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April 6, 2018

VIA ELECTRONIC MAIL AND CERTIFIED MAIL/RETURN RECEIPT REQUESTED

Mr. Brian Long, Plant Manager
Chemours Company – Fayetteville Works
22828 NC Highway 87 West
Fayetteville, NC 28306-7332

SUBJECT: 60-Day Notice of Intent to Modify Air Quality Permit No. 03735T43
The Chemours Company, Fayetteville Works

Dear Mr. Long:

Pursuant to N.C.G.S. § 143-215.108(c)(3) and 15A NCAC 2Q .0519(a), the North Carolina Department of Environmental Quality (DEQ), Division of Air Quality (DAQ) hereby provides notice of its intent to modify air quality permit 03735T43 (Permit) in 60 days.

Background

N.C.G.S. 143-215.108(c)(3) authorizes the North Carolina Environmental Management Commission (Commission) to modify an air permit “upon not less than 60 days’ written notice to any person affected.” The Commission has delegated this authority to the Director of DAQ by rule in 15A NCAC 2Q. 0519(a). The Director of DAQ is authorized to modify a permit for several reasons, including if “The conditions under which the permit or permit renewal was granted have changed” under 15A NCAC 2Q. 0519(a)(2), or if the Director finds that modification “is necessary to carry out the purpose of G.S. 143, Article 21B” under 15A NCAC 2Q. 0519(a)(7). These provisions are incorporated into Section 3-General Provisions of the Permit (Condition S).

Summary of DAQ Actions

Over the last 8 months, DAQ has conducted an extensive investigation into the emissions from the Chemours Fayetteville Works and the impacts of those emissions on the surrounding environment. The DAQ investigation has been an integral component of a comprehensive DEQ investigation of Chemours that includes DEQ’s Division of Waste Management (DWM) and Division of Water Resources (DWR). The DAQ investigation has been focused on emissions of HFPO dimer acid (GenX), HFPO dimer acid fluoride, and HFPO dimer acid ammonium salt (collectively, the GenX compounds). HFPO dimer acid fluoride and HFPO dimer acid ammonium salt readily convert into HFPO dimer acid upon contact with water.

Chemours submitted an air emissions inventory to DAQ on June 24, 2017. The air emissions inventory reported that the facility emitted approximately 66.6 pounds of GenX compounds in 2016. On September 20, 2017, DAQ sent a letter to Chemours requesting additional information regarding Chemours’ emission of GenX compounds and other Per- and Polyfluoroalkyl Substances (PFAS). Chemours submitted a revised assessment of emissions of GenX compounds on October 18, 2017. Specifically,

Chemours stated that in 2016 the facility emitted 594 pounds of the GenX compounds. This figure is nearly 9 times higher than the quantity of emissions of GenX compounds reported in June 2017.

As part of its investigation, DAQ has directed Chemours to conduct testing of its process operations to quantify the level of GenX compounds in its emissions. The stack testing results at the Fayetteville Works are summarized below:

- On January 22-25, 2018, Chemours conducted testing on two sources. The Division stack vents process emissions and room air from the Vinyl Ethers North process area and the PPA stack vents process emissions and room air from the Polymer Processing Aid process area. Chemours also measured GenX compounds in the exhaust from the PPA building. In a report dated March 9, 2018 by Weston Solutions, Chemours reported the following emission results: 0.0255 lb/hr (average of two two-hour tests) from the PPA Stack, 0.296 lb/hr (average of three two-hour tests) from the Division Stack, and 0.0058 lb/hr in the PPA Building Exhaust (one two-hour test). Chemours converted the hourly emission rate of GenX compounds at the Division Stack to an annual emissions rate of 1,257 pounds per year and calculated the PPA annual stack emissions to be 670 pounds per year.
- At DAQ's direction, Chemours performed additional stack testing for emissions of GenX compounds during the week of February 26, 2018 on the PPA stack and the Vinyl Ethers South stack. DAQ recently received a report from Chemours on this testing and the report is still under review by DAQ staff.
- During the week of March 19, 2018, Chemours performed stack testing for emissions of GenX compounds from the IXM Polymers, Division, and Semi-Works stacks. DAQ has not received results for this testing.

At the direction of DAQ, Chemours has also evaluated its Leak Detection and Repair (LDAR) program. In a report dated January 31, 2018 by ERM, Chemours estimated that leaks from pumps, valves, and connectors located in outdoor process areas result in the emission of 314 pounds per year of GenX compounds.

In total, Chemours has reported to DAQ that it currently emits GenX compounds at a rate of 2,241 pounds per year. This figure is approximately 33.6 times higher than the quantity of emissions of GenX compounds reported in June 2017 and more than 3.7 times higher than the quantity reported in October 2017. DAQ's own calculations indicate that Chemours' annual emissions of GenX compounds at the Fayetteville Works could exceed 2,700 pounds per year.

In conjunction with the efforts to quantify emission rates, DAQ has undertaken measures to determine the fate of GenX compounds emitted from the Chemours facility. This effort was an important step in DEQ's attempt to understand why GenX compounds had been detected in numerous water supply wells in 3 counties (Bladen, Cumberland and Robeson) at significant distances beyond the boundary of the Fayetteville Works. According to DEQ's groundwater rules (15A NCAC Subchapter 2L), the allowable concentration for GenX is the practical quantitation limit (10 parts per trillion) because neither an interim nor final compound-specific groundwater standard for GenX has been adopted. Because the investigation showed the presence of GenX compounds in groundwater at upgradient locations, and at extended distances, DAQ concluded that atmospheric deposition of GenX compounds emitted from the facility might explain the pattern of groundwater impacts. DAQ initially performed deposition modeling which,

based on local meteorological data, predicted that deposition of GenX compounds could occur along the prevailing wind direction from southwest to northeast. As more groundwater data collected by DEQ confirmed that numerous water supply wells located miles from the facility contained GenX at levels above the PQL, DAQ began collecting and testing rainwater samples from various locations during rain events. The sampling occurred on January 28-29, February 4-5, and February 28-March 2, 2018. Each time, DAQ found that GenX was present in rainwater above the PQL and at increasingly greater distances from the Chemours facility.

The attached Figure 1 illustrates the geographical extent of GenX detected in rainwater samples collected by DAQ on February 28-March 2. These measurements include a sample measuring 810 ppt five miles to the northeast of the facility and three samples measuring between 40 and 60 ppt located seven miles to the northeast of the facility. In addition, Figure 1 shows how the rainwater data overlay with groundwater data.

Thus, DAQ has concluded (a) the measured emissions of GenX compounds are significantly higher than previously reported by Chemours; (b) GenX compounds are deposited on the land surface by rainfall at distances of at least seven miles from the Chemours facility; and (c) the evidence of atmospheric deposition of GenX shows a geographic footprint that is remarkably similar to the detection of GenX in groundwater samples. Because GenX is not a naturally occurring compound and there are no other facilities in North Carolina known to produce or use GenX, the DEQ investigation data demonstrate that the widespread presence of GenX in groundwater above the PQL is caused by emissions of GenX from the Fayetteville Works.

Notice of Intent to Modify Permit

Based on our investigation, DAQ has concluded that the conditions under which the current version of the Permit was issued on December 14, 2016 have changed. At that time, DAQ had no knowledge that Chemours was emitting GenX compounds at the current rates reported by Chemours, that GenX compounds emitted from the Chemours facility in such quantities were transmitted and deposited on the land surface by rainfall several miles away from the facility, or that such deposition caused or contributed to widespread contamination of groundwater in violation of the State's groundwater standards. Thus, in accordance with 15A NCAC 2Q. 0519(a)(2), incorporated in General Condition S of the Permit, DAQ intends to modify the Permit in 60 days.

Further, modification of the Permit is necessary to carry out the purpose of N.C.G.S. Chapter 143, Article 21B. The provisions of Article 21B establish the permitting and regulatory authority of the Commission and DAQ. The purpose of Article 21B, which is established in N.C.G.S. § 143-211 ("Declaration of Public Policy") and incorporated into Article 21B through N.C.G.S. § 143-215.105, is quoted in full below:

(a) It is hereby declared to be the public policy of this State to provide for the conservation of its water and air resources. Furthermore, it is the intent of the General Assembly, within the context of this Article and Articles 21A and 21B of this Chapter, to achieve and to maintain for the citizens of the State a total environment of superior quality. Recognizing that the water and air resources of the State belong to the people, the General Assembly affirms the State's ultimate responsibility for the preservation and development of these resources in the best interest of all its citizens and declares the prudent utilization of these resources to be essential to the general welfare.

(b) It is the public policy of the State to maintain, protect, and enhance water quality within North Carolina. Further, it is the public policy of the State that the cumulative impact of transfers from a source river basin shall not result in a violation of the antidegradation policy set out in 40 Code of Federal Regulations § 131.12 (1 July 1997 Edition) and the statewide antidegradation policy adopted pursuant thereto.

(c) It is the purpose of this Article to create an agency which shall administer a program of water and air pollution control and water resource management. It is the intent of the General Assembly, through the duties and powers defined herein, to confer such authority upon the Department of Environmental Quality as shall be necessary to administer a complete program of water and air conservation, pollution abatement and control and to achieve a coordinated effort of pollution abatement and control with other jurisdictions. Standards of water and air purity shall be designed to protect human health, to prevent injury to plant and animal life, to prevent damage to public and private property, to insure the continued enjoyment of the natural attractions of the State, to encourage the expansion of employment opportunities, to provide a permanent foundation for healthy industrial development and to secure for the people of North Carolina, now and in the future, the beneficial uses of these great natural resources. It is the intent of the General Assembly that the powers and duties of the Environmental Management Commission and the Department of Environmental Quality be construed so as to enable the Department and the Commission to qualify to administer federally mandated programs of environmental management and to qualify to accept and administer funds from the federal government for such programs.

DAQ believes N.C.G.S. § 143-211 establishes a clear mandate for environmental protection and conservation of natural resources by DAQ. The statute endorses a “total environment of superior quality” and repeatedly speaks to coordinated protection of water and air resources. (Groundwater is included in the definition of “waters” in N.C.G.S. § 143-212.) A frequent refrain in this policy statement is prevention of damage and preservation of natural resources for the benefit of all citizens of the State, including preserving opportunities for “healthy industrial development” and encouraging “the expansion of employment opportunities.” Overall, Article 21B directs DAQ to protect the public and North Carolina’s endowment of natural resources.

Here, DAQ has confirmed there is a causal link between GenX emissions from Chemours and widespread degradation of groundwater. DAQ believes the incessant fouling of the state’s natural resources by Chemours cannot be sustained under the law and the causal link must be severed to carry out the purpose of Article 21B. Therefore, in accordance with 15A NCAC 02Q .0519(a)(7), incorporated in General Condition S of the Permit, DAQ intends to modify the Permit in 60 days to prohibit emissions of GenX compounds from the Fayetteville Works.

Required Actions

Pursuant to N.C.G.S. § 150B-3(b), DAQ will provide an opportunity for Chemours to show compliance with all lawful requirements for retention of the current terms of the Permit. By April 27, 2018, Chemours must do one of the following:

- (1) respond to DAQ in writing and demonstrate to DAQ’s satisfaction that emissions of GenX compounds from the Fayetteville Works under current conditions do not cause or contribute to violations of the groundwater rules; or

- (2) respond to DAQ in writing and demonstrate to DAQ's satisfaction that emissions of GenX compounds under alternate conditions proposed by Chemours will not cause or contribute to violations of the groundwater rules.

If Chemours submits a timely response under option (1) above and DAQ finds that Chemours has met its burden of demonstrating that emissions of GenX compounds do not cause or contribute to groundwater violations under current operating conditions, DAQ will not modify the Permit. If Chemours submits a timely response under option (2) above and DAQ finds that Chemours has met its burden of demonstrating that emissions of GenX compounds will not cause or contribute to groundwater violations under alternate operating conditions proposed by Chemours, DAQ will modify the Permit by inserting enforceable conditions corresponding to the alternate operating conditions that will take effect on the date of the modification. If Chemours does not submit a timely response or if DAQ finds that Chemours' response fails to make the required demonstration under either option (1) or option (2) above, then DAQ will proceed with modification of the Permit to prohibit emissions of GenX compounds, effective on the date of the modification.

Please contact me at 919-707-8447 if you would like to discuss this notification.

Sincerely,



Michael A. Abraczinskas, Director
NC Division of Air Quality, NCDEQ

c: Christel Compton, Chemours
Fayetteville Regional Office Files
William F. Lane
Sheila C. Holman

Groundwater and Rainwater Sample Testing Results



