

STATE OF NORTH CAROLINA  
COUNTY OF BLADEN

IN THE GENERAL COURT OF JUSTICE  
SUPERIOR COURT DIVISION  
17 CVS 580

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STATE OF NORTH CAROLINA, *ex rel.*, )  
MICHAEL S. REGAN, SECRETARY, )  
NORTH CAROLINA DEPARTMENT OF )  
ENVIRONMENTAL QUALITY, )  
 )  
Plaintiff, )  
 )  
CAPE FEAR RIVER WATCH, )  
 )  
Plaintiff-Intervenor, )  
 )  
v. )  
 )  
THE CHEMOURS COMPANY FC, LLC, )  
 )  
Defendant. )

**CONSENT ORDER**

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WHEREAS, since July 1, 2015, Defendant The Chemours Company FC, LLC (“Chemours”) has owned and operated a chemical manufacturing facility called the Fayetteville Works (“Facility”) in Bladen County, North Carolina, which, prior to July 1, 2015, was owned and operated by E. I. DuPont de Nemours & Company, Inc. (“DuPont”).

WHEREAS, on September 7, 2017, Plaintiff, the State of North Carolina, by and through Michael S. Regan, Secretary of the North Carolina Department of Environmental Quality (“DEQ”), filed a Complaint and motion for a temporary restraining order in this Court against Chemours, seeking various forms of relief relating to alleged violations by Chemours and DuPont of North Carolina water quality laws and regulations arising out of the discharge of certain per-

and polyfluoroalkyl substances (“PFAS”), including a compound often referred to by the trade name “GenX,” into surface water and groundwater;

WHEREAS, on September 8, 2017, the Court entered a partial consent order resolving DEQ’s motion for a temporary restraining order;

WHEREAS, on April 10, 2018, Plaintiff filed an Amended Complaint against Chemours that, among other things, sought further relief, including relating to alleged violations by Chemours and DuPont of North Carolina water quality laws and regulations arising out of the discharge or release of per- and polyfluoroalkyl substances into surface water, groundwater and the air;

WHEREAS, on July 11, 2018, Chemours filed an Answer to the Amended Complaint denying the allegations that Chemours had violated State laws or regulations and setting forth multiple affirmative defenses to Plaintiff’s claims;

WHEREAS, DEQ has issued Notices of Violation to Chemours dated September 6, 2017, November 13, 2017, February 12, 2018, and June 1, 2018 (collectively, “the NOVs”), relating to the alleged violations set forth in the Complaint and/or Amended Complaint, and Chemours responded to the NOVs;

WHEREAS, since the filing of the Complaint, the Parties have conducted good-faith discussions to develop comprehensive and effective solutions to the environmental concerns that have been raised concerning the Facility’s operations, including those underlying the allegations of the Amended Complaint and the NOVs;

WHEREAS, the Parties have negotiated this Consent Order that the Parties believe will provide such solutions;

WHEREAS, pursuant to this Consent Order, and in consideration of the release of claims

and the other relief set forth herein, Chemours will, among other things:

(i) install abatement technology at the Facility (including a thermal oxidizer) that, once fully operational, will permanently reduce annual air emissions of GenX Compounds and other PFAS (as those terms are defined below) by at least 99% from baseline levels and control all PFAS emissions from process streams routed to the thermal oxidizer at an efficiency of 99.99%;

(ii) on an interim basis, reduce annual air emissions of GenX Compounds (as defined below) by at least 82% beginning as of October 6, 2018 and by at least 92% beginning as of December 31, 2018;

(iii) continue to capture for off-site disposal all process wastewater from its operations at the Facility unless or until an NPDES Permit is issued authorizing the discharge of process wastewater;

(iv) undertake the measures specified below with respect to abatement and remediation of groundwater contamination and provision of alternative drinking water supplies; and

(v) agree to the measures specified below to verify and ensure compliance with the foregoing commitments and the requirements of this Consent Order;

WHEREAS, Chemours denies any violation of any law, regulation or permit, including the claims of any such violation made in the Amended Complaint or the NOVs, and has agreed to this Consent Order solely to avoid the expense, burden and uncertainty of litigation and to address community concerns about the Facility;

WHEREAS, Chemours and DEQ have consented to the intervention of Cape Fear River Watch in this matter for the purpose of entering into this Consent Order and resolving Cape Fear

River Watch's pending actions in Cape Fear River Watch v. North Carolina Department of Environmental Quality, 18 CVS 2462 (New Hanover Cty. Sup. Ct.) and Cape Fear River Watch v. Chemours Company FC, LLC, No. 7:18-cv-00159 (E.D.N.C.);

NOW THEREFORE, the parties agree, and the Court orders, as follows:

#### A. **DEFINITIONS**

**“Amended Complaint”** means the amended complaint filed by the Plaintiff in this matter on April 10, 2018.

**“Complaint”** means the complaint filed by the Plaintiff in this matter on September 7, 2018.

**“Defendant”** or **“Chemours”** means The Chemours Company FC, LLC, a Delaware limited liability company registered and doing business in North Carolina.

**“DEQ”** means the North Carolina Department of Environmental Quality, including all its divisions.

**“DAQ”** means the North Carolina Division of Air Quality, a division of DEQ.

**“DWM”** means the North Carolina Division of Waste Management, a division of DEQ.

**“DWR”** means the North Carolina Division of Water Resources, a division of DEQ.

**“Facility”** means Chemours' Fayetteville Works Facility located at 22828 NC Highway 87 W, Fayetteville, Bladen County, North Carolina, which Facility is owned by, and operated in part by, Chemours.

**“GenX”** means the chemical C3 Dimer Acid (also known as HFPO Dimer Acid), which has a CAS number of 13252-13-6.

**“GenX Compounds”** means C3 Dimer Acid (also known as HFPO Dimer Acid), CAS

No. 13252-13-6, C3 Dimer Acid Fluoride (also known as HFPO Dimer Acid Fluoride), CAS No. 2062-98-8, and C3 Dimer Acid Ammonium Salt (also known as HFPO Dimer Acid Ammonium Salt), CAS No. 62037-80-3.

“**NOVs**” means the Notices of Violation issued by DEQ to Chemours dated September 6, 2017, November 13, 2017, February 12, 2018, and June 1, 2018. “NOVs” also includes the anticipated notice of violation for the truck spill that occurred during Hurricane Florence on September 18, 2018.

“**PFAS**” means perfluoroalkyl and polyfluoroalkyl substances.

“**Plaintiff**” means the sovereign State of North Carolina on behalf of DEQ.

“**2017 Total Reported Emissions**” means total facility-wide estimated emissions of GenX Compounds in the amount of 2302.7 lbs as reported by Chemours to DAQ in Chemours’ Letter of April 27, 2018 and the document, “HFPO-DA Baseline Emission Estimates,” attached thereto as Exhibit 2.

## **B. JURISDICTION AND VENUE**

1. Plaintiff is the sovereign State of North Carolina. This action was brought on the relation of Michael S. Regan, Secretary of DEQ, the State agency established pursuant to N.C. Gen. Stat. § 143B-279.1 *et seq.*, and vested with the statutory authority to enforce the State’s environmental protection laws, including laws enacted to protect the water and air quality of the State.

2. Plaintiff-Intervenor Cape Fear River Watch is a § 501(c)(3) nonprofit public interest organization headquartered in Wilmington, North Carolina that engages residents of the Cape Fear watershed through programs to preserve and safeguard the river. The organization has 1,100

members, including members who live near, drink water from, and fish, swim, and boat on the Cape Fear River downstream of Chemours' Fayetteville Works Facility. Cape Fear River Watch's mission is "to protect and improve the water quality of the Lower Cape Fear River Basin through education, advocacy and action."

3. Defendant Chemours is a Delaware limited liability company registered and doing business in North Carolina. Chemours owns the Fayetteville Works facility located at 22828 NC Highway 87 W, Fayetteville, Bladen County, North Carolina and operates a portion of that facility.

4. This Court has jurisdiction pursuant to N.C. Gen. Stat. § 143-215.6C, N.C. Gen. Stat. § 143-114C, N.C. Gen. Stat. § 7A-245(a)(2) and N.C. Gen. Stat. § 1-493.

5. Bladen County, North Carolina is a proper venue because portions of the Fayetteville Works facility are located in Bladen County and the Amended Complaint alleges violations occurring in Bladen County. N.C. Gen. Stat. § 143-215.6C; N.C. Gen. Stat. § 143-114C.

6. The Honorable Douglas B. Sasser, Senior Resident Superior Court Judge, presides over this matter by designation pursuant to Rule 2.1 of the General Rules of Practice.

### **C. COMPLIANCE MEASURES – AIR EMISSIONS**

#### **7. Control Technology Improvements:**

- a. *Second Phase Scrubber.* Chemours completed installation of a packed bed scrubber ("Second Phase Scrubber") to control emissions from the Division Waste Gas Scrubber on or before November 7, 2018. On or before February 6, 2019, Chemours shall submit a report to DAQ demonstrating that the Second Phase Scrubber operates with a minimum control efficiency of 72%

for GenX Compounds.

b. *Vinyl Ethers North Carbon Adsorber Project*: Chemours shall make improvements to allow for the control of emissions from the Second Phase Scrubber by the Vinyl Ethers North Carbon Adsorber Unit (“Vinyl Ethers North Carbon Adsorber Project”) in accordance with the following schedule and conditions:

- i. On October 19, 2018, Chemours submitted to DAQ a process hazard assessment pertaining to the Vinyl Ethers North Carbon Adsorber Project.
- ii. By December 31, 2018, Chemours shall complete construction of the Vinyl Ethers North Carbon Adsorber Project. Upon completion of construction, all emissions from the Second Phase Scrubber shall be controlled by the Vinyl Ethers North Carbon Adsorber Unit subject to such unit downtime as may be required by the process hazard assessment or as necessary for maintenance of the unit. Chemours will use its best efforts consistent with safe operations to minimize unit downtime.
- iii. Within ninety (90) days of installation, Chemours shall submit a report to DAQ demonstrating that the Vinyl Ethers North Carbon Adsorber Unit operates with a minimum control efficiency of 93% for GenX Compounds.

c. *Thermal Oxidizer.* By December 31, 2019, Chemours shall install a thermal oxidizer to control all PFAS in process streams from the HFPO Process, the Vinyl Ethers North Process, the Vinyl Ethers South Process, the RSU Process, the TFE Process, the MMF Process, and the Polymers Process. Within ninety (90) days of installation, Chemours shall demonstrate that the thermal oxidizer controls all PFAS at an efficiency of 99.99%.

8. GenX Emissions Reduction Milestones: Chemours shall achieve the overall emissions reductions of GenX Compounds in accordance with the following schedule.

a. By October 6, 2018 and for the twelve-month period beginning on that date, Chemours shall reduce Facility-wide air emissions of GenX Compounds on an annualized basis by at least 82% from 2017 Total Reported Emissions. Compliance with this requirement shall be demonstrated through continued compliance with the control efficiency requirement set forth in paragraph 7(a).

b. By December 31, 2018 and for the twelve-month period beginning on that date, Chemours shall reduce Facility-wide air emissions of GenX Compounds on an annualized basis by at least 92% from 2017 Total Reported Emissions. To demonstrate compliance with this paragraph, Chemours shall:

i. Conduct emissions testing for GenX Compounds emissions sources to determine GenX Compounds emission rates for each product campaign. Emissions testing shall be conducted during the first campaign of that product of the Calendar Year 2019. Control device operating parameters must be recorded during the testing. Emissions

test reports shall be submitted to DAQ within forty-five days of completion of the emissions test; and

- ii. Submit a report demonstrating compliance to DAQ by February 28, 2020. This report shall include GenX Compounds emissions in pounds per year based on test data or established emission factors where test data are not available, hours of operation for each campaign, and production data. The report shall quantify any other emissions including but not limited to fugitive, maintenance, malfunction and accidental emissions. The report shall also include a summary of control device operating parameters throughout the year.
- c. By December 31, 2019 and for each consecutive twelve-month period following that date, Chemours shall reduce Facility-wide annual air emissions of GenX Compounds by at least 99% from 2017 Total Reported Emissions. To demonstrate compliance with this paragraph, Chemours shall:
- i. Conduct emissions testing for the thermal oxidizer to determine the emissions rate of GenX Compounds. Emissions testing shall be completed by March 31, 2020. Emissions test reports shall be submitted to DAQ within forty-five days of completion of the emissions test; and
  - ii. Submit a report demonstrating compliance to DAQ by February 28, 2021. This report shall include GenX Compounds emissions in pounds per year based on test data, or established emission factors where test data are not available, hours of operation, and production data. The

report shall quantify any other emissions including but not limited to fugitive, maintenance, malfunction and accidental emissions. The report shall also include a summary of control device operating parameters throughout the year.

- iii. Chemours shall repeat this compliance demonstration for each subsequent calendar year unless and until DAQ issues a modified Air Quality Permit to Chemours, incorporating a 99% or greater reduction requirement.

9. Disclosure of PFAS emissions: Chemours shall have an ongoing duty to disclose to DAQ (i) any identified previously undisclosed PFAS and emissions rates for those PFAS, and (ii) any new process or production that may lead to the addition of any previously undisclosed PFAS in the Facility's air emissions. For any such PFAS, Chemours shall provide DAQ with any available analytical test methods and lab standards. Chemours shall provide DAQ with all known test methods and lab standards for PFAS in air emissions at the facility by December 31, 2018.

#### **D. COMPLIANCE MEASURES – SURFACE WATER**

10. No Discharge of Process Wastewater from Chemours' Manufacturing Areas: Chemours shall not discharge process wastewater from Chemours' manufacturing areas until issuance of an NPDES Permit issued under N.C. Gen. Stat. § 143-215.1 and 15A NCAC 2B ("NPDES Permit") expressly authorizing the discharge of such process wastewater and with such limits as DEQ reasonably deems necessary and appropriate to control the discharge of GenX Compounds and other PFAS. In accordance with applicable law, in setting such limits, DEQ shall take into account available health information including any information produced pursuant to this

Consent Order.

11. Characterization of PFAS in process and non-process wastewater and stormwater at the Facility:

- a. *Test methods and lab standards:* By January 31, 2019, Chemours shall (a) provide DWR with all known analytical test methods and lab standards for all PFAS in all process and non-process wastewater and stormwater at the Facility, including but not limited to all process and non-process wastewater and stormwater discharged through Outfall 002, and (b) submit a plan and schedule for conducting non-targeted analysis of all process and non-process wastewater and stormwater streams to identify any additional PFAS and developing test methods and lab standards for such compounds. Chemours shall commence implementation of such plan within thirty (30) days of approval by DEQ. Chemours shall follow the EPA's Protocol for Review and Validation of New Methods for Regulated Organic and Inorganic Analytes in Wastewater under EPA's Alternate Test Procedure Program, *see* [https://www.epa.gov/sites/production/files/2016-03/documents/chemical-new-method-protocol\\_feb-2016.pdf](https://www.epa.gov/sites/production/files/2016-03/documents/chemical-new-method-protocol_feb-2016.pdf), and shall write each test procedure in the standard EPA format.
- b. *Sampling plan:* By December 31, 2018, Chemours shall submit a sampling plan to DWR for approval. This sampling plan shall include proposed locations for the sampling to carry out the initial characterization of all PFAS described in subparagraph (c).

- c. *Initial characterization:* Within thirty (30) days of approval of the sampling plan, Chemours shall commence submission of quarterly reports to DEQ identifying PFAS constituents and initial concentrations at any level above the practical quantitation limit in all process and non-process wastewater and stormwater at the Facility, including, but not limited to, all process and non-process wastewater and stormwater discharged through Outfall 002. As part of these reports, process and non-process wastewater and stormwater shall be characterized from each of Chemours' manufacturing areas as well as from the manufacturing areas of Chemours' tenants, Kuraray and DuPont. Similar testing for PFAS constituents in the raw water intake shall be performed in conjunction with other sampling in order to assess background concentrations. The final quarterly report shall be submitted, and initial characterization of all PFAS completed, no later than eighteen (18) months after approval of the sampling plan.
- d. *Ongoing sampling:* For all PFAS for which test methods and lab standards have been developed Chemours, at least every two months, shall sample for each such PFAS at approved locations and report the results to DWR. Approved locations shall, at a minimum, include the locations described in subparagraph 11(c), unless Chemours has demonstrated through its initial characterization that a manufacturing area does not contribute to PFAS loading. After two years of such sampling, Chemours may request that DWR agree to a reduced sampling frequency.

- e. *Ongoing duty to disclose:* Chemours shall have an ongoing duty to disclose (i) any previously undisclosed PFAS and concentrations of any previously undisclosed PFAS in all process and non-process wastewater and stormwater at the Facility, and (ii) any new process or production that may lead to the addition of any previously undisclosed PFAS in process and non-process wastewater and stormwater at the Facility. For any such PFAS, Chemours shall provide DWR with available test methods and lab standards as specified in subparagraph (a) above.

12. Prevention of PFAS Loading to Surface Waters:

- a. By May 31, 2019, Chemours shall submit to DEQ and Cape Fear River Watch a plan demonstrating the maximum reductions in PFAS loading from the Facility (including loading from contaminated stormwater, non-process wastewater, and groundwater) to surface waters, including Old Outfall 002, that are economically and technologically feasible, and can be achieved within a two-year period (“PFAS reduction targets”). If significantly greater reductions can be achieved in a longer implementation period, Chemours may propose, in addition, an implementation period of up to five years. Subject to approval by DEQ, the plan may include actions to be undertaken by other entities that have contributed to the need for such remediation.
- b. The plan shall include a model accounting for all sources of PFAS (including identification and mass loading of all PFAS) from the Facility contributing to

the loading of PFAS into the Cape Fear River, Willis Creek, Georgia Branch, and Old Outfall 002.

- c. The model shall be prepared by a third party approved by DEQ. Prior to conducting the modeling analysis, the third party shall submit to DEQ for approval a scope of work describing the modeling analysis. DEQ shall consider all timely comments received from Cape Fear River Watch prior to agency approval of any such document.
- d. DEQ and Cape Fear River Watch shall review the plan developed by Chemours, and the Parties shall work together in good faith to determine if the PFAS reduction targets identified by Chemours represent the maximum reductions that are economically and technologically feasible, and can be implemented over a two-year period (or longer as proposed in an alternate plan), or whether the Parties can identify and agree upon further reductions. The burden is on Chemours to demonstrate that the concentrations of GenX and perfluoro-1-methoxyacetic acid (PFMOAA) detected in Outfall 002 cannot be reduced by at least 80% from baseline levels, including after measurable storm events, as defined in 40 C.F.R. 122.21(g)(7)(ii), within 2 years.
- e. By September 30, 2019 Chemours shall capture the water in Old Outfall 002 at the Option A location depicted in **Attachment A** for treatment (subject to approval by DEQ) or offsite disposal. Additional measures may be required by DEQ with respect to Old Outfall 002 as part of the Corrective Action Plan pursuant to paragraph 16.

- f. Provided that the Parties come to an agreement regarding additional PFAS reductions, by July 31, 2019, DEQ, Cape Fear River Watch and Chemours shall jointly move to amend this Consent Order to incorporate any agreed upon reductions as enforceable requirements of this Consent Order as well as stipulated penalties for non-compliance. If DEQ, Cape Fear River Watch, and Chemours are unable to mutually agree upon additional PFAS reductions by July 31, 2019: (i) the Parties may jointly stipulate to additional time in which to submit a joint motion to amend, or (ii) Cape Fear River Watch, DEQ, and Chemours may bring any dispute regarding the additional reductions before the Court for resolution. In resolving any such dispute, the Court shall, in addition to considering testimony by qualified experts presented by the parties, give due regard to the demonstrated knowledge and expertise of DEQ with respect to the evaluation of the economic and technological feasibility of environmental remediation and the application of that knowledge and expertise to other remediation projects. After the Court amends this Consent Order or otherwise resolves this issue, Chemours shall comply with the reduction targets mandated.
- g. Nothing in this paragraph shall be construed to limit Chemours' obligations to submit and implement a complete Corrective Action Plan pursuant to paragraph 16, but Chemours may propose such a Corrective Action Plan that integrates the requirements of this paragraph.

13. Facility Site Visit: By February 28, 2019, Chemours shall provide DEQ and Cape Fear River Watch with a tour of the exterior grounds of the Facility, including Old Outfall 002,

Outfall 002, the terracotta pipe (which formerly carried industrial process wastewater), discharge locations to surface waters, and the proposed sampling locations contemplated by paragraph 11(b).

14. Health Studies: By February 28, 2019, Chemours shall submit a plan and proposed schedule for review and approval by DEQ for funding and facilitating the conducting of an initial set of toxicity studies by a qualified third party approved by DEQ relating to both human health and aquatic life sufficient to aid in development of surface water and groundwater regulatory standards for up to five PFAS as determined by DEQ. The plan shall provide for the studies and parameters identified in **Attachment B** as well as technologically feasible dosing parameters to be agreed upon by Chemours and DEQ. Chemours shall implement the measures set forth in the approved plan. DEQ reserves the right to seek additional health studies or health information beyond the scope of the initial set of studies required by this paragraph. DEQ shall consider public comments in determining what additional health studies or health information are needed. Chemours reserves the right to contest any efforts by DEQ to seek additional health studies or information from Chemours beyond the scope of the initial set of studies required by this paragraph. Any dispute with respect to this paragraph that the parties are unable to resolve after good faith negotiations shall be resolved by the Court, which shall determine whether the disputed activity is reasonably necessary to achieve the objectives of this paragraph.

15. Notice to and Coordination With Water Utilities: In the event of an upset or other operating condition at the Facility that has the potential to cause (i) a discharge of GenX Compounds or any PFAS for which analytical test methods and lab standards have been developed into the Cape Fear River through Outfall 002 at concentrations exceeding 140 ng/L, or any applicable health advisory, whichever is lower, or (ii) a material increase in the concentration of

any PFAS in effluent being discharged into the Cape Fear River through Outfall 002 or any future permitted discharge, Chemours shall provide notice to downstream public water utilities, DEQ, and Cape Fear River Watch within one (1) hour of knowledge of the condition. Chemours shall maintain a list of appropriate contacts of downstream public water utilities, which Chemours shall routinely update by requesting contact information from DEQ. Chemours shall also post a description of the condition including any estimated quantity of the release on a publicly available website within twenty-four (24) hours of knowledge of the condition.

#### **E. COMPLIANCE MEASURES – GROUNDWATER**

16. **Groundwater Remediation:**

- a. By December 31, 2019, Chemours shall submit for approval by DEQ a complete Corrective Action Plan that complies with the requirements of the 2L Rules and guidance provided by DEQ.
- b. Chemours shall implement the Corrective Action Plan in accordance with a schedule approved by DEQ. Except as otherwise allowed in or provided under the 2L Rules, the Corrective Action Plan must provide, upon full implementation, for the remediation of groundwater to the standards set forth in 15A NCAC 2L.0202. Subject to approval by DEQ, the Corrective Action Plan may include actions to be undertaken by other entities that have contributed to the need for such remediation.
- c. The Corrective Action Plan shall include the installation of groundwater monitoring wells along Old Outfall 002, Willis Creek, Georgia Branch, and the Cape Fear River in sufficient number and in locations adequate for monitoring

the quality of groundwater entering surface waters, and include the collection and reporting of accurate baseline concentrations for all PFAS for which test methods and lab standards have been developed within each groundwater monitoring well installed pursuant to this paragraph, in addition to existing long-term wells (LTWs) along the Cape Fear River.

- d. At a minimum, in addition to any measures that might be otherwise required to comply with the 2L Rules, and notwithstanding any provisions of the 2L Rules or other exceptions that might apply to corrective action plans, the Corrective Action Plan must require Chemours to reduce the PFAS loading to surface water (Old Outfall 002, Willis Creek, Georgia Branch, and the Cape Fear River), for the PFAS for which test methods and lab standards have been developed, by at least 75% from baseline. The baseline will be established using the average of the concentrations of the PFAS in the groundwater monitoring wells for each surface water and LTWs along the Cape Fear River over the first four (4) quarters of sampling. To demonstrate compliance, mass loading to surface water (Old Outfall 002, Willis Creek, Georgia Branch, and the Cape Fear River), must be reduced by at least 75% from baseline for at least eight (8) consecutive quarters and determined using measured concentrations in groundwater monitoring wells and LTW wells.

17. Lining of Nafion Ditch and Sedimentation Ponds: Chemours completed permanent lining of the Nafion Ditch by November 7, 2018 and permanent lining of the south sedimentation

pond by November 8, 2018. Chemours shall complete permanent lining of the north sedimentation pond no later than December 31, 2018.

18. On and Offsite Assessment: By July 31, 2019, Chemours shall submit to DWM a comprehensive assessment of on and offsite groundwater contamination that complies with the requirements of the 2L Rules. This assessment shall include an analysis of: (i) the source and cause of contamination; (ii) any imminent hazards to public health and safety and any actions taken to mitigate them; (iii) all receptors (to include as potential receptors drinking water wells and surface waters) and significant exposure pathways; (iv) the horizontal and vertical extent of soil and groundwater contamination and all significant factors affecting contaminant transport; and (v) geological and hydrogeological features influencing the movement, chemical, and physical character of the contaminants.

**F. COMPLIANCE MEASURES –  
REPLACEMENT DRINKING WATER SUPPLIES**

19. Provision of Public Water Supplies or Whole Building Filtration Systems: Chemours shall establish and properly maintain permanent replacement drinking water supplies in the form of public water or a whole building filtration system for any party (i.e., household, business, school, or public building) with a private drinking water well that has been found through testing validated by DEQ to be contaminated by concentrations of GenX compounds in exceedance of 140 ng/L, or any applicable health advisory, whichever is lower. Under this provision, permanent replacement water supplies shall be established by connection to a public water supply, except that:

- a. in lieu of a connection to public water supply, an affected party may elect to receive either a whole building filtration system approved by DEQ or under sink reverse osmosis systems (installed at every kitchen and bathroom sink at the election of the affected party) approved by DEQ, in which case Chemours shall install and properly maintain such filtration systems;
- b. an affected party may elect to decline any permanent replacement drinking water supply; and
- c. if DEQ determines that connection to a public water supply to an affected party would be cost-prohibitive (i.e., greater than \$75,000) or unsafe, DEQ may authorize provision of a permanent replacement water supply to that affected party through installation and ongoing maintenance of either a whole building filtration system approved by DEQ or reverse osmosis systems approved by DEQ installed at every kitchen and bathroom sink (at the election of the affected party).

Permanent replacement drinking water supplies established pursuant to this paragraph shall be installed no later than: (i) nine (9) months from the date Chemours becomes aware that the affected party qualifies for replacement drinking water; or (ii) if Chemours is aware that an affected party qualifies for replacement drinking water at the time this Consent Order is entered, nine (9) months from the date of entry of this Consent Order. For affected parties, Chemours shall be liable to pay for any water bills from public utilities for a period of twenty (20) years up to \$75/month/affected party, provided that the monthly cap on public utility bills may be reevaluated by DEQ every two (2) years and adjusted by the average percentage increase or decrease in utility rates a given county.

20. Provision of Reverse Osmosis Drinking Water Systems: Chemours shall provide for and properly maintain permanent replacement water supplies through the installation of three under sink reverse osmosis drinking water systems approved by DEQ for any party (i.e., household, business, school, or public building) that does not qualify for permanent replacement of a private drinking water supply pursuant to paragraph 19 with a drinking water supply well contaminated by:

- a. combined quantifiable concentrations of PFAS listed in **Attachment C** in exceedance of 70 ng/L; or
- b. quantifiable concentrations of any individual PFAS listed in **Attachment C** in exceedance of 10 ng/L.

Permanent replacement drinking water supplies established pursuant to this paragraph shall be installed by Chemours by no later than: (i) six (6) months from the date Chemours becomes aware that an affected party qualifies for replacement drinking water; or (ii) if Chemours is aware that an affected party qualifies for replacement of drinking water at the time this Consent Order is entered, six (6) months from the date of entry of this Consent Order.

21. Private Well Testing: Chemours shall fund sampling by a third party laboratory approved by DEQ of drinking water wells for a distance of at least one-quarter (1/4) mile beyond the nearest well with test results showing a quantifiable level of any PFAS listed in **Attachment C** above 10 ng/L. Such testing shall be completed within eighteen (18) months of entry of this Order. Additionally, by December 31, 2018, Chemours shall fund re-analysis by a third party laboratory approved by DEQ for all PFAS listed in **Attachment C** of any previously collected groundwater samples that were analyzed only for GenX, GenX Compounds, or a subset of the

PFAS listed in **Attachment C**. Chemours shall retest annually to determine the extent of PFAS contamination. Chemours shall request incorporation of a plan to carry out this requirement in its Corrective Action Plan.

22. Provision of Sampling Results: On an ongoing basis and within seven (7) days of receiving any groundwater sampling results, Chemours shall provide these results to DEQ, with samples identified by both address and sample ID. Within seven (7) days of receiving test results, Chemours shall also provide sampling results to parties who have had their wells tested. For parties whose wells were tested prior to the lodging of this Consent Order, Chemours shall ensure that they have received sampling results within seven (7) days of the lodging of this Consent Order.

23. Interim Replacement of Private Drinking Water Supplies: Within three (3) days of Chemours becoming aware that a party qualifies for permanent replacement of private drinking water pursuant to paragraph 19 or 20, Chemours shall offer temporary replacement water supplies (i.e., bottled water) until such time as permanent replacement water supplies have been provided. For any party that is eligible for permanent replacement water supplies pursuant to paragraph 19 or 20 but declines to receive such permanent replacement water supplies, Chemours shall provide bottled water for at least three (3) months after receiving written confirmation that an affected party declines to receive permanent replacement water supplies.

24. Drinking Water Compliance Plan:

- a. By no later than sixty (60) days after entry of this Order, Chemours shall submit a plan for compliance with paragraphs 19-23 to DEQ for approval. This plan shall include a detailed schedule with milestones to (1) sample private drinking water wells and (2) maintain filtration systems installed pursuant to paragraphs

19 or 20 until such a time as DEQ determines that a drinking water well is no longer contaminated with PFAS.

- b. DEQ shall establish a process for addressing citizen complaints related to implementation of the plan.

25. Extension of Deadlines: For good cause shown, Chemours may submit to DEQ one or more requests for extensions of up three months each for any deadline specified in paragraphs 19-24.

### **G. OTHER COMPLIANCE MEASURES**

26. Total Organic Fluorine: Chemours shall fund development by a third party contractor(s) of a sampling and analytical methodology for the measurement of Total Organic Fluorine in its process air emissions and process wastewater. Chemours' contractor(s) shall (i) be approved by DEQ, (ii) submit quarterly reports to DEQ, and (iii) submit the completed methodology to DEQ for review by December 31, 2020.

27. Fate and Transport: Chemours shall fund development by a third party contractor(s) of a study, based on the best available data and information, analyzing the fate and transport of identified PFAS originating from the Facility in air, surface water and groundwater. Chemours' contractor(s) shall (i) be approved by DEQ, and (ii) submit the completed study to DEQ for review by June 30, 2019. This study may be done as part of another study required by this Order.

28. Reporting: Chemours shall submit quarterly progress reports to DEQ detailing the work and activities undertaken and completed pursuant to the requirements set forth in this Order.

The quarterly reports are due later than the thirtieth (30th) day of January, April, July, and October for the duration of this Order.

#### **H. COMPLIANCE MEASURES-PUBLIC INFORMATION**

29. Whenever Chemours proposes to make a change to its facility operations that would result in (i) the use, production, or release into the environment of a previously undisclosed PFAS or (ii) the material increase in the release to the environment of a previously disclosed PFAS, Chemours shall conduct at least one public meeting in Bladen County or, at the request of DEQ, two public meetings—one in Bladen County and one in another county down river from the Facility—and, at least four weeks prior to the meetings, notify DEQ and Cape Fear River Watch when and where the meetings will occur. Chemours shall notify the public at least two weeks before the public hearing by issuing a press release and posting the release on a publicly available website. Any meeting shall be held prior to permit applications for the change, if any, being submitted to DEQ.

30. Chemours shall post all submissions made by Chemours to DEQ pursuant to this Order, other than any submissions containing (i) confidential business information of Chemours, (ii) information concerning specific residents or other individuals, or (iii) other information that DEQ determines would be exempt from disclosure under the North Carolina Public Records Act and should not be posted, to a publicly accessible website within 30 days of submission.

#### **I. PENALTIES AND INVESTIGATIVE COSTS**

31. Stipulated Penalties: Unless excused under paragraph 32, Chemours shall pay, by certified check payable to the North Carolina Department of Environmental Quality, stipulated

penalties according to the following schedule for failure to perform activities described in paragraphs 7-30.

Failure to meet 82% emissions reduction milestone in paragraph 8	\$200,000
Failure to meet 92% emissions reduction milestone in paragraph 8	\$350,000
Failure to meet 99% emissions reduction milestone in paragraph 8	\$1,000,000
Failure to meet technology milestone in paragraph 7 (not including control efficiency requirements).	\$5,000/day for first 14 days; \$30,000/day thereafter
Failure to meet any control efficiency requirements in paragraph 7.	\$50,000 for the first failed test. \$25,000/week thereafter until the date of testing showing compliance.
Failure to meet PFAS loading reductions incorporated pursuant to paragraph 12.	To be incorporated pursuant to paragraph 12
Failure to meet any other deadline in this Consent Order to which no other stipulated penalties are applicable.	\$1,000/day for first 7 days; \$2,000/day thereafter

32. Force Majeure: The stipulated penalties specified in paragraphs 31 are not due if Chemours satisfies DEQ that noncompliance was caused solely by:

- a. An act of God;
- b. An act of war;
- c. An intentional act or omission of a third party, but this defense shall not be available if the act or omission is that of an employee or agent of Chemours or if the act or omission occurs in connection with a contractual relationship with Chemours;

- d. An extraordinary event beyond the Chemours' control, specifically including any court order staying the effectiveness of any necessary permit or approval. Contractor delays or failure to obtain funding will not be considered as events beyond Chemours' control; or
- e. Any combination of the above causes.

33. Civil Penalty and Investigative Costs: By no later than thirty (30) days following entry of this Order, Chemours shall pay, by certified check payable to the North Carolina Department of Environmental Quality, a civil penalty in the amount of \$12,000,000 and investigative costs in the amount of \$1,000,000.

**J. RELEASE AND RESERVATION OF RIGHTS**

34. Subject to paragraph 35, this Consent Order releases and resolves civil and administrative claims for injunctive relief and civil penalties by Plaintiff against Chemours relating to the release of PFAS from the Facility that have been or could have been brought based on information known to DEQ prior to the lodging of this Consent Order for past and continuing violations of the following statutes and regulations: the Clean Water Act and regulations promulgated thereunder; the Clean Air Act and regulations promulgated thereunder; and the North Carolina statutes and regulations referenced in the Complaint, the Amended Complaint and the NOVs (collectively, the "Subject Statutes and Regulations"). Furthermore, DEQ agrees that, based on information known to DEQ prior to the lodging of this Consent Order, this Consent Order addresses and resolves any violation or condition at the Facility insofar as it could serve as the basis for a claim, proceeding, or action pursuant to Section 13.1(a) or (c) of North Carolina Session Law 2018-5.

35. Plaintiff reserves all legal and equitable remedies available to enforce the provisions of this Consent Order, including requesting the Court to exercise its contempt powers, provided that the stipulated penalties set forth in paragraph 31 shall be the exclusive monetary remedy for any violation of this Consent Order to which they apply. Plaintiff retains all legal and equitable remedies to address any imminent and substantial endangerment to the public health or welfare or the environment arising as a result of activities at the Facility whether related to the violations addressed in this Consent Order or otherwise. Nothing in this Order shall prevent Plaintiff, acting pursuant to applicable law, from requiring Chemours take further interim measures to reduce air emissions of PFAS other than GenX Compounds prior to installation of the thermal oxidizer. Nothing in this Consent Order shall restrict the right of DEQ to inspect or take enforcement action against Chemours for any new or subsequent violations (violations not addressed in paragraph 34) of the Subject Statutes and Regulations, or the right of Chemours to contest any subsequent enforcement action based on allegations of new, subsequent or repeated violations, to the extent provided by law.

36. Nothing in this Consent Order releases Chemours from any liability it may have to any third parties arising from Chemours' actions.

#### **K. INTERVENTION OF CAPE FEAR RIVER WATCH**

37. For the purpose of entering into this Consent Order and resolving Cape Fear River Watch's pending actions in Cape Fear River Watch v. North Carolina Department of Environmental Quality, 18 CVS 2462 (New Hanover Cty. Sup. Ct.) and Cape Fear River Watch v. Chemours Company FC, LLC, No. 7:18-cv-00159 (E.D.N.C.), Plaintiff and Chemours consent to the intervention of Cape Fear River Watch as a Plaintiff in this matter.

38. Plaintiff shall have sole authority to enforce of the requirements of this Consent Order in this Court against Chemours, except that Cape Fear River Watch shall also have authority to enforce paragraphs 7, 8, 10, 11, 12, 13, 15, 16(d), 29, 40, and 46, provided that Cape Fear River Watch's authority to enforce a requirement under paragraph 7 or 8 shall cease upon incorporation of that requirement into the Facility's air permit, and further provided that Cape Fear River Watch shall provide Chemours and DEQ with at least 14 days advance notice of any compliance concern that could result in an enforcement action, and the parties shall confer in an effort to resolve any dispute prior to its presentation to the Court. Furthermore, Cape Fear River Watch shall have the right to be heard in any proceeding before this Court in which Plaintiff is seeking to have the terms of this Consent Order enforced.

39. Within fifteen (15) days of entry of this Consent Order, Cape Fear River Watch agrees to voluntarily dismiss with prejudice its Petition for Judicial Review in Cape Fear River Watch v. North Carolina Department of Environmental Quality, 18 CVS 2462 (New Hanover Cty. Sup. Ct.). Within sixty (60) days of entry of this Consent Order, Cape Fear River Watch agrees to voluntarily dismiss with prejudice its action in Cape Fear River Watch v. Chemours Company FC, LLC, No. 7:18-cv-00159 (E.D.N.C.) for Chemours' alleged violations of the Clean Water Act and the Toxic Substances Control Act alleged by the Cape Fear River Watch prior to the date of entry of this Order.

40. Chemours shall provide quarterly progress reports submitted to DEQ concurrently to Cape Fear River Watch. Within thirty (30) days of receiving those reports, DEQ shall make relevant staff available for an in person meeting with Cape Fear River Watch to discuss the status of Chemours' performance of its obligations under the Consent Order and DEQ's review of any

relevant submissions.

#### L. MISCELLANEOUS

41. Effect of this Order: This Consent Order (a) shall be binding on the parties as an order of the Court, (b) is not, and shall not be construed to be, a permit issued pursuant to any federal or state statute or regulation, and (c) is not, and shall not be construed to be, a determination on the merits of any of the factual allegations or legal claims advanced by any party in this action, including in DEQ's Complaint or Amended Complaint, Chemours' Answer, any Notices of Violation, or the proposed findings of fact or conclusions of law filed by DEQ in connection with prior motions or status reports. Nothing in this Consent Order limits Chemours' obligations to comply with the requirements of all applicable state and federal laws and regulations, provided that nothing in this sentence limits the scope of the release under paragraphs 34-35.

42. No Admission: By agreeing to entry of this Consent Order, Chemours makes no admission of law or fact with respect to the allegations in the Complaint or Amended Complaint, any Notices of Violation, or the proposed findings of fact or conclusions of law filed by DEQ in connection with prior motions or status reports, and does not admit to any other factual or legal determination, and denies any non-compliance or violation of any law, regulation or permit referenced therein or in this Consent Order. In particular, and without limiting the foregoing, Chemours does not admit that any concentration-based standard referenced herein for GenX compounds or other PFAS is scientifically supported or legally or factually appropriate.

43. Findings of Fact and Conclusions of Law: The Parties waive any requirement for formal findings of fact and conclusions of law and agree that this Consent Order shall be binding

upon them the same as if entered by a Superior Court Judge after a hearing on the merits of all matters now pending.

44. Carbon Filtration Systems: DEQ and Chemours have cooperated to develop and implement a program for testing the efficacy of granular activated carbon filtration systems in removing GenX and PFAS compounds from drinking water. Under test conditions, PFAS tested in post-treatment water were either not detected at all or detected at concentrations below 10 ng/L and near the reporting limit.

45. Cooperation: The Parties acknowledge that this Consent Order is the product of good faith efforts and discussions since the filing of the draft Proposed Order, and that Chemours has cooperated with DEQ in responding to issues and requests raised by DEQ and in voluntarily undertaking significant corrective and remedial measures while these discussions were ongoing.

46. Notices and Submissions:

- a. Whenever notice is required to be given or a document is required to be sent by one Party to another under the terms of this Consent Order, it shall be provided to all parties, directed to the individuals at the addresses specified below, unless those individuals or their successors give notice of a change to the other Parties in writing. Notice or submission by electronic mail is acceptable.

As to DEQ:

Sheila Holman  
Assistant Secretary for the Environment  
1601 Mail Service Center  
Raleigh, NC 27699-1601  
sheila.holman@ncdenr.gov

Cc: William F. Lane

General Counsel  
1601 Mail Service Center  
Raleigh, NC 27699-1601  
Bill.Lane@ncdenr.gov

Francisco Benzoni  
Special Deputy Attorney General  
PO Box 629  
Raleigh, NC 27602  
fbenzoni@ncdoj.gov

As to DAQ:

Michael Abraczinskas  
Director, Division of Air Quality  
1641 Mail Service Center  
Raleigh, NC 27699-1641  
michael.abraczinskas@ncdenr.gov

As to DWM:

Michael Scott  
Director, Division of Waste Management  
1646 Mail Service Center  
Raleigh, NC 27699-1646  
michael.scott@ncdenr.gov

As to DWR:

Linda Culpepper  
Interim Director, Division of Water Resources  
1611 Mail Service Center  
Raleigh, NC 27699-1611  
linda.culpepper@ncdenr.gov

As to Chemours:

Brian D. Long  
Plant Manager – Fayetteville Works  
The Chemours Company  
22828 NC Highway 87W  
Fayetteville, NC 28306  
Brian.d.long@chemours.com

David C. Shelton, Esq.  
Senior Vice President, General Counsel & Corporate Secretary  
The Chemours Company  
1007 Market Street  
Wilmington, DE 19898  
(302) 773-2588  
David.c.shelton@chemours.com

Cc: John F. Savarese, Esq.  
Wachtell, Lipton, Rosen & Katz  
51 West 52<sup>nd</sup> Street  
New York, NY 10019  
(212) 403-1000  
jfsavarese@wlrk.com

As to Cape Fear River Watch:

Kemp Burdette  
Cape Fear River Watch  
617 Surry Street  
Wilmington, NC 28401  
(910) 762-5606  
kemp@cfrw.org

cc: Geoff Gisler  
Southern Environmental Law Center  
601 West Rosemary Street, Suite 220  
Chapel Hill, NC 27516-2356  
(919) 967-1450  
ggisler@selcnc.org

- b. Chemours shall provide all submissions and notices made by Chemours to DEQ, DAQ, DWM, DWR pursuant to this Order concurrently to Cape Fear River Watch, redacting confidential business information of Chemours, and information concerning specific residents or other individuals. DEQ shall consider all timely comments received from Cape Fear River Watch prior to agency approval of any such document.

47. Permits: In accordance with applicable law, DEQ agrees to review and act timely on all applications by Chemours for permits necessary for Chemours to undertake the actions required under this Consent Order, including without limitation all permits necessary for Chemours to construct, install and operate the thermal oxidizer system. In accordance with applicable law, DEQ agrees (i) to review and act timely on an application by Chemours for a new NPDES permit; (ii) to meet monthly with Chemours and work in good faith with Chemours to identify, review and discuss information necessary for Chemours to complete its application; and (iii) to review and act on Chemours' application in a manner consistent with the Clean Water Act and associated regulations as well as N.C. Gen. Stat. § 143-215.1 and associated regulations, practices, and procedures for permitting the discharge of industrial process wastewater with conditions and limitations necessary to protect public health and the environment.

48. Public Participation: This Consent Order will be lodged with the Court for a period of not fewer than thirty (30) days for public notice and comment. DEQ reserves the right to withdraw or withhold its consent if the comments regarding the Consent Order disclose facts or considerations indicating that the Consent Order is inappropriate, improper, inadequate, or requires modification. Chemours and Cape Fear River Watch consent to entry of this Consent Order without further notice and agree not to withdraw from or oppose entry of this Consent Order by the Court or to challenge any provision of the Consent Order, unless DEQ has notified Chemours and Cape Fear River Watch in writing that it no longer supports entry of the Consent Order in its current form.

49. Successors and Assigns: This Consent Order shall be binding upon, and inure to the benefit of, the Parties and their respective successors and assigns (who shall not be considered

third parties). No third party shall be deemed the beneficiary of, or as having the right to enforce, this Consent Order.

50. Effective Date: This Consent Order shall become effective on the date that it is entered by the Court. In the event that deadlines for any obligations under this Consent Order arise prior to its entry by the Court, such obligations shall take effect upon such entry by the Court.

51. Duration: This Court retains jurisdiction over both the subject matter of this Consent Order and the Parties for the duration of the performance of the terms and provisions of this Consent Order to effectuate or enforce compliance with the terms of this Consent Order, provided that after January 1, 2023, any provision of this Consent Order may be terminated under the following circumstances:

- a. (i) Chemours has discharged the obligations set forth in the provision and six months have elapsed since the date on which Chemours discharged its obligations; or (ii) If the requirements of the provision have not been fully discharged, requirements at least as stringent have been incorporated into a permit, Corrective Action Plan, or other regulatory instrument enforceable by DEQ; and
- b. (i) The Parties stipulate that the above conditions have been met and file a notice of full or partial termination with the Court; or (ii) After all parties have been heard, Chemours demonstrates to the Court that the conditions specified in subparagraph (a) above have been met.

52. This Consent Order may be signed out-of-court, out-of-term, and out-of-county.

This the \_\_ day of \_\_\_\_\_, 2018.

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Douglas B. Sasser  
Superior Court Judge

CONSENTED TO BY:

NORTH CAROLINA DEPARTMENT  
OF ENVIRONMENTAL QUALITY

By: \_\_\_\_\_  
Michael S. Regan  
Secretary

By: \_\_\_\_\_  
Francisco Benzoni  
Special Deputy Attorney General

CONSENTED TO BY:

THE CHEMOURS COMPANY FC, LLC

By: \_\_\_\_\_  
David Shelton  
Senior Vice President, General Counsel, and Corporate Secretary

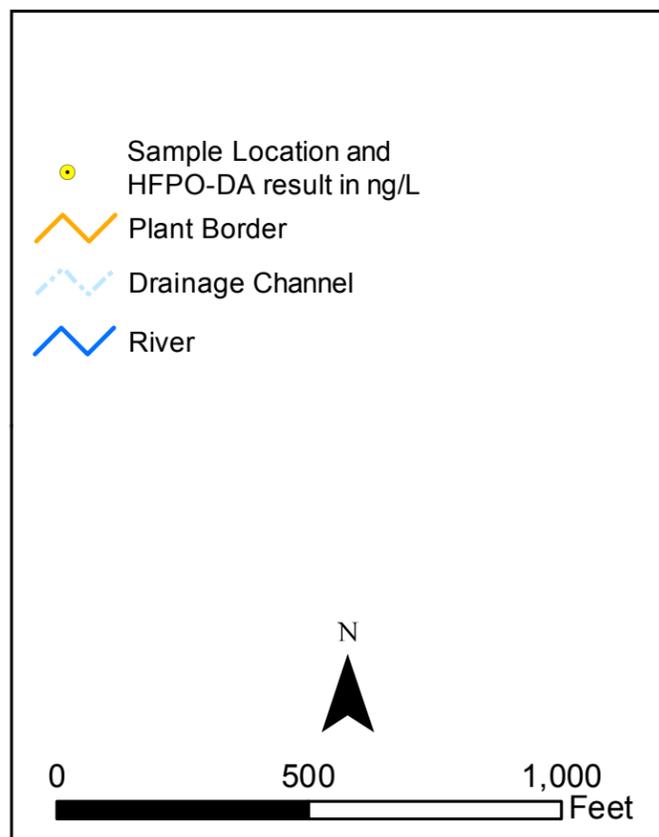
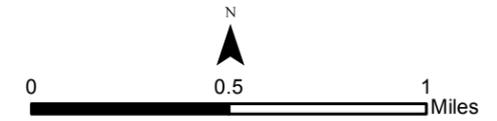
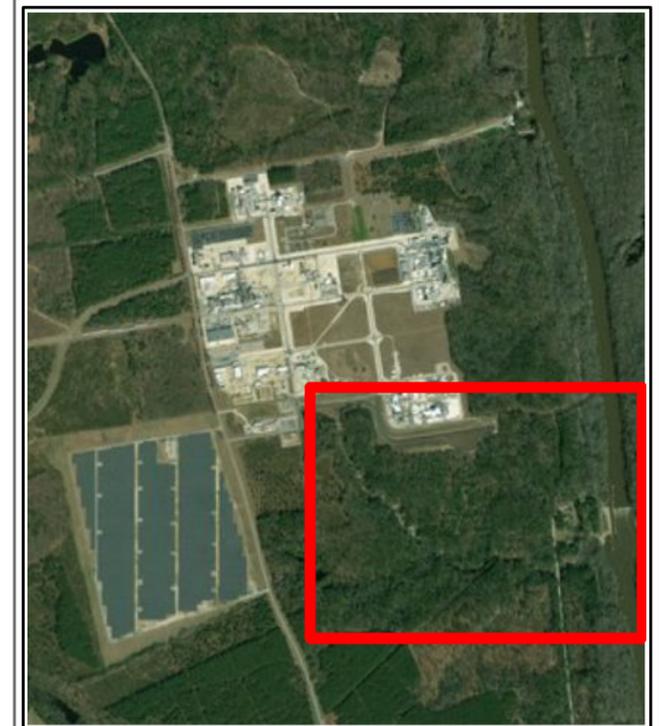
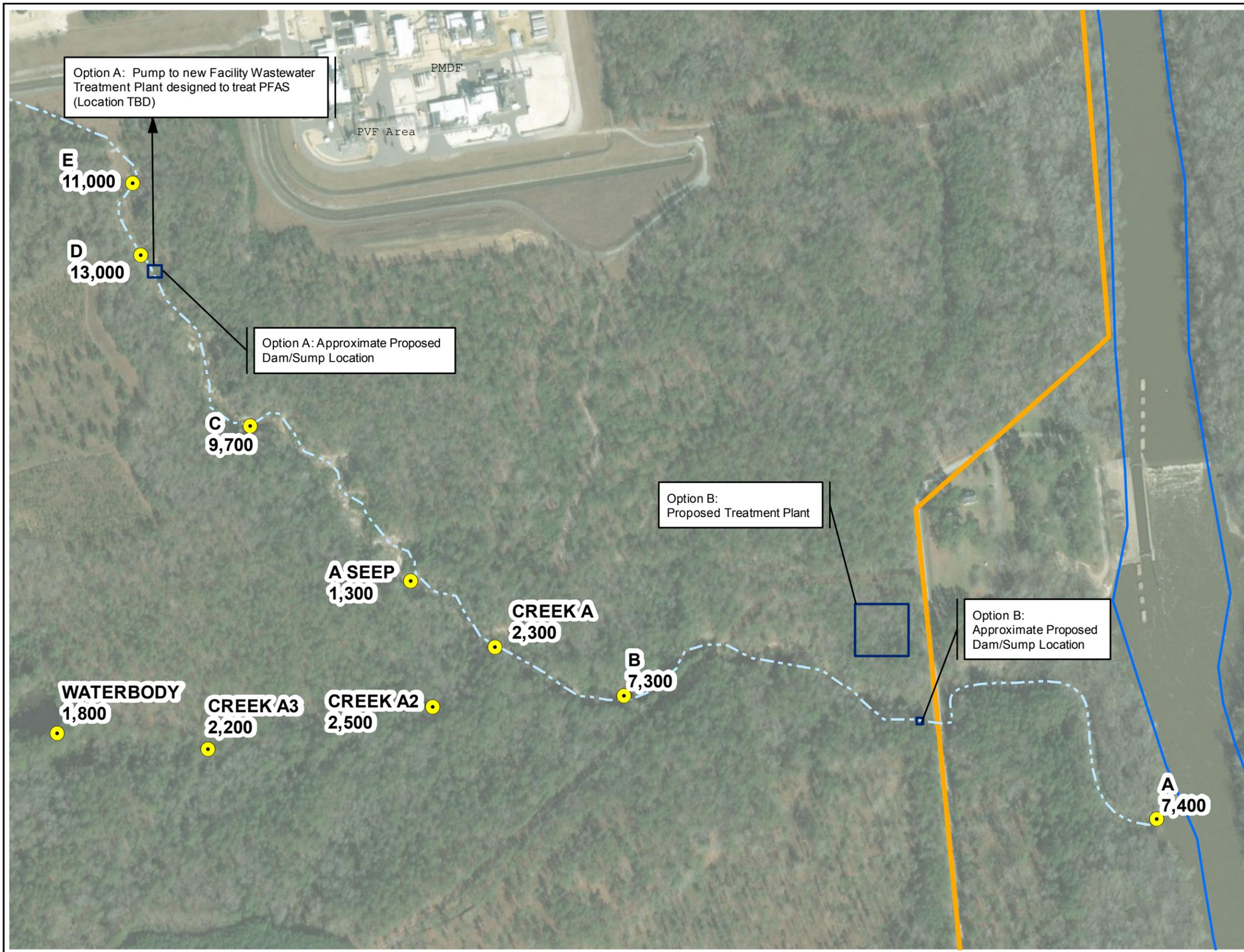
By: \_\_\_\_\_  
John Savarese  
Counsel for Chemours

CONSENTED TO BY:

CAPE FEAR RIVER WATCH

By: \_\_\_\_\_  
Kemp Burdette  
Cape Fear Riverkeeper

By: \_\_\_\_\_  
Geoff Gisler  
Counsel for Cape Fear River Watch



Path: D:\GIS\Fayetteville\GIS\Project\_figures\2018\Option\_F4.mxd

# Attachment A

Drawn: C. Oneal	Date: 3/26/2018	File Project Number: 449338.01050
Revision: 1	Figure Number: 5	
Name: Option_F4		

## ATTACHMENT B

Chemours' proposed plan to conduct health studies pursuant to paragraph 14 shall include:

(i) Testing of the following PFAS compounds:

Common Name		Chemical Name		CASN		Chemical Formula
PFMOAA		Perfluoro-2-methoxyacetic acid		674-13-5		C3HF5O3
PMPA	PFMOPrA	Perfluoro-2-methoxypropanoic acid	Perfluoro-3-methoxypropanoic acid	13140-29-9	377-73-1	C4HF7O3
PFO2HXA		Perfluoro(3,5-dioxahexanoic) acid		39492-88-1		C4HF7O4
PEPA	PFMOBA	2,3,3,3-Tetrafluoro-2-(pentafluoroethoxy) propanoic acid	Perfluoro-4-methoxybutanoic acid	267239-61-2	8630-90-5	C5HF9O3
PFESA-BP2 / Nafion BP #2		Nafion Byproduct 2		749836-20-2		C7H2F14O5S

(ii) The following studies, which shall be conducted following applicable USEPA, OECD protocols as defined in the USEPA TSCA, OPPT or other appropriate programs as determined by DEQ:

a. Human Health:

- 28-day oral immunotoxicity study in rats
- 28-day oral immunotoxicity study in mice
- 90-day repeated dose oral toxicity study in rats
- 90-day repeated dose oral toxicity study in mice

b. Ecological:

- Algal acute (72-hour growth) toxicity study
- Daphnid acute toxicity study
- Daphnid chronic (reproduction) toxicity study
- Fish acute toxicity study
- Sediment 10-day freshwater invertebrates toxicity test

(iii) A detailed proposed schedule of work.

## ATTACHMENT C

For purposes of paragraphs 19-21, “PFAS” shall mean the following compounds, unless Chemours demonstrates to the reasonable satisfaction of DEQ that the PFAS in a given well did not originate from the Facility:

Common Name		Chemical Name		CASN		Chemical Formula
PFMOAA		Perfluoro- 2-methoxyacetic acid		674-13-5		C3HF5O3
PMPA	PFMOPrA	Perfluoro-2-methoxypropanoic acid	Perfluoro-3-methoxypropanoic acid	13140-29-9	377-73-1	C4HF7O3
PFO2HXA		Perfluoro(3,5-dioxahexanoic) acid		39492-88-1		C4HF7O4
PEPA	PFMOBA	2,3,3,3-Tetrafluoro-2-(pentafluoroethoxy) propanoic acid	Perfluoro-4-methoxybutanoic acid	267239-61-2	863090-89-5	C5HF9O3
PFO3OA		Perfluoro(3,5,7-trioxaoctanoic) acid		39492-89-2		C5HF9O5
PFO4DA		Perfluoro(3,5,7,9-tetraoxadecanoic) acid		39492-90-5		C6HF11O6
PFESA-BP1 / Nafion BP #1		Nafion Byproduct 1		66796-30-3; 29311-67-9		C7HF13O5S
PFESA-BP2 / Nafion BP #2		Nafion Byproduct 2		749836-20-2		C7H2F14O5S
PFECA-G		Hexanoic acid, 2,2,3,3,4,4,5,5,6,6-decafluoro-6-(trifluoromethoxy)-; Butanoic acid, 2,2,3,3,4,4- hexafluoro-4-[1,2,2,2-tetrafluoro-1-(trifluoromethyl)ethoxy]-		174767-10-3; 801212-59-9		C7HF13O3
TAFN4 / PF05DA		Perfluoro(3,5,7,9,11-pentadecanoic) acid		39492-91-6		C7HF13O7
PFHpA		Perfluoroheptanoic acid		375-85-9		C7HF13O2
HFPO-DA / PFPrOPrA / “GenX”		2,3,3,3-Tetrafluoro-2 (1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid)		13252-13-6		C6HF11O3