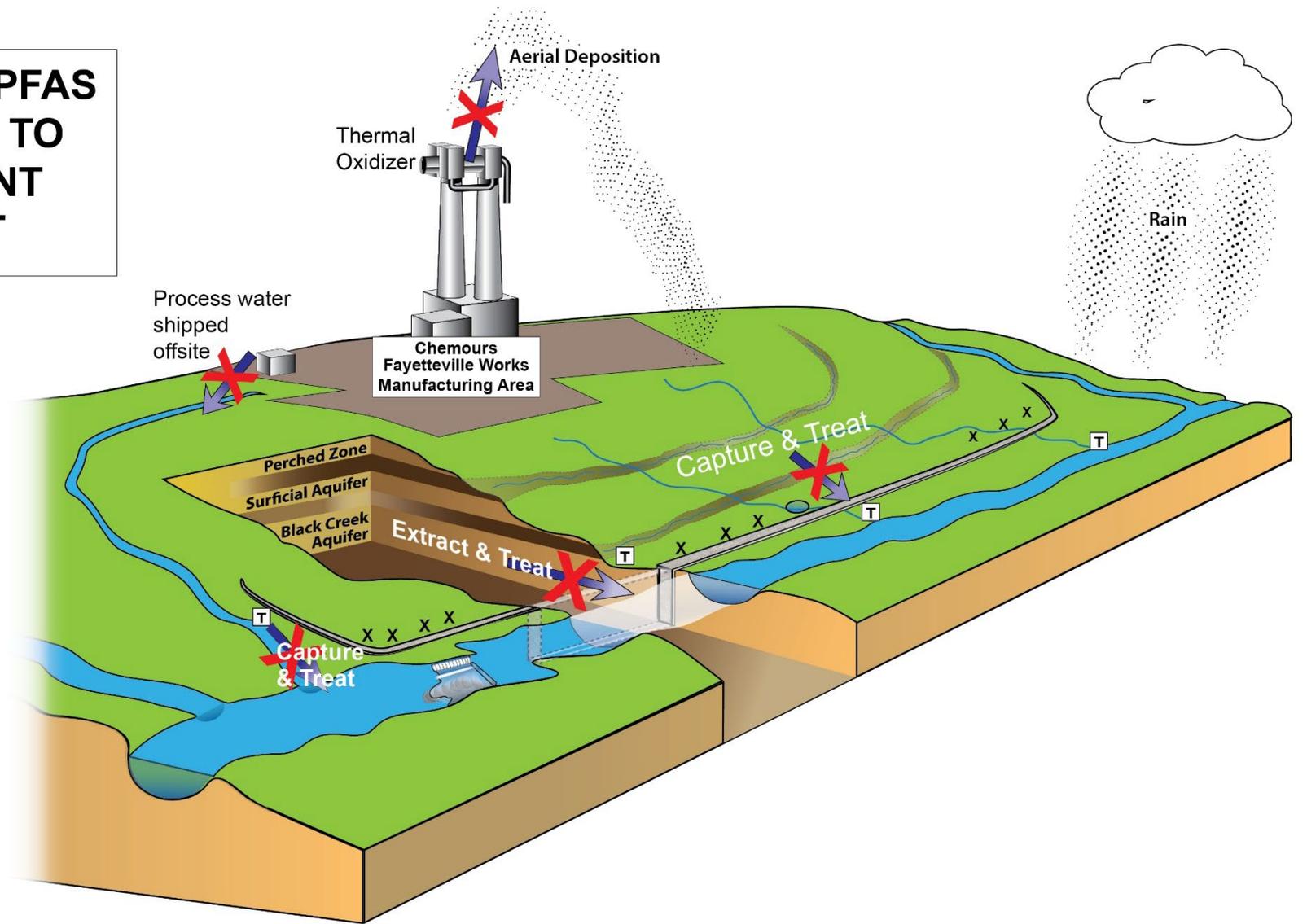
Addressing contamination

Per the 2019 Consent Order and 2020 Addendum, Chemours must also:

- Achieve control technology improvements and meet emissions reduction milestones;
- Determine which PFAS at what amounts are in wastewater and stormwater at the facility;
- Determine which PFAS at what amounts are in river sediment and downstream raw water intakes for drinking water plants;
- Take specific actions to address more than 90 percent of the PFAS entering the Cape Fear River through groundwater from the **residual** contamination on the site.
 - As of 2022, the interim measures required by the Addendum are operational. The design of the barrier wall and treatment system is underway, and DEQ has held a public process for the related NPDES permit.



MAIN SOURCES OF PFAS FROM CHEMOURS TO THE ENVIRONMENT 2017 - PRESENT



Note: Image is conceptual and is not to scale

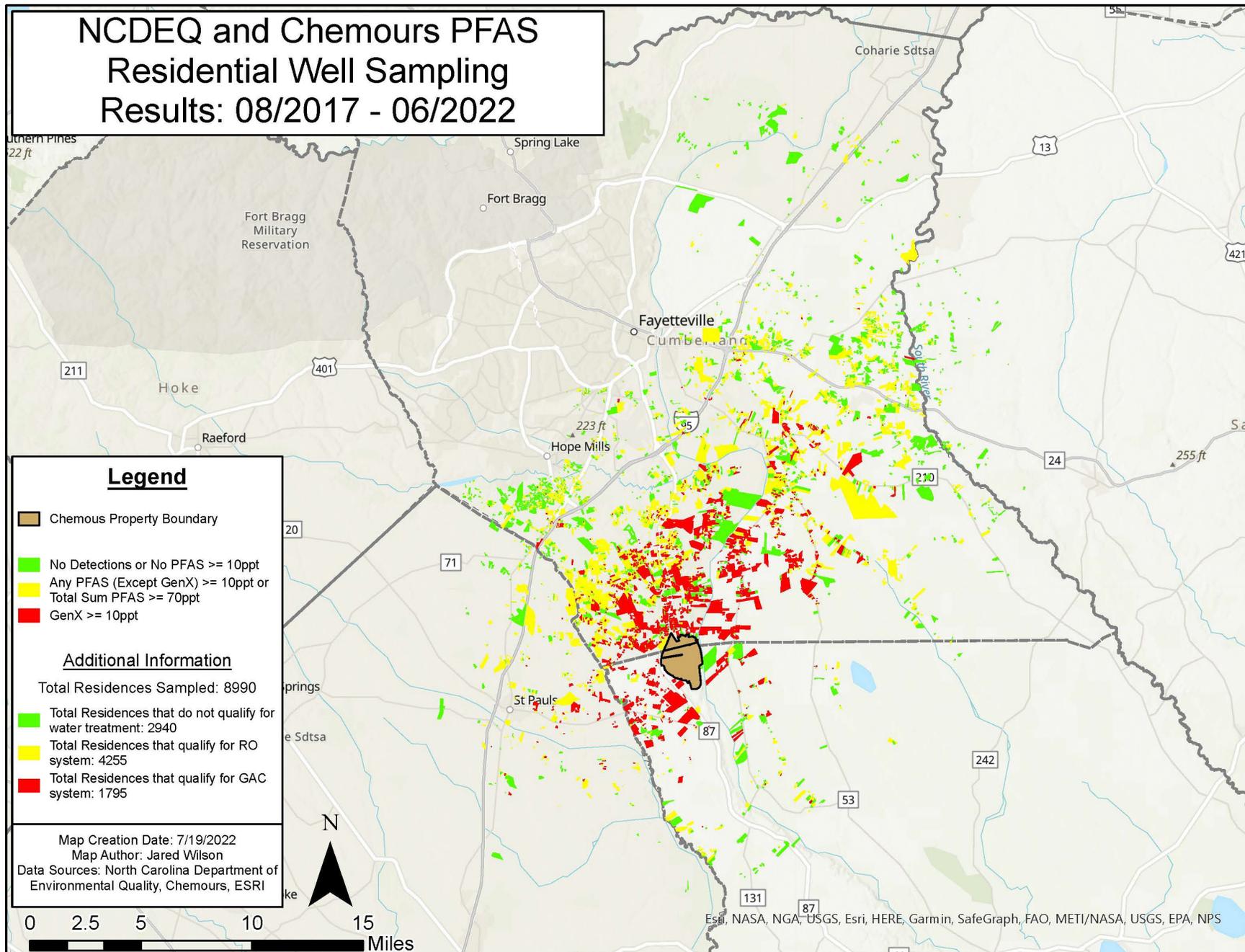
Chemours – Addressing Contamination

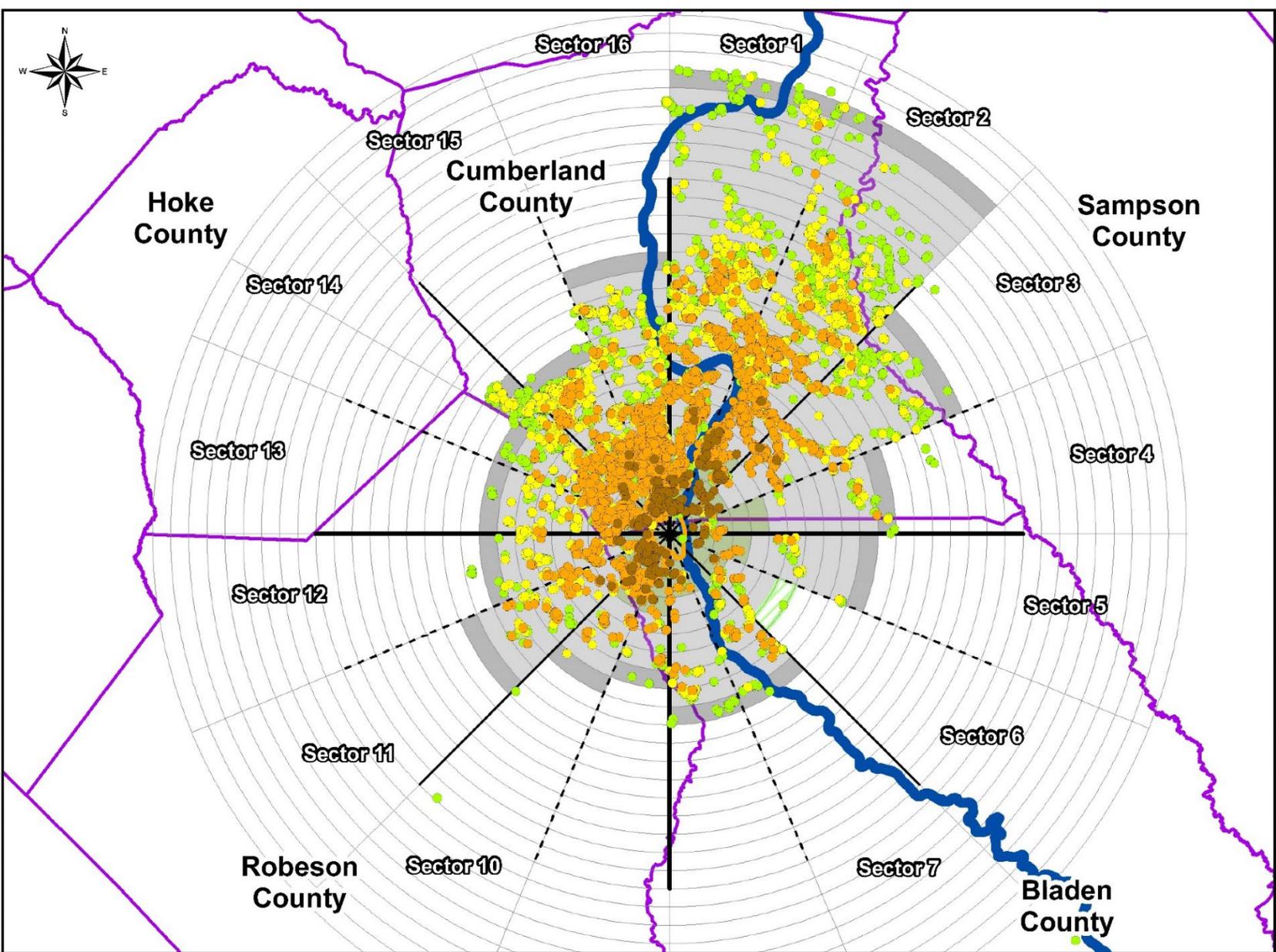
Consent Order Feb 2019 : Groundwater

Sample Wells and Provide Drinking Water for impacted private drinking water wells

- Sample drinking water wells
 - ¼ mile beyond the closest well that had PFAS levels above 10 parts per trillion
 - Annually retest wells that were previously sampled
 - Bottled water in 3 days if exceed a Consent Order limit
- For those with GenX above **10 parts per trillion (New EPA Health Advisory)**:
 - Provide permanent drinking water supply
 - Options: Public waterline connection where feasible, whole-building GAC filtration system, reverse osmosis (RO) units installed on every bathroom and kitchen sink
- For those with combined PFAS levels above 70 parts per trillion or any individual PFAS compound above 10 parts per trillion:
 - Provide, install and maintain up to three under-sink RO systems per residence

NCDEQ and Chemours PFAS Residential Well Sampling Results: 08/2017 - 06/2022





Legend

⊙ Sampling Results Received the Week of July 10, 2022

CO Criteria

- GAC Eligible (DA \geq 140)
- RO Eligible (Σ PFAS \geq 70)
- RO Eligible (PFAS \geq 10)
- No Action (Sample Results Less than CO Criteria)

— Fayetteville Works Facility Site Boundary

— Cape Fear River

— County Boundaries

Compass Directions

- Cardinal Directions
- Primary Intercardinal Directions
- - - Secondary Intercardinal Directions

Site Buffers (Every 1 Mile)

- Potential Sampling
- In Fill Sampling
- Step Out Sampling
- Sampled or Offered to Sample All Residences
- Delineated

Number of Results Received the Week of July 10, 2022		
		0

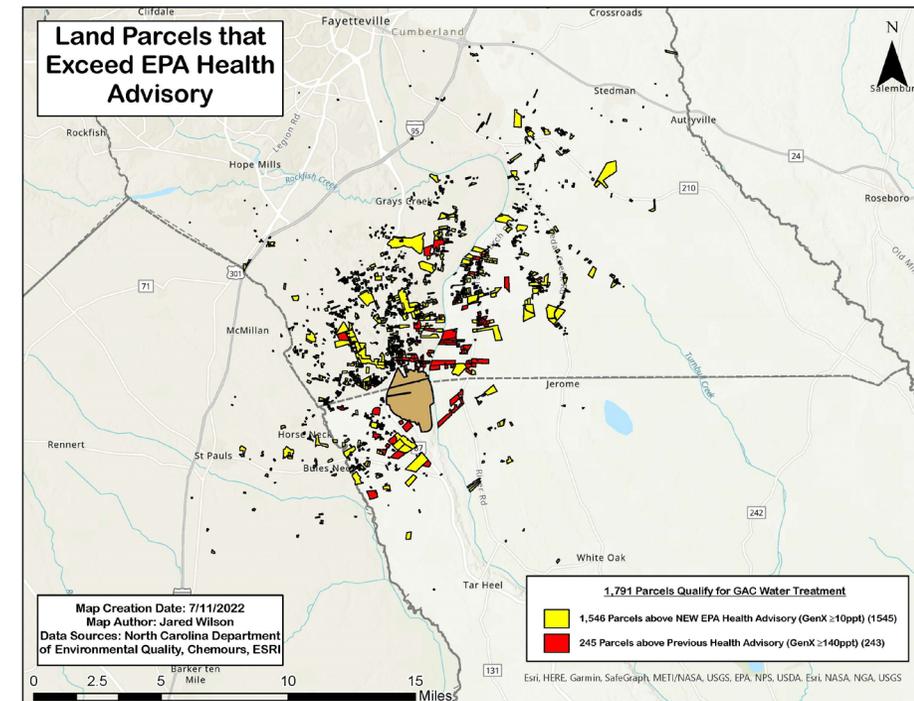
Number of	Residents	Installed
GAC Eligible* <i>(Shares Well with GAC Eligible)</i>	270 <i>(18)</i>	108
RO Eligible* <i>(Shares Well with RO Eligible)</i>	6,471 <i>(459)</i>	3,546
No Action Residences* <i>(Shares Well with No Action Res.)</i>	3,358 <i>(297)</i>	NA

Notes:

- *Includes shared wells.
- Residential sample results presented on the figure represent the residential location where the sample was collected. Residents who use a neighboring well are not presented on the figure.
- GAC installed systems consist of being online and initial confirmation sampling has been conducted.
- CO = Consent Order
- DA = HFPO Dimer Acid
- GAC = Granular Activated Carbon

DEQ's June 15, 2022 letter to Chemours

- Required Chemours to submit a report by July 13th **identifying** affected parties entitled to public water or whole-building filtration as a result of the new EPA health advisory for GenX at 10 ppt
- Required Chemours to submit for review and approval a draft letter to affected parties (well owners with GenX above 10ppt) notifying them of their eligibility options.
- Requirement to submit a plan within 90 days for **revising** and supplementing Chemours' assessment of **public water feasibility** for all affected parties (including re-evaluation of areas where municipal water was determined to be infeasible).
- Requirement to submit a plan for **transitioning affected parties** who have previously received RO systems to public water or whole-house filtration systems where required.
 - Residents who have GenX levels above 10 ppt and declined filters / bottled water will be contacted.



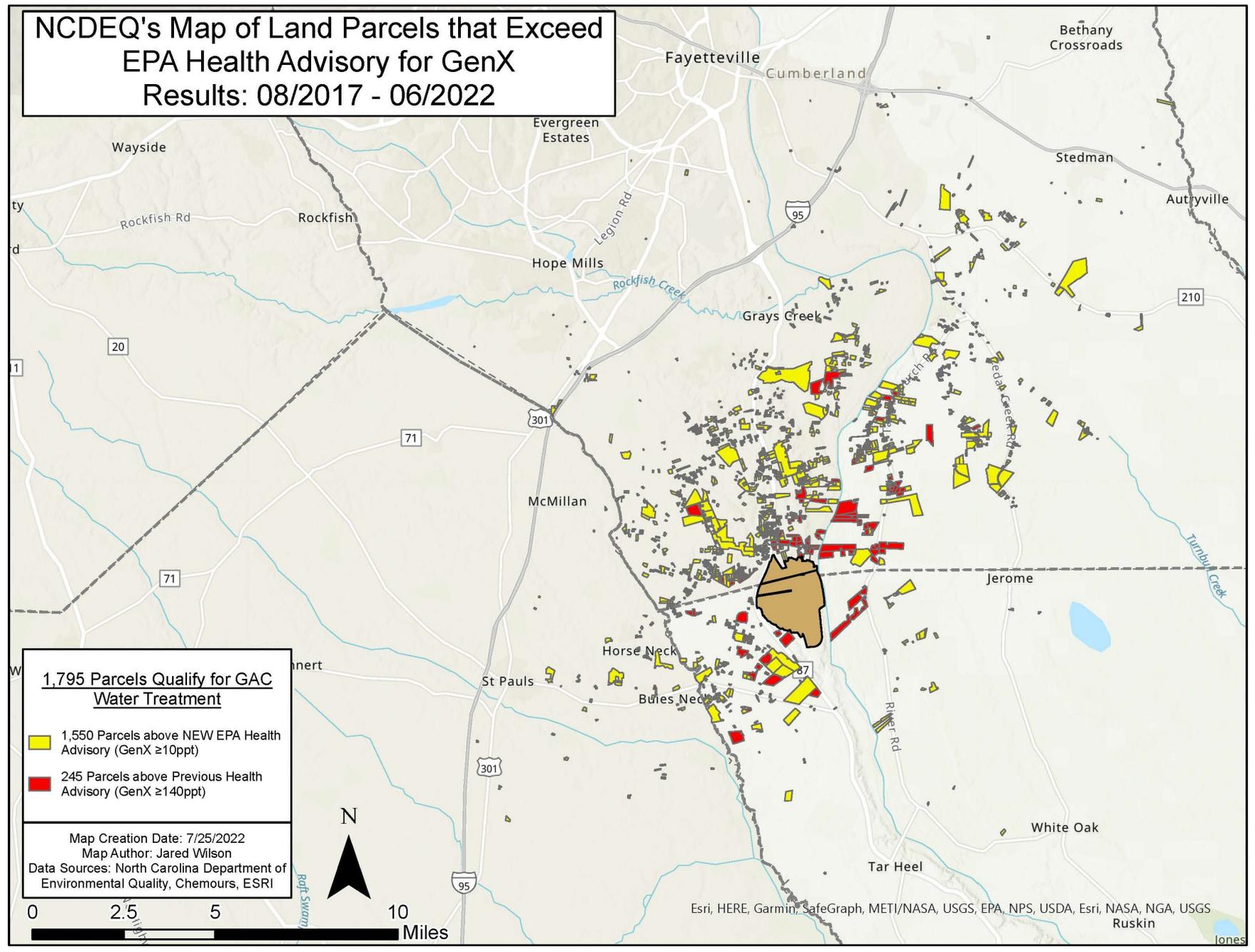
Updated Private Well Numbers for GenX

- Chemours has reported that **1,697 residences** in Cumberland, Bladen and Robeson Counties with GenX between 10 ppt and 140 ppt. All have been offered alternate water.
 - About **1,487** in Cumberland
 - Appx. **139** in Bladen
 - About **71** residences in Robeson
- Chemours proposes to send a letter within 30 days of DEQ approval outlining the options based on the new health goal for GenX: public water (if feasible), RO units in every bathroom and kitchen sink (where currently not installed), or installation of a whole-house GAC system.
- Chemours will cover the installation and maintenance costs for the filters for 20 years or the connection to municipal water and the water bill (for 20 years up to \$75) if public water is feasible.
- Information on a revised public water feasibility will be forthcoming to all residents
- Residents can request whole-house GAC filtration or additional RO units in the near term even if municipal water may be available.

NOTE: These selections would forego the future municipal water connection.



NCDEQ's Map of Land Parcels that Exceed EPA Health Advisory for GenX Results: 08/2017 - 06/2022



1,795 Parcels Qualify for GAC Water Treatment

- 1,550 Parcels above NEW EPA Health Advisory (GenX \geq 10ppt)
- 245 Parcels above Previous Health Advisory (GenX \geq 140ppt)

Map Creation Date: 7/25/2022
 Map Author: Jared Wilson
 Data Sources: North Carolina Department of Environmental Quality, Chemours, ESRI



Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, Esri, NASA, NGA, USGS

Next Steps if Chemours PFAS are detected

Installation of water treatment systems if Chemours PFAS are detected above 10ppt including GenX

- Two types of well water treatment systems are used
- Whole-house treatment (GAC) and under-the-sink (RO) versions
- DEQ has tested both systems for their effectiveness



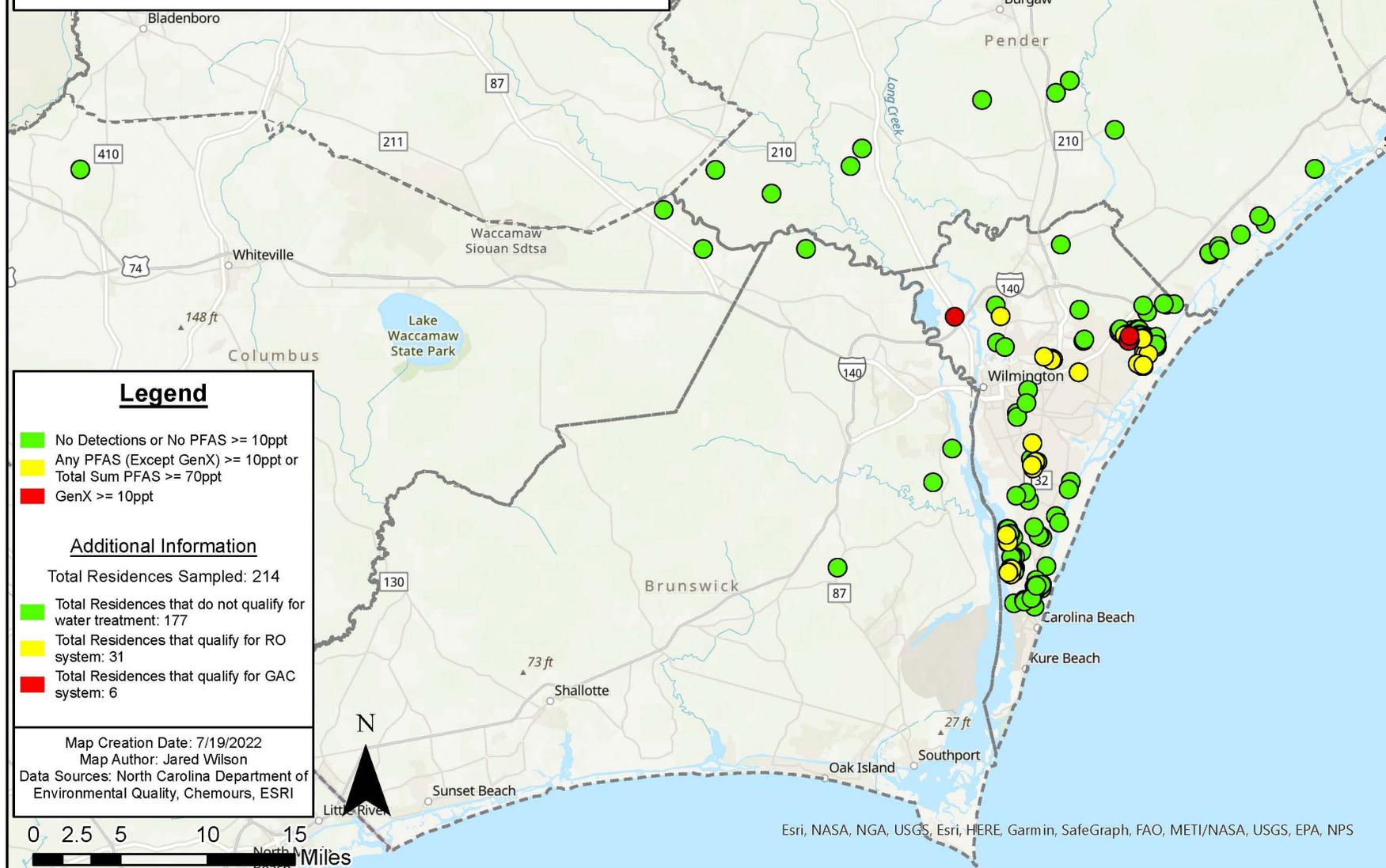
Whole-House Granular Activated Carbon system

Reverse Osmosis System

Next Steps

- Once DEQ approves, Chemours will send letters to residents in Bladen, Cumberland, Robeson and Sampson Counties offering the different options under the EPA health goal of 10ppt for GenX.
 - Options are: connection to municipal water, ROs at every kitchen and bathroom sink, whole-house GAC
- Continued DEQ and local government input / coordination on the Chemours public water feasibility reevaluation to be submitted in September of 2022. This will include Cumberland, Bladen and Robeson Counties. DEQ and the counties met on July 20 to discuss next steps in this process.
- Continued private well sampling in four Lower Cape Fear counties: New Hanover, Columbus, Pender and Brunswick.
 - There are currently 43 wells in this area that are eligible for alternate water based on detections of Chemours PFAS in well water.
- Continued work on the current and proposed remediation systems at the Chemours plant to include the barrier wall and groundwater extraction system.

NCDEQ and Chemours PFAS Residential Well Sampling Lower Cape Fear Counties Results: 08/2017 - 06/2022



Bottled Water Information

- If a private well is tested by Chemours / Parsons and found to have Chemours PFAS above 10ppt bottle water will be provided to the resident within 3 days.
- Chemours is using a new bottled water voucher system that may help some residents with their requests for different water volume sizes.
- The voucher card would allow residents to purchase the type of water and size of container they prefer with pre-paid money voucher cards provided by Chemours.

Additional Information

If you live near Chemours' Fayetteville Works facility:
Call Chemours at (910) 678-1101 to have your drinking water well sampled or for more information.

- DEQ website includes latest actions, PFAS health-related information and air/water information:
<https://deq.nc.gov/news/key-issues/genx-investigation>
- Fayetteville-area well sampling information:
<https://deq.nc.gov/news/key-issues/genx-investigation/genx-information-residents>
- Community Update – sent to residents who live near the Chemours facility with information and updates about DEQ's actions

The screenshot shows the North Carolina Department of Environmental Quality (DEQ) website. The header includes the DEQ logo, the text 'NORTH CAROLINA Environmental Quality', a search bar, and navigation links for 'NC.GOV', 'AGENCIES', 'JOBS', and 'SERVICES'. The main navigation menu includes 'Home', 'Divisions', 'Permits & Rules', 'Outreach & Education', 'Energy & Climate', 'News', and 'About'. The breadcrumb trail reads: 'NC DEQ » News » Key Issues » GenX Investigation » Well Sampling Information for Lower Cape Fear Area Residents'. The main heading is 'Well Sampling Information for Lower Cape Fear Area Residents'. Below this is a green box titled 'Private Drinking Water Well Sampling Requests' with the text: 'If you live in New Hanover, Brunswick, Pender or Columbus counties, call Chemours at (910) 678-1100 to request well sampling or for more information.' Below the green box is a paragraph: 'At DEQ's direction, Chemours is sampling for PFAS contamination in private drinking water wells in four downstream counties: New Hanover, Brunswick, Columbus and Pender. Private drinking water well sampling began in February. To have your well sampled, call Chemours at (910) 678-1100. Messages to the Chemours call-line are monitored during regular business hours (Monday through Friday, 9 a.m. to 5 p.m.); Chemours should respond within 24-to-48 hours starting on the next business day. Chemours is also sending letters to well owners/residents requesting information about primary drinking water sources and offering'. On the right side, there is a dark blue sidebar with a 'GenX Investigation' header and several links: 'Chemours Consent Order', 'GenX Information for Fayetteville-area Residents', 'Well Sampling Information for Lower Cape Fear Area Residents', 'Recent Actions, Investigations and Enforcement', 'Chemours Permit Information', 'Air Quality Sampling', 'GenX Surface Water Sampling Sites', 'Groundwater', and 'Health Related Resources'.



Waste Management

Michael E. Scott, Director
217 W. Jones Street
1464 Mail Service Center
Raleigh, NC 27699-1646

919-707-8246

<https://deq.nc.gov/wastemanagement>

Questions???



Water Resources Update

Richard Rogers and Julie Gryzb

North Carolina Department of Environmental Quality

July 26, 2022



DWR Emerging Compounds Strategy

- **Groundwater** – DWR is expanding groundwater PFAS assessment using the DWR ambient groundwater monitoring network to better understand the nature and extent of PFAS contamination in North Carolina’s aquifers.
- **Public Water Supply Systems** – DWR has prioritized additional sampling at 50 of the systems, which showed elevated levels of PFOA, PFOS and GenX.
- **Surface Water** – DWR is currently collecting PFAS data from several wastewater and industrial dischargers that are known to discharge PFAS compounds. DWR is working with the NC Water Quality Association and pretreatment operators to have them voluntarily submit to DWR PFAS sampling data.

Emerging Compounds Strategy: Groundwater

Lower Cape Fear River Basin

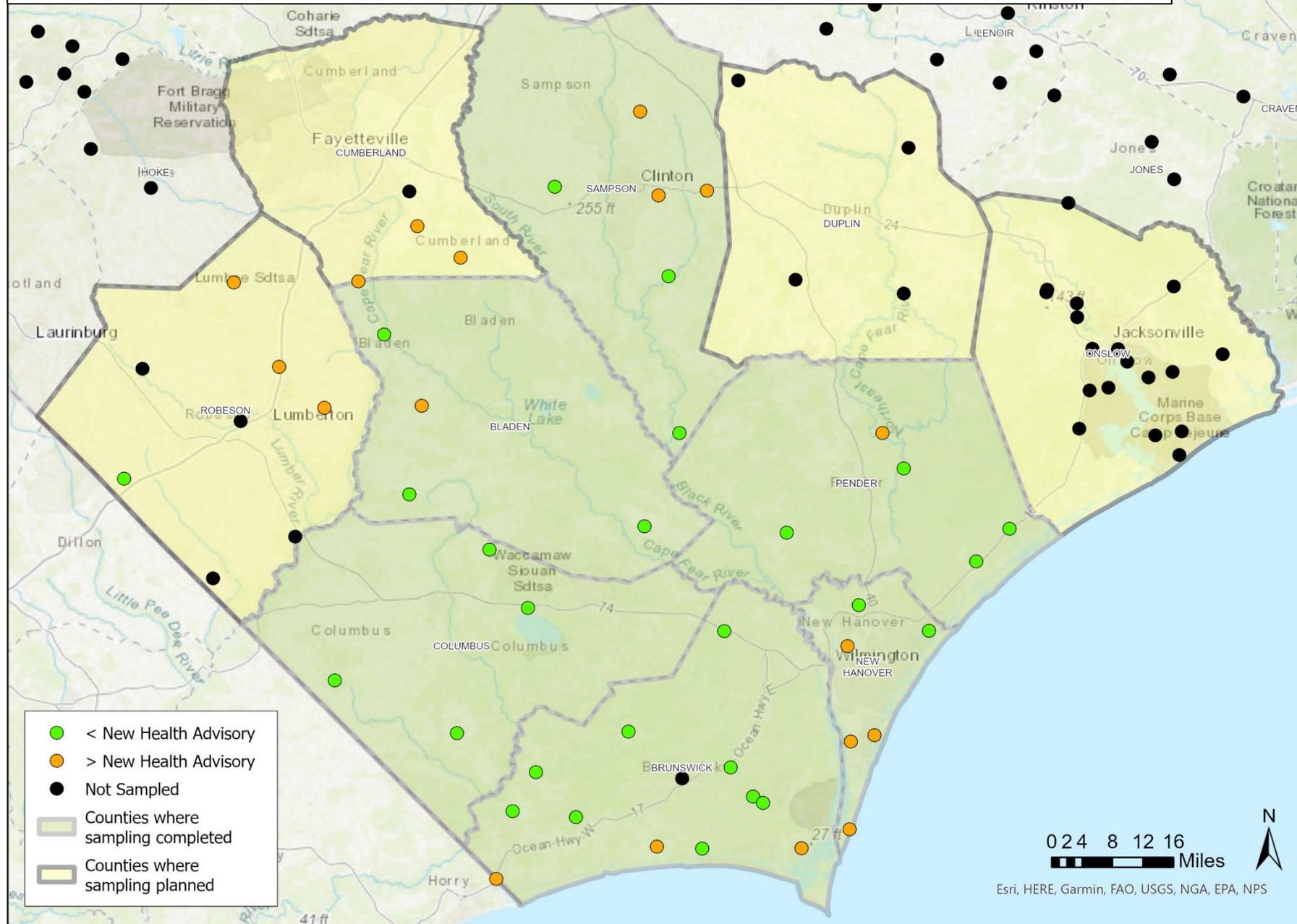
The statewide groundwater monitoring well network consists of 703 wells in 68 counties. To date, samples have been collected from 217 wells at 86 monitoring station locations between July 2020 and June 2022.

Of the 69 monitoring wells sampled in Brunswick, Pender, Sampson, Columbus, New Hanover and southern Bladen Counties: 13 locations showed levels greater than 4 ppt for PFOS/PFOA, and/or 10 ppt GenX.

DWR is currently identifying additional monitoring wells to sample to fill data gaps throughout New Hanover, Brunswick, Pender, Sampson, Columbus, and Bladen Counties.



DWR Groundwater Monitoring Well Network Locations – Lower Cape Fear



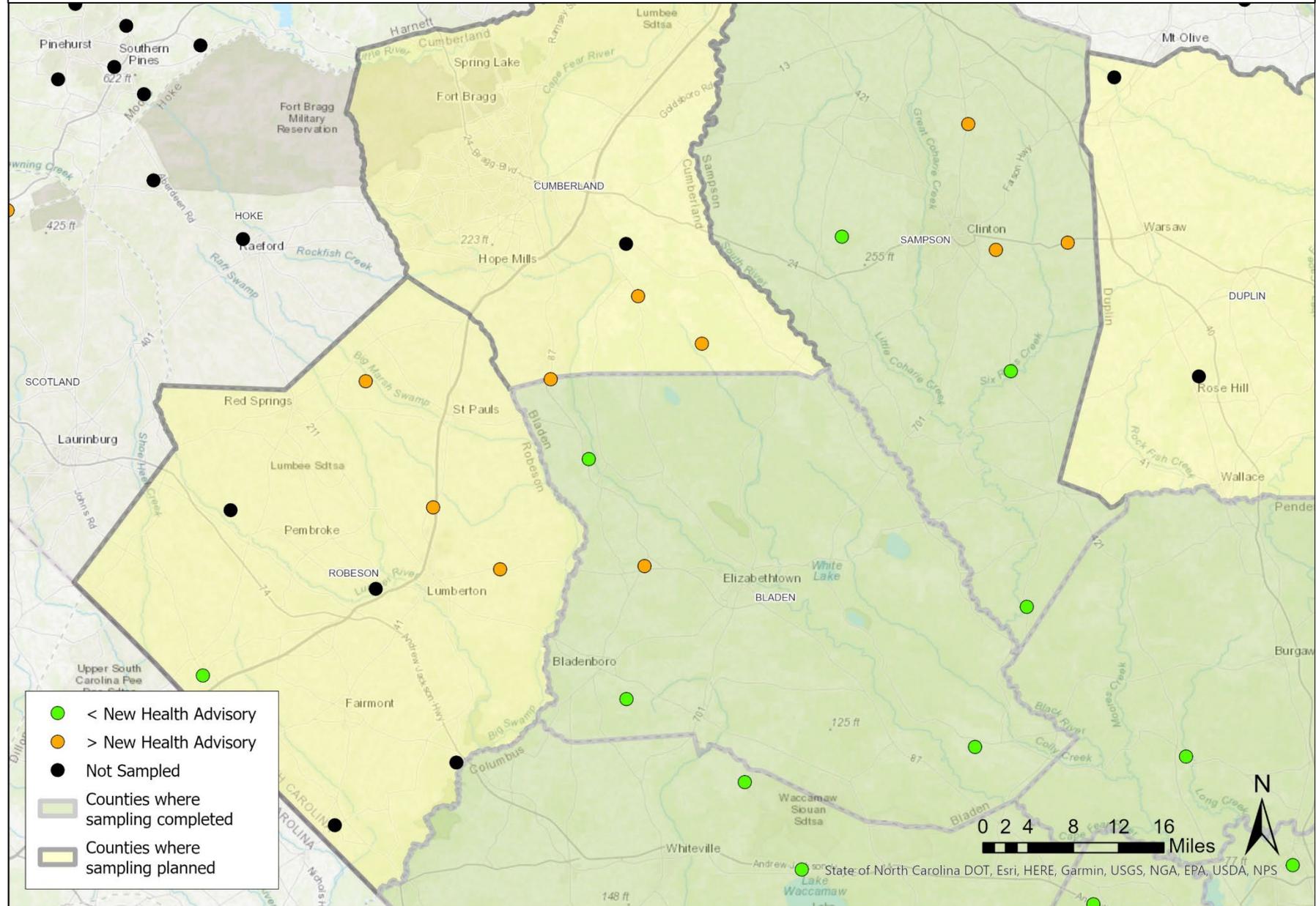
Orange symbol color indicates well locations where samples showed PFAS concentrations exceeded any one of the new EPA health advisories

- PFOA – 4 ng/L
- PFOS – 4 ng/L
- GenX – 10 ng/L

DWR Groundwater Monitoring Well Network – Bladen, Cumberland, Robeson, Sampson

Orange Symbol color indicates well locations where samples showed PFAS concentrations exceeded any one of the new EPA health advisories

- PFOA – 4 ng/L
- PFOS – 4 ng/L
- GenX – 10 ng/L



Emerging Compounds Strategy: Groundwater

Statewide monitoring network for PFAS

DWR continues to collect additional monitoring data from all available sources.

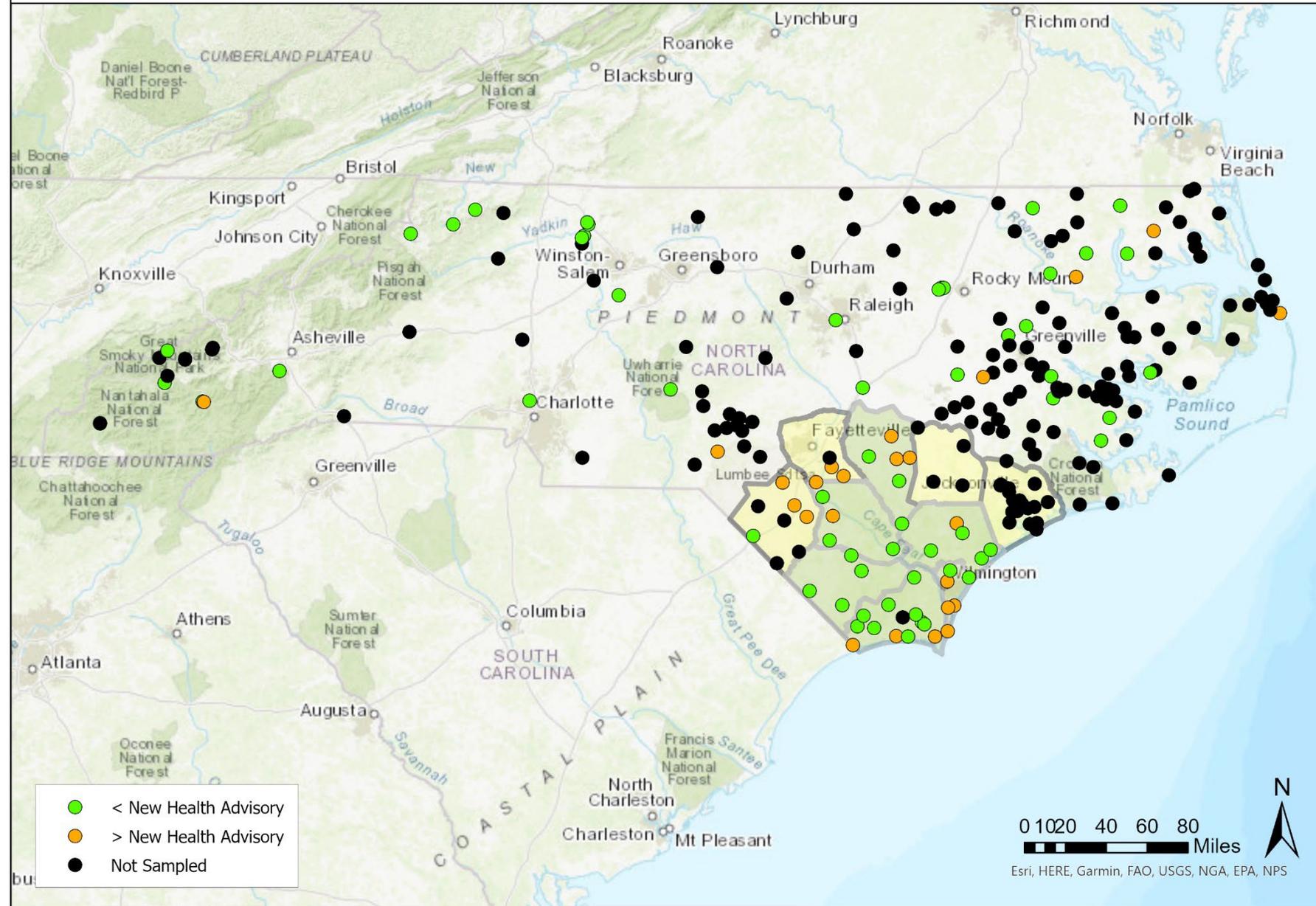
DWR's sampling will focus on sampling 50 public water supply sources around the state that showed PFOS/PFOA at or above 4ppt and/or GenX above 10ppt in the 2019 NC PFAS Round 1 Network data.

In addition, groundwater network monitoring will be expanded to available wells that are near these 50 sites.

DWR will focus on investigative data that helps educate and protect public health.



DWR Groundwater Monitoring Well Network Locations – Statewide PFAS Sampling



Orange Symbol color indicates well locations where samples showed PFAS concentrations exceeded :any one of the new EPA health advisories

- PFOA – 4 ng/L
- PFOS – 4 ng/L
- GenX – 10 ng/L

Emerging Compounds Strategy: Public Water Systems

Public Water Supply Systems Sampling

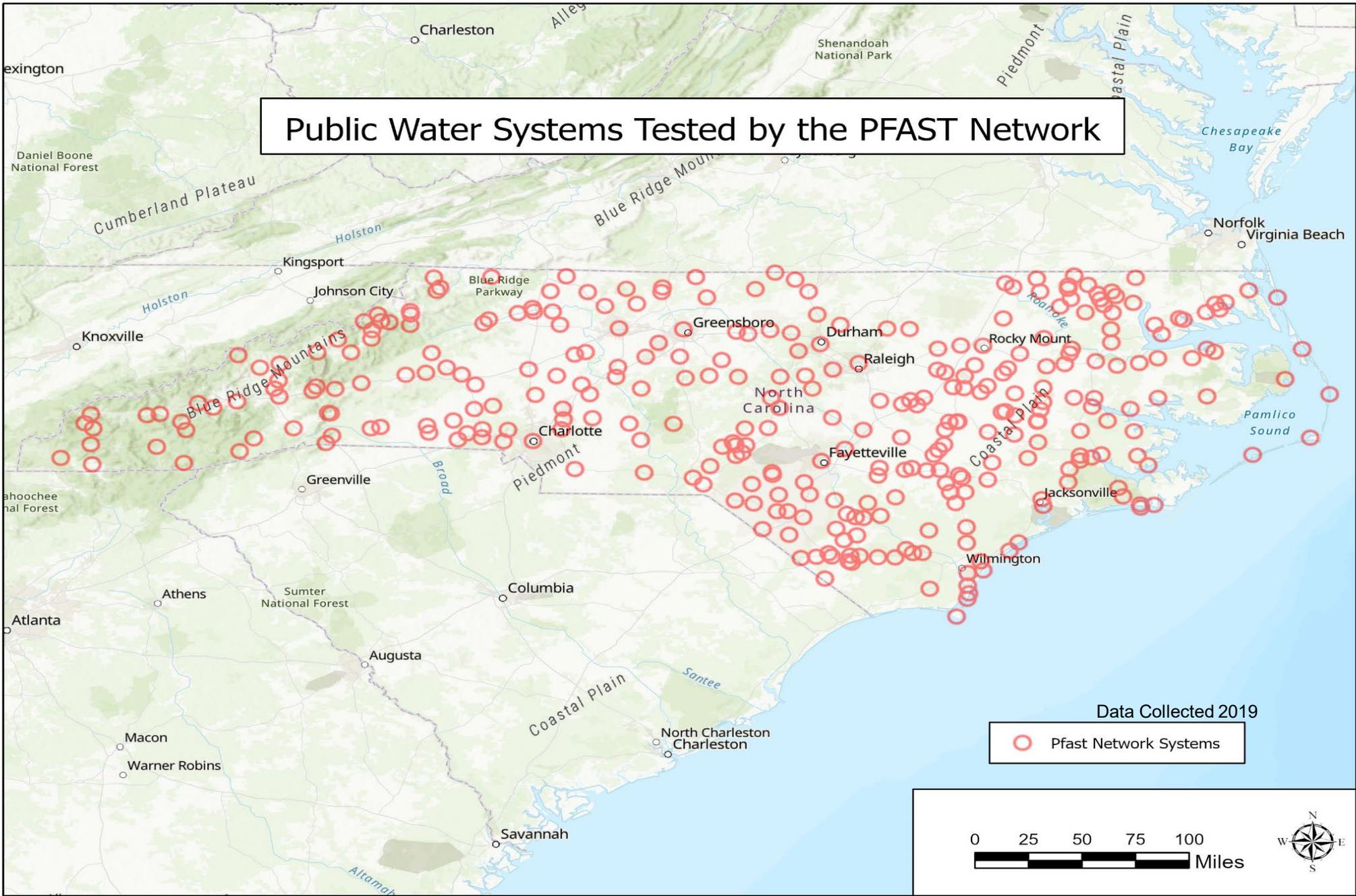
Of the 380 sites in 97 counties tested by the NC PFAS Testing Network, 50 sources were found to have PFOS/PFOA at or above 4ppt & /or GenX above 10ppt.

DWR will sample these facilities 3 times over the next 3 months.

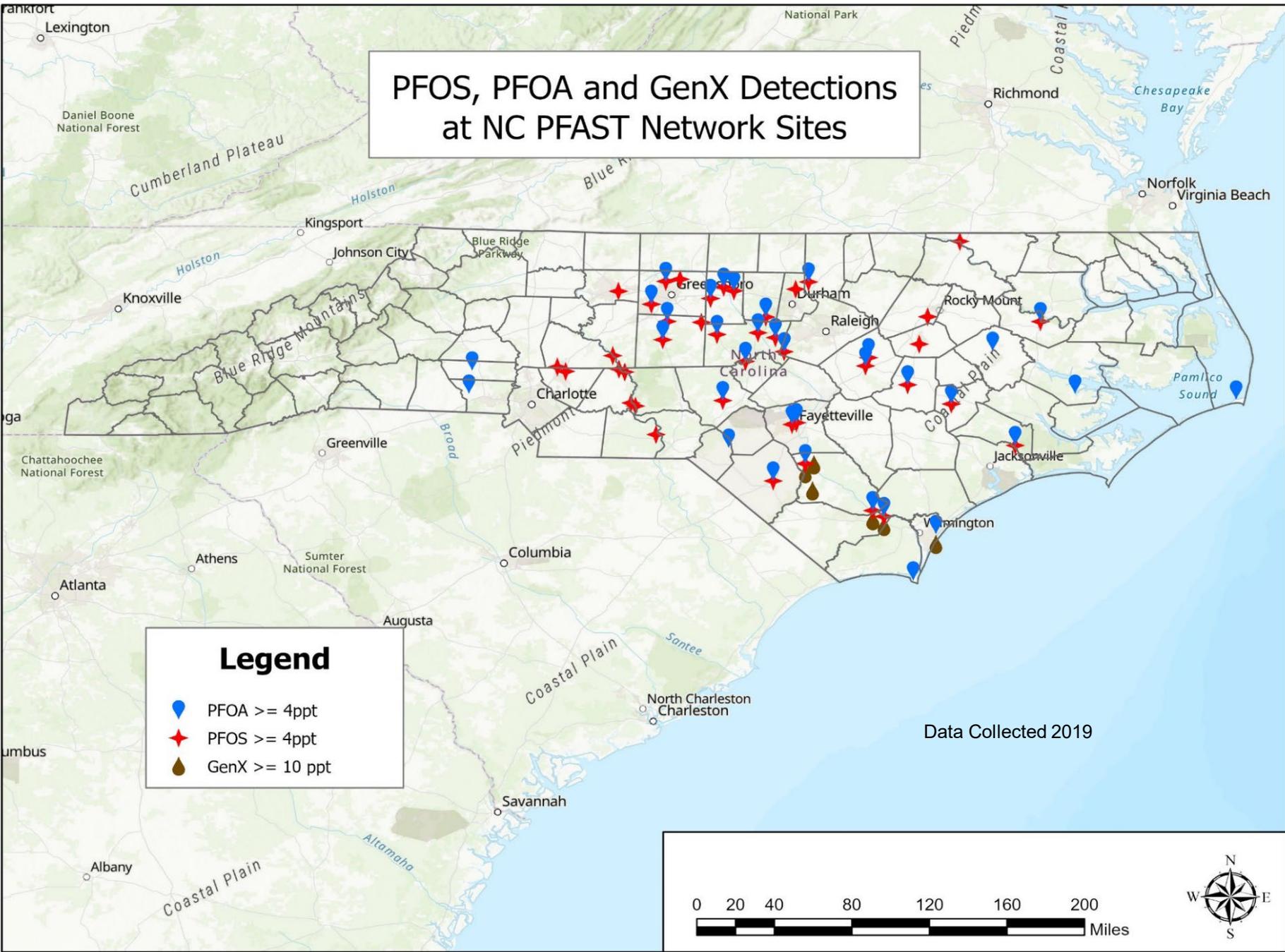
Identify where PFOA and/or PFOS are above the minimum reporting limit to establish areas of focus for education and protection of public health.



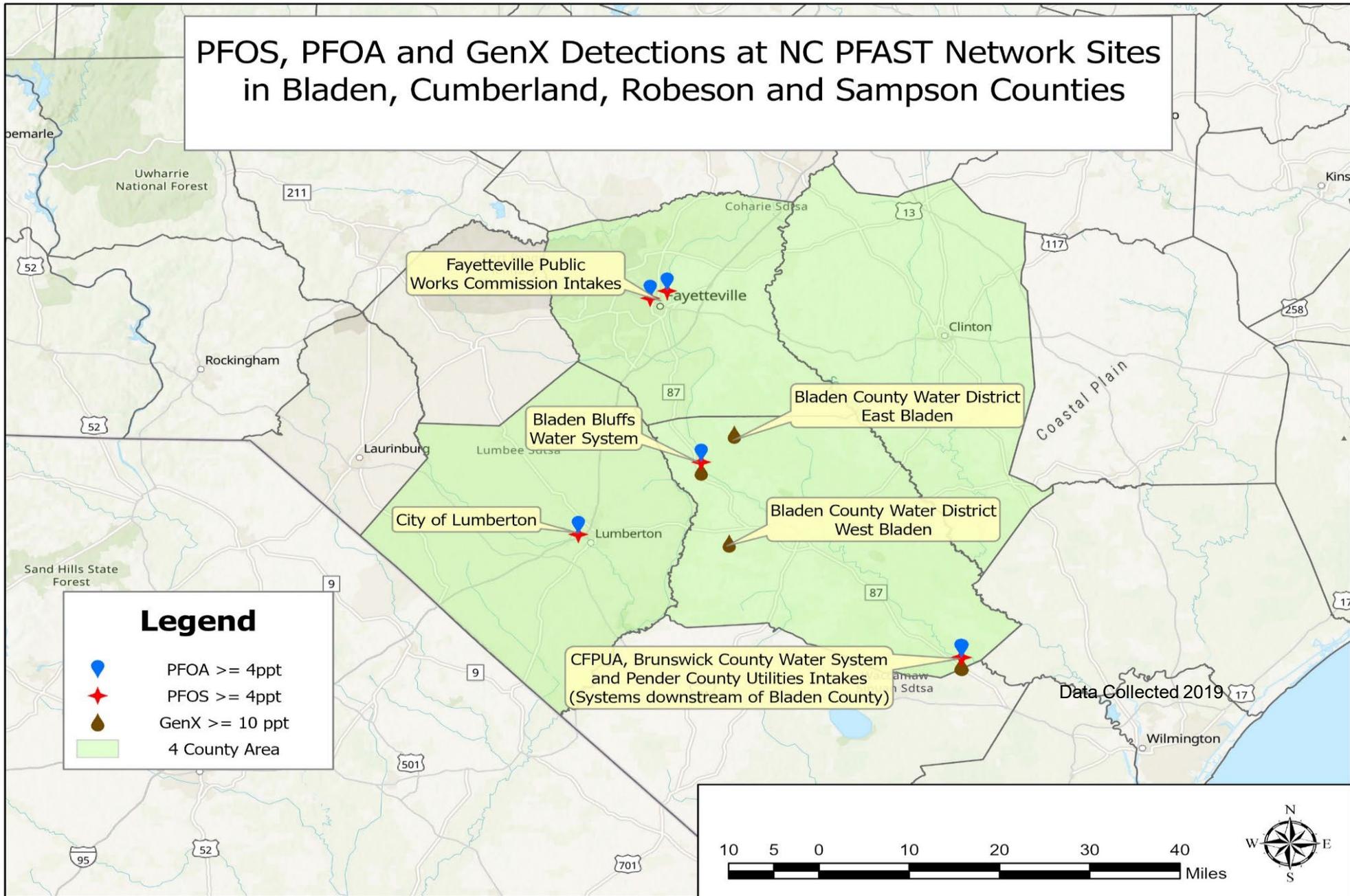
Public Water Systems Tested by the PFAST Network



PFOS, PFOA and GenX Detections at NC PFAST Network Sites



PFOS, PFOA and GenX Detections at NC PFAST Network Sites in Bladen, Cumberland, Robeson and Sampson Counties



Emerging Compounds Strategy: Public Water Systems

Public Water Supply Systems Sampling

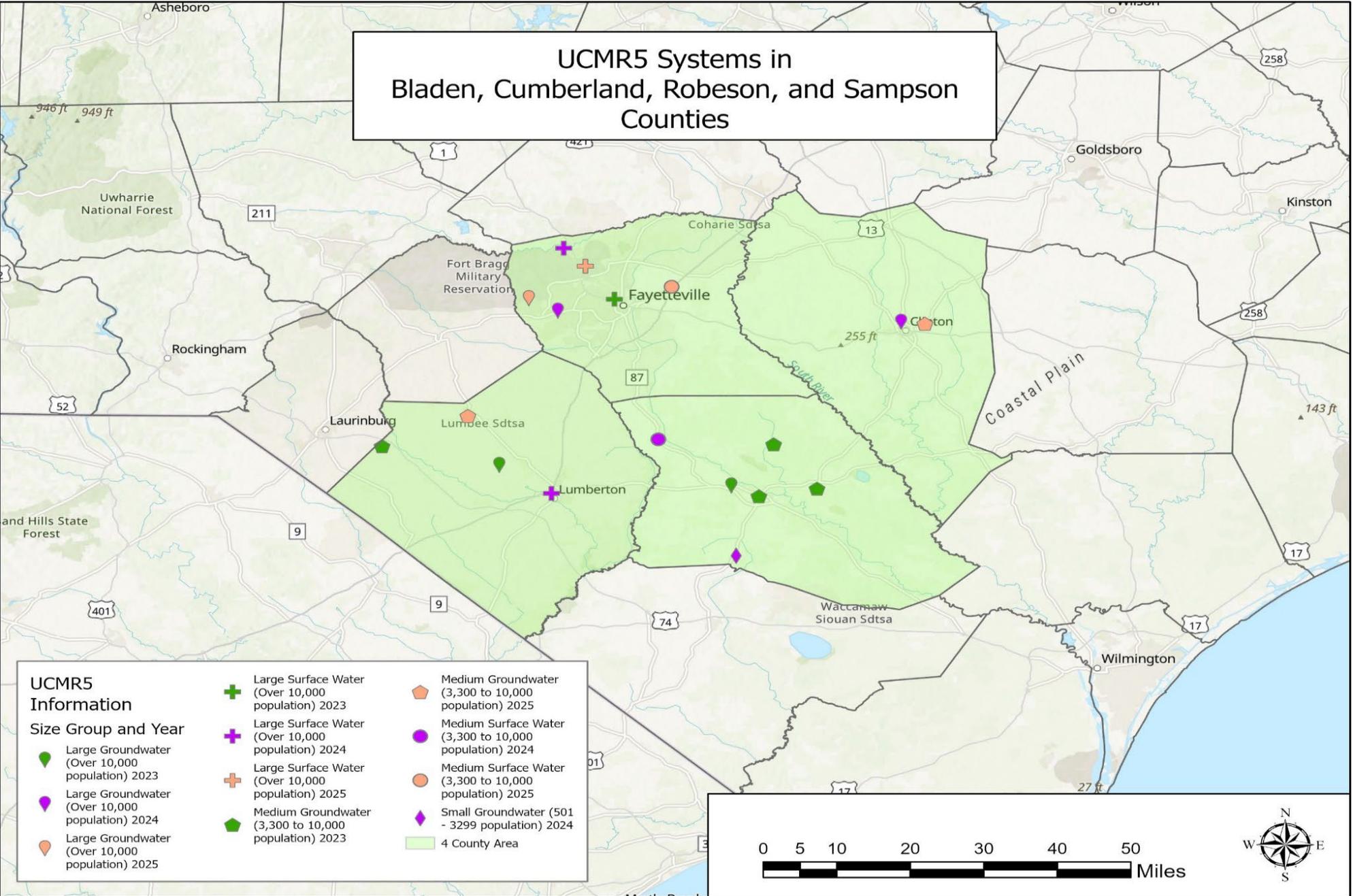
EPA's Safe Drinking Water Unregulated Contaminant Monitoring Rule #5 (UCMR5) is a 5-year cycle that spans 2022 – 2026, with preparations in 2022, sample collection from 2023 – 2025, and completion of data reporting in 2026.

Public water systems serving 3,300 people or more will be required to sample for 29 PFAS compounds.

Eighteen public water supplies in Bladen, Cumberland, Robeson and Sampson Counties will be required to sample the UCMR5 parameters during a 12-month period.



UCMR5 Systems in Bladen, Cumberland, Robeson, and Sampson Counties



UCMR5 Information Size Group and Year

- | | | | |
|--|--|--|--|
| | Large Groundwater (Over 10,000 population) 2023 | | Medium Groundwater (3,300 to 10,000 population) 2025 |
| | Large Groundwater (Over 10,000 population) 2024 | | Medium Surface Water (3,300 to 10,000 population) 2024 |
| | Large Groundwater (Over 10,000 population) 2025 | | Medium Surface Water (3,300 to 10,000 population) 2025 |
| | Medium Groundwater (3,300 to 10,000 population) 2023 | | Small Groundwater (501 - 3299 population) 2024 |
| | Large Surface Water (Over 10,000 population) 2023 | | 4 County Area |
| | Large Surface Water (Over 10,000 population) 2024 | | |
| | Large Surface Water (Over 10,000 population) 2025 | | |



Emerging Compounds Strategy: Surface Water

Industry and Wastewater System Sampling

April 2022: EPA issued a Memorandum outlining its approach to use federally-issued permits to reduce PFAS discharges.

- Federally-issued permits will include requirements to monitor for PFAS, to use best management practices like product substitution and good housekeeping practices and establish practices to address PFAS-containing firefighting foams in stormwater.
- These conditions and PFAS monitoring requirements will also apply to Industrial Direct Dischargers and Publicly Owned Wastewater Treatment systems receiving wastewaters from industries known or suspected of discharging wastewaters containing PFAS compounds.

DWR is adding permitting conditions and monitoring requirements to municipal and industrial facilities who are suspected or known to discharge PFAS compounds.



Barrier Wall and NPDES Permit for Outfall 004

Groundwater from decades of contamination from the Chemours Fayetteville Works site continues to flow into the Cape Fear River.

This is the largest reoccurring source of PFAS from the Chemours site impacting the Cape Fear River.

The barrier wall is designed to intercept the flow of contaminated groundwater to the Cape Fear River.

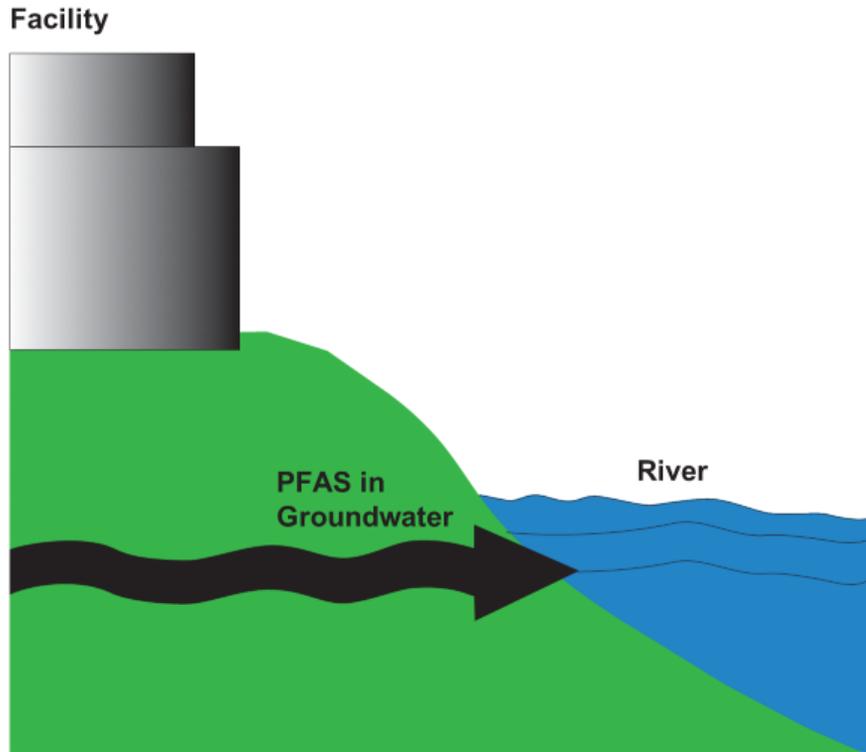
The subsurface barrier wall will be approx. 6,050 feet long, 70-80 feet deep, and about 2 feet thick. It will consist of bentonite and cement mixed with soil.

Extraction wells will be installed to collect the contaminated groundwater behind the wall. This contaminated groundwater will be pumped to a treatment system for the removal of PFAS compounds.

The NPDES Permit for Outfall 004 applies to this treatment system.

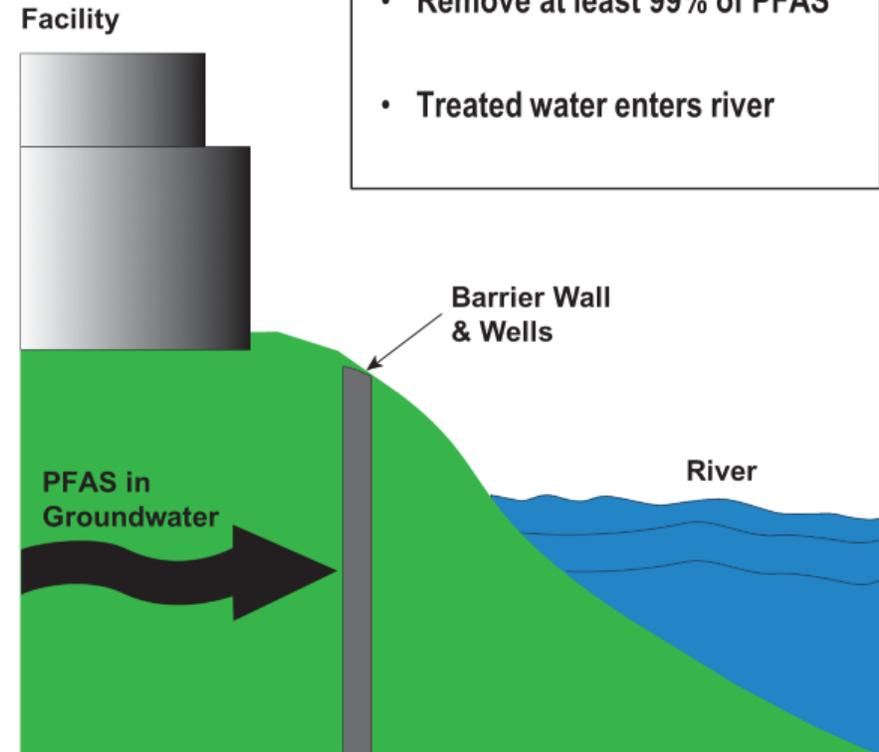
Proposed Groundwater Treatment System

Current Groundwater
Contaminating Cape Fear River



Proposed Groundwater
Treatment:

- Intercept contaminated groundwater
- Remove at least 99% of PFAS
- Treated water enters river



Barrier Wall And Draft Discharge Permit

- Public hearings on the permit were held on June 21st and 23rd.
- The Hearing Officer is reviewing and addressing comments and considering appropriate recommendations.
- The Hearing Officer's recommendations will be presented to the Director within the next month for review and approval.



Cumberland County Information Session



Department of Environmental Quality

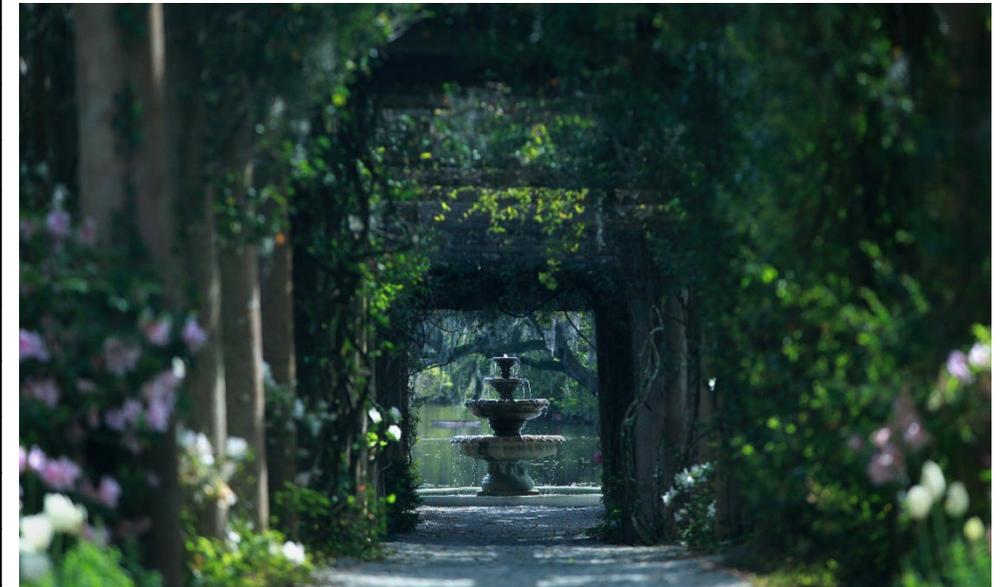


PFAST Network Sampled Systems in Four-County Area

PWS_ID	Water_System_Name	PWS_ID	Water_System_Name
NC0309010	ELIZABETHTOWN - TOWN OF	NC0378030	SAINT PAULS - TOWN OF
NC0309015	BLADENBORO - TOWN OF	NC0378035	MAXTON - TOWN OF
NC0309020	CLARKTON - TOWN OF	NC0378040	ROWLAND - TOWN OF
NC0309025	DUBLIN - TOWN OF	NC0378045	PARKTON - TOWN OF
NC0309030	WHITE LAKE - TOWN OF	NC0378055	ROBESON COUNTY WATER SYSTEM
NC0309050	EAST ARCADIA - TOWN OF	NC0382010	CLINTON - CITY OF
NC0309055	BLADEN CO WTR DIST-WEST BLADEN	NC0382015	ROSEBORO - TOWN OF
NC0309060	BLADEN CO WTR DIST-EAST BLADEN	NC0382020	GARLAND - TOWN OF
NC0326010	FAYETTEVILLE PUBLIC WORKS COMM	NC0382025	SALEMBURG - TOWN OF
NC0326040	WADE - TOWN OF	NC0382035	NEWTON GROVE - TOWN OF
NC0378010	LUMBERTON - CITY OF	NC0382040	TURKEY - TOWN OF
NC0378015	RED SPRINGS - TOWN OF	NC0382070	SAMPSON CO WTR DIST II
NC0378020	PEMBROKE - TOWN OF	NC5009012	BLADEN BLUFFS WATER SYSTEM
NC0378025	FAIRMONT - TOWN OF		

UCMR5 Systems in Four-County Area

PWS ID	System Name
NC0309055	BLADEN CO WTR DIST-WEST BLADEN
NC0326127	BROOKWOOD COMM WTR SYSTEM
NC0326332	CLIFFDALE WEST
NC0378055	ROBESON COUNTY WATER SYSTEM
NC0382010	CLINTON - CITY OF
NC0326010	FAYETTEVILLE PUBLIC WORKS COMM
NC0326020	SPRING LAKE - TOWN OF
NC0378010	LUMBERTON - CITY OF
NC5026019	OLD NORTH UTILITIES SERVICES/FT BRAGG
NC0309010	ELIZABETHTOWN - TOWN OF
NC0309030	WHITE LAKE - TOWN OF
NC0309060	BLADEN CO WTR DIST-EAST BLADEN
NC0378015	RED SPRINGS - TOWN OF
NC0378035	MAXTON - TOWN OF
NC0382070	SAMPSON CO WTR DIST II
NC5026027	EASTOVER SANITARY DISTRICT
NC0309527	SMITHFIELD FRESH MEATS CORP - TAR HEEL
NC0309020	CLARKTON - TOWN OF





Air Quality Update

Mike Abraczinskas, Division of Air Quality

July 26, 2022

NC Department of Environmental Quality



Division of Air Quality - Outline

- **Control technology updates – Thermal Oxidizer/Scrubber control system**
- **Facility-wide GenX emissions cap**
- **Compliance status**
- **Atmospheric deposition data**

Air Quality – Control Technology Improvements

- ***Control Technology Improvements: Thermal Oxidizer/Scrubber system***
- **By December 31, 2019, control all PFAS in process streams routed to the control system at an efficiency of 99.99%.**
 - **Thermal Oxidizer/Scrubber system - installed & operational on December 27, 2019**
 - **Stack Tests performed in 2020, 2021, 2022 demonstrate the 99.99% removal efficiency.**

Air Quality – Facility-Wide GenX Emission Reductions

GenX Emissions Reduction Milestones

99%

facility-wide reduction of GenX compounds relative to 2017 total reported emissions by December 31, 2019 and for each consecutive 12-month period following that date

2017 Baseline

2,302.7 pounds

Air Quality Permit

23.027 pounds

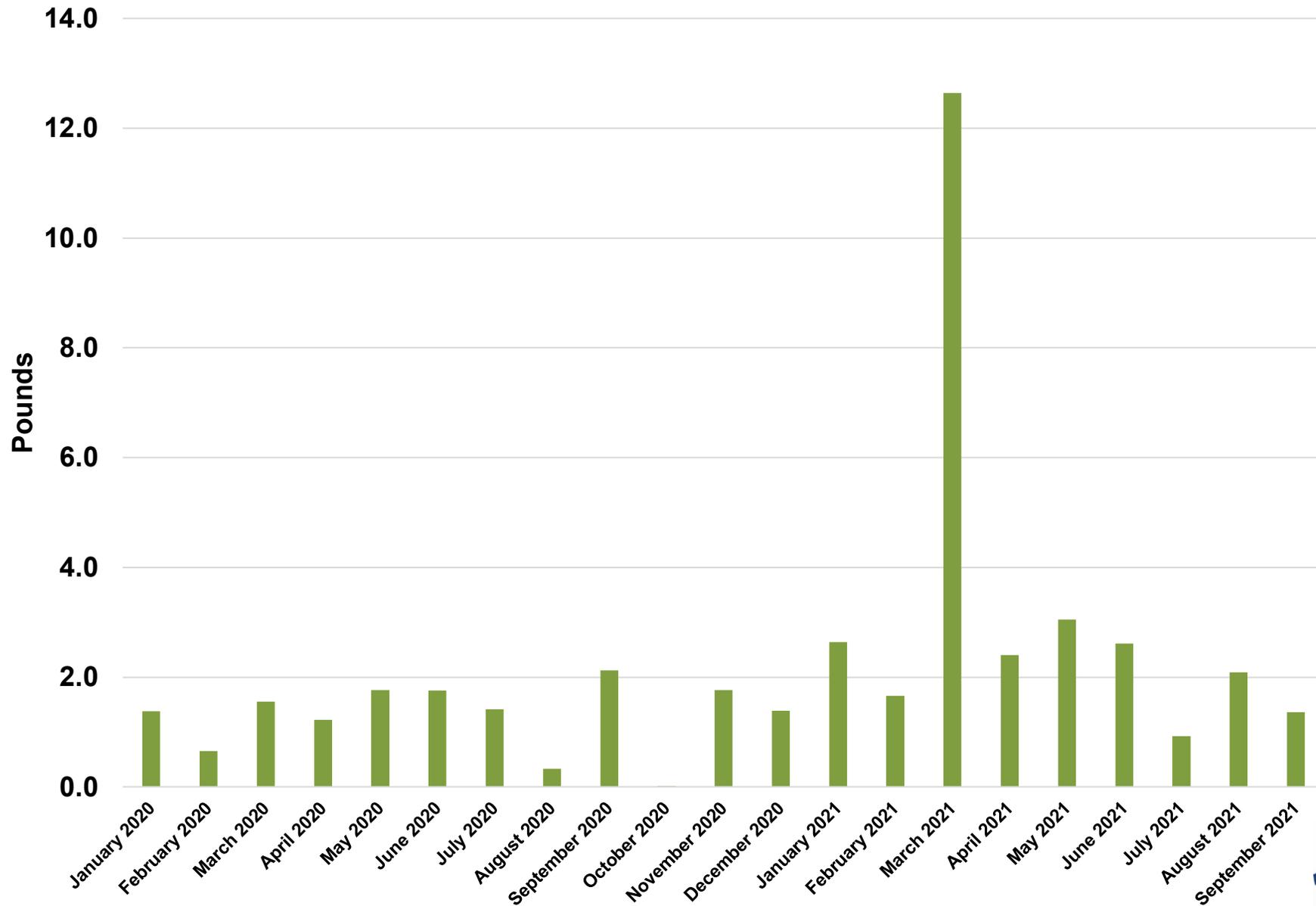
12 month rolling sum
GenX emissions cap

2020 reported emissions

15.36 pounds

DAQ reviewed data
and confirmed results

Monthly Facility-Wide GenX Emissions



Air Quality – Facility-Wide GenX Emission Reductions Enforcement Actions

- **DAQ Issued Civil Penalty Assessment on October 1, 2021**
 - 7 violations for failure to reduce the 12-month rolling sum facility-wide emissions of GenX Compounds to less than 23.027 pounds
 - 26 violations for failure to properly operate and maintain the control device.
- **Total assessment: \$305,611.00**
- **Chemours appealed the assessment**

Air Quality – Facility-Wide GenX Emission Reductions Enforcement Actions

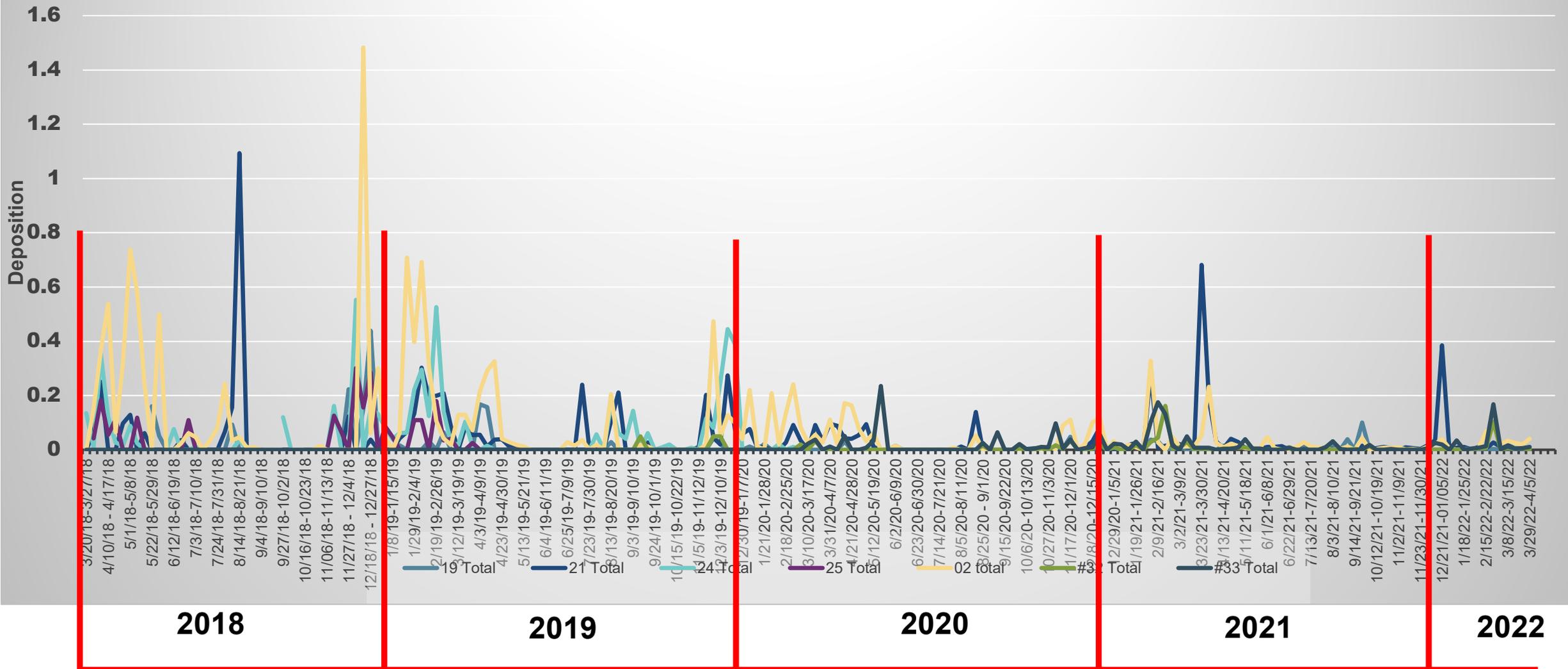
- Settlement signed on April 5, 2022
- Chemours agreed to:
 - pay the \$305K civil penalty in full
 - a new emissions limit of no more than an average of 1.0 pound of GenX emissions per month between May and September 2022
 - implement a list of 12 additional emission reduction actions by the end of October 2022
 - follow a rigorous schedule of stack testing that will allow DAQ to better assess how well the Carbon Adsorber control unit at their Vinyl Ethers North process is controlling emissions
- If that new emissions limit is not met, Chemours waived the right to contest an additional civil penalty assessment of up to \$125,000.

Air Quality – Facility-Wide GenX Emission Reductions Leak Investigation

- July 2, 2022
- Chemours reported a leak that resulted in an estimated 1.07 pounds of GenX emissions from the Vinyl Ethers North carbon adsorber
 - Resulted from an O-ring not sealing properly
- DAQ is continuing to collect information and investigate
- Evaluate compliance with the new limit
 - Average of 1.0 pound of GenX emissions per month
- Reviewing permit language

Atmospheric Deposition of GenX

GenX Total Deposition - ng/cm²



Contact information

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