

September 26, 2019

*Via Email*

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**Re: Chemours' PFAS Loading Reduction Plan**

The North Carolina Department of Environmental Quality (“DEQ”) and Cape Fear River Watch have reviewed Chemours’ PFAS Loading Reduction Plan, submitted on August 26, 2019. As we made clear during our meeting on September 13, 2019, we believe that the plan must be supplemented and revised in order to satisfy the requirements of Paragraph 12.

Under Paragraph 12 of the Consent Order, Chemours is required to:

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”). The plan shall be supported by interim benchmarks to ensure continuous progress in reduction of PFAS loading. *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 supported by interim benchmarks to ensure continuous progress in reduction of PFAS loading.

Chemours’ August 26, 2019 submission lacks required information and analysis.

First, the submission does not evaluate remedial options for some of the largest pathways of pollution identified by company. The company has found that onsite groundwater contributes up to 22 percent of the PFAS loading into the Cape Fear River. Reduction Plan at 13. Yet the submission does not evaluate any remedial options for onsite groundwater. Remedial options for onsite groundwater that Chemours has previously identified, but has not evaluated in this submission, include:

- Installation of a recovery trench(es), and pumping and treating contaminated groundwater from the Perched Zone;

- Construction of a horizontal recovery well, and pumping and treating contaminated groundwater from the Perched Zone;
- Installation of temporary vertical well points and headers to dewater the Perched Zone and treat contaminated groundwater;
- Pumping and treating contaminated groundwater from Surficial and Black Creek Aquifers using existing long-term wells;
- Pumping and treating contaminated groundwater from Surficial and Black Creek Aquifers using vertical recovery wells;
- Pumping and treating contaminated groundwater from Surficial and Black Creek Aquifers using horizontal recovery wells;
- Installation of sheet pile wall parallel to surface waters and treating contaminated groundwater from the Surficial and Black Creek Aquifers; and
- Installation of a permeable reactive barrier wall parallel to surface waters.

Chemours Focused Feasibility Study Report – PFAS Remediation (Feb. 2018) at 15-19. It is unclear why Chemours chose not to analyze these methods in its submission. Chemours’ proposal to defer all consideration of groundwater remediation to the corrective action plan due at the end of this year suggests that Chemours may view such remediation as outside the scope of paragraph 12. However, paragraph 12 requires maximum feasible reductions in PFAS loading to surface waters that can be achieved in a two-year period, *regardless of source*.

The submission similarly does not evaluate remedial options for Willis Creek and Georgia Branch Creek, two tributaries of the Cape Fear River that have long received, and continue to receive, PFAS contamination from the facility. The submission estimates that Willis Creek and Georgia Branch together contribute up to 14% of PFAS loading to the Cape Fear River. Reduction Plan at 13. Groundwater seeps to Willis Creek have had combined PFAS concentrations measured as high as 22,000 ppt, and seeps to Georgia Branch Creek have had combined concentrations measured at 3,500 ppt. Seeps and Creeks Investigation Report at 19. Whereas Chemours proposes to capture and treat groundwater seeps into the Cape Fear River, the company proposes nothing for the seeps into Willis Creek and Georgia Branch Creek. Under paragraph 12, the company must evaluate a range of remedial options for each pathway of pollution. This evaluation is necessary to ensure that DEQ and Cape Fear River Watch can consider Chemours selection of remedial measures that will achieve *maximum* feasible reductions in PFAS loading, as stated in the Consent Order.

Second, the submission lacks any analysis of economic and technological feasibility. For instance, the submission states that feasible actions “were not identified for the Willis Creek, Georgia Branch Creek and offsite groundwater pathways. Any potential actions for these pathways would be extensively disruptive to local wildlife habitats and costs would be disproportionately high compared to relative benefits.” Reduction Plan at 19. However, the company has provided no analysis to support that claim. Similarly, when dismissing remedial options for Outfall 002, the submission simply includes a table that has checkmarks for whether or not an option is

technologically and economically feasible. Reduction Plan at 29. Without detailed information on the feasibility of the options identified, DEQ and Cape Fear River Watch cannot meaningfully assess the submission.

Third, the submission does not satisfy Chemours' burden of demonstrating that GenX and PFMOAA concentrations in Outfall 002 cannot be reduced by at least 80%. While the submission identifies some options that could be implemented to achieve a greater than 80% reduction, the submission rules out the two most impactful options on the grounds that costs would be "extremely high" and "disproportionately large compared to estimated benefits to Cape Fear River loading reductions." The submission does not include any information to support the assertion that the costs of these measures are "extremely high" let alone disproportionately so, particularly in light of the downstream utilities' plans to invest over \$150 million to treat river water contaminated by PFAS. In order to satisfy Chemours' burden of demonstrating that PFAS concentrations cannot be reduced by at least 80%, Chemours must provide detailed information to support its conclusion that these measures are infeasible.

Fourth, the submission does not justify the time frames for the remedial actions that are proposed. The Consent Order requires Chemours to present the parties with maximum reductions that "can be achieved within a two-year period." Only "*if significantly greater reductions can be achieved in a longer implementation period*" can Chemours propose remediation options that take "up to five years." In its submission, Chemours proposes to address four groundwater seeps into the Cape Fear River, and asserts that a five-year timeline is needed to carry out its proposal without any analysis and without any discussion of whether there are interim actions that can be taken within two years that will significantly reduce PFAS loading to the Cape Fear River. Reduction Plan at 21. In its revised submission, the company must discuss what options can be achieved within two years for each pathway of pollution. If Chemours proposes a longer time frame for any remedial options, it must show that "significantly greater reductions can be achieved."

In summary, in order for DEQ and Cape Fear River Watch to be able to assess the adequacy of Chemours' PFAS Loading Reduction Plan, Chemours must revise the plan to include the following information, as required by Paragraph 12(a) of the Consent Order:

- Chemours must identify a range of options available to reduce PFAS loading from the facility to the Cape Fear River, Willis Creek, Georgia Branch Creek, and Old Outfall 002 from contaminated groundwater (including groundwater-fed seeps), stormwater, and non-process wastewater that can be achieved within a two-year period. *For each option identified, Chemours must provide an analysis of the economic and technological feasibility of the option, along with an estimate of anticipated reductions. If Chemours proposes not to implement a measure that has been identified, Chemours must demonstrate that the measure is technologically or economically infeasible or that less expensive measures can be implemented to achieve the same or a better result.*

- For any of the pathways of contamination to the Cape Fear River, Willis Creek, Georgia Branch Creek, and Old Outfall 002, Chemours must evaluate whether significantly greater reductions can be achieved in more than two years, but less than five years. *This analysis must include an economic and technological feasibility analysis for each remedial option identified along with an estimate of the additional reductions that can be achieved by extending the time period for implementation to more than two years but less than five years. For any options that extend beyond two years, interim measures and benchmarks should also be identified.*

In the interest of working together to reach agreement upon measures that can be incorporated into the Consent Order, we propose that the Parties stipulate to an extension of time for submission of a motion to amend the Consent Order to December 9, 2019. DEQ and Cape Fear River Watch request that Chemours submit a revised plan by November 1, 2019.

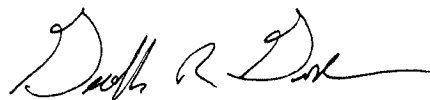
Chemours' obligations under Paragraph 12 represent central components of the Consent Order designed to ensure maximum feasible reductions in PFAS loading to the Cape Fear River and downstream public water intakes. DEQ and Cape Fear River Watch intend to fully enforce the requirements set forth in the Consent Order to ensure that these goals are met.

Please contact the undersigned if you have any questions regarding this letter.

Sincerely,



Francisco Benzoni  
*Counsel for the North Carolina Department of  
Environmental Quality*



Geoff Gisler  
*Counsel for Cape Fear River Watch*

Cc (via email):

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