

# *SSAB Support to DWM*

Division of Waste Management



The SSAB has provided input on action levels, drinking water health goals and proposed standards that have assisted the Division of Waste Management:

- Trichloroethylene (TCE)
- HFPO Dimer Acid (GenX)
- PFOA / PFOS

What has come out of these action levels?

What are future requests for the SAB?



# TCE Action Levels

- SAB's final recommendations on the TCE Indoor Air Inhalation Immediate Action Levels and Response guidance provided:

## Notification and Response Actions Associated with Trichloroethylene (TCE) in Indoor-Air

Property owners, remediating parties, prospective purchasers or Brownfields Program applicants should be aware of reporting, notification and response actions associated with sampling for trichloroethylene (also called trichloroethene or TCE). Outlined below are the requirements if you have contracted a consultant to perform indoor air sampling for TCE on your behalf or another entity has contracted a consultant to perform indoor air sampling for TCE in a building located on a property that you own.

### Purpose

There are stringent timeframes regarding reporting, notification and potential response actions required by the Division of Waste Management (DWM) due to potential health risks associated with exposure to TCE in air above the action level for women of child-bearing age (between 15 and 50 years of age) that may be pregnant or plan to become pregnant soon.

These requirements are specific to TCE exposures due to vapor intrusion from subsurface contamination. This information applies to workplaces that do not use TCE as part of their operations. The Occupational Safety and Health Administration covers the use of TCE at work and may have different standards.

**The N.C. Department of Environmental Quality (DEQ) recommends that all women that may be pregnant or plan to become pregnant avoid exposure to TCE above the action level concentrations regardless of the source of the TCE.**

### Action Levels for TCE

- The action level to protect women of child-bearing age in a **residential setting** is 2.1 micrograms per cubic meter of air (µg/m<sup>3</sup>).
- The action level to protect women of child-bearing age in a **nonresidential setting** is 8.8 µg/m<sup>3</sup>.

The TCE-sensitive population at risk is women of child-bearing age (defined as age 15 to 50 years). The potential health risk is permanent damage to fetal heart development. Therefore, it is especially important to protect women who may be in their first trimester of a pregnancy, including women who may not yet know they are pregnant. Based upon information from the Environmental Protection Agency and other scientific studies, DWM has determined that when the inhalation action level concentration has been exceeded and this TCE-sensitive population may be exposed, immediate actions must be taken to report the concentrations to the division along with notifying any exposed TCE-sensitive population and taking response actions to reduce the exposure to below the action level concentration as quickly as possible. **The goal is to reduce exposures below the action level within 72-hours or less for women in their first trimester.**

### Notification

**Owners:** The property owner, remediating party or Brownfields Program applicant (if currently the owner of the property) must report the data to the DWM within **one business day** of receipt of validated laboratory data if TCE is detected above the applicable action level. Failing to do so may cause additional risk and may make the property owner, remediating party or Brownfields Program applicant more vulnerable to private and public legal actions.

**Prospective Owners:** When the indoor air sampling is performed by a prospective property purchaser,

- A thorough scientific review of the potential risks of short-term inhalation which were in dispute across the country.
- Public participation through a 30-day public comment period. Additional guidance was developed based upon comments received.
- A determination that the proposed action levels are protective and appropriate. A variety of action levels were being used across the country and clarity was needed.
- A recommendation to implement the guidance proposed by DEQ which protects public health.



# *TCE Action Levels*

- Implementation of the TCE guidance recommended by the SAB led to:
  - The ability for DEQ to address risk from short-term exposure to TCE consistently across programs.
  - A specific action level to compare sampling results to that indicate when immediate action must take place. This clear direction allows for resources to be allocated quickly and efficiently.
  - The development of a risk communication process to inform potentially affected parties as soon as possible which outlines the roles of toxicologists, risk assessors and other local/state agencies.
  - Additional procurement of air purifying units to deploy within 24-48 hours of notice of an exceedance of TCE action levels.

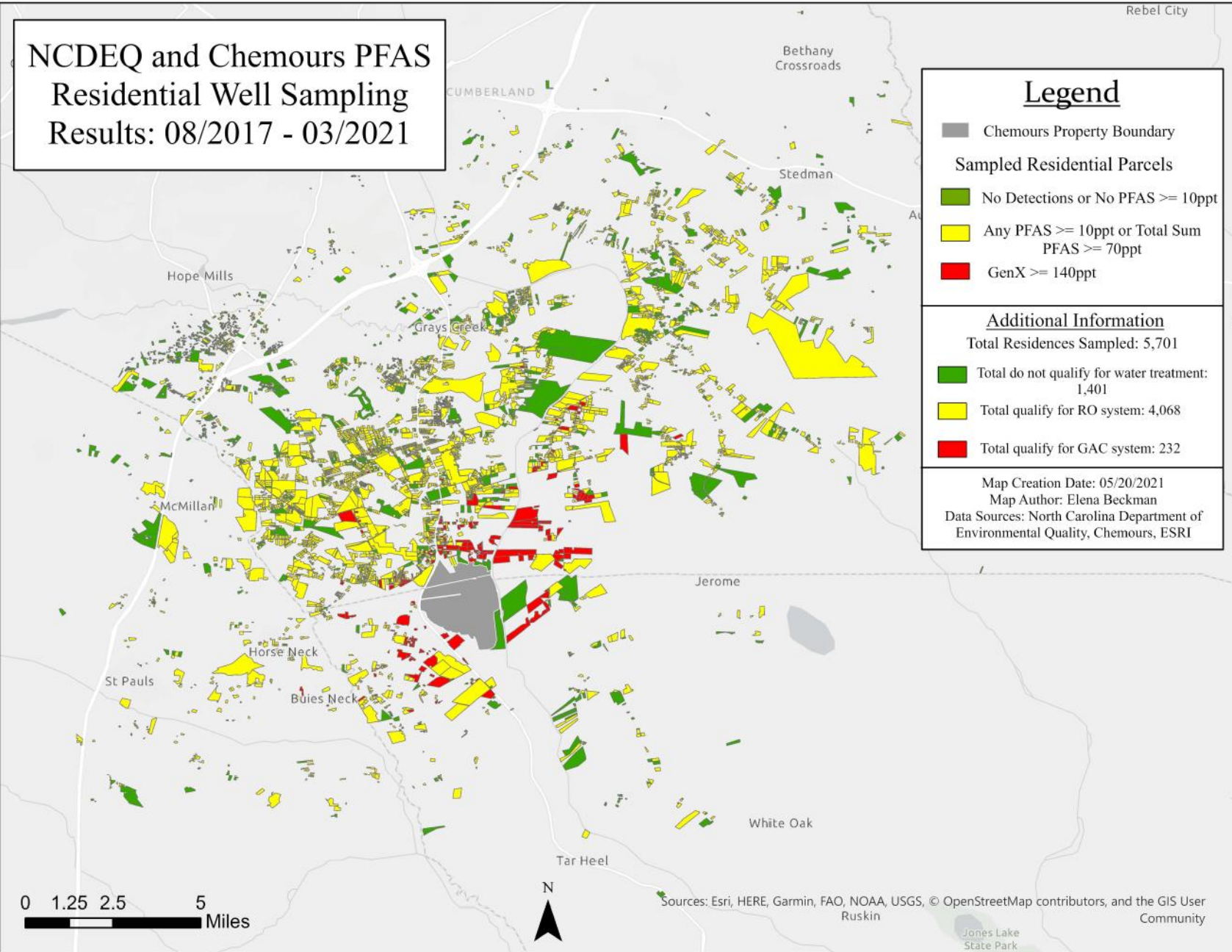


# *GenX Drinking Water Health Goal*

- The GenX provisional drinking water health goal of 140 ppt was set by the Dept. of Health and Human Services based on published research on GenX health effects in July, 2017.
- This level was reviewed and approved by the SAB in a report dated Oct. 2018.
- This number was used in the DEQ Consent Order with Chemours and the Cape Fear River Watch in February 2019, which requires Chemours to provide whole house treatment systems for residential wells near the facility with GenX above 140 ug/L (ppt).



**NCDEQ and Chemours PFAS  
Residential Well Sampling  
Results: 08/2017 - 03/2021**



Map of residential wells tested in the Chemours area. Wells with GenX above 140 ppt are shown in red.

>5,700 homes have been tested to date. 232 have GenX above 140 ppt.

However, there are multiple other PFAS detected in these wells at higher levels that do not have drinking water health goals or other regulatory limits.



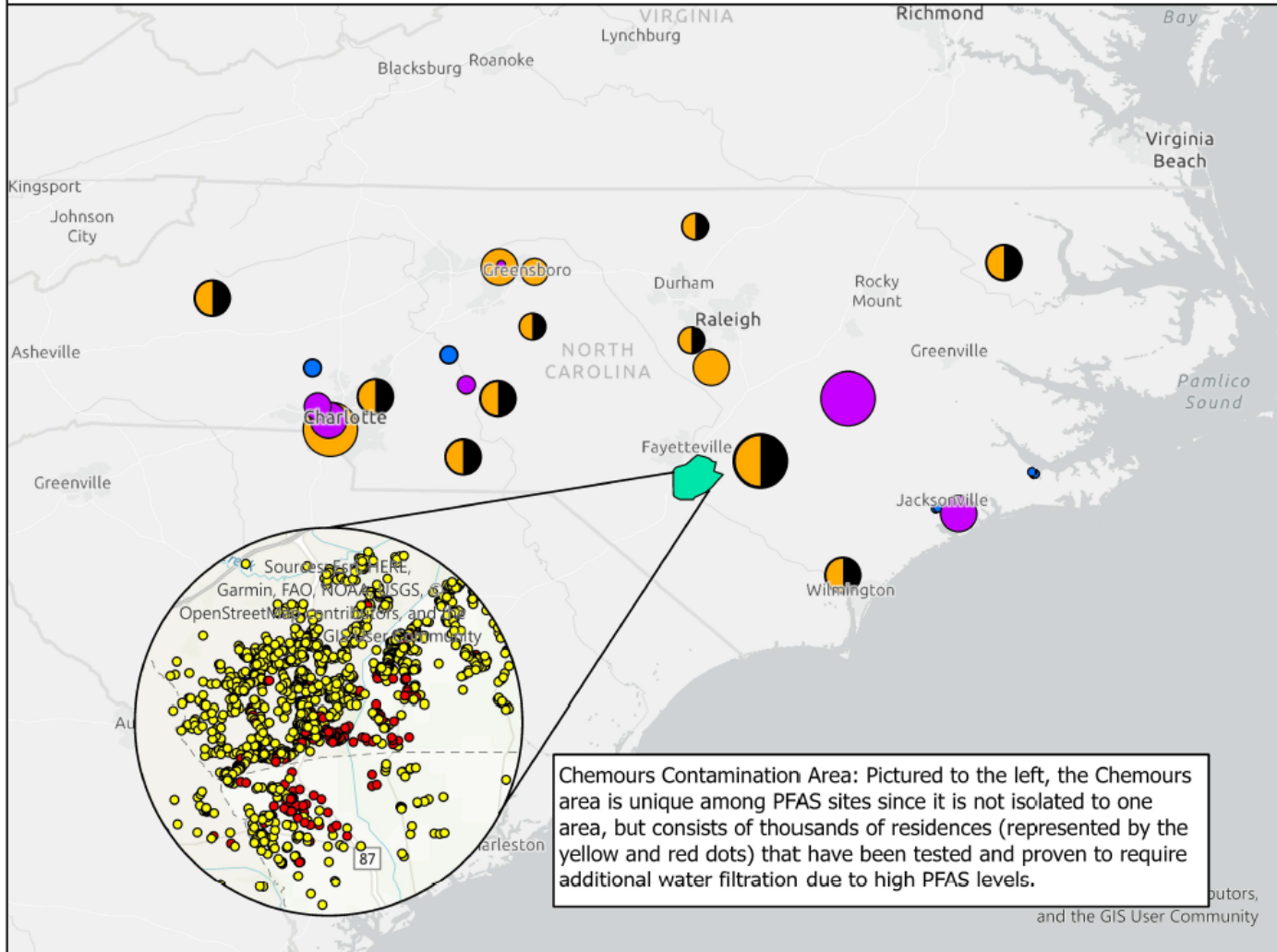
Map of PFAS levels near the Chemours Fayetteville Works Facility

## *Legacy PFAS groundwater standards*

- SAB reviewed and approved the draft groundwater standards for PFOS and PFOA of 70 ng/L (total, combined) now being considered by the EMC.
- DWM is testing sites with known PFAS releases, such as former fire training areas and sites that manufacture PFAS for potential groundwater contamination.



# NC DEQ Division of Waste Management PFAS Data by Concentration and PFAS Group



Chemours Contamination Area: Pictured to the left, the Chemours area is unique among PFAS sites since it is not isolated to one area, but consists of thousands of residences (represented by the yellow and red dots) that have been tested and proven to require additional water filtration due to high PFAS levels.

### Legend

**PFAS Contamination Level**  
 Total PFAS Concentration (Max) ppt

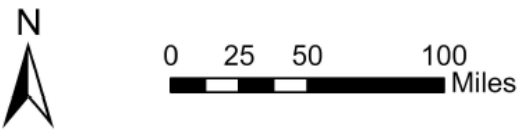
- ≤70
- ≤1,000
- ≤10,000
- ≤100,000
- 100,000

**PFAS Group**

- AFFF (Aqueous Film Forming Foam)
- Multiple Chemicals Found
- PFOA/PFOS
- Chemours Impacted Area
- ◐ Landfill Leachate
- Groundwater

### Additional Information

- Concentration levels show the smallest group level as less than 70ppt (parts per trillion), since that is the Lifetime Health Advisory (LHA) level set by the EPA for PFOA/PFOS.
- The PFAS Group "Multiple Chemicals Found" means that at that location, compounds that fall in more than one of the PFAS groups, and/or may fall outside of the PFAS groups above, were identified at these sites.
- Some sites have additional surface water and soil PFAS detections, but only groundwater and landfill leachate has been accounted for on this map.



Map Creation Date: 12/02/2020  
 Map Author: Elena Beckman  
 Data Sources: North Carolina Department of Environmental Quality, ESRI

*Current  
 DWM PFAS  
 data in North  
 Carolina*



# Next Steps

- Testing at additional manufacturing and other sites where PFAS releases are likely
  - Past fire training sites
  - Manufacturing site that make or use PFAS
- Improving analytical methods for detection in multiple media
- Creation of new PFAS Standards – private and public entities are working to synthesize standards for new PFAS compounds of interest
- Discussion on management of PFAS wastes

