Division of Air Quality

March 12, 2020

MEMORANDUM

To: Heather Carter, Fayetteville Regional Supervisor

From: Gary L. Saunders, Stationary Source Compliance Branch

Subject: The Chemours Company – Fayetteville Works
Fayetteville, Bladen County, North Carolina
Facility ID. No. 0900009, Permit No. 03735T47
Performance Testing for HFPO Dimer Acid Conducted on September 24-25, 2019 at Vinyl Ethers North (VEN) Carbon Bed and Division Waste Gas Stack and September 25-26. 2019 at the Polymers Stack by Weston Solutions, Inc.
Tracking No. 2019-336ST

Summary of HFPO Dimer Acid Test Program

Sources Tested

Two areas were tested during this test series. The first test was conducted on the carbon bed adsorber and the Division Waste Gas Stack. All process and fugitive emissions are now vented through a primary and secondary scrubber and through the carbon bed adsorber prior to venting to the Division Waste Gas Stack. During the testing, VEN has producing EVE through the reaction of HFPO and the products from the MMF operations. This is the first-time test for EVE production.

The second test was conducted on the Polymers Stack while making an ion exchange membrane product designated as CR.

Sampling Method

Testing was conducted using a modified EPA Method 0010 found in the SW-846 compendium of *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*. This sampling train is a variation of the EPA Reference Method 5 found in 40 CFR 60, Appendix A. The Method 0010 train extracts a sample isokinetically from the gas stream, passes the sample through a temperature-controlled filter, through a temperature-controlled condenser and into a series of XAD-2 resin "traps" and impingers to capture and collect the materials that passed through the filter. The test method is designed to capture certain particulate and condensable materials for later recovery and analysis.

After sample recovery, the samples were sent to Chemours' contractor, Test America's laboratory in Denver, Colorado. GenX was extracted from the resin traps. The DAQ required split samples after extraction to be submitted for independent analysis. This summary of results only addresses the results provided by Test America for Chemours. Laboratory analysis and quantification was performed using a liquid chromatography column and a dual mass spectrometer (LC/MS/MS).

Test Results

The reported HFPO test results reflect corrected emission rates accounting for dilution and spike recovery values.

Vinyl Ethers North Area Test Results

Inlet and outlet emissions from the VEN carbon bed adsorber were measured on September 24-25, 2019 to determine the removal efficiency of HFPO Dimer Acid from the process and room air emissions. Each test run was 90 minutes in length. The process was operating normally and was producing EVE.

Table 1. Summary of Stack Test Results for VEN Carbon Bed and DWG Stack on September 24-25, 2019

Run Number	HFPO Dimer Acid Emission Rate			
	DWG Stack (lb/hr)	Inlet (lb/hr)	Outlet (lb/hr)	% Removal Efficiency
1	1.49E-03	1.61E-02	8.90E-04	94.5
2	2.21E-03	8.48E-03	2.80E-04	96.7
3	9.94E-04	3.67E-03	3.70E-04	89.9
Average	1.55E-03	9.42E-03	5.13E-04	93.7

Polymers Process Area

The polymers processing area react and polymerize tetrafluoroethylene with fluorinated vinyl ethers from the Vinyl Ethers North (VEN) area. The polymerized product is extruded to produce an ion exchange membrane product (film). Process operations were considered to be normal during the testing while producing the product designated as CR polymer. The emission test results are presented in the table below for use in emissions estimates.

Table 2. Summary of Stack Test Results from Polymers Stack on September 25-26, 2019

Test Method	Run Number	HFPO Dimer Acid Emission Rate	
		lb/hr	g/sec
Modified Method 0010	1	1.49E-04	1.87E-05
	2	1.50E-04	1.88E-05
	3	2.25E-04	2.84E-05
	Average	1.74E-04	2.20E-05

Summary and Conclusions

NC DAQ staff members were on site during each day that source testing occurred. DAQ staff observed the source test teams, the sample recovery and the process operations. Based upon the onsite observation of the testing and review of the test report, NC DAQ concludes that the testing was conducted in accordance to the modified testing protocol submitted by Chemours and that the analytical results appear representative of the stack conditions and process operations during the testing.

Cc: Central Files – Bladen County
IBEAM Documents - 0900009