



Source Test Report

The Chemours Company, FC, LLC
Fayetteville Works
22828 Highway 87W
Fayetteville, NC 28306

Source Tested: Polymer Process Aid (PPA) Carbon Bed
Test Date: September 27, 2022

Project No. AST-2022-3359

Prepared By
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Regulatory Information

Permit No. North Carolina Department of Air Quality (NCDAQ) Title V Air Permit No. 03735T48

Source Information

<i>Source Name</i>	<i>Target Parameter</i>
PPA Carbon Bed (Inlet / Outlet)	HFPO-DA

Contact Information

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Alliance Technical Group, LLC (Alliance) has completed the source testing as described in this report. Results apply only to the source(s) tested and operating condition(s) for the specific test date(s) and time(s) identified within this report. All results are intended to be considered in their entirety, and Alliance is not responsible for use of less than the complete test report without written consent. This report shall not be reproduced in full or in part without written approval from the customer.

To the best of my knowledge and abilities, all information, facts and test data are correct. Data presented in this report has been checked for completeness and is accurate, error-free and legible. Onsite testing was conducted in accordance with approved internal Standard Operating Procedures. Any deviations or problems are detailed in the relevant sections in the test report.

This report is only considered valid once an authorized representative of Alliance has signed in the space provided below; any other version is considered draft. This document was prepared in portable document format (.pdf) and contains pages as identified in the bottom footer of this document.



Patrick Grady, QSTI
Project Manager
Alliance Technical Group, LLC

November 4, 2022

Date

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Introduction

1.0 Introduction

Alliance Technical Group, LLC (Alliance) was retained by The Chemours Company (Chemours) to conduct compliance testing at the Fayetteville Works facility in Fayetteville, North Carolina. The facility operates under North Carolina Department of Air Quality (NCDAQ) Title V Air Permit No. 03735T48. Source emissions testing were conducted at the inlet and outlet of the Polymer Process Aid (PPA) carbon bed. The testing was conducted to evaluate emissions of hexafluoro-propylene oxide-dimer acid (HFPO-DA). HFPO-DA, hexafluoro-propylene oxide dimer acid fluoride (HFPO-DAF) and hexafluoro-propylene oxide dimer acid ammonium salt are captured and reported together as HFPO-DA.

1.1 Source and Control System Descriptions

The PPA facility produces surfactants used to produce fluoropolymer products, such as Teflon® at other Chemours facilities, as well as sales to outside producers of fluoropolymers. Process streams are vented to a caustic wet scrubber (ACD-A1), a carbon bed and exhausted through a process stack (AEP-A1). The process inside the building is under negative pressure and the building air is vented to the carbon bed and the process stack (AEP-A1).

1.2 Project Team

Personnel involved in this project are identified in the following table.

Table 1-1: Project Team

Alliance Personnel	Patrick Grady Antonio Andersen Jacob Cavallo Brian Goodhile Jeff Sheldon
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Summary of Results

2.0 Summary of Results

Alliance conducted compliance testing at the Fayetteville Works Facility in Fayetteville, NC on September 27, 2022. Testing consisted of determining the emission rates of HFPO-DA at the inlet and outlet of the PPA carbon bed.

Table 2-1 provides a summary of the emission testing results. Any difference between the summary results listed in the following tables and the detailed results contained in appendices is due to rounding for presentation.

Table 2-1: Summary of Results

Run Number	Run 1	Run 2	Run 3	Average
Date	9/27/22	9/27/22	9/27/22	--
HFPO-DA Data				
Outlet Emission Rate, lb/hr	3.3E-05	1.9E-05	4.7E-05	3.3E-05
Inlet Emission Rate, lb/hr	3.5E-02	2.7E-01	2.4E-01	1.8E-01
Reduction Efficiency, %	99.9	100.0	100.0	100.0

Testing Methodology

3.0 Testing Methodology

The emission testing program was conducted in accordance with the test methods listed in Table 3-1. Method descriptions are provided below while quality assurance/quality control data is provided in Appendix D.

Table 3-1: Source Testing Methodology

Parameter	U.S. EPA Reference Test Methods	Notes/Remarks
Volumetric Flow Rate	1 & 2	Full Velocity Traverses
Moisture Content	4	Gravimetric Analysis
Hexafluoro-Propylene Oxide-Dimer Acid	Modified Method 0010	Isokinetic Sampling

3.1 U.S. EPA Reference Test Methods 1 and 2 – Sampling/Traverse Points and Volumetric Flow Rate

The sampling location and number of traverse (sampling) points were selected in accordance with U.S. EPA Reference Test Method 1. To determine the minimum number of traverse points, the upstream and downstream distances were equated into equivalent diameters and compared to Figure 1-1 in U.S. EPA Reference Test Method 1.

Full velocity traverses were conducted in accordance with U.S. EPA Reference Test Method 2 to determine the average stack gas velocity pressure, static pressure and temperature. The velocity and static pressure measurement system consisted of a pitot tube and inclined manometer. The stack gas temperature was measured with a K-type thermocouple and pyrometer.

3.2 U.S. EPA Reference Test Method 4 – Moisture Content

The stack gas moisture content was determined in accordance with U.S. EPA Reference Test Method 4. The gas conditioning train consisted of a series of chilled impingers. Prior to testing, each impinger was filled with a known quantity of water or silica gel. Each impinger was analyzed gravimetrically before and after each test run on the same balance to determine the amount of moisture condensed.

3.3 Modified Method 0010 – Hexafluoro-Propylene Oxide-Dimer Acid

HFPO-DA emissions were evaluated in accordance with Modified Method 0010. Testing followed the submitted protocol in the execution of our onsite sampling and analysis activities. Modified Method 0010 procedure was followed as outlined in the protocol submitted to NC Division of Air Quality. Modified Method 0010 sampling and analysis procedures performed for this project are consistent with OTM-45, which was released by EPA in January 2021, subsequent to Chemours submittal of plans to DAQ.

The sample train consisted of a borosilicate glass nozzle attached directly to a heated borosilicate glass-lined probe. The probe was connected directly to a heated borosilicate glass filter holder containing a solvent-extracted glass fiber filter. In order to minimize possible thermal degradation of the HFPO-DA, the probe and particulate filter were heated to just above stack temperature to minimize water vapor condensation before the filter. The filter holder exit was connected to a water-cooled coil condenser followed by a water-cooled sorbent module containing approximately 40 grams of XAD-2 resin. The XAD-2 inlet temperature was monitored to ensure that the module is maintained at a temperature below 20°C.

The XAD-2 resin trap was followed by a condensate knockout impinger and a series of three impingers each containing 100-ml of high purity deionized water. The water impingers were followed by another condensate knockout impinger equipped with a second XAD-2 resin trap to account for any sample breakthrough. The final impinger contained approximately 250 grams of dry pre-weighed silica gel. The water impingers and condensate impingers were submerged in an ice bath through the duration of the testing. The water in the ice bath was also used to circulate around the coil condenser and the XAD-2 resin traps.

Exhaust gases were extracted from the sample locations isokinetically using a metering console equipped with a vacuum pump, a calibrated orifice, oil manometer and probe/filter heat controllers.

3.4 HFPO-DA Sample Train and Equipment Preparation

Prior to conducting the field work the following procedures were conducted to prepare the field sampling glassware and sample recovery tools.

1. Wash all glassware, brushes, and ancillary tools with low residue soap and hot water.
2. Rinse all glassware, brushes, and ancillary tools three (3) times with D.I. H₂O.
3. Bake glassware (with the exception of probe liners) at 450°C for approximately 2 hours, (XAD-2 resin tube glassware is cleaned by Eurofins/TestAmerica by this same procedure).
4. Solvent rinse three (3) times all glassware, brushes, and ancillary tools with the following sequence of solvents: acetone, methylene chloride, hexane, and methanol.
5. Clean glassware and tools will be sealed in plastic bags or aluminum foil for transport to the sampling site.
6. Squirt bottles will be new dedicated bottles of known history and dedicated to the D.I. Water and methanol/ammonium hydroxide (MeOH/ 5% NH₄OH) solvent contents. Squirt bottles will be labelled with the solvent content it contains.

3.5 HFPO-DA Sample Train Recovery

Following completion of each test run, the sample probe, nozzle and front-half of the filter holder were brushed and rinsed three times each with the MeOH/ 5% NH₄OH solution (Container #1). The glass fiber filter was removed from its housing and transferred to a polyethylene bottle (Container #2). Any particulate matter and filter fibers which adhered to the filter holder and gasket were also placed in Container #2. The XAD-2 resin trap was sealed, labelled and placed in an iced sample cooler. The back-half of the filter holder, coil condenser condensate trap and connecting glassware were rinsed with the same MeOH/ 5% NH₄OH solution and placed in Container #3.

The volume of water collected in all impingers was measured for moisture determinations and then placed in Container #4. All impingers and connecting glassware were then rinsed with the MeOH/ 5% NH₄OH solution and placed in Container #5. The second (breakthrough) XAD-2 resin trap was sealed, labelled and placed in an iced sample cooler. The contents of the fifth impinger were placed in its original container and weighed for moisture determinations.

Containers were sealed and labeled with the appropriate sample information. Samples remained chilled until analysis. HFPO-DA analysis was conducted using liquid chromatography/dual mass spectrometry (LC/MS/MS).

Appendix A

Location: Chemours Company - Fayetteville Works Facility, NC
Source: Polymer Process Aid Inlet
Project No.: 2022-3359
Run No.: 1
Parameter: HFPO-DA

Meter Pressure (Pm), in. Hg

$$P_m = P_b + \frac{\Delta H}{13.6}$$

where,

$P_b \frac{29.94}{1} =$ barometric pressure, in. Hg
 $\frac{\Delta H}{13.6} \frac{0.681}{13.6} =$ pressure differential of orifice, in H₂O
 $P_m \frac{29.99}{1} =$ in. Hg

Absolute Stack Gas Pressure (Ps), in. Hg

$$P_s = P_b + \frac{P_g}{13.6}$$

where,

$P_b \frac{29.94}{1} =$ barometric pressure, in. Hg
 $\frac{P_g}{13.6} \frac{-1.30}{13.6} =$ static pressure, in. H₂O
 $P_s \frac{29.84}{1} =$ in. Hg

Standard Meter Volume (Vmstd), dscf

$$Vmstd = \frac{17.636 \times Y \times V_m \times P_m}{T_m}$$

where,

$Y \frac{1.032}{1} =$ meter correction factor
 $V_m \frac{42.281}{1} =$ meter volume, cf
 $P_m \frac{29.99}{1} =$ absolute meter pressure, in. Hg
 $T_m \frac{526.7}{1} =$ absolute meter temperature, °R
 $Vmstd \frac{43.816}{1} =$ dscf

Standard Wet Volume (Vwstd), scf

$$Vwstd = 0.04716 \times V_{lc}$$

where,

$V_{lc} \frac{33.5}{1} =$ volume of H₂O collected, ml
 $Vwstd \frac{1.580}{1} =$ scf

Moisture Fraction (BWSsat), dimensionless (theoretical at saturated conditions)

$$BWS_{sat} = \frac{10^{6.37 - \left(\frac{2,827}{T_s + 365}\right)}}{P_s}$$

where,

$T_s \frac{69.1}{1} =$ stack temperature, °F
 $P_s \frac{29.84}{1} =$ absolute stack gas pressure, in. Hg
 $BWS_{sat} \frac{0.024}{1} =$ dimensionless

Moisture Fraction (BWS), dimensionless (measured)

$$BWS = \frac{Vwstd}{(Vwstd + Vmstd)}$$

where,

$Vwstd \frac{1.580}{1} =$ standard wet volume, scf
 $Vmstd \frac{43.816}{1} =$ standard meter volume, dscf
 $BWS \frac{0.035}{1} =$ dimensionless

Moisture Fraction (BWS), dimensionless

$$BWS = BWS_{msd} \text{ unless } BWS_{sat} < BWS_{msd}$$

where,

$BWS_{sat} \frac{0.024}{1} =$ moisture fraction (theoretical at saturated conditions)
 $BWS_{msd} \frac{0.035}{1} =$ moisture fraction (measured)
 $BWS \frac{0.024}{1} =$

Location: Chemours Company - Fayetteville Works Facility, NC
Source: Polymer Process Aid Inlet
Project No.: 2022-3359
Run No.: 1
Parameter: HFPO-DA

Molecular Weight (DRY) (Md), lb/lb-mole

$$Md = (0.44 \times \% CO_2) + (0.32 \times \% O_2) + (0.28 (100 - \% CO_2 - \% O_2))$$

where,

$$\begin{aligned} CO_2 \frac{0.1}{28.85} &= \text{carbon dioxide concentration, \%} \\ O_2 \frac{20.9}{28.85} &= \text{oxygen concentration, \%} \\ Md &= \text{lb/lb mol} \end{aligned}$$

Molecular Weight (WET) (Ms), lb/lb-mole

$$Ms = Md (1 - BWS) + 18.015 (BWS)$$

where,

$$\begin{aligned} Md \frac{28.85}{28.59} &= \text{molecular weight (DRY), lb/lb mol} \\ BWS \frac{0.024}{28.59} &= \text{moisture fraction, dimensionless} \\ Ms &= \text{lb/lb mol} \end{aligned}$$

Average Velocity (Vs), ft/sec

$$Vs = 85.49 \times Cp \times (\Delta P^{1/2})_{avg} \times \sqrt{\frac{Ts}{Ps \times Ms}}$$

where,

$$\begin{aligned} Cp \frac{0.840}{23.6} &= \text{pitot tube coefficient} \\ \Delta P^{1/2} \frac{0.417}{23.6} &= \text{velocity head of stack gas, (in. H}_2\text{O)}^{1/2} \\ Ts \frac{528.8}{23.6} &= \text{absolute stack temperature, } ^\circ\text{R} \\ Ps \frac{29.84}{23.6} &= \text{absolute stack gas pressure, in. Hg} \\ Ms \frac{28.59}{23.6} &= \text{molecular weight of stack gas, lb/lb mol} \\ Vs &= \text{ft/sec} \end{aligned}$$

Average Stack Gas Flow at Stack Conditions (Qa), acfm

$$Qa = 60 \times Vs \times As$$

where,

$$\begin{aligned} Vs \frac{23.6}{8,928} &= \text{stack gas velocity, ft/sec} \\ As \frac{6.31}{8,928} &= \text{cross-sectional area of stack, ft}^2 \\ Qa &= \text{acfm} \end{aligned}$$

Average Stack Gas Flow at Standard Conditions (Qs), dscfm

$$Qs = 17.636 \times Qa \times (1 - BWS) \times \frac{Ps}{Ts}$$

where,

$$\begin{aligned} Qa \frac{8,928}{8,675} &= \text{average stack gas flow at stack conditions, acfm} \\ BWS \frac{0.024}{8,675} &= \text{moisture fraction, dimensionless} \\ Ps \frac{29.84}{8,675} &= \text{absolute stack gas pressure, in. Hg} \\ Ts \frac{528.8}{8,675} &= \text{absolute stack temperature, } ^\circ\text{R} \\ Qs &= \text{dscfm} \end{aligned}$$

Dry Gas Meter Calibration Check (Yqa), dimensionless

$$Y_{qa} = \frac{Y - \left(\frac{\Theta}{V_m} \sqrt{\frac{0.0319 \times T_m \times 29}{\Delta H@ \times \left(P_b + \frac{\Delta H_{avg}}{13.6} \right) \times M_d}} \sqrt{\Delta H_{avg}} \right)}{\sqrt{\quad}} \times 100$$

where,

$$\begin{aligned} Y \frac{1.032}{-2.9} &= \text{meter correction factor, dimensionless} \\ \Theta \frac{96}{-2.9} &= \text{run time, min.} \\ V_m \frac{42.281}{-2.9} &= \text{total meter volume, dcf} \\ T_m \frac{526.7}{-2.9} &= \text{absolute meter temperature, } ^\circ\text{R} \\ \Delta H@ \frac{1.699}{-2.9} &= \text{orifice meter calibration coefficient, in. H}_2\text{O} \\ P_b \frac{29.94}{-2.9} &= \text{barometric pressure, in. Hg} \\ \Delta H_{avg} \frac{0.681}{-2.9} &= \text{average pressure differential of orifice, in H}_2\text{O} \\ M_d \frac{28.85}{-2.9} &= \text{molecular weight (DRY), lb/lb mol} \\ (\Delta H)^{1/2} \frac{0.812}{-2.9} &= \text{average squareroot pressure differential of orifice, (in. H}_2\text{O)}^{1/2} \\ Y_{qa} &= \text{dimensionless} \end{aligned}$$

Location: Chemours Company - Fayetteville Works Facility, NC
Source: Polymer Process Aid Inlet
Project No.: 2022-3359
Run No.: 1
Parameter: HFPO-DA

Volume of Nozzle (Vn), ft³

$$V_n = \frac{T_s}{P_s} \left(0.002669 \times V_{lc} + \frac{V_m \times P_m \times Y}{T_m} \right)$$

where,

T _s	<u>528.8</u>	= absolute stack temperature, °R
P _s	<u>29.84</u>	= absolute stack gas pressure, in. Hg
V _{lc}	<u>33.5</u>	= volume of H ₂ O collected, ml
V _m	<u>42.281</u>	= meter volume, cf
P _m	<u>29.99</u>	= absolute meter pressure, in. Hg
Y	<u>1.032</u>	= meter correction factor, unitless
T _m	<u>526.7</u>	= absolute meter temperature, °R
V _n	<u>45.605</u>	= volume of nozzle, ft ³

Isokinetic Sampling Rate (I), %

$$I = \left(\frac{V_n}{\theta \times 60 \times A_n \times V_s} \right) \times 100$$

where,

V _n	<u>45.605</u>	= nozzle volume, ft ³
θ	<u>96.0</u>	= run time, minutes
A _n	<u>0.00034</u>	= area of nozzle, ft ²
V _s	<u>23.6</u>	= average velocity, ft/sec
I	<u>97.3</u>	= %

HFPO-DA Concentration (C), ng/dscm

$$C = \frac{M \times 35.313}{V_{mstd}}$$

where,

M	<u>1,345,260</u>	= HFPO-DA mass, ng
V _{mstd}	<u>43.816</u>	= standard meter volume, dscf
C _{NH3}	<u>1.1E+06</u>	= ng/dscm

HFPO-DA Emission Rate (ER), lb/hr

$$ER = \frac{M \times Q_s \times 60}{V_{mstd} \times 4.54F + 11}$$

where,

M	<u>1,345,260</u>	= HFPO-DA mass, ng
Q _s	<u>8,675</u>	= average stack gas flow at standard conditions, dscfm
V _{mstd}	<u>43.816</u>	= standard meter volume, dscf
ER	<u>3.5E-02</u>	= lb/hr

Appendix B

Location Chemours Company - Fayetteville Works Facility, NC
Source Polymer Process Aid Outlet
Project No. 2022-3359
Parameter HFPO-DA

Run Number		Run 1	Run 2	Run 3	Average
Date		9/27/22	9/27/22	9/27/22	--
Start Time		8:05	10:30	12:50	--
Stop Time		9:53	12:18	14:38	--
Run Time, min	(θ)	96.0	96.0	96.0	96.0
INPUT DATA					
Barometric Pressure, in. Hg	(Pb)	29.94	29.94	29.94	29.94
Meter Correction Factor	(Y)	1.001	1.001	1.001	1.001
Orifice Calibration Value	($\Delta H @$)	1.841	1.841	1.841	1.841
Meter Volume, ft ³	(Vm)	62.691	64.113	62.504	63.103
Meter Temperature, °F	(Tm)	69.1	78.1	84.8	77.3
Meter Temperature, °R	(Tm)	528.8	537.8	544.4	537.0
Meter Orifice Pressure, in. WC	(ΔH)	1.298	1.346	1.286	1.310
Volume H ₂ O Collected, mL	(Vlc)	30.3	28.2	27.1	28.5
Nozzle Diameter, in	(Dn)	0.250	0.250	0.250	0.250
Area of Nozzle, ft ²	(An)	0.0003	0.0003	0.0003	0.0003
FH HFPO-DA Mass, ng	M _(HFPODA)	991.0	479.0	1,450.0	973.3
BH HFPO-DA Mass, ng	M _(HFPODA)	578.0	475.0	972.0	675.0
Imp HFPO-DA Mass, ng	M _(HFPODA)	--	--	--	--
Breakthrough HFPO-DA Mass, ng	M _(HFPODA)	143.0	13.9	12.8	56.57
Total HFPO-DA Mass, ng	M _(HFPODA)	1,712.0	967.9	2,434.8	1,704.9
ISOKINETIC DATA					
Standard Meter Volume, ft ³	(Vmstd)	62.862	63.224	60.874	62.320
Standard Water Volume, ft ³	(Vwstd)	1.429	1.330	1.278	1.346
Moisture Fraction Measured	(BWSmsd)	0.022	0.021	0.021	0.021
Moisture Fraction @ Saturation	(BWSsat)	0.027	0.028	0.028	0.028
Moisture Fraction	(BWS)	0.022	0.021	0.021	0.021
Meter Pressure, in Hg	(Pm)	30.04	30.04	30.03	30.04
Volume at Nozzle, ft ³	(Vn)	64.580	65.002	62.647	64.08
Isokinetic Sampling Rate, (%)	(I)	103.6	103.1	103.0	103.2
DGM Calibration Check Value, (+/- 5%)	(Y _{qa})	3.7	3.2	2.8	3.2
EMISSION CALCULATIONS					
HFPO-DA Concentration, ng/dscm	C _(HFPODA)	9.6E+02	5.4E+02	1.4E+03	9.7E+02
HFPO-DA Emission Rate, lb/hr	ER _(HFPODA)	3.3E-05	1.9E-05	4.7E-05	3.3E-05
REDUCTION CALCULATIONS					
Inlet HFPO-DA Emission Rate, lb/hr	RE _(HFPODA)	3.5E-02	2.7E-01	2.4E-01	1.8E-01
HFPO-DA Reduction Efficiency, %	RE _(HFPODA)	99.9	100.0	100.0	100.0

Underlined values are non-detect and reported as the reporting limit.

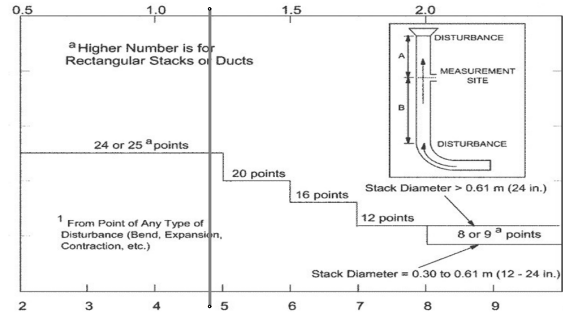
Location Chemours Company - Fayetteville Works Facility, NC
Source Polymer Process Aid Outlet
Project No. 2022-3359
Parameter HFPO-DA

Run Number	Run 1	Run 2	Run 3	Average	
Date	9/27/22	9/27/22	9/27/22	--	
Start Time	8:05	10:30	12:50	--	
Stop Time	9:53	12:18	14:38	--	
Run Time, min	96.0	96.0	96.0	96.0	
VELOCITY HEAD, in. WC					
Point 1	0.33	0.33	0.34	0.33	
Point 2	0.33	0.34	0.34	0.34	
Point 3	0.33	0.34	0.34	0.34	
Point 4	0.33	0.34	0.34	0.34	
Point 5	0.33	0.34	0.34	0.34	
Point 6	0.33	0.34	0.34	0.34	
Point 7	0.34	0.35	0.35	0.35	
Point 8	0.34	0.34	0.35	0.34	
Point 9	0.34	0.30	0.23	0.29	
Point 10	0.33	0.30	0.23	0.29	
Point 11	0.33	0.29	0.22	0.28	
Point 12	0.33	0.29	0.22	0.28	
Point 13	0.33	0.34	0.33	0.33	
Point 14	0.33	0.34	0.33	0.33	
Point 15	0.33	0.33	0.34	0.33	
Point 16	0.33	0.34	0.33	0.33	
Point 17	0.33	0.34	0.34	0.34	
Point 18	0.33	0.34	0.34	0.34	
Point 19	0.34	0.33	0.35	0.34	
Point 20	0.34	0.34	0.35	0.34	
Point 21	0.34	0.30	0.35	0.33	
Point 22	0.21	0.30	0.19	0.23	
Point 23	0.21	0.30	0.19	0.23	
Point 24	0.21	0.25	0.19	0.22	
CALCULATED DATA					
Square Root of ΔP , (in. WC) ^{1/2}	(ΔP)	0.562	0.568	0.547	0.559
Pitot Tube Coefficient	(Cp)	0.840	0.840	0.840	0.840
Barometric Pressure, in. Hg	(Pb)	29.94	29.94	29.94	29.94
Static Pressure, in. WC	(Pg)	1.50	1.50	1.50	1.50
Stack Pressure, in. Hg	(Ps)	30.05	30.05	30.05	30.05
Stack Cross-sectional Area, ft ²	(As)	4.91	4.91	4.91	4.91
Temperature, °F	(Ts)	72.7	74.0	74.5	73.8
Temperature, °R	(Ts)	532.4	533.7	534.2	533.420
Moisture Fraction Measured	(BWSmsd)	0.022	0.021	0.021	0.021
Moisture Fraction @ Saturation	(BWSsat)	0.027	0.028	0.028	0.028
Moisture Fraction	(BWS)	0.022	0.021	0.021	0.021
O ₂ Concentration, %	(O ₂)	20.9	20.9	20.9	20.9
CO ₂ Concentration, %	(CO ₂)	0.1	0.1	0.1	0.1
Molecular Weight, lb/lb-mole (dry)	(Md)	28.85	28.85	28.85	28.85
Molecular Weight, lb/lb-mole (wet)	(Ms)	28.61	28.63	28.63	28.62
Velocity, ft/sec	(Vs)	31.8	32.1	31.0	31.6
VOLUMETRIC FLOW RATE					
At Stack Conditions, acfm	(Qa)	9,355	9,459	9,121	9,312
At Standard Conditions, dscfm	(Qs)	9,106	9,200	8,862	9,056

Location Chemours Company - Fayetteville Works Facility, NC
 Source Polymer Process Aid Outlet
 Project No. 2022-3359
 Date: 09/26/22

Stack Parameters

Duct Orientation: Vertical
 Duct Design: Circular
 Distance from Far Wall to Outside of Port: 46.00 in
 Nipple Length: 16.00 in
 Depth of Duct: 30.00 in
 Cross Sectional Area of Duct: 4.91 ft²
 No. of Test Ports: 2
 Distance A: 32.0 ft
 Distance A Duct Diameters: 4.8 (must be > 0.5)
 Distance B: 12.0 ft
 Distance B Duct Diameters: 4.8 (must be > 2)
 Minimum Number of Traverse Points: 24
 Actual Number of Traverse Points: 24
 Number of Readings per Point: 1
 Measurer (Initial and Date): BAG-9/26/22
 Reviewer (Initial and Date): JS-9/26/22



CIRCULAR DUCT

LOCATION OF TRAVERSE POINTS

Number of traverse points on a diameter

	2	3	4	5	6	7	8	9	10	11	12
1	14.6	--	6.7	--	4.4	--	3.2	--	2.6	--	2.1
2	85.4	--	25.0	--	14.6	--	10.5	--	8.2	--	6.7
3	--	--	75.0	--	29.6	--	19.4	--	14.6	--	11.8
4	--	--	93.3	--	70.4	--	32.3	--	22.6	--	17.7
5	--	--	--	--	85.4	--	67.7	--	34.2	--	25.0
6	--	--	--	--	95.6	--	80.6	--	65.8	--	35.6
7	--	--	--	--	--	--	89.5	--	77.4	--	64.4
8	--	--	--	--	--	--	96.8	--	85.4	--	75.0
9	--	--	--	--	--	--	--	--	91.8	--	82.3
10	--	--	--	--	--	--	--	--	97.4	--	88.2
11	--	--	--	--	--	--	--	--	--	--	93.3
12	--	--	--	--	--	--	--	--	--	--	97.9

*Percent of stack diameter from inside wall to traverse point.

Traverse Point	% of Diameter	Distance from inside wall	Distance from outside of port
1	2.1	1.00	17.00
2	6.7	2.01	18.01
3	11.8	3.54	19.54
4	17.7	5.31	21.31
5	25.0	7.50	23.50
6	35.6	10.68	26.68
7	64.4	19.32	35.32
8	75.0	22.50	38.50
9	82.3	24.69	40.69
10	88.2	26.46	42.46
11	93.3	27.99	43.99
12	97.9	29.00	45.00

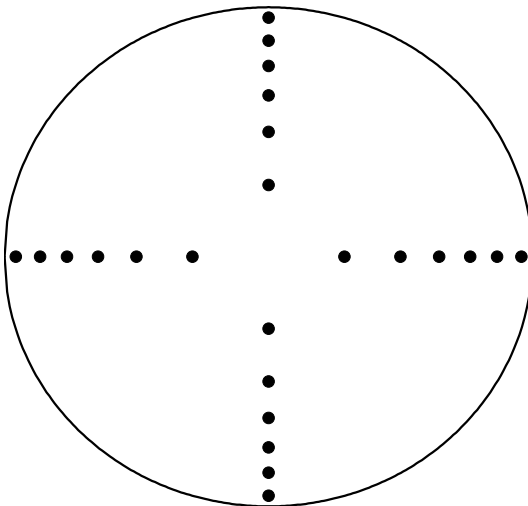
Stack Diagram

A = 32 ft.

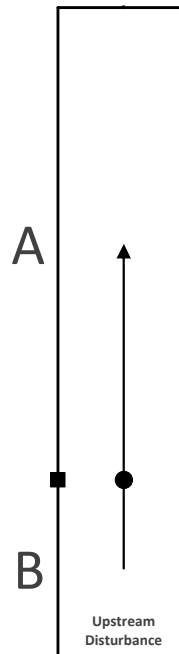
B = 12 ft.

Depth of Duct = 30 in.

Cross Sectional Area



Downstream Disturbance



Location Chemours Company - Fayetteville Works Facility, NC
Source Polymer Process Aid Outlet
Project No. 2022-3359
Date 09/27/22

Sample Point	Angle ($\Delta P=0$)
1	6
2	8
3	8
4	6
5	8
6	4
7	10
8	10
9	12
10	10
11	10
12	10
13	10
14	8
15	8
16	4
17	4
18	4
19	6
20	10
21	10
22	12
23	13
24	12
Average	8

Location Chemours Company - Fayetteville Works Facility, NC

Source Polymer Process Aid Outlet

Project No. 2022-3359

Parameter HFPO-DA

Analysis Gravimetric

Run 1	Date: 9/27/22								
Impinger No.	1	2	3	4	5	6	7	8	Total
Contents	XAD Trap	Empty	H2O	H2O	H2O	Empty	XAD Trap	Silica	--
Initial Mass, g	302.6	498.6	743.8	760.6	736.5	499.8	342.7	842.3	4726.9
Final Mass, g	314.6	499.5	743.6	757.0	738.1	498.3	354.9	851.2	4757.2
Gain	12.0	0.9	-0.2	-3.6	1.6	-1.5	12.2	8.9	30.3
Run 2	Date: 9/27/22								
Impinger No.	1	2	3	4	5	6	7	8	Total
Contents	XAD Trap	Empty	H2O	H2O	H2O	Empty	XAD Trap	Silica	--
Initial Mass, g	303.9	483.7	734.3	752.0	761.3	476.6	308.8	867.6	4688.2
Final Mass, g	313.5	484.3	733.4	751.8	761.9	478.0	314.9	878.6	4716.4
Gain	9.6	0.6	-0.9	-0.2	0.6	1.4	6.1	11.0	28.2
Run 3	Date: 9/27/22								
Impinger No.	1	2	3	4	5	6	7	8	Total
Contents	XAD Trap	Empty	H2O	H2O	H2O	Empty	XAD Trap	Silica	--
Initial Mass, g	307.7	499.6	733.5	771.3	736.6	498.3	317.2	839.8	4704.0
Final Mass, g	317.9	499.9	732.3	773.0	737.8	499.2	324.6	846.4	4731.1
Gain	10.2	0.3	-1.2	1.7	1.2	0.9	7.4	6.6	27.1

Location: Chemours Company - Fayetteville Works Facility, NC				Start Time: 8:05		Source: Polymer Process Aid Outlet					
Date: 9/27/22		Run 1		VALID		End Time: 9:53		Project No.: 2022-3359		Parameter: HFPO-DA	

STACK DATA (EST)			EQUIPMENT			STACK DATA (EST)			FILTER NO.			STACK DATA (FINAL)			MOIST. DATA		
Moisture:	2.0	% est.	Meter Box ID:	MB 7		Est. Tm:	75	°F				Pb:	29.94	in. Hg	Vlc (ml)	--	
Barometric:	30.03	in. Hg	Y:	1.001		Est. Ts:	83	°F				Pg:	1.50	in. WC	30.3		
Static Press:	1.80	in. WC	ΔH @ (in.WC):	1.841		Est. ΔP:	0.35	in. WC				O ₂ :	20.9	%	K-FACTOR		
Stack Press:	30.16	in. Hg	Probe ID:	TC-5D		Est. Dn:	0.271	in.				CO ₂ :	0.1	%	4.096		
CO ₂ :	0.1	%	Liner Material:	glass		Target Rate:	0.78	scfm				Check Pt. Initial Final Corr.					
O ₂ :	20.9	%	Pitot ID:	P4-2		LEAK CHECK:	Pre	Mid 1	Mid 2	Mid 3	Post	Mid 1 (cf)			--		
N ₂ /CO:	79.0	%	Pitot Cp/Type:	0.840	S-type	Leak Rate (cfm):	0.000	--	--	--	0.000	Mid 2 (cf)			--		
Md:	28.85	lb/lb-mole	Nozzle ID:	GL-3	glass	Vacuum (in Hg):	10	--	--	--	10	Mid 3 (cf)			--		
Ms:	28.63	lb/lb-mole	Nozzle Dn (in.):	0.250		Pitot Tube:	Pass	--	--	--	Pass	Mid-Point Leak Check Vol (cf):			--		

Sample Pt.	Sample Time (minutes)		Dry Gas Meter Reading (ft ³)	Pitot Tube ΔP (in WC)	Gas Temperatures (°F)		Orifice Press. ΔH (in. WC)		Pump Vac (in. Hg)	Gas Temperatures (°F)				% ISO	Vs (fps)
	Begin	End			DGM Average	Stack	Ideal	Actual		Probe	Filter	Imp Exit	Aux		
					Amb.	Amb.				Amb.	Amb.				
					60	60				60	60				
1	0.00	4.00	509.281	0.33	60	57	1.38	1.40	1	80	86	51	45	105.7	31.91
2	4.00	8.00	512.000	0.33	62	73	1.35	1.35	1	81	84	51	44	109.3	32.40
3	8.00	12.00	514.780	0.33	63	73	1.35	1.30	1	81	80	49	43	103.2	32.40
4	12.00	16.00	517.410	0.33	65	73	1.35	1.30	1	81	80	48	41	102.8	32.40
5	16.00	20.00	520.040	0.33	66	73	1.36	1.30	1	81	81	48	39	103.4	32.40
6	20.00	24.00	522.690	0.33	66	73	1.36	1.30	1	80	80	47	38	103.4	32.40
7	24.00	28.00	525.340	0.34	67	73	1.40	1.40	1	81	82	47	38	103.6	32.88
8	28.00	32.00	528.040	0.34	68	73	1.40	1.40	1	81	80	48	38	103.8	32.88
9	32.00	36.00	530.750	0.34	68	73	1.40	1.40	1	81	81	48	38	103.4	32.88
10	36.00	40.00	533.450	0.33	68	74	1.36	1.35	1	81	80	47	37	105.8	32.43
11	40.00	44.00	536.170	0.33	69	73	1.36	1.35	1	81	81	47	37	103.9	32.40
12	44.00	48.00	538.850	0.33	70	73	1.37	1.35	1	81	81	47	38	102.0	32.40
1	48.00	52.00	541.486	0.33	71	73	1.37	1.35	1	80	80	52	43	102.9	32.40
2	52.00	56.00	544.150	0.33	68	73	1.36	1.35	1	81	81	51	42	103.8	32.40
3	56.00	60.00	546.820	0.33	71	74	1.37	1.35	1	81	81	49	41	103.7	32.43
4	60.00	64.00	549.500	0.33	71	74	1.37	1.35	1	81	80	49	40	103.7	32.43
5	64.00	68.00	552.180	0.33	72	74	1.37	1.35	1	81	81	50	41	101.9	32.43
6	68.00	72.00	554.820	0.33	73	74	1.37	1.35	1	81	81	51	41	101.3	32.43
7	72.00	76.00	557.450	0.34	74	74	1.41	1.40	1	81	81	50	42	102.7	32.91
8	76.00	80.00	560.160	0.34	73	74	1.41	1.40	1	80	81	50	40	103.3	32.91
9	80.00	84.00	562.880	0.34	73	74	1.41	1.40	1	81	80	49	41	103.3	32.91
10	84.00	88.00	565.600	0.21	73	74	0.87	0.88	1	81	81	51	42	108.1	25.87
11	88.00	92.00	567.840	0.21	74	73	0.88	0.88	1	81	80	51	42	98.6	25.84
12	92.00	96.00	569.890	0.21	74	73	0.88	0.88	1	81	81	52	41	100.2	25.84
Final DGM:			571.972												

RESULTS	Run Time	Vm	ΔP	Tm	Ts	Max Vac	ΔH	%ISO	BWS	Y _{qa}					
	96.0	min	62.691	ft ³	0.32	in. WC	69.1	°F	72.7	°F	1	1.298	in. WC	103.6	0.022

Location: Chemours Company - Fayetteville Works Facility, NC				Start Time: 10:30		Source: Polymer Process Aid Outlet			
Date: 9/27/22		Run 2		End Time: 12:18		Project No.: 2022-3359		Parameter: HFPO-DA	

STACK DATA (EST)		EQUIPMENT		STACK DATA (EST)		FILTER NO.		STACK DATA (FINAL)		MOIST. DATA		
Moisture:	2.0 % est.	Meter Box ID:	MB 7	Est. Tm:	69 °F			Pb:	29.94 in. Hg	Vlc (ml)		
Barometric:	30.03 in. Hg	Y:	1.001	Est. Ts:	73 °F			Pg:	1.50 in. WC	28.2		
Static Press:	1.80 in. WC	ΔH @ (in.WC):	1.841	Est. ΔP:	0.32 in. WC			O ₂ :	20.9 %	K-FACTOR		
Stack Press:	30.16 in. Hg	Probe ID:	TC-5D	Est. Dn:	0.278 in.			CO ₂ :	0.1 %	4.13		
CO ₂ :	0.1 %	Liner Material:	glass	Target Rate:	0.78 scfm			Check Pt.		Initial	Final	Corr.
O ₂ :	20.9 %	Pitot ID:	P4-2	LEAK CHECK:	Pre Mid 1 Mid 2 Mid 3 Post			Mid 1 (cf)		--		
N ₂ /CO:	79.0 %	Pitot Cp/Type:	0.840 S-type	Leak Rate (cfm):	0.000 -- -- -- 0.002			Mid 2 (cf)		--		
Md:	28.85 lb/lb-mole	Nozzle ID:	GL-3 glass	Vacuum (in Hg):	10 -- -- -- 10			Mid 3 (cf)		--		
Ms:	28.63 lb/lb-mole	Nozzle Dn (in.):	0.250	Pitot Tube:	Pass -- -- -- Pass			Mid-Point Leak Check Vol (cf):		--		

Sample Pt.	Sample Time (minutes)		Dry Gas Meter Reading (ft ³)	Pitot Tube ΔP (in WC)	Gas Temperatures (°F)		Orifice Press. ΔH (in. WC)		Pump Vac (in. Hg)	Gas Temperatures (°F)				% ISO	Vs (fps)
	Begin	End			DGM Average	Stack	Ideal	Actual		Probe	Filter	Imp Exit	Aux		
					Amb.	Amb.				Amb.	Amb.	Amb.	Amb.		
1	0.00	4.00	572.250	0.33	72	74	1.37	1.35	2	80	80	58	48	105.0	32.43
2	4.00	8.00	574.970	0.34	73	74	1.41	1.40	2	81	81	48	48	101.7	32.91
3	8.00	12.00	577.650	0.34	74	74	1.41	1.40	2	81	81	49	50	102.7	32.91
4	12.00	16.00	580.360	0.34	75	74	1.42	1.40	2	81	80	49	49	101.0	32.91
5	16.00	20.00	583.030	0.34	76	74	1.42	1.40	2	81	82	49	50	102.3	32.91
6	20.00	24.00	585.740	0.34	76	74	1.42	1.40	2	81	81	50	50	101.2	32.91
7	24.00	28.00	588.420	0.35	77	74	1.46	1.45	2	81	81	50	50	103.6	33.40
8	28.00	32.00	591.210	0.34	77	74	1.42	1.40	2	81	81	51	54	102.9	32.91
9	32.00	36.00	593.940	0.30	77	74	1.26	1.25	2	81	81	52	53	105.1	30.92
10	36.00	40.00	596.560	0.30	78	74	1.26	1.25	2	81	81	51	52	102.9	30.92
11	40.00	44.00	599.130	0.29	78	74	1.22	1.20	2	81	81	51	51	102.6	30.40
12	44.00	48.00	601.650	0.29	78	74	1.22	1.20	2	81	82	51	50	102.6	30.40
1	48.00	52.00	604.171	0.34	77	74	1.42	1.40	2	81	80	55	46	101.7	32.91
2	52.00	56.00	606.870	0.34	78	74	1.43	1.40	2	81	81	50	43	101.6	32.91
3	56.00	60.00	609.570	0.33	78	74	1.38	1.40	2	81	81	47	44	103.5	32.43
4	60.00	64.00	612.280	0.34	78	74	1.43	1.40	2	81	80	48	45	102.7	32.91
5	64.00	68.00	615.010	0.34	79	74	1.43	1.40	2	81	82	50	46	101.0	32.91
6	68.00	72.00	617.700	0.34	80	74	1.43	1.40	2	81	82	50	50	104.9	32.91
7	72.00	76.00	620.500	0.33	82	74	1.39	1.40	2	81	81	51	46	106.1	32.43
8	76.00	80.00	623.300	0.34	83	74	1.44	1.45	2	81	81	51	47	108.1	32.91
9	80.00	84.00	626.200	0.30	83	74	1.27	1.30	2	80	80	51	46	100.7	30.92
10	84.00	88.00	628.740	0.30	83	74	1.27	1.30	2	81	82	51	46	101.5	30.92
11	88.00	92.00	631.300	0.30	81	74	1.27	1.30	2	81	81	51	47	105.5	30.92
12	92.00	96.00	633.950	0.25	81	74	1.05	1.05	2	81	80	52	46	105.2	28.22
Final DGM:			636.363												

RESULTS	Run Time	Vm	ΔP	Tm	Ts	Max Vac	ΔH	%ISO	BWS	Y _{qa}
		96.0 min	64.113 ft ³	0.32 in. WC	78.1 °F	74.0 °F	2	1.346 in. WC	103.1	0.021

Location: Chemours Company - Fayetteville Works Facility, NC				Start Time: 12:50		Source: Polymer Process Aid Outlet			
Date: 9/27/22		Run 3		End Time: 14:38		Project No.: 2022-3359		Parameter: HFPO-DA	

STACK DATA (EST)		EQUIPMENT		STACK DATA (EST)		FILTER NO.		STACK DATA (FINAL)		MOIST. DATA	
Moisture:	2.0 % est.	Meter Box ID:	MB 7	Est. Tm:	78 °F			Pb:	29.94 in. Hg	Vlc (ml)	
Barometric:	30.03 in. Hg	Y:	1.001	Est. Ts:	74 °F			Pg:	1.50 in. WC	27.1	
Static Press:	1.80 in. WC	ΔH @ (in.WC):	1.841	Est. ΔP:	0.32 in. WC			O ₂ :	20.9 %	K-FACTOR	
Stack Press:	30.16 in. Hg	Probe ID:	TC-5D	Est. Dn:	0.275 in.			CO ₂ :	0.1 %	4.189	
CO ₂ :	0.1 %	Liner Material:	glass	Target Rate:	0.78 scfm			Check Pt. Initial Final Corr.			
O ₂ :	20.9 %	Pitot ID:	P4-2	LEAK CHECK:	Pre Mid 1 Mid 2 Mid 3 Post			Mid 1 (cf)		--	
N ₂ /CO:	79.0 %	Pitot Cp/Type:	0.840 S-type	Leak Rate (cfm):	0.000 -- -- -- 0.000			Mid 2 (cf)		--	
Md:	28.85 lb/lb-mole	Nozzle ID:	GL-3 glass	Vacuum (in Hg):	10 -- -- -- 10			Mid 3 (cf)		--	
Ms:	28.63 lb/lb-mole	Nozzle Dn (in.):	0.250	Pitot Tube:	Pass -- -- -- Pass			Mid-Point Leak Check Vol (cf):		--	

Sample Pt.	Sample Time (minutes)		Dry Gas Meter Reading (ft ³)	Pitot Tube ΔP (in WC)	Gas Temperatures (°F)		Orifice Press. ΔH (in. WC)		Pump Vac (in. Hg)	Gas Temperatures (°F)				% ISO	Vs (fps)
	Begin	End			DGM Average	Stack	Ideal	Actual		Probe	Filter	Imp Exit	Aux		
					Amb.	Amb.				Amb.	Amb.	Amb.	Amb.		
1	0.00	4.00	636.575	0.34	79	74	1.43	1.40	2	81	85	59	46	101.9	32.91
2	4.00	8.00	639.290	0.34	79	74	1.43	1.40	2	80	83	53	50	103.2	32.91
3	8.00	12.00	642.040	0.34	80	74	1.43	1.40	2	81	82	51	47	103.0	32.91
4	12.00	16.00	644.790	0.34	82	74	1.44	1.45	2	81	81	50	49	102.3	32.91
5	16.00	20.00	647.530	0.34	83	74	1.44	1.45	2	81	82	50	47	102.5	32.91
6	20.00	24.00	650.280	0.34	84	74	1.44	1.45	2	81	81	50	50	102.3	32.91
7	24.00	28.00	653.030	0.35	84	74	1.48	1.50	2	81	82	50	47	102.7	33.40
8	28.00	32.00	655.830	0.35	85	74	1.49	1.50	2	81	83	49	49	103.2	33.40
9	32.00	36.00	658.650	0.23	85	74	0.98	0.98	2	81	82	50	49	106.4	27.07
10	36.00	40.00	661.010	0.23	86	74	0.98	0.98	2	81	81	51	49	102.2	27.07
11	40.00	44.00	663.280	0.22	86	74	0.94	0.94	2	81	80	52	51	104.0	26.48
12	44.00	48.00	665.540	0.22	86	74	0.94	0.94	2	81	80	52	48	105.0	26.48
1	48.00	52.00	667.821	0.33	83	74	1.40	1.40	2	81	83	61	52	101.3	32.43
2	52.00	56.00	670.500	0.33	84	74	1.40	1.40	2	81	83	52	52	100.8	32.43
3	56.00	60.00	673.170	0.34	85	74	1.44	1.45	2	81	83	53	49	101.4	32.91
4	60.00	64.00	675.900	0.33	85	75	1.40	1.40	2	81	83	52	56	103.0	32.46
5	64.00	68.00	678.630	0.34	86	75	1.44	1.45	2	81	84	54	56	103.1	32.95
6	68.00	72.00	681.410	0.34	87	75	1.45	1.45	2	81	85	55	56	103.3	32.95
7	72.00	76.00	684.200	0.35	87	75	1.49	1.50	2	81	86	56	57	103.3	33.43
8	76.00	80.00	687.030	0.35	87	75	1.49	1.50	2	82	87	57	56	103.3	33.43
9	80.00	84.00	689.860	0.35	87	76	1.49	1.50	2	83	88	57	59	103.8	33.46
10	84.00	88.00	692.700	0.19	88	76	0.81	0.81	2	83	89	59	56	108.7	24.65
11	88.00	92.00	694.900	0.19	88	76	0.81	0.81	2	85	90	60	58	103.8	24.65
12	92.00	96.00	697.000	0.19	88	76	0.81	0.81	2	87	90	60	56	102.7	24.65
Final DGM:			699.079												

RESULTS	Run Time	Vm	ΔP	Tm	Ts	Max Vac	ΔH	%ISO	BWS	Y _{ga}
		96.0 min	62.504 ft ³	0.30 in. WC	84.8 °F	74.5 °F	2	1.286 in. WC	103.0	0.021

Location Chemours Company - Fayetteville Works Facility, NC
Source Polymer Process Aid Inlet
Project No. 2022-3359
Parameter HFPO-DA

Run Number		Run 1	Run 2	Run 3	Average
Date		9/27/22	9/27/22	9/27/22	--
Start Time		8:05	10:30	12:50	--
Stop Time		9:53	12:18	14:38	--
Run Time, min	(θ)	96.0	96.0	96.0	96.0
INPUT DATA					
Barometric Pressure, in. Hg	(Pb)	29.94	29.94	29.94	29.94
Meter Correction Factor	(Y)	1.032	1.032	1.032	1.032
Orifice Calibration Value	($\Delta H @$)	1.699	1.699	1.699	1.699
Meter Volume, ft ³	(Vm)	42.281	43.445	45.074	43.600
Meter Temperature, °F	(Tm)	67.0	75.3	78.8	73.7
Meter Temperature, °R	(Tm)	526.7	535.0	538.5	533.4
Meter Orifice Pressure, in. WC	(ΔH)	0.681	0.717	0.734	0.711
Volume H ₂ O Collected, mL	(Vlc)	33.5	32.6	26.2	30.8
Nozzle Diameter, in	(Dn)	0.250	0.250	0.250	0.250
Area of Nozzle, ft ²	(An)	0.0003	0.0003	0.0003	0.0003
FH HFPO-DA Mass, ng	M _(HFPODA)	934,000.0	909,000.0	797,000.0	880,000.0
BH HFPO-DA Mass, ng	M _(HFPODA)	387,000.0	9,320,000.0	8,600,000.0	6,102,333.3
Imp HFPO-DA Mass, ng	M _(HFPODA)	23,100.0	--	31.4	11,565.7
Breakthrough HFPO-DA Mass, ng	M _(HFPODA)	1,160.0	27.1	37.1	408.07
Total HFPO-DA Mass, ng	M _(HFPODA)	1,345,260.0	10,229,027.1	9,397,068.5	6,990,451.9
ISOKINETIC DATA					
Standard Meter Volume, ft ³	(Vmstd)	43.816	44.332	45.693	44.613
Standard Water Volume, ft ³	(Vwstd)	1.580	1.537	1.235	1.451
Moisture Fraction Measured	(BWSmsd)	0.035	0.034	0.026	0.032
Moisture Fraction @ Saturation	(BWSsat)	0.024	0.027	0.029	0.027
Moisture Fraction	(BWS)	0.024	0.027	0.026	0.026
Meter Pressure, in Hg	(Pm)	29.99	29.99	29.99	29.99
Volume at Nozzle, ft ³	(Vn)	45.605	46.375	47.699	46.56
Isokinetic Sampling Rate, (%)	(I)	97.3	97.7	99.5	98.1
DGM Calibration Check Value, (+/- 5%)	(Y _{qa})	-2.9	-3.1	-1.2	-2.4
EMISSION CALCULATIONS					
HFPO-DA Concentration, ng/dscm	C _(HFPODA)	1.1E+06	8.1E+06	7.3E+06	5.5E+06
HFPO-DA Emission Rate, lb/hr	ER _(HFPODA)	3.5E-02	2.7E-01	2.4E-01	1.8E-01

Underlined values are non-detect and reported as the reporting limit.

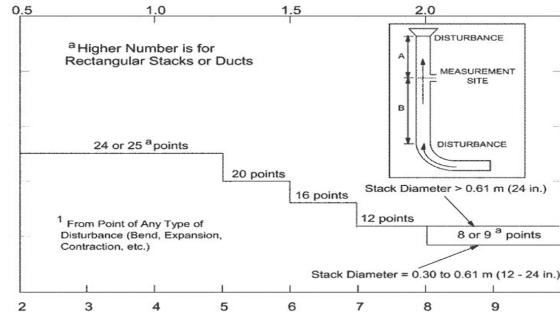
Location Chemours Company - Fayetteville Works Facility, NC
Source Polymer Process Aid Inlet
Project No. 2022-3359
Parameter HFPO-DA

Run Number	Run 1	Run 2	Run 3	Average	
Date	9/27/22	9/27/22	9/27/22	--	
Start Time	8:05	10:30	12:50	--	
Stop Time	9:53	12:18	14:38	--	
Run Time, min	96.0	96.0	96.0	96.0	
VELOCITY HEAD, in. WC					
Point 1	0.27	0.25	0.29	0.27	
Point 2	0.27	0.26	0.29	0.27	
Point 3	0.25	0.25	0.28	0.26	
Point 4	0.24	0.23	0.25	0.24	
Point 5	0.22	0.22	0.24	0.23	
Point 6	0.18	0.22	0.22	0.21	
Point 7	0.14	0.19	0.16	0.16	
Point 8	0.12	0.18	0.11	0.14	
Point 9	0.11	0.17	0.11	0.13	
Point 10	0.08	0.18	0.08	0.11	
Point 11	0.08	0.16	0.08	0.11	
Point 12	0.07	0.15	0.08	0.10	
Point 13	0.25	0.30	0.26	0.27	
Point 14	0.23	0.28	0.26	0.26	
Point 15	0.23	0.28	0.25	0.25	
Point 16	0.22	0.24	0.23	0.23	
Point 17	0.21	0.22	0.22	0.22	
Point 18	0.21	0.15	0.21	0.19	
Point 19	0.20	0.11	0.18	0.16	
Point 20	0.16	0.11	0.16	0.14	
Point 21	0.15	0.09	0.16	0.13	
Point 22	0.15	0.08	0.17	0.13	
Point 23	0.14	0.08	0.15	0.12	
Point 24	0.14	0.07	0.14	0.12	
CALCULATED DATA					
Square Root of ΔP , (in. WC) ^{1/2}	(ΔP)	0.417	0.423	0.429	0.423
Pitot Tube Coefficient	(Cp)	0.840	0.840	0.840	0.840
Barometric Pressure, in. Hg	(Pb)	29.94	29.94	29.94	29.94
Static Pressure, in. WC	(Pg)	-1.30	-1.40	-1.30	-1.33
Stack Pressure, in. Hg	(Ps)	29.84	29.84	29.84	29.84
Stack Cross-sectional Area, ft ²	(As)	6.31	6.31	6.31	6.31
Temperature, °F	(Ts)	69.1	72.4	75.3	72.3
Temperature, °R	(Ts)	528.8	532.0	535.0	531.948
Moisture Fraction Measured	(BWSmsd)	0.035	0.034	0.026	0.032
Moisture Fraction @ Saturation	(BWSsat)	0.024	0.027	0.029	0.027
Moisture Fraction	(BWS)	0.024	0.027	0.026	0.026
O ₂ Concentration, %	(O ₂)	20.9	20.9	20.9	20.9
CO ₂ Concentration, %	(CO ₂)	0.1	0.1	0.1	0.1
Molecular Weight, lb/lb-mole (dry)	(Md)	28.85	28.85	28.85	28.85
Molecular Weight, lb/lb-mole (wet)	(Ms)	28.59	28.56	28.57	28.58
Velocity, ft/sec	(Vs)	23.6	24.0	24.4	24.0
VOLUMETRIC FLOW RATE					
At Stack Conditions, acfm	(Qa)	8,928	9,084	9,237	9,083
At Standard Conditions, dscfm	(Qs)	8,675	8,746	8,848	8,757

Location Chemours Company - Fayetteville Works Facility, NC
 Source Polymer Process Aid Inlet
 Project No. 2022-3359
 Date: 09/26/22

Stack Parameters

Duct Orientation: Vertical
 Duct Design: Circular
 Distance from Far Wall to Outside of Port: 47.50 in
 Nipple Length: 13.50 in
 Depth of Duct: 34.00 in
 Cross Sectional Area of Duct: 6.31 ft²
 No. of Test Ports: 2
 Distance A: 3.5 ft
 Distance A Duct Diameters: 4.8 (must be > 0.5)
 Distance B: 5.0 ft
 Distance B Duct Diameters: 1.8 (must be > 2)
 Minimum Number of Traverse Points: 24
 Actual Number of Traverse Points: 24
 Number of Readings per Point: 1
 Measurer (Initial and Date): BAG-9/26/22
 Reviewer (Initial and Date): JS-9/26/22



CIRCULAR DUCT

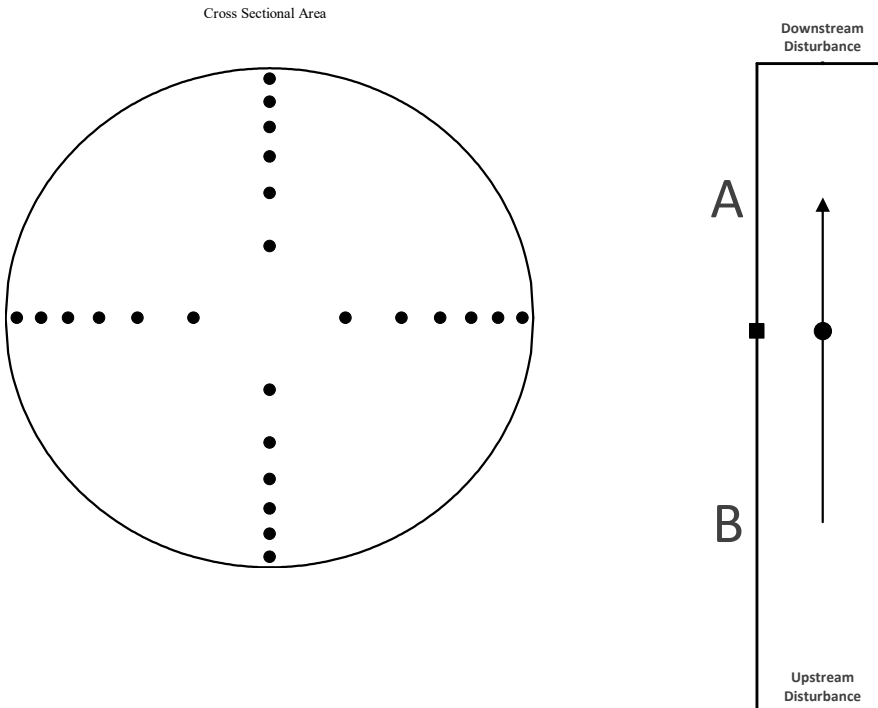
LOCATION OF TRAVERSE POINTS
 Number of traverse points on a diameter

	2	3	4	5	6	7	8	9	10	11	12
1	14.6	--	6.7	--	4.4	--	3.2	--	2.6	--	2.1
2	85.4	--	25.0	--	14.6	--	10.5	--	8.2	--	6.7
3	--	--	75.0	--	29.6	--	19.4	--	14.6	--	11.8
4	--	--	93.3	--	70.4	--	32.3	--	22.6	--	17.7
5	--	--	--	--	85.4	--	67.7	--	34.2	--	25.0
6	--	--	--	--	95.6	--	80.6	--	65.8	--	35.6
7	--	--	--	--	--	--	89.5	--	77.4	--	64.4
8	--	--	--	--	--	--	96.8	--	85.4	--	75.0
9	--	--	--	--	--	--	--	--	91.8	--	82.3
10	--	--	--	--	--	--	--	--	97.4	--	88.2
11	--	--	--	--	--	--	--	--	--	--	93.3
12	--	--	--	--	--	--	--	--	--	--	97.9

Traverse Point	% of Diameter	Distance from inside wall	Distance from outside of port
1	2.1	1.00	14.50
2	6.7	2.28	15.78
3	11.8	4.01	17.51
4	17.7	6.02	19.52
5	25.0	8.50	22.00
6	35.6	12.10	25.60
7	64.4	21.90	35.40
8	75.0	25.50	39.00
9	82.3	27.98	41.48
10	88.2	29.99	43.49
11	93.3	31.72	45.22
12	97.9	33.00	46.50

*Percent of stack diameter from inside wall to traverse point.

Stack Diagram
 A = 3.5 ft.
 B = 5 ft.
 Depth of Duct = 34 in.



Location Chemours Company - Fayetteville Works Facility, NC
 Source Polymer Process Aid Inlet
 Project No. 2022-3359
 Date 09/27/22

Sample Point	Angle ($\Delta P=0$)
1	10
2	12
3	10
4	10
5	12
6	10
7	12
8	10
9	8
10	10
11	10
12	8
13	12
14	12
15	10
16	10
17	10
18	10
19	8
20	10
21	10
22	10
23	12
24	14
Average	10

Location Chemours Company - Fayetteville Works Facility, NC
Source Polymer Process Aid Inlet
Project No. 2022-3359
Parameter HFPO-DA
Analysis Gravimetric

Run 1	Date: 9/27/22								
Impinger No.	1	2	3	4	5	6	7	8	Total
Contents	XAD Trap	Empty	H2O	H2O	H2O	Empty	XAD Trap	Silica	--
Initial Mass, g	308.8	466.4	712.2	744.7	732.4	489.9	387.1	841.9	4683.4
Final Mass, g	322.8	469.6	712.1	745.1	733.6	490.8	394.0	848.9	4716.9
Gain	14.0	3.2	-0.1	0.4	1.2	0.9	6.9	7.0	33.5
Run 2	Date: 9/27/22								
Impinger No.	1	2	3	4	5	6	7	8	Total
Contents	XAD Trap	Empty	H2O	H2O	H2O	Empty	XAD Trap	Silica	--
Initial Mass, g	299.2	467.5	759.1	755.6	735.6	477.3	299.3	824.6	4618.2
Final Mass, g	312.4	467.9	759.2	756.0	736.8	478.3	307.9	832.3	4650.8
Gain	13.2	0.4	0.1	0.4	1.2	1.0	8.6	7.7	32.6
Run 3	Date: 9/27/22								
Impinger No.	1	2	3	4	5	6	7	8	Total
Contents	XAD Trap	Empty	H2O	H2O	H2O	Empty	XAD Trap	Silica	--
Initial Mass, g	300.3	467.2	704.5	756.0	733.1	490.8	326.0	848.3	4626.2
Final Mass, g	306.5	467.4	704.0	757.1	734.5	491.6	337.0	854.3	4652.4
Gain	6.2	0.2	-0.5	1.1	1.4	0.8	11.0	6.0	26.2

Location: Chemours Company - Fayetteville Works Facility, NC				Start Time: 8:05		Source: Polymer Process Aid Inlet					
Date: 9/27/22		Run 1		VALID		End Time: 9:53		Project No.: 2022-3359		Parameter: HFPO-DA	

STACK DATA (EST)			EQUIPMENT		STACK DATA (EST)			FILTER NO.		STACK DATA (FINAL)		MOIST. DATA		
Moisture:	2.0	% est.	Meter Box ID: MB 15		Est. Tm:	70	°F			Pb:	29.94	in. Hg	Vlc (ml)	
Barometric:	30.02	in. Hg	Y: 1.032		Est. Ts:	81	°F			Pg:	-1.30	in. WC	33.5	
Static Press:	-1.43	in. WC	ΔH @ (in.WC): 1.699		Est. ΔP:	0.22	in. WC			O ₂ :	20.9	%	K-FACTOR	
Stack Press:	29.91	in. Hg	Probe ID: TC-7D		Est. Dn:	0.306	in.			CO ₂ :	0.1	%	3.730	
CO ₂ :	0.1	%	Liner Material: glass		Target Rate:	0.78	scfm			Check Pt. Initial Final Corr.				
O ₂ :	20.9	%	Pitot ID: P4-1		LEAK CHECK:	Pre	Mid 1	Mid 2	Mid 3	Post	Mid 1 (cf)		--	
N ₂ /CO:	79.0	%	Pitot Cp/Type: 0.840 S-type		Leak Rate (cfm):	0.005	--	--	--	0.002	Mid 2 (cf)		--	
Md:	28.85	lb/lb-mole	Nozzle ID: GL-4 glass		Vacuum (in Hg):	10	--	--	--	7	Mid 3 (cf)		--	
Ms:	28.63	lb/lb-mole	Nozzle Dn (in.): 0.250		Pitot Tube:	Pass	--	--	--	Pass	Mid-Point Leak Check Vol (cf):		--	

Sample Pt.	Sample Time (minutes)		Dry Gas Meter Reading (ft ³)	Pitot Tube ΔP (in WC)	Gas Temperatures (°F)		Orifice Press. ΔH (in. WC)		Pump Vac (in. Hg)	Gas Temperatures (°F)				% ISO	Vs (fps)
	Begin	End			DGM Average	Stack	Ideal	Actual		Probe	Filter	Imp Exit	Aux		
					Amb.	Amb.				Amb.	Amb.	Amb.	Amb.		
A-1	0.00	4.00	901.915	0.27	66	68	1.03	1.00	4	72	70	51	36	101.0	29.29
2	4.00	8.00	904.190	0.27	66	68	1.03	1.00	4	75	77	43	36	98.1	29.29
3	8.00	12.00	906.400	0.25	65	68	0.95	0.94	3	78	80	40	35	99.3	28.18
4	12.00	16.00	908.550	0.24	65	68	0.91	0.91	3	77	79	41	35	96.7	27.61
5	16.00	20.00	910.600	0.22	65	68	0.83	0.83	3	82	80	41	35	96.0	26.44
6	20.00	24.00	912.550	0.18	64	68	0.68	0.68	3	77	78	41	36	95.4	23.91
7	24.00	28.00	914.300	0.14	64	68	0.53	0.53	3	82	80	41	36	100.1	21.09
8	28.00	32.00	915.920	0.12	64	68	0.45	0.45	2	81	79	42	37	102.1	19.52
9	32.00	36.00	917.450	0.11	65	69	0.42	0.42	2	82	79	43	37	96.8	18.71
10	36.00	40.00	918.840	0.08	65	69	0.30	0.30	2	79	79	43	37	93.9	15.96
11	40.00	44.00	919.990	0.08	66	69	0.30	0.30	2	80	80	44	40	96.1	15.96
12	44.00	48.00	921.170	0.07	66	69	0.27	0.27	2	81	79	45	38	98.4	14.93
B-1	48.00	52.00	922.300	0.25	67	69	0.95	0.95	3	80	79	53	39	101.4	28.21
2	52.00	56.00	924.500	0.23	68	70	0.87	0.87	3	80	80	44	37	91.2	27.08
3	56.00	60.00	926.400	0.23	68	70	0.87	0.87	3	84	79	45	37	96.0	27.08
4	60.00	64.00	928.400	0.22	68	70	0.84	0.84	4	83	79	47	38	94.2	26.49
5	64.00	68.00	930.320	0.21	69	70	0.80	0.80	4	78	80	47	38	97.2	25.88
6	68.00	72.00	932.260	0.21	69	70	0.80	0.80	4	80	79	47	38	97.2	25.88
7	72.00	76.00	934.200	0.20	69	70	0.76	0.76	4	87	80	46	38	102.7	25.25
8	76.00	80.00	936.200	0.16	69	70	0.61	0.61	4	88	80	46	39	93.0	22.59
9	80.00	84.00	937.820	0.15	70	70	0.57	0.57	4	87	80	47	38	98.2	21.87
10	84.00	88.00	939.480	0.15	70	70	0.57	0.57	4	83	79	48	39	92.9	21.87
11	88.00	92.00	941.050	0.14	70	70	0.53	0.53	3	79	79	48	40	96.1	21.13
12	92.00	96.00	942.620	0.14	71	70	0.54	0.54	3	80	79	48	40	96.3	21.13
Final DGM:			944.196												

RESULTS	Run Time		Vm		ΔP		Tm		Ts		Max Vac		ΔH		%ISO		BWS		Y _{qa}	
	min		ft ³		in. WC		°F		°F		in. WC									
	96.0		42.281		0.18		67.0		69.1		4	0.681		97.3		0.024				-2.9

Location: Chemours Company - Fayetteville Works Facility, NC			Start Time: 10:30		Source: Polymer Process Aid Inlet						
Date: 9/27/22		Run 2	VALID	End Time: 12:18		Project No.: 2022-3359	Parameter: HFPO-DA				
STACK DATA (EST)		EQUIPMENT		STACK DATA (EST)		FILTER NO.	STACK DATA (FINAL)		MOIST. DATA		
Moisture: 2.0 % est.		Meter Box ID: MB 15		Est. Tm: 67 °F			Pb: 29.94 in. Hg		Vlc (ml)		
Barometric: 30.02 in. Hg		Y: 1.032		Est. Ts: 69 °F			Pg: -1.40 in. WC		32.6		
Static Press: -1.43 in. WC		ΔH @ (in.WC): 1.699		Est. ΔP: 0.18 in. WC			O ₂ : 20.9 %		K-FACTOR		
Stack Press: 29.91 in. Hg		Probe ID: TC-7D		Est. Dn: 0.321 in.			CO ₂ : 0.1 %		3.79		
CO ₂ : 0.1 %		Liner Material: glass		Target Rate: 0.78 scfm			Check Pt.		Initial	Final	Corr.
O ₂ : 20.9 %		Pitot ID: P4-1		LEAK CHECK: Pre Mid 1 Mid 2 Mid 3 Post			Mid 1 (cf)				--
N ₂ /CO: 79.0 %		Pitot Cp/Type: 0.840 S-type		Leak Rate (cfm): 0.002 -- -- -- 0.002			Mid 2 (cf)				--
Md: 28.85 lb/lb-mole		Nozzle ID: GL-4 glass		Vacuum (in Hg): 8 -- -- -- 9			Mid 3 (cf)				--
Ms: 28.63 lb/lb-mole		Nozzle Dn (in.): 0.250		Pitot Tube: Pass -- -- -- Pass			Mid-Point Leak Check Vol (cf):				--

Sample Pt.	Sample Time (minutes)		Dry Gas Meter Reading (ft ³)	Pitot Tube ΔP (in WC)	Gas Temperatures (°F)		Orifice Press. ΔH (in. WC)		Pump Vac (in. Hg)	Gas Temperatures (°F)				% ISO	Vs (fps)
					DGM Average		Stack			Ideal	Actual	Probe	Filter		
	Amb.	Amb.			Amb.	Amb.	Amb.	Amb.				Amb.	Amb.		
	Begin	End			--	--	--	--		--	--	--	--		
A-1	0.00	4.00	944.368	0.25	73	71	0.96	0.96	4	87	86	63	47	101.9	28.26
2	4.00	8.00	946.600	0.26	73	71	1.00	1.00	4	88	86	55	46	94.9	28.82
3	8.00	12.00	948.720	0.25	74	71	0.96	0.96	4	85	82	52	42	99.3	28.26
4	12.00	16.00	950.900	0.23	74	72	0.88	0.88	4	80	80	51	43	94.1	27.13
5	16.00	20.00	952.880	0.22	74	72	0.84	0.84	4	78	79	50	42	94.8	26.54
6	20.00	24.00	954.830	0.22	75	72	0.84	0.84	4	82	79	50	43	95.5	26.54
7	24.00	28.00	956.800	0.19	75	72	0.73	0.73	3	87	79	49	43	95.5	24.66
8	28.00	32.00	958.630	0.18	75	72	0.69	0.69	3	82	79	49	42	100.2	24.00
9	32.00	36.00	960.500	0.17	75	71	0.65	0.65	3	79	79	50	42	96.4	23.30
10	36.00	40.00	962.250	0.18	76	72	0.69	0.69	4	78	79	51	43	96.3	24.00
11	40.00	44.00	964.050	0.16	76	73	0.61	0.61	3	84	80	50	42	96.5	22.65
12	44.00	48.00	965.750	0.15	75	72	0.58	0.58	3	87	79	51	45	96.3	21.91
B-1	48.00	52.00	967.390	0.30	76	73	1.15	1.15	4	82	79	61	45	95.9	31.02
2	52.00	56.00	969.700	0.28	76	73	1.07	1.10	4	88	79	51	42	98.9	29.96
3	56.00	60.00	972.000	0.28	76	73	1.07	1.10	4	85	79	52	42	95.0	29.96
4	60.00	64.00	974.210	0.24	76	73	0.92	0.92	4	82	79	52	41	95.6	27.74
5	64.00	68.00	976.270	0.22	76	73	0.84	0.84	4	79	79	51	42	98.4	26.56
6	68.00	72.00	978.300	0.15	76	73	0.58	0.58	3	79	79	51	43	95.0	21.93
7	72.00	76.00	979.920	0.11	76	73	0.42	0.42	2	83	80	51	44	94.5	18.78
8	76.00	80.00	981.300	0.11	76	73	0.42	0.42	2	84	79	51	42	99.3	18.78
9	80.00	84.00	982.750	0.09	76	73	0.35	0.35	2	82	79	52	43	98.4	16.99
10	84.00	88.00	984.050	0.08	76	73	0.31	0.31	2	79	80	53	42	100.3	16.02
11	88.00	92.00	985.300	0.08	76	73	0.31	0.31	2	79	79	53	42	103.5	16.02
12	92.00	96.00	986.590	0.07	76	73	0.27	0.27	2	84	80	53	43	104.9	14.98

Final DGM: 987.813

RESULTS	Run Time	Vm	ΔP	Tm	Ts	Max Vac	ΔH	%ISO	BWS	Y _{ga}
	96.0 min	43.445 ft ³	0.19 in. WC	75.3 °F	72.4 °F	4	0.717 in. WC	97.7	0.027	-3.1

Location: Chemours Company - Fayetteville Works Facility, NC				Start Time: 12:50		Source: Polymer Process Aid Inlet			
Date: 9/27/22		Run 3		End Time: 14:38		Project No.: 2022-3359		Parameter: HFPO-DA	

STACK DATA (EST)		EQUIPMENT		STACK DATA (EST)		FILTER NO.		STACK DATA (FINAL)		MOIST. DATA	
Moisture:	2.0 % est.	Meter Box ID:	MB 15	Est. Tm:	75 °F			Pb:	29.94 in. Hg	Vlc (ml)	
Barometric:	30.02 in. Hg	Y:	1.032	Est. Ts:	72 °F			Pg:	-1.30 in. WC	26.2	
Static Press:	-1.43 in. WC	ΔH @ (in.WC):	1.699	Est. ΔP:	0.19 in. WC			O ₂ :	20.9 %	K-FACTOR	
Stack Press:	29.91 in. Hg	Probe ID:	TC-7D	Est. Dn:	0.316 in.			CO ₂ :	0.1 %	3.829	
CO ₂ :	0.1 %	Liner Material:	glass	Target Rate:	0.78 scfm			Check Pt.		Initial	Final
O ₂ :	20.9 %	Pitot ID:	P4-1	LEAK CHECK:	Pre Mid 1 Mid 2 Mid 3 Post			Mid 1 (cf)	--		
N ₂ /CO:	79.0 %	Pitot Cp/Type:	0.840 S-type	Leak Rate (cfm):	0.003 -- -- -- 0.002			Mid 2 (cf)	--		
Md:	28.85 lb/lb-mole	Nozzle ID:	GL-4 glass	Vacuum (in Hg):	10 -- -- -- 9			Mid 3 (cf)	--		
Ms:	28.63 lb/lb-mole	Nozzle Dn (in.):	0.250	Pitot Tube:	Pass -- -- -- Pass			Mid-Point Leak Check Vol (cf):	--		

Sample Pt.	Sample Time (minutes)		Dry Gas Meter Reading (ft ³)	Pitot Tube ΔP (in WC)	Gas Temperatures (°F)		Orifice Press. ΔH (in. WC)		Pump Vac (in. Hg)	Gas Temperatures (°F)				% ISO	Vs (fps)
	Begin	End			DGM Average	Stack	Ideal	Actual		Probe	Filter	Imp Exit	Aux		
					Amb.	Amb.				Amb.	Amb.	Amb.	Amb.		
A-1	0.00	4.00	987.915	0.29	77	74	1.11	1.10	4	77	88	66	43	96.4	30.52
2	4.00	8.00	990.200	0.29	77	74	1.11	1.10	4	88	90	51	40	100.8	30.52
3	8.00	12.00	992.590	0.28	77	74	1.07	1.10	4	90	88	50	40	99.2	29.99
4	12.00	16.00	994.900	0.25	77	74	0.96	0.96	3	90	84	50	40	99.9	28.34
5	16.00	20.00	997.100	0.24	78	75	0.92	0.92	3	87	83	50	40	97.3	27.79
6	20.00	24.00	999.200	0.22	78	75	0.84	0.85	3	85	82	50	42	99.2	26.61
7	24.00	28.00	1001.250	0.16	78	75	0.61	0.62	3	81	80	51	39	97.5	22.69
8	28.00	32.00	1002.970	0.11	78	75	0.42	0.42	2	80	80	51	40	96.3	18.82
9	32.00	36.00	1004.380	0.11	79	75	0.42	0.42	2	80	79	51	40	100.9	18.82
10	36.00	40.00	1005.860	0.08	79	75	0.31	0.31	2	82	79	52	42	99.1	16.05
11	40.00	44.00	1007.100	0.08	79	75	0.31	0.31	2	82	79	54	42	98.3	16.05
12	44.00	48.00	1008.330	0.08	79	75	0.31	0.31	2	80	79	54	42	97.5	16.05
B-1	48.00	52.00	1009.550	0.26	79	76	1.00	1.00	4	81	79	59	43	97.8	28.96
2	52.00	56.00	1011.750	0.26	79	76	1.00	1.00	4	81	79	49	38	97.8	28.96
3	56.00	60.00	1013.950	0.25	79	76	0.96	0.96	4	81	79	46	39	98.4	28.39
4	60.00	64.00	1016.120	0.23	79	76	0.88	0.88	3	80	79	46	43	99.7	27.23
5	64.00	68.00	1018.230	0.22	80	76	0.85	0.85	3	80	79	48	43	100.8	26.64
6	68.00	72.00	1020.320	0.21	80	76	0.81	0.81	3	81	79	50	43	96.3	26.02
7	72.00	76.00	1022.270	0.18	80	76	0.69	0.69	3	82	79	50	43	97.5	24.09
8	76.00	80.00	1024.100	0.16	80	76	0.62	0.62	3	81	79	50	42	101.7	22.71
9	80.00	84.00	1025.900	0.16	80	76	0.62	0.62	2	80	79	48	40	103.4	22.71
10	84.00	88.00	1027.730	0.17	80	76	0.65	0.65	2	79	79	48	41	102.6	23.41
11	88.00	92.00	1029.600	0.15	80	76	0.58	0.58	2	81	79	48	41	101.6	21.99
12	92.00	96.00	1031.340	0.14	80	76	0.54	0.54	2	83	79	48	43	99.6	21.25
Final DGM:			1032.989												

RESULTS	Run Time		Vm	ΔP	Tm	Ts	Max Vac	ΔH	%ISO	BWS	Y _{qa}
	min		ft ³	in. WC	°F	°F		in. WC			
	96.0		45.074	0.19	78.8	75.3	4	0.734	99.5	0.026	-1.2

Appendix C

ANALYTICAL REPORT

Eurofins Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921
Tel: (865)291-3000

Laboratory Job ID: 140-29077-1
Client Project/Site: PPA Carbon Bed Inlet

For:

The Chemours Company FC, LLC
c/o AECOM
Sabre Building, Suite 300
4051 Ogletown Road
Newark, Delaware 19713

Attn: Michael Aucoin



Authorized for release by:
10/27/2022 8:58:46 AM

Courtney Adkins, Project Manager II
(865)291-3019
Courtney.Adkins@et.eurofinsus.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Definitions/Glossary

Client: The Chemours Company FC, LLC
Project/Site: PPA Carbon Bed Inlet

Job ID: 140-29077-1

Qualifiers

LCMS

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: The Chemours Company FC, LLC
Project/Site: PPA Carbon Bed Inlet

Job ID: 140-29077-1

Job ID: 140-29077-1

Laboratory: Eurofins Knoxville

Narrative

Job Narrative 140-29077-1

Receipt

The samples were received on 9/30/2022 11:50 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.5° C.

LCMS

Methods 537 (modified), Dilution: LC/MS/MS Sampling Train Preparation and Analysis: The sampling train components are extracted and analyzed for Per- and Polyfluorinated Alkyl Substances (PFAS) using Eurofins TestAmerica Knoxville standard operating procedures KNOX-OP-0026 and KNOX-LC-0007.

The sampling trains are prepared as four analytical fractions: The particulate filter and front half of the filter holder, nozzle and probe solvent rinses are combined for one analytical fraction. The XAD-2 resin trap and back half of the filter holder, coil condenser and connecting glassware solvent rinses are also combined as a separate analytical fraction. The condensate, impinger contents and their related glassware DI water rinses make up the third analytical fraction. The breakthrough XAD module makes up the fourth analytical fraction.

The filters and XAD components are spiked with isotope dilution internal standards and the components are extracted with methanol/ammonium hydroxide by shaking for at least 18 hours. The extracts are concentrated to 10 mL and analyzed by HPLC/MS/MS. The condensates are spiked with the isotope dilution internal standards and extracted using either Solid-Phase Extraction (SPE) or diluting the water sample for analysis. Each extract at its final volume is 80:20 methanol:water

Sample results were calculated using the following equation:

Result, ng/sample = (on-column concentration, ng/mL) × (nominal final volume of extract (10 mL) / 1 sample) × DF × SF

Where:

DF = Instrument dilution factor

SF = Extraction Split Factor = (final volume of extract in the initial extraction batch / initial volume of extract in the "Split" batch)

For condensate, if less than the entire sample is extracted, the fraction of sample used replaces "1 sample"

Method 537 (modified): The required dilution factor for the following samples were higher than could be achieved by "in vial" dilution, as it would dilute out the Isotope Dilution Analytes (IDA): T-2670, T-2671, T-2673 PPA CB INLET R1 OTM-45 BH (140-29077-2), T-2675, T-2676 PPA CB INLET R2 OTM-45 FH (140-29077-5), T-2677, T-2678, T-2680 PPA CB INLET R2 OTM-45 BH (140-29077-6), T-2682, T-2683 PPA CB INLET R3 OTM-45 FH (140-29077-9), T-2668, T-2669 PPA CB INLET R1 OTM-45 FH (140-29077-1) and T-2684, T-2685, T-2687 PPA CB INLET R3 OTM-45 BH (140-29077-10). As such, the dilution was achieved by taking a subsample of the undiluted extract, adding sufficient solvent, and re-spiking the extract with IDA.

Client Sample Results

Client: The Chemours Company FC, LLC
 Project/Site: PPA Carbon Bed Inlet

Job ID: 140-29077-1

Client Sample ID: T-2668, T-2669 PPA CB INLET R1 OTM-45 FH

Lab Sample ID: 140-29077-1

Date Collected: 09/27/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	934		49.4	46.4	ug/Sample		10/04/22 10:10	10/23/22 14:31	1
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>13C3 HFPO-DA</i>	<i>93</i>		<i>25 - 150</i>				<i>10/04/22 10:10</i>	<i>10/23/22 14:31</i>	<i>1</i>

Client Sample ID: T-2670, T-2671, T-2673 PPA CB INLET R1

Lab Sample ID: 140-29077-2

OTM-45 BH

Matrix: Air

Date Collected: 09/27/22 00:00

Date Received: 09/30/22 11:50

Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	387		200	110	ug/Sample		10/03/22 08:25	10/21/22 15:26	1
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>13C3 HFPO-DA</i>	<i>83</i>		<i>25 - 150</i>				<i>10/03/22 08:25</i>	<i>10/21/22 15:26</i>	<i>1</i>

Client Sample ID: T-2672 PPA CB INLET R1 OTM-45

Lab Sample ID: 140-29077-3

IMPINGERS 1,2,&3 CONDENSATE

Matrix: Air

Date Collected: 09/27/22 00:00

Date Received: 09/30/22 11:50

Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	23.1		0.746	0.299	ug/Sample		10/05/22 11:45	10/22/22 19:26	10
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>13C3 HFPO-DA</i>	<i>89</i>		<i>25 - 150</i>				<i>10/05/22 11:45</i>	<i>10/22/22 19:26</i>	<i>10</i>

Client Sample ID: T-2674 PPA CB INLET R1 OTM-45

Lab Sample ID: 140-29077-4

BREAKTHROUGH XAD-2 RESIN TUBE

Matrix: Air

Date Collected: 09/27/22 00:00

Date Received: 09/30/22 11:50

Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	1.16		0.400	0.220	ug/Sample		10/03/22 08:25	10/21/22 15:36	20
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>13C3 HFPO-DA</i>	<i>79</i>		<i>25 - 150</i>				<i>10/03/22 08:25</i>	<i>10/21/22 15:36</i>	<i>20</i>

Client Sample ID: T-2675, T-2676 PPA CB INLET R2 OTM-45 FH

Lab Sample ID: 140-29077-5

Matrix: Air

Date Collected: 09/27/22 00:00

Date Received: 09/30/22 11:50

Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	909		25.0	23.5	ug/Sample		10/04/22 10:10	10/22/22 05:21	1

Eurofins Knoxville

Client Sample Results

Client: The Chemours Company FC, LLC
 Project/Site: PPA Carbon Bed Inlet

Job ID: 140-29077-1

Client Sample ID: T-2675, T-2676 PPA CB INLET R2 OTM-45 FH
 Date Collected: 09/27/22 00:00
 Date Received: 09/30/22 11:50
 Sample Container: Air Train

Lab Sample ID: 140-29077-5
 Matrix: Air

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	82		25 - 150	10/04/22 10:10	10/22/22 05:21	1

Client Sample ID: T-2677, T-2678, T-2680 PPA CB INLET R2 OTM-45 BH
 Date Collected: 09/27/22 00:00
 Date Received: 09/30/22 11:50
 Sample Container: Air Train

Lab Sample ID: 140-29077-6
 Matrix: Air

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	9320		2000	1100	ug/Sample		10/03/22 08:25	10/21/22 15:45	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	86		25 - 150	10/03/22 08:25	10/21/22 15:45	1

Client Sample ID: T-2679 PPA CB INLET R2 OTM-45 IMPINGERS 1,2,&3 CONDENSATE
 Date Collected: 09/27/22 00:00
 Date Received: 09/30/22 11:50
 Sample Container: Air Train

Lab Sample ID: 140-29077-7
 Matrix: Air

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.0725	0.0290	ug/Sample		10/05/22 11:45	10/22/22 14:35	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	97		25 - 150	10/05/22 11:45	10/22/22 14:35	1

Client Sample ID: T-2681 PPA CB INLET R2 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE
 Date Collected: 09/27/22 00:00
 Date Received: 09/30/22 11:50
 Sample Container: Air Train

Lab Sample ID: 140-29077-8
 Matrix: Air

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	0.0271		0.0200	0.0110	ug/Sample		10/03/22 08:25	10/21/22 15:54	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	78		25 - 150	10/03/22 08:25	10/21/22 15:54	1

Client Sample ID: T-2682, T-2683 PPA CB INLET R3 OTM-45 FH
 Date Collected: 09/27/22 00:00
 Date Received: 09/30/22 11:50
 Sample Container: Air Train

Lab Sample ID: 140-29077-9
 Matrix: Air

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	797		24.6	23.1	ug/Sample		10/04/22 10:10	10/22/22 05:30	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	93		25 - 150	10/04/22 10:10	10/22/22 05:30	1

Eurofins Knoxville

Client Sample Results

Client: The Chemours Company FC, LLC
 Project/Site: PPA Carbon Bed Inlet

Job ID: 140-29077-1

Client Sample ID: T-2684, T-2685, T-2687 PPA CB INLET R3

Lab Sample ID: 140-29077-10

OTM-45 BH

Date Collected: 09/27/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	8600		2000	1100	ug/Sample		10/03/22 08:25	10/21/22 16:24	1
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C3 HFPO-DA	86		25 - 150				10/03/22 08:25	10/21/22 16:24	1

Client Sample ID: T-2686 PPA CB INLET R3 OTM-45

Lab Sample ID: 140-29077-11

IMPINGERS 1,2,&3 CONDENSATE

Date Collected: 09/27/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	0.0314	J	0.0769	0.0308	ug/Sample		10/05/22 11:45	10/22/22 14:43	1
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C3 HFPO-DA	103		25 - 150				10/05/22 11:45	10/22/22 14:43	1

Client Sample ID: T-2688 PPA CB INLET R3 OTM-45

Lab Sample ID: 140-29077-12

BREAKTHROUGH XAD-2 RESIN TUBE

Date Collected: 09/27/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	0.0371		0.0200	0.0110	ug/Sample		10/03/22 08:25	10/21/22 16:32	1
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C3 HFPO-DA	87		25 - 150				10/03/22 08:25	10/21/22 16:32	1

Isotope Dilution Summary

Client: The Chemours Company FC, LLC
 Project/Site: PPA Carbon Bed Inlet

Job ID: 140-29077-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Air

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	HFPODA (25-150)	
140-29077-1	T-2668, T-2669 PPA CB INLET I	93	
140-29077-2	T-2670, T-2671, T-2673 PPA CE INLET R1 OTM-45 BH	83	
140-29077-3	T-2672 PPA CB INLET R1 OTM-45 IMPINGERS 1,2,&3 CONDENSATE	89	
140-29077-4	T-2674 PPA CB INLET R1 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE	79	
140-29077-5	T-2675, T-2676 PPA CB INLET R2 OTM-45 FH	82	
140-29077-6	T-2677, T-2678, T-2680 PPA CE INLET R2 OTM-45 BH	86	
140-29077-7	T-2679 PPA CB INLET R2 OTM-45 IMPINGERS 1,2,&3 CONDENSATE	97	
140-29077-8	T-2681 PPA CB INLET R2 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE	78	
140-29077-9	T-2682, T-2683 PPA CB INLET R3 OTM-45 FH	93	
140-29077-10	T-2684, T-2685, T-2687 PPA CE INLET R3 OTM-45 BH	86	
140-29077-11	T-2686 PPA CB INLET R3 OTM-45 IMPINGERS 1,2,&3 CONDENSATE	103	
140-29077-12	T-2688 PPA CB INLET R3 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE	87	
LCS 140-65913/2-B	Lab Control Sample	87	
LCS 140-65971/2-B	Lab Control Sample	75	
LCS 140-66018/2-A	Lab Control Sample	87	
LCSD 140-65913/3-B	Lab Control Sample Dup	89	
LCSD 140-65971/3-B	Lab Control Sample Dup	76	
LCSD 140-66018/3-A	Lab Control Sample Dup	102	
MB 140-65913/1-B	Method Blank	90	
MB 140-65971/1-B	Method Blank	87	
MB 140-66018/1-A	Method Blank	92	

Surrogate Legend

HFPODA = 13C3 HFPO-DA

QC Sample Results

Client: The Chemours Company FC, LLC
 Project/Site: PPA Carbon Bed Inlet

Job ID: 140-29077-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 140-65913/1-B
Matrix: Air
Analysis Batch: 66559

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 65913

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.0200	0.0110	ug/Sample		10/03/22 08:25	10/21/22 15:00	1
Isotope Dilution	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
¹³ C3 HFPO-DA	90		25 - 150				10/03/22 08:25	10/21/22 15:00	1

Lab Sample ID: LCS 140-65913/2-B
Matrix: Air
Analysis Batch: 66559

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 65913

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
HFPO-DA	0.0200	0.02698		ug/Sample		135	60 - 140
Isotope Dilution	%Recovery	LCS Qualifier	Limits				
¹³ C3 HFPO-DA	87		25 - 150				

Lab Sample ID: LCSD 140-65913/3-B
Matrix: Air
Analysis Batch: 66559

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 65913

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HFPO-DA	0.0200	0.02541		ug/Sample		127	60 - 140	6	30
Isotope Dilution	%Recovery	LCSD Qualifier	Limits						
¹³ C3 HFPO-DA	89		25 - 150						

Lab Sample ID: MB 140-65971/1-B
Matrix: Air
Analysis Batch: 66559

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 65971

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.00500	0.00470	ug/Sample		10/04/22 10:10	10/22/22 04:28	1
Isotope Dilution	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
¹³ C3 HFPO-DA	87		25 - 150				10/04/22 10:10	10/22/22 04:28	1

Lab Sample ID: LCS 140-65971/2-B
Matrix: Air
Analysis Batch: 66559

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 65971

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
HFPO-DA	0.0200	0.02649		ug/Sample		132	60 - 140
Isotope Dilution	%Recovery	LCS Qualifier	Limits				
¹³ C3 HFPO-DA	75		25 - 150				

QC Sample Results

Client: The Chemours Company FC, LLC
 Project/Site: PPA Carbon Bed Inlet

Job ID: 140-29077-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCSD 140-65971/3-B
Matrix: Air
Analysis Batch: 66559

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 65971

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
HFPO-DA	0.0200	0.02626		ug/Sample		131	60 - 140	1	30
		<i>LCSD</i>	<i>LCSD</i>						
Isotope Dilution	%Recovery	Qualifier	Limits						
<i>13C3 HFPO-DA</i>	76		25 - 150						

Lab Sample ID: MB 140-66018/1-A
Matrix: Air
Analysis Batch: 66559

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 66018

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.000500	0.000200	ug/Sample		10/05/22 11:45	10/22/22 00:04	1
		<i>MB</i>	<i>MB</i>						
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
<i>13C3 HFPO-DA</i>	92		25 - 150	10/05/22 11:45	10/22/22 00:04	1			

Lab Sample ID: LCS 140-66018/2-A
Matrix: Air
Analysis Batch: 66559

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 66018

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
HFPO-DA	0.0100	0.01234		ug/Sample		123	60 - 140		
		<i>LCS</i>	<i>LCS</i>						
Isotope Dilution	%Recovery	Qualifier	Limits						
<i>13C3 HFPO-DA</i>	87		25 - 150						

Lab Sample ID: LCSD 140-66018/3-A
Matrix: Air
Analysis Batch: 66559

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 66018

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
HFPO-DA	0.0100	0.01095		ug/Sample		109	60 - 140	12	30
		<i>LCSD</i>	<i>LCSD</i>						
Isotope Dilution	%Recovery	Qualifier	Limits						
<i>13C3 HFPO-DA</i>	102		25 - 150						

QC Association Summary

Client: The Chemours Company FC, LLC
 Project/Site: PPA Carbon Bed Inlet

Job ID: 140-29077-1

LCMS

Prep Batch: 65913

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-29077-2	T-2670, T-2671, T-2673 PPA CB INLET R1 OTM-	Total/NA	Air	None	
140-29077-4	T-2674 PPA CB INLET R1 OTM-45 BREAKTHRC	Total/NA	Air	None	
140-29077-6	T-2677, T-2678, T-2680 PPA CB INLET R2 OTM-	Total/NA	Air	None	
140-29077-8	T-2681 PPA CB INLET R2 OTM-45 BREAKTHRC	Total/NA	Air	None	
140-29077-10	T-2684, T-2685, T-2687 PPA CB INLET R3 OTM-	Total/NA	Air	None	
140-29077-12	T-2688 PPA CB INLET R3 OTM-45 BREAKTHRC	Total/NA	Air	None	
MB 140-65913/1-B	Method Blank	Total/NA	Air	None	
LCS 140-65913/2-B	Lab Control Sample	Total/NA	Air	None	
LCSD 140-65913/3-B	Lab Control Sample Dup	Total/NA	Air	None	

Prep Batch: 65971

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-29077-1	T-2668, T-2669 PPA CB INLET R1 OTM-45 FH	Total/NA	Air	None	
140-29077-5	T-2675, T-2676 PPA CB INLET R2 OTM-45 FH	Total/NA	Air	None	
140-29077-9	T-2682, T-2683 PPA CB INLET R3 OTM-45 FH	Total/NA	Air	None	
MB 140-65971/1-B	Method Blank	Total/NA	Air	None	
LCS 140-65971/2-B	Lab Control Sample	Total/NA	Air	None	
LCSD 140-65971/3-B	Lab Control Sample Dup	Total/NA	Air	None	

Cleanup Batch: 66004

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-29077-2	T-2670, T-2671, T-2673 PPA CB INLET R1 OTM-	Total/NA	Air	Split	65913
140-29077-4	T-2674 PPA CB INLET R1 OTM-45 BREAKTHRC	Total/NA	Air	Split	65913
140-29077-6	T-2677, T-2678, T-2680 PPA CB INLET R2 OTM-	Total/NA	Air	Split	65913
140-29077-8	T-2681 PPA CB INLET R2 OTM-45 BREAKTHRC	Total/NA	Air	Split	65913
140-29077-10	T-2684, T-2685, T-2687 PPA CB INLET R3 OTM-	Total/NA	Air	Split	65913
140-29077-12	T-2688 PPA CB INLET R3 OTM-45 BREAKTHRC	Total/NA	Air	Split	65913
MB 140-65913/1-B	Method Blank	Total/NA	Air	Split	65913
LCS 140-65913/2-B	Lab Control Sample	Total/NA	Air	Split	65913
LCSD 140-65913/3-B	Lab Control Sample Dup	Total/NA	Air	Split	65913

Prep Batch: 66018

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-29077-3	T-2672 PPA CB INLET R1 OTM-45 IMPINGERS	Total/NA	Air	PFAS Prep	
140-29077-7	T-2679 PPA CB INLET R2 OTM-45 IMPINGERS	Total/NA	Air	PFAS Prep	
140-29077-11	T-2686 PPA CB INLET R3 OTM-45 IMPINGERS	Total/NA	Air	PFAS Prep	
MB 140-66018/1-A	Method Blank	Total/NA	Air	PFAS Prep	
LCS 140-66018/2-A	Lab Control Sample	Total/NA	Air	PFAS Prep	
LCSD 140-66018/3-A	Lab Control Sample Dup	Total/NA	Air	PFAS Prep	

Cleanup Batch: 66029

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-29077-1	T-2668, T-2669 PPA CB INLET R1 OTM-45 FH	Total/NA	Air	Split	65971
140-29077-5	T-2675, T-2676 PPA CB INLET R2 OTM-45 FH	Total/NA	Air	Split	65971
140-29077-9	T-2682, T-2683 PPA CB INLET R3 OTM-45 FH	Total/NA	Air	Split	65971
MB 140-65971/1-B	Method Blank	Total/NA	Air	Split	65971
LCS 140-65971/2-B	Lab Control Sample	Total/NA	Air	Split	65971
LCSD 140-65971/3-B	Lab Control Sample Dup	Total/NA	Air	Split	65971

Eurofins Knoxville

QC Association Summary

Client: The Chemours Company FC, LLC
 Project/Site: PPA Carbon Bed Inlet

Job ID: 140-29077-1

LCMS

Analysis Batch: 66559

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-29077-2	T-2670, T-2671, T-2673 PPA CB INLET R1 OTM-	Total/NA	Air	537 (modified)	66569
140-29077-4	T-2674 PPA CB INLET R1 OTM-45 BREAKTHRC	Total/NA	Air	537 (modified)	66004
140-29077-5	T-2675, T-2676 PPA CB INLET R2 OTM-45 FH	Total/NA	Air	537 (modified)	66569
140-29077-6	T-2677, T-2678, T-2680 PPA CB INLET R2 OTM-	Total/NA	Air	537 (modified)	66569
140-29077-8	T-2681 PPA CB INLET R2 OTM-45 BREAKTHRC	Total/NA	Air	537 (modified)	66004
140-29077-9	T-2682, T-2683 PPA CB INLET R3 OTM-45 FH	Total/NA	Air	537 (modified)	66569
140-29077-10	T-2684, T-2685, T-2687 PPA CB INLET R3 OTM-	Total/NA	Air	537 (modified)	66569
140-29077-12	T-2688 PPA CB INLET R3 OTM-45 BREAKTHRC	Total/NA	Air	537 (modified)	66004
MB 140-65913/1-B	Method Blank	Total/NA	Air	537 (modified)	66004
MB 140-65971/1-B	Method Blank	Total/NA	Air	537 (modified)	66029
MB 140-66018/1-A	Method Blank	Total/NA	Air	537 (modified)	66018
LCS 140-65913/2-B	Lab Control Sample	Total/NA	Air	537 (modified)	66004
LCS 140-65971/2-B	Lab Control Sample	Total/NA	Air	537 (modified)	66029
LCS 140-66018/2-A	Lab Control Sample	Total/NA	Air	537 (modified)	66018
LCSD 140-65913/3-B	Lab Control Sample Dup	Total/NA	Air	537 (modified)	66004
LCSD 140-65971/3-B	Lab Control Sample Dup	Total/NA	Air	537 (modified)	66029
LCSD 140-66018/3-A	Lab Control Sample Dup	Total/NA	Air	537 (modified)	66018

Cleanup Batch: 66569

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-29077-1	T-2668, T-2669 PPA CB INLET R1 OTM-45 FH	Total/NA	Air	Dilution	66029
140-29077-2	T-2670, T-2671, T-2673 PPA CB INLET R1 OTM-	Total/NA	Air	Dilution	66004
140-29077-5	T-2675, T-2676 PPA CB INLET R2 OTM-45 FH	Total/NA	Air	Dilution	66029
140-29077-6	T-2677, T-2678, T-2680 PPA CB INLET R2 OTM-	Total/NA	Air	Dilution	66004
140-29077-9	T-2682, T-2683 PPA CB INLET R3 OTM-45 FH	Total/NA	Air	Dilution	66029
140-29077-10	T-2684, T-2685, T-2687 PPA CB INLET R3 OTM-	Total/NA	Air	Dilution	66004

Analysis Batch: 66593

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-29077-3	T-2672 PPA CB INLET R1 OTM-45 IMPINGERS	Total/NA	Air	537 (modified)	66018
140-29077-7	T-2679 PPA CB INLET R2 OTM-45 IMPINGERS	Total/NA	Air	537 (modified)	66018
140-29077-11	T-2686 PPA CB INLET R3 OTM-45 IMPINGERS	Total/NA	Air	537 (modified)	66018

Analysis Batch: 66608

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-29077-1	T-2668, T-2669 PPA CB INLET R1 OTM-45 FH	Total/NA	Air	537 (modified)	66569

Lab Chronicle

Client: The Chemours Company FC, LLC
 Project/Site: PPA Carbon Bed Inlet

Job ID: 140-29077-1

Client Sample ID: T-2668, T-2669 PPA CB INLET R1 OTM-45 FH

Lab Sample ID: 140-29077-1

Date Collected: 09/27/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	83 mL	65971	10/04/22 10:10	ACW	EET KNX
Total/NA	Cleanup	Split			42 mL	10 mL	66029	10/05/22 13:37	CAC	EET KNX
Total/NA	Cleanup	Dilution			1 uL	10000 uL	66569	10/21/22 11:00	JRC	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	66608	10/23/22 14:31	CAC	EET KNX
Instrument ID: LCA										

Client Sample ID: T-2670, T-2671, T-2673 PPA CB INLET R1

Lab Sample ID: 140-29077-2

OTM-45 BH

Date Collected: 09/27/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	360 mL	65913	10/03/22 08:25	ACW	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	66004	10/05/22 08:22	ACW	EET KNX
Total/NA	Cleanup	Dilution			1 uL	10000 uL	66569	10/21/22 11:00	JRC	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	66559	10/21/22 15:26	CAC	EET KNX
Instrument ID: LCA										

Client Sample ID: T-2672 PPA CB INLET R1 OTM-45

Lab Sample ID: 140-29077-3

IMPINGERS 1,2,&3 CONDENSATE

Date Collected: 09/27/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PFAS Prep			0.0067 Sample	10 mL	66018	10/05/22 11:45	ACW	EET KNX
Total/NA	Analysis	537 (modified)		10	1 mL	1 mL	66593	10/22/22 19:26	CAC	EET KNX
Instrument ID: LCA										

Client Sample ID: T-2674 PPA CB INLET R1 OTM-45

Lab Sample ID: 140-29077-4

BREAKTHROUGH XAD-2 RESIN TUBE

Date Collected: 09/27/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	360 mL	65913	10/03/22 08:25	ACW	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	66004	10/05/22 08:22	ACW	EET KNX
Total/NA	Analysis	537 (modified)		20	1 mL	1 mL	66559	10/21/22 15:36	CAC	EET KNX
Instrument ID: LCA										

Lab Chronicle

Client: The Chemours Company FC, LLC
 Project/Site: PPA Carbon Bed Inlet

Job ID: 140-29077-1

Client Sample ID: T-2675, T-2676 PPA CB INLET R2 OTM-45 FH

Lab Sample ID: 140-29077-5

Date Collected: 09/27/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	56 mL	65971	10/04/22 10:10	ACW	EET KNX
Total/NA	Cleanup	Split			28 mL	10 mL	66029	10/05/22 13:37	CAC	EET KNX
Total/NA	Cleanup	Dilution			2 uL	10000 uL	66569	10/21/22 11:00	JRC	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	66559	10/22/22 05:21	CAC	EET KNX
Instrument ID: LCA										

Client Sample ID: T-2677, T-2678, T-2680 PPA CB INLET R2

Lab Sample ID: 140-29077-6

OTM-45 BH

Date Collected: 09/27/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	360 mL	65913	10/03/22 08:25	ACW	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	66004	10/05/22 08:22	ACW	EET KNX
Total/NA	Cleanup	Dilution			0.1 uL	10000 uL	66569	10/21/22 11:00	JRC	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	66559	10/21/22 15:45	CAC	EET KNX
Instrument ID: LCA										

Client Sample ID: T-2679 PPA CB INLET R2 OTM-45

Lab Sample ID: 140-29077-7

IMPINGERS 1,2,&3 CONDENSATE

Date Collected: 09/27/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PFAS Prep			0.0069 Sample	10 mL	66018	10/05/22 11:45	ACW	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	66593	10/22/22 14:35	CAC	EET KNX
Instrument ID: LCA										

Client Sample ID: T-2681 PPA CB INLET R2 OTM-45

Lab Sample ID: 140-29077-8

BREAKTHROUGH XAD-2 RESIN TUBE

Date Collected: 09/27/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	360 mL	65913	10/03/22 08:25	ACW	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	66004	10/05/22 08:22	ACW	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	66559	10/21/22 15:54	CAC	EET KNX
Instrument ID: LCA										

Lab Chronicle

Client: The Chemours Company FC, LLC
 Project/Site: PPA Carbon Bed Inlet

Job ID: 140-29077-1

Client Sample ID: T-2682, T-2683 PPA CB INLET R3 OTM-45 FH

Lab Sample ID: 140-29077-9

Date Collected: 09/27/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	61 mL	65971	10/04/22 10:10	ACW	EET KNX
Total/NA	Cleanup	Split			31 mL	10 mL	66029	10/05/22 13:37	CAC	EET KNX
Total/NA	Cleanup	Dilution			2 uL	10000 uL	66569	10/21/22 11:00	JRC	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	66559	10/22/22 05:30	CAC	EET KNX
Instrument ID: LCA										

Client Sample ID: T-2684, T-2685, T-2687 PPA CB INLET R3

Lab Sample ID: 140-29077-10

OTM-45 BH

Date Collected: 09/27/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	360 mL	65913	10/03/22 08:25	ACW	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	66004	10/05/22 08:22	ACW	EET KNX
Total/NA	Cleanup	Dilution			0.1 uL	10000 uL	66569	10/21/22 11:00	JRC	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	66559	10/21/22 16:24	CAC	EET KNX
Instrument ID: LCA										

Client Sample ID: T-2686 PPA CB INLET R3 OTM-45

Lab Sample ID: 140-29077-11

IMPINGERS 1,2,&3 CONDENSATE

Date Collected: 09/27/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PFAS Prep			0.0065 Sample	10 mL	66018	10/05/22 11:45	ACW	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	66593	10/22/22 14:43	CAC	EET KNX
Instrument ID: LCA										

Client Sample ID: T-2688 PPA CB INLET R3 OTM-45

Lab Sample ID: 140-29077-12

BREAKTHROUGH XAD-2 RESIN TUBE

Date Collected: 09/27/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	360 mL	65913	10/03/22 08:25	ACW	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	66004	10/05/22 08:22	ACW	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	66559	10/21/22 16:32	CAC	EET KNX
Instrument ID: LCA										

Laboratory References:

EET KNX = Eurofins Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000

Accreditation/Certification Summary

Client: The Chemours Company FC, LLC
 Project/Site: PPA Carbon Bed Inlet

Job ID: 140-29077-1

Laboratory: Eurofins Knoxville

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
	AFCEE	N/A	
ANAB	Dept. of Defense ELAP	L2311	02-13-25
ANAB	Dept. of Energy	L2311.01	02-13-25
ANAB	ISO/IEC 17025	L2311	02-13-25
Arkansas DEQ	State	88-0688	06-16-23
California	State	2423	06-30-22 *
Colorado	State	TN00009	02-28-23
Connecticut	State	PH-0223	09-30-23
Florida	NELAP	E87177	06-30-23
Georgia (DW)	State	906	12-11-22
Hawaii	State	NA	12-11-22
Kansas	NELAP	E-10349	10-31-22
Kentucky (DW)	State	90101	12-31-22
Louisiana	NELAP	83979	06-30-23
Louisiana (All)	NELAP	83979	06-30-23
Louisiana (DW)	State	LA019	12-31-22
Maryland	State	277	03-31-23
Michigan	State	9933	12-11-22
Nevada	State	TN00009	07-31-23
New Hampshire	NELAP	299919	01-17-23
New Jersey	NELAP	TN001	06-30-23
New York	NELAP	10781	03-31-23
North Carolina (DW)	State	21705	07-31-23
North Carolina (WW/SW)	State	64	12-31-22
Ohio VAP	State	CL0059	06-02-23
Oklahoma	State	9415	08-31-23
Oregon	NELAP	TNI0189	12-31-22
Pennsylvania	NELAP	68-00576	12-31-22
Tennessee	State	02014	07-27-25
Texas	NELAP	T104704380-22-17	08-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-19-00236	12-31-22
Utah	NELAP	TN00009	07-31-23
Virginia	NELAP	460176	09-14-23
Washington	State	C593	01-19-23
West Virginia (DW)	State	9955C	12-31-22
West Virginia DEP	State	345	04-30-23
Wisconsin	State	998044300	08-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: The Chemours Company FC, LLC
Project/Site: PPA Carbon Bed Inlet

Job ID: 140-29077-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	EET KNX
Dilution	Dilution and Re-fortification of Standards	None	EET KNX
None	Leaching Procedure	TAL SOP	EET KNX
None	Leaching Procedure for Filter	TAL SOP	EET KNX
PFAS Prep	Preparation, Direct Inject PFAS	TAL-SAC	EET KNX
Split	Source Air Split	None	EET KNX

Protocol References:

EPA = US Environmental Protection Agency

None = None

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

TAL-SAC = Eurofins Sacramento, Facility Standard Operating Procedure.

Laboratory References:

EET KNX = Eurofins Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000



Sample Summary

Client: The Chemours Company FC, LLC
 Project/Site: PPA Carbon Bed Inlet

Job ID: 140-29077-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
140-29077-1	T-2668, T-2669 PPA CB INLET R1 OTM-45 FH	Air	09/27/22 00:00	09/30/22 11:50
140-29077-2	T-2670, T-2671, T-2673 PPA CB INLET R1 OTM-45 BH	Air	09/27/22 00:00	09/30/22 11:50
140-29077-3	T-2672 PPA CB INLET R1 OTM-45 IMPINGERS 1,2,&3 CONDENSATE	Air	09/27/22 00:00	09/30/22 11:50
140-29077-4	T-2674 PPA CB INLET R1 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE	Air	09/27/22 00:00	09/30/22 11:50
140-29077-5	T-2675, T-2676 PPA CB INLET R2 OTM-45 FH	Air	09/27/22 00:00	09/30/22 11:50
140-29077-6	T-2677, T-2678, T-2680 PPA CB INLET R2 OTM-45 BH	Air	09/27/22 00:00	09/30/22 11:50
140-29077-7	T-2679 PPA CB INLET R2 OTM-45 IMPINGERS 1,2,&3 CONDENSATE	Air	09/27/22 00:00	09/30/22 11:50
140-29077-8	T-2681 PPA CB INLET R2 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE	Air	09/27/22 00:00	09/30/22 11:50
140-29077-9	T-2682, T-2683 PPA CB INLET R3 OTM-45 FH	Air	09/27/22 00:00	09/30/22 11:50
140-29077-10	T-2684, T-2685, T-2687 PPA CB INLET R3 OTM-45 BH	Air	09/27/22 00:00	09/30/22 11:50
140-29077-11	T-2686 PPA CB INLET R3 OTM-45 IMPINGERS 1,2,&3 CONDENSATE	Air	09/27/22 00:00	09/30/22 11:50
140-29077-12	T-2688 PPA CB INLET R3 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE	Air	09/27/22 00:00	09/30/22 11:50

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Project Identification:		Chemours Emissions Test	
Client Name:	The Chemours Company FC, LLC		
Client Contact:	Christel Compton Office: (910) 678-1213 Cell: (910) 975-3386		
TestAmerica Project Manager:	Courtney Adkins Office: (865) 291-3019		
TestAmerica Program Manager:	Billy Anderson Office: (865) 291-3080 Cell: (865) 206-9004		

Laboratory Deliverable Turnaround Requirements:	
Analytical Due Date: (Review-Released Data)	21 Days from Lab Receipt
Data Package Due Date:	28 Days from Lab Receipt
Laboratory Destination:	
Eurofins TestAmerica 5815 Middlebrook Pike Knoxville, TN 37921	
Lab Phone Number:	865.291.3000
Courier:	Hand Deliver

Analytical Testing QC Requirements:
 The Legend for Project-Specific Quality Control Testing is designated in the "QC" column as follows: "BT" = Blank Train, "RB" = Reagent Blank, "MS" = Matrix Spike, "MSD" = Matrix Spike Duplicate, "DUP" = Duplicate, "PB" = Proof Blank, "TB" = Trip Blank

Project Deliverables:
 Report analytical results on TALS Report form Std_Tal_L4. Include "Field Sample Number", "Sample Type", and "Run Number" on all TALS Reports.

Analytical Parameter:	Holding Time Requirements:	Preservation Requirements:
HFPO-DA (CAS No. 13252-13-6) & PFOA (CAS No. 335-67-1)	14 Days to Extraction; 40 Days to Analysis	Cool, 4°C

Field Sample No./Sample Coding ID	Run No.	Sample Collection Date	Project QC Requirements	Sample Bottle/ Container	Sample Type/Analysis	Analytical Specifications
T-2668 PPA CB INLET R1 OTM-45 Filter (Combine with T-2669)	1	9/27/22		250 mL HDPE Wide-Mouth Bottle	Particulate Filter (82.6 mm Whatman Glass Microfiber) OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level. Use the Front-Half Probe Rinse to assist the solvent extraction of the Filter sample. Analyze for HFPO-DA and PFOA.
T-2669 PPA CB INLET R1 OTM-45 FH of Filter Holder & Probe MeOH Rinse (Combine with T-2668)	1	9/27/22		250 mL HDPE Wide-Mouth Bottle	Front Half of Filter Holder & Probe Methanol/5% Ammonium Hydroxide Rinse OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Use this solvent sample in the Filter extraction.



140-29077 Chain of Custody

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Field Sample No./Sample Coding ID	Run No.	Sample Collection Date	Project QC Requirements	Sample Bottle/ Container	Sample Type/Analysis	Analytical Specifications
T-2670 PPA CB INLET R1 OTM-45 XAD-2 Resin Tube	1	9/27/22		XAD-2 Resin Tube	XAD-2 Resin Tube OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level. Use the Back-Half Glassware Rinse and the Impinger Glassware Methanol Rinse to assist the solvent extraction of the XAD-2 resin sample. Analyze for HFPO-DA and PFOA.
T-2671 PPA CB INLET R1 OTM-45 BH of Filter Holder & Coil Condenser MeOH Rinse (Combine with T-2670)	1	9/27/22		250 mL HDPE Wide-Mouth Bottle	Back Half of Filter Holder & Coil Condenser Methanol/5% Ammonium Hydroxide Rinse OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Use this solvent sample and the Impinger Glassware Methanol Rinse in the XAD-2 Resin extraction. Analyze for HFPO-DA and PFOA.
T-2672 PPA CB INLET R1 OTM-45 Impingers 1,2 & 3 Condensate	1	9/27/22		1 Liter HDPE Wide-Mouth Bottle	Impinger #1, #2 & #3 Condensate OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Analyze for HFPO-DA and PFOA.
T-2673 PPA CB INLET R1 OTM-45 Impinger Glassware MeOH Rinse (Combine with T-2670)	1	9/27/22		250 mL HDPE Wide-Mouth Bottle	Impinger Glassware Methanol/5% Ammonium Hydroxide Rinse OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Use this solvent sample in the XAD-2 Resin Extraction.
T-2674 PPA CB INLET R1 OTM-45 Breakthrough XAD-2 Resin Tube	1	9/27/22		XAD-2 Resin Tube	Breakthrough XAD-2 Resin Tube OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level and perform the regular XAD-2 Resin Extraction. Analyze for HFPO-DA and PFOA.

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Field Sample No./Sample Coding ID	Run No.	Sample Collection Date	Project QC Requirements	Sample Bottle/ Container	Sample Type/Analysis	Analytical Specifications
T-2675 PPA CB INLET R2 OTM-45 Filter (Combine with T-2676)	2	9/21/22		250 mL HDPE Wide-Mouth Bottle	Particulate Filter (82.6 mm Whatman Glass Microfiber) OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level. Use the Front-Half Probe Rinse to assist the solvent extraction of the Filter sample. Analyze for HFPO-DA and PFOA.
T-2676 PPA CB INLET R2 OTM-45 FH of Filter Holder & Probe MeOH Rinse (Combine with T-2675)	2	9/21/22		250 mL HDPE Wide-Mouth Bottle	Front Half of Filter Holder & Probe Methanol/5% Ammonium Hydroxide Rinse OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Use this solvent sample in the Filter extraction.
T-2677 PPA CB INLET R2 OTM-45 XAD-2 Resin Tube	2	9/21/22		XAD-2 Resin Tube	XAD-2 Resin Tube OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level. Use the Back-Half Glassware Rinse and the Impinger Glassware Methanol Rinse to assist the solvent extraction of the XAD-2 resin sample. Analyze for HFPO-DA and PFOA.
T-2678 PPA CB INLET R2 OTM-45 BH of Filter Holder & Coil Condenser MeOH Rinse (Combine with T-2677)	2	9/21/22		250 mL HDPE Wide-Mouth Bottle	Back Half of Filter Holder & Coil Condenser Methanol/5% Ammonium Hydroxide Rinse OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Use this solvent sample and the Impinger Glassware Methanol Rinse in the XAD-2 Resin extraction. Analyze for HFPO-DA and PFOA.
T-2679 PPA CB INLET R2 OTM-45 Impingers 1,2 & 3 Condensate	2	9/21/22		1 Liter HDPE Wide-Mouth Bottle	Impinger #1, #2 & #3 Condensate OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Analyze for HFPO-DA and PFOA.

Field Sample No./Sample Coding ID	Run No.	Sample Collection Date	Project QC Requirements	Sample Bottle/ Container	Sample Type/Analysis	Analytical Specifications
T-2680 PPA CB INLET R2 OTM-45 Impinger Glassware MeOH Rinse (Combine with T-2677)	2	9/27/22		250 mL HDPE Wide-Mouth Bottle	Impinger Glassware Methanol/5% Ammonium Hydroxide Rinse OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Use this solvent sample in the XAD-2 Resin Extraction.
T-2681 PPA CB INLET R2 OTM-45 Breakthrough XAD-2 Resin Tube	2	9/27/22		XAD-2 Resin Tube	Breakthrough XAD-2 Resin Tube OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level and perform the regular XAD-2 Resin Extraction. Analyze for HFPO-DA and PFOA.
T-2682 PPA CB INLET R3 OTM-45 Filter (Combine with T-2683)	3	9/27/22		250 mL HDPE Wide-Mouth Bottle	Particulate Filter (82.6 mm Whatman Glass Microfiber) OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level. Use the Front-Half Probe Rinse to assist the solvent extraction of the Filter sample. Analyze for HFPO-DA and PFOA.
T-2683 PPA CB INLET R3 OTM-45 FH of Filter Holder & Probe MeOH Rinse (Combine with T-2682)	3	9/27/22		250 mL HDPE Wide-Mouth Bottle	Front Half of Filter Holder & Probe Methanol/5% Ammonium Hydroxide Rinse OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Use this solvent sample in the Filter extraction.
T-2684 PPA CB INLET R3 OTM-45 XAD-2 Resin Tube	3	9/27/22		XAD-2 Resin Tube	XAD-2 Resin Tube OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level. Use the Back-Half Glassware Rinse and the Impinger Glassware Methanol Rinse to assist the solvent extraction of the XAD-2 resin sample. Analyze for HFPO-DA and PFOA.

Field Sample No./Sample Coding ID	Run No.	Sample Collection Date	Project QC Requirements	Sample Bottle/ Container	Sample Type/Analysis	Analytical Specifications
T-2685 PPA CB INLET R3 OTM-45 BH of Filter Holder & Coil Condenser MeOH Rinse (Combine with T-2685)	3	9/27/22		250 mL HDPE Wide-Mouth Bottle	Back Half of Filter Holder & Coil Condenser Methanol/5% Ammonium Hydroxide Rinse OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Use this solvent sample and the Impinger Glassware Methanol Rinse in the XAD-2 Resin extraction. Analyze for HFPO-DA and PFOA.
T-2686 PPA CB INLET R3 OTM-45 Impingers 1,2 & 3 Condensate	3	9/27/22		1 Liter HDPE Wide-Mouth Bottle	Impinger #1, #2 & #3 Condensate OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Analyze for HFPO-DA and PFOA.
T-2687 PPA CB INLET R3 OTM-45 Impinger Glassware MeOH Rinse (Combine with T-2685)	3	9/27/22		250 mL HDPE Wide-Mouth Bottle	Impinger Glassware Methanol/5% Ammonium Hydroxide Rinse OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Use this solvent sample in the XAD-2 Resin Extraction.
T-2688 PPA CB INLET R3 OTM-45 Breakthrough XAD-2 Resin Tube	3	9/27/22		XAD-2 Resin Tube	Breakthrough XAD-2 Resin Tube OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level and perform the regular XAD-2 Resin Extraction. Analyze for HFPO-DA and PFOA.

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Sample Receipt Log and Condition of the Samples Upon Receipt:

Please fill in the following information:

Comments

(Please write "NONE" if no comment applicable)

(1) Record the identities of any samples that were listed on the RFA but were not found in the sample shipment.

NONE

(2) Record the sample shipping cooler temperature of all coolers transporting samples listed on this RFA:

Rec @ 1.4^{RT} 1.5^{CT} °C

(3) Record any apparent sample loss/breakage.

NONE

(4) Record any unidentified samples transported with this shipment of samples:

NONE

(5) Indicate if all samples were received according to the project's required specifications (i.e. no nonconformances):

NONE

Custody Transfer:

Relinquished By:	<u>Patricia May</u> Name	<u>Alliance</u> Company	<u>9/29/22 1730</u> Date/Time
Accepted By:	<u>Doug Giff</u> Name	<u>ETA KNOX</u> Company	<u>9/29/22 1730</u> Date/Time
Relinquished By:	<u>Doug Giff</u> Name	<u>ETA KNOX</u> Company	<u>9/30/22 1150</u> Date/Time
Accepted By:	<u>R. D. D.</u> Name	<u>ETA KNOX</u> Company	<u>09.30.22 1150</u> Date/Time
Relinquished By:	_____ Name	_____ Company	_____ Date/Time
Accepted By:	_____ Name	_____ Company	_____ Date/Time
Relinquished By:	_____ Name	_____ Company	_____ Date/Time
Accepted By:	_____ Name	_____ Company	_____ Date/Time

EUROFINS/TESTAMERICA KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST

Review Items	Yes	No	NA	If No, what was the problem?	Comments/Actions Taken
1. Are the shipping containers intact?	✓			<input type="checkbox"/> Containers, Broken	
2. Were ambient air containers received intact?			✓	<input type="checkbox"/> Checked in lab	
3. The coolers/containers custody seal if present, is it intact?			✓	<input type="checkbox"/> Yes <input type="checkbox"/> NA	
4. Is the cooler temperature within limits? (> freezing temp. of water to 6 °C, VOST: 10°C) Thermometer ID : <u>56-13</u> Correction factor: <u>40.1°C</u>	✓			<input type="checkbox"/> Cooler Out of Temp, Client Contacted, Proceed/Cancel <input type="checkbox"/> Cooler Out of Temp, Same Day Receipt	
5. Were all of the sample containers received intact?	✓			<input type="checkbox"/> Containers, Broken	
6. Were samples received in appropriate containers?	✓			<input type="checkbox"/> Containers, Improper; Client Contacted; Proceed/Cancel	
7. Do sample container labels match COC? (IDs, Dates, Times)	✓			<input type="checkbox"/> COC & Samples Do Not Match <input type="checkbox"/> COC Incorrect/Incomplete <input type="checkbox"/> COC Not Received	
8. Were all of the samples listed on the COC received?	✓			<input type="checkbox"/> Sample Received, Not on COC <input type="checkbox"/> Sample on COC, Not Received	
9. Is the date/time of sample collection noted?	✓			<input type="checkbox"/> COC; No Date/Time; Client Contacted	
10. Was the sampler identified on the COC?			✓	<input type="checkbox"/> Sampler Not Listed on COC	
11. Is the client and project name/# identified?	✓			<input type="checkbox"/> COC Incorrect/Incomplete	
12. Are tests/parameters listed for each sample?	✓			<input type="checkbox"/> COC No tests on COC	
13. Is the matrix of the samples noted?	✓			<input type="checkbox"/> COC Incorrect/Incomplete	
14. Was COC relinquished? (Signed/Dated/Timed)	✓			<input type="checkbox"/> COC Incorrect/Incomplete	
15. Were samples received within holding time?	✓			<input type="checkbox"/> Holding Time - Receipt	
16. Were samples received with correct chemical preservative (excluding Encore)?			✓	<input type="checkbox"/> pH Adjusted, pH Included (See box 16A) <input type="checkbox"/> Incorrect Preservative	
17. Were VOA samples received without headspace?			✓	<input type="checkbox"/> Headspace (VOA only)	
18. Did you check for residual chlorine, if necessary? (e.g. 1613B, 1668) Chlorine test strip lot number:			✓	<input type="checkbox"/> Residual Chlorine	
19. For 1613B water samples is pH<9?			✓	<input type="checkbox"/> If no, notify lab to adjust	
20. For rad samples was sample activity info. Provided?			✓	<input type="checkbox"/> Project missing info	
Project #: <u>14004326</u> PM Instructions:					
Sample Receiving Associate: <u>[Signature]</u> Date: <u>09.30.17</u>					

Labeling Verified by: _____ Date: _____
pH test strip lot number: _____
Box 16A: pH Preservation
Box 18A: Residual Chlorine
Preservative: _____
Lot Number: _____
Exp Date: _____
Analyst: _____
Date: _____
Time: _____



PFAS BATCH WORKSHEET

Lab Name: Eurofins Knoxville Job No.: 140-29077-1
 SDG No.: _____
 Batch Number: 65913 Batch Start Date: 10/03/22 08:25 Batch Analyst: Wright, Aurielle C
 Batch Method: None Batch End Date: 10/05/22 08:17

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	63xxMFPC_IDA 00051	63xxPF3LSP 00010
MB 140-65913/1		None, Split, 537 (modified)		1 Sample	360 mL	0.5 mL	
LCS 140-65913/2		None, Split, 537 (modified)		1 Sample	360 mL	0.5 mL	1 mL
LCSD 140-65913/3		None, Split, 537 (modified)		1 Sample	360 mL	0.5 mL	1 mL
140-29077-A-4	T-2674 PPA CB INLET R1 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE	None, Split, 537 (modified)	T	1 Sample	360 mL	0.5 mL	
140-29077-A-8	T-2681 PPA CB INLET R2 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE	None, Split, 537 (modified)	T	1 Sample	360 mL	0.5 mL	
140-29077-A-12	T-2688 PPA CB INLET R3 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE	None, Split, 537 (modified)	T	1 Sample	360 mL	0.5 mL	

Batch Notes	
H2O/ 5% NH4OH ID	5%NH4OH/MeOH: 518496
Extraction 1 Start Time	10/03/2022 12:35
Extraction 1 End Time	10/04/2022 08:30
Extraction 2 Start Time	10/04/2022 10:05
Extraction 2 End Time	10/05/2022 08:15
Analyst ID - Extraction	acw
Analyst ID - Spike Analyst	cac
Analyst ID - Spike Witness Analyst	acw
PVDF Filter ID	520581
XAD ID	494989
Hot Block ID	pfas1 & 2
Oven, Bath or Block Temperature 1	60 Degrees C

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

PFAS BATCH WORKSHEET

Lab Name: Eurofins Knoxville Job No.: 140-29077-1
 SDG No.:
 Batch Number: 65913 Batch Start Date: 10/03/22 08:25 Batch Analyst: Wright, Aurielle C
 Batch Method: None Batch End Date: 10/05/22 08:17

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

PFAS BATCH WORKSHEET

Lab Name: Eurofins Knoxville Job No.: 140-29077-1 Batch Start Date: 10/03/22 08:25 Batch Analyst: Wright, Aurielle C
 SDG No.: _____ Batch Number: 65913 Batch End Date: 10/05/22 08:17
 Batch Method: None

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	63xxMPFC_IDA 00051
140-29077-A-2	T-2670, T-2671, T-2673 PPA CB INLET R1 OTM-45 BH	None, Split, Dilution, 537 (modified)	T	1 Sample	360 mL	0.5 mL
140-29077-A-6	T-2677, T-2678, T-2680 PPA CB INLET R2 OTM-45 BH	None, Split, Dilution, 537 (modified)	T	1 Sample	360 mL	0.5 mL
140-29077-A-10	T-2684, T-2685, T-2687 PPA CB INLET R3 OTM-45 BH	None, Split, Dilution, 537 (modified)	T	1 Sample	360 mL	0.5 mL

Batch Notes	
H2O/ 5% NH4OH ID	5%NH4OH/MeOH: 518496
Extraction 1 Start Time	10/03/2022 12:35
Extraction 1 End Time	10/04/2022 08:30
Extraction 2 Start Time	10/04/2022 10:05
Extraction 2 End Time	10/05/2022 08:15
Analyst ID - Extraction	acw
Analyst ID - Spike Analyst	cac
Analyst ID - Spike Witness Analyst	acw
PVDF Filter ID	520581
XAD ID	494989
Hot Block ID	pfas1 & 2
Oven, Bath or Block Temperature 1	60 Degrees C

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

PFAS BATCH WORKSHEET

Lab Name: Eurofins Knoxville Job No.: 140-29077-1
 SDG No.: _____
 Batch Number: 65971 Batch Start Date: 10/04/22 10:10 Batch Analyst: Wright, Aurielle C
 Batch Method: None Batch End Date: 10/05/22 13:35

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	CalcMsg	63xxMPFC_IDA 00051	63xxPFC3LSP 00010
MB 140-65971/1		None, Split, 537 (modified)		1 Sample	50 mL	CALC NOT SET TO RUN	0.5 mL	
LCS 140-65971/2		None, Split, 537 (modified)		1 Sample	50 mL	CALC NOT SET TO RUN	0.5 mL	1 mL
LCSD 140-65971/3		None, Split, 537 (modified)		1 Sample	50 mL	CALC NOT SET TO RUN	0.5 mL	1 mL

Batch Notes	
H2O/ 5% NH4OH ID	5%NH4OH/MeOH:521647
Extraction Start Date	10/04/2022
Extraction Start time	14:00
Extraction End Date	10/05/2022
Extraction End time	10:20
Analyst ID - Extraction	acw
Analyst ID - Spike Analyst	cac
Analyst ID - Spike Witness Analyst	acw
Filter ID	511522
Hot Block ID	PFAS 1/2
Oven, Bath or Block Temperature 1	60 Degrees C

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

PFAS BATCH WORKSHEET

Lab Name: Eurofins Knoxville Job No.: 140-29077-1 Batch Start Date: 10/04/22 10:10 Batch Analyst: Wright, Aurielle C
 SDG No.: _____ Batch End Date: 10/05/22 13:35
 Batch Number: 65971
 Batch Method: None

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	CalcMsg	63xxMPFC_IDA 00051
140-29077-A-1	T-2668, T-2669 PPA CB INLET R1 OTM-45 FH	None, Split, Dilution, 537 (modified)	T	1 Sample	83 mL	CALC NOT SET TO RUN	0.5 mL
140-29077-A-5	T-2675, T-2676 PPA CB INLET R2 OTM-45 FH	None, Split, Dilution, 537 (modified)	T	1 Sample	56 mL	CALC NOT SET TO RUN	0.5 mL
140-29077-A-9	T-2682, T-2683 PPA CB INLET R3 OTM-45 FH	None, Split, Dilution, 537 (modified)	T	1 Sample	61 mL	CALC NOT SET TO RUN	0.5 mL

Batch Notes	
H2O/ 5% NH4OH ID	5%NH4OH/MeOH:521647
Extraction Start Date	10/04/2022
Extraction Start time	14:00
Extraction End Date	10/05/2022
Extraction End time	10:20
Analyst ID - Extraction	acw
Analyst ID - Spike Analyst	cac
Analyst ID - Spike Witness Analyst	acw
Filter ID	511522
Hot Block ID	PFAS 1/2
Oven, Bath or Block Temperature 1	60 Degrees C

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

PFAS BATCH WORKSHEET

Lab Name: Eurofins Knoxville Job No.: 140-29077-1 Batch Start Date: 10/05/22 08:22 Batch Analyst: Wright, Aurielle C
 SDG No.: _____ Batch End Date: 10/10/22 15:38
 Batch Number: 66004
 Batch Method: Split

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	63xxMPFOA-IS 00052
MB 140-65913/1-A		Split, 537 (modified)		180 mL	10 mL	250 uL
LCS 140-65913/2-A		Split, 537 (modified)		180 mL	10 mL	250 uL
LCS 140-65913/3-A		Split, 537 (modified)		180 mL	10 mL	250 uL
140-29077-A-4-A	T-2674 PPA CB INLET R1 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE	Split, 537 (modified)	T	180 mL	10 mL	250 uL
140-29077-A-8-A	T-2681 PPA CB INLET R2 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE	Split, 537 (modified)	T	180 mL	10 mL	250 uL
140-29077-A-12-A	T-2688 PPA CB INLET R3 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE	Split, 537 (modified)	T	180 mL	10 mL	250 uL

Batch Notes	
Analyst ID - Spike Analyst	cac
Analyst ID - Spike Witness Analyst	acw

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

PFAS BATCH WORKSHEET

Lab Name: Eurofins Knoxville Job No.: 140-29077-1

SDG No.: _____

Batch Number: 66004 Batch Start Date: 10/05/22 08:22 Batch Analyst: Wright, Aurielle C

Batch Method: Split Batch End Date: 10/10/22 15:38

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	63xxMFOA-IS 00052
140-29077-A-2-A	T-2670, T-2671, T-2673 PPA CB INLET R1 OTM-45 BH	Split, Dilution, 537 (modified)	T	180 mL	10 mL	250 uL
140-29077-A-6-A	T-2677, T-2678, T-2680 PPA CB INLET R2 OTM-45 BH	Split, Dilution, 537 (modified)	T	180 mL	10 mL	250 uL
140-29077-A-10-A	T-2684, T-2685, T-2687 PPA CB INLET R3 OTM-45 BH	Split, Dilution, 537 (modified)	T	180 mL	10 mL	250 uL

Batch Notes	
Analyst ID - Spike Analyst	cac
Analyst ID - Spike Witness Analyst	acw

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

537 (modified)

Carbon Bed Inlet/Outlet

Eurofins TestAmerica Knoxville Extraction Sheet
PFAS in Source Air Back Half Fraction

Prep Batch Number: 65913
Split Batch Number: 16004
TALS Prep Chain: LCMS_BH_Prep -> Split_SA_LCMS

Sample ID	Measure associated rinses using a graduated cylinder and record volume (mL)	Create MB and LCS/D by using clean XAD and placing in 500mL Nalgene container	Empty all XAD from traps into 500mL Nalgene containers	Add 50 ng/mL IS (IDA) to all samples & QC. Record volume in TALS.	Add 20 ng/mL native spike (TA) to LCS/D. Record volume in TALS.	Add rinses and MeOH/5% NH4OH to the appropriate volume. Record volume of extraction solvent (mL)	Extraction 1 on shaker table for 18hr minimum	Decant solvent from 1st extraction into a separate Nalgene container	Add remaining rinses and MeOH/5% NH4OH to the appropriate volume. Record volume of extraction solvent (mL)	Extraction 2 on shaker table for 18hr minimum	Combine 1st extraction solvent with the 2nd extraction solvent	Place on hotblock at 60 deg C. Concentrate to <10mL.	Transfer to 10mL polypropylene tube. Place on N-EVAP and concentrate to near dryness. Add 2mL DI water.	Add 50ng/mL internal standard. Record volume in TALS. Bring to final volume in methanol. Filter using plastic syringe and 0.45um PVDF filter disk.
MB 140-65913/1	N/A	✓	N/A	✓	N/A	✓	✓	✓	✓	✓	✓	✓	✓	✓
LCMS 140-65913/2	160	✓	N/A	✓	N/A	✓	✓	✓	✓	✓	✓	✓	✓	✓
LCSD 140-65913/3	N/A	✓	N/A	✓	N/A	✓	✓	✓	✓	✓	✓	✓	✓	✓
140-29077-A-2 (140-520748)	210	✓	N/A	✓	N/A	✓	✓	✓	✓	✓	✓	✓	✓	✓
140-29077-A-4 (140-520752)	N/A	✓	N/A	✓	N/A	✓	✓	✓	✓	✓	✓	✓	✓	✓
140-29077-A-6 (140-520755)	N/A	✓	N/A	✓	N/A	✓	✓	✓	✓	✓	✓	✓	✓	✓
140-29077-A-8 (140-520759)	191	✓	N/A	✓	N/A	✓	✓	✓	✓	✓	✓	✓	✓	✓
140-29077-A-10 (140-520762)	N/A	✓	N/A	✓	N/A	✓	✓	✓	✓	✓	✓	✓	✓	✓
140-29077-A-12 (140-520766)	171	✓	N/A	✓	N/A	✓	✓	✓	✓	✓	✓	✓	✓	✓
140-29079-A-2 (140-520818)	N/A	✓	N/A	✓	N/A	✓	✓	✓	✓	✓	✓	✓	✓	✓
140-29079-A-4 (140-520822)	N/A	✓	N/A	✓	N/A	✓	✓	✓	✓	✓	✓	✓	✓	✓
140-29079-A-6 (140-520825)	161	✓	N/A	✓	N/A	✓	✓	✓	✓	✓	✓	✓	✓	✓
140-29079-A-8 (140-520829)	N/A	✓	N/A	✓	N/A	✓	✓	✓	✓	✓	✓	✓	✓	✓
MB 140-65913/14	162	✓	N/A	✓	N/A	✓	✓	✓	✓	✓	✓	✓	✓	✓
140-29079-A-10 (140-520832)	N/A	✓	N/A	✓	N/A	✓	✓	✓	✓	✓	✓	✓	✓	✓
140-29079-A-12 (140-520836)	159	✓	N/A	✓	N/A	✓	✓	✓	✓	✓	✓	✓	✓	✓
140-29080-A-2 (140-520847)	N/A	✓	N/A	✓	N/A	✓	✓	✓	✓	✓	✓	✓	✓	✓
140-29080-A-4 (140-520851)	209	✓	N/A	✓	N/A	✓	✓	✓	✓	✓	✓	✓	✓	✓
140-29080-A-6 (140-520854)	N/A	✓	N/A	✓	N/A	✓	✓	✓	✓	✓	✓	✓	✓	✓
140-29080-A-8 (140-520858)	231	✓	N/A	✓	N/A	✓	✓	✓	✓	✓	✓	✓	✓	✓
140-29080-A-10 (140-520861)	N/A	✓	N/A	✓	N/A	✓	✓	✓	✓	✓	✓	✓	✓	✓
140-29080-A-12 (140-520865)	185	✓	N/A	✓	N/A	✓	✓	✓	✓	✓	✓	✓	✓	✓
140-29081-A-2 (140-520868)	N/A	✓	N/A	✓	N/A	✓	✓	✓	✓	✓	✓	✓	✓	✓
140-29081-A-4 (140-520872)	10/3	✓	N/A	✓	N/A	✓	✓	✓	✓	✓	✓	✓	✓	✓

OP136R2 081721 PFAS Back Half (TALS)



PFAS BATCH WORKSHEET

Lab Name: Eurofins Knoxville Job No.: 140-29077-1
 SDG No.: _____
 Batch Number: 66018 Batch Start Date: 10/05/22 11:45 Batch Analyst: Wright, Aurielle C
 Batch Method: PFAS Prep Batch End Date: 10/07/22 15:12

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	63xxMPFC_IDA 00051	63xxMPFOA-IS 00052	63xxPFC3LSP 00010
MB 140-66018/1		PFAS Prep, 537 (modified)		1 Sample	10 mL	0.25 mL	0.25 mL	
LCS 140-66018/2		PFAS Prep, 537 (modified)		1 Sample	10 mL	0.25 mL	0.25 mL	0.5 mL
LCSD 140-66018/3		PFAS Prep, 537 (modified)		1 Sample	10 mL	0.25 mL	0.25 mL	0.5 mL
140-29077-A-3	T-2672 PFA CB INLET R1 OTM-45 IMPINGERS 1,2,&3 CONDENSATE	PFAS Prep, 537 (modified)	T	0.0067 Sample	10 mL	0.25 mL	0.25 mL	
140-29077-A-7	T-2679 PFA CB INLET R2 OTM-45 IMPINGERS 1,2,&3 CONDENSATE	PFAS Prep, 537 (modified)	T	0.0069 Sample	10 mL	0.25 mL	0.25 mL	
140-29077-A-11	T-2686 PFA CB INLET R3 OTM-45 IMPINGERS 1,2,&3 CONDENSATE	PFAS Prep, 537 (modified)	T	0.0065 Sample	10 mL	0.25 mL	0.25 mL	

Batch Notes	
Methanol ID	509164
Analyst ID - IDA Reagent Drop	cac
Analyst ID - IDA Reagent Drop Witness	dws
Analyst ID - TA Reagent Drop	cac
Analyst ID - TA Reagent Drop Witness	dws

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Eurofins/TestAmerica Knoxville Prep Batch Review Checklist

Batch # 101018

Split Batch # N/A

Review Items	N/A	Yes	No	If No, why is data reportable?	2nd Level
1. Were the samples extracted within the required holding times? <u>M/S 10/7/22</u>		✓		If No, NCM #: _____	✓
2. Are the final extracts free of water , precipitates, multiple phases, and for HRMS - color?		✓			✓
3. Were all project specific requirements met?		✓			✓
4. Were the correct start and completion dates entered into TALS?		✓			✓
5. Are the spike IDs and volumes correct in TALS for the method?		✓			✓
6. Does the prep batch paperwork package contain all required documentation which has been properly and completely filled out, including: <ul style="list-style-type: none"> • Extraction Benchsheet (Excel) • Batch Worksheets (ANLY) • Verify Protocol #'s (compare excel sheet to TALS) <u>M/S 10/7/22</u> • Was the Excel Extraction Benchsheet and Prep Batch Review Checklist scanned and attached to batch in TALS? 		✓			✓
7. Did extracts go through GPC cleanup? Has the following nonconformance been associated with all extracts?	✓			If Yes, NCM# <u>140-38695</u>	<u>NA</u>
8. Are all additional nonconformances documented appropriately?	✓			If Yes, NCM#: _____	<u>NA</u>
Analyst: <u>CAC</u> Date: <u>10/07/2022</u>					
Comments:					
<u>Example Calculation:</u>					
<u>29077-A-3 → 2ml used</u>					
<u>$\frac{2\text{ml}}{300\text{ml}} \text{ recieved} = 0.006666 \text{ sample} = 0.0067 \text{ Sample}$</u>					
2nd Level Reviewer: <u>M/S</u> Date: <u>10/7/22</u>					
Comments:					

PFAS BATCH WORKSHEET

Lab Name: Eurofins Knoxville Job No.: 140-29077-1 Batch Start Date: 10/05/22 13:37 Batch Analyst: Clark, Courtney A
 SDG No.: _____ Batch End Date: 10/11/22 13:51
 Batch Number: 66029
 Batch Method: Split

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	63xxMPFOA-IS 00052
MB 140-65971/1-A		Split, 537 (modified)		25 mL	10 mL	250 uL
LCS 140-65971/2-A		Split, 537 (modified)		25 mL	10 mL	250 uL
LCSD 140-65971/3-A		Split, 537 (modified)		25 mL	10 mL	250 uL

Batch Notes	
Analyst ID - Spike Analyst	cac
Analyst ID - Spike Witness Analyst	acw

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

PFAS BATCH WORKSHEET

Lab Name: Eurofins Knoxville Job No.: 140-29077-1

SDG No.: _____

Batch Number: 66029 Batch Start Date: 10/05/22 13:37 Batch Analyst: Clark, Courtney A

Batch Method: Split Batch End Date: 10/11/22 13:51

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	63xxMFOA-IS 00052
140-29077-A-1-A	T-2668, T-2669 PPA CB INLET R1 OTM-45 FH	Split, Dilution, 537 (modified)	T	42 mL	10 mL	250 uL
140-29077-A-5-A	T-2675, T-2676 PPA CB INLET R2 OTM-45 FH	Split, Dilution, 537 (modified)	T	28 mL	10 mL	250 uL
140-29077-A-9-A	T-2682, T-2683 PPA CB INLET R3 OTM-45 FH	Split, Dilution, 537 (modified)	T	31 mL	10 mL	250 uL

Batch Notes	
Analyst ID - Spike Analyst	cac
Analyst ID - Spike Witness Analyst	acw

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

537 (modified)

Carbon beds FH

EurofinsTestAmerica Knoxville Extraction Sheet
PFAS in Source Air Front Half Fraction

Prep Batch Number: 65971
 Split Batch Number: 111029
 TALS Prep Chain: LCMS_FH_Prep --> Split_SA_LCMS

Sample ID	Measure associated rinses using a graduated cylinder and record volume (mL)	Push down filter with tweezers in bottle	Create MB and LCS/D by using clean filter and placing in 125mL container	Add 50 ng/mL IS (IDA) to all samples & QC. Record volume in TALS.	Add 20 ng/mL native spike (TA) to LCS/D.	Add rinses and MeOH/5% NH4OH to the appropriate volume. Record volume of extraction solvent (mL)	Extract on shaker table for 18hr minimum	Filter sample using filter paper and plastic funnel	Place on hotblock at 60 deg C. Concentrate to <10mL.	Transfer to 10mL polypropylene tube. Place on N-EVAP and concentrate to near dryness. Add 2mL DI water.	Add 50ng/mL internal standard. Record volume in TALS. Bring to final volume in methanol. Filter using plastic syringe and 0.45um PVDF filter disk.
MB 140-65971/1	N/A										
LCSD 140-65971/2					N/A						
LCSD 140-65971/3					N/A						
140-29077-A-1 (140-520746)	83										
140-29077-A-5 (140-520753)	50										
140-29077-A-9 (140-520760)	60										
140-29079-A-1 (140-520816)	52										
140-29079-A-5 (140-520823)	48										
140-29079-A-9 (140-520830)	47										
140-29080-A-1 (140-520845)	50										
140-29080-A-5 (140-520852)	100										
140-29080-A-9 (140-520859)	90										
140-29081-A-1 (140-520866)	60										
MB 140-65971/14	N/A										
140-29081-A-5 (140-520873)	68										
140-29081-A-9 (140-520880)	75										
140-29085-A-1 (140-520984)	63										
140-29085-A-7 (140-520993)	111										
140-29085-A-11 (140-521000)	N/A										
140-29082-A-1 (140-520887)	77										
140-29082-A-5 (140-520894)	63										
140-29082-A-9 (140-520901)	69										
140-29084-A-1 (140-520944)	64										
140-29084-A-5 (140-520951)	72										
140-29084-A-9 (140-520958)	72										
140-29084-A-11 (140-520965)	72										
140-29084-A-13 (140-520972)	72										
140-29084-A-15 (140-520979)	72										
AGW	10/14										
CAC	10/13										
CAC/AGW	10/11										
CAC	10/17										

OP135R1 031121 PFAS Front Half (TALS)

OP135R1, 3/11/21



PFAS BATCH WORKSHEET

Lab Name: Eurofins Knoxville Job No.: 140-29077-1

SDG No.: _____

Batch Number: 66569 Batch Start Date: 10/21/22 11:00 Batch Analyst: Cochran, James R

Batch Method: Dilution Batch End Date: 10/21/22 11:30

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialVolume1	FinalVolume1	InitialVolume2	FinalVolume2	InitialVolume3	FinalVolume3
140-29077-A-2-B	T-2670, T-2671, T-2673 PPA CB INLET R1 OTM-45 BH	Dilution, 537 (modified)	T	100 uL	10000 uL	100 uL	10000 uL		
140-29077-A-6-B	T-2677, T-2678, T-2680 PPA CB INLET R2 OTM-45 BH	Dilution, 537 (modified)	T	100 uL	10000 uL	100 uL	10000 uL	1000 uL	10000 uL
140-29077-A-10-B	T-2684, T-2685, T-2687 PPA CB INLET R3 OTM-45 BH	Dilution, 537 (modified)	T	100 uL	10000 uL	100 uL	10000 uL	1000 uL	10000 uL
140-29077-A-1-B	T-2668, T-2669 PPA CB INLET R1 OTM-45 FH	Dilution, 537 (modified)	T	100 uL	10000 uL	100 uL	10000 uL		
140-29077-A-5-B	T-2675, T-2676 PPA CB INLET R2 OTM-45 FH	Dilution, 537 (modified)	T	200 uL	10000 uL	100 uL	10000 uL		
140-29077-A-9-B	T-2682, T-2683 PPA CB INLET R3 OTM-45 FH	Dilution, 537 (modified)	T	200 uL	10000 uL	100 uL	10000 uL		

Lab Sample ID	Client Sample ID	Method Chain	Basis	DilutionFactor	FinalAmount	63xxMPFC_IDA_00054	63xxMPFOA-IS_00048
140-29077-A-2-B	T-2670, T-2671, T-2673 PPA CB INLET R1 OTM-45 BH	Dilution, 537 (modified)	T	10000 No Unit	10000 uL	0.25 mL	0.25 mL
140-29077-A-6-B	T-2677, T-2678, T-2680 PPA CB INLET R2 OTM-45 BH	Dilution, 537 (modified)	T	100000 No Unit	10000 uL	0.25 mL	0.25 mL
140-29077-A-10-B	T-2684, T-2685, T-2687 PPA CB INLET R3 OTM-45 BH	Dilution, 537 (modified)	T	100000 No Unit	10000 uL	0.25 mL	0.25 mL
140-29077-A-1-B	T-2668, T-2669 PPA CB INLET R1 OTM-45 FH	Dilution, 537 (modified)	T	10000 No Unit	10000 uL	0.25 mL	0.25 mL
140-29077-A-5-B	T-2675, T-2676 PPA CB INLET R2 OTM-45 FH	Dilution, 537 (modified)	T	5000 No Unit	10000 uL	0.25 mL	0.25 mL

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

537 (modified)

PFAS BATCH WORKSHEET

Lab Name: Eurofins Knoxville Job No.: 140-29077-1 Batch Start Date: 10/21/22 11:00 Batch Analyst: Cochran, James R
 SDG No.: _____ Batch Number: 66569 Batch End Date: 10/21/22 11:30
 Batch Method: Dilution

Lab Sample ID	Client Sample ID	Method Chain	Basis	DilutionFactor	FinalAmount	63xxMPFC_IDA 00054	63xxMPFOA-IS 00048
140-29077-A-9-B	T-2682, T-2683 PPA CB INLET R3 OTM-45 FH	Dilution, 537 (modified)	T	5000 No Unit	10000 uL	0.25 mL	0.25 mL

Batch Notes

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

ANALYTICAL REPORT

Eurofins Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921
Tel: (865)291-3000

Laboratory Job ID: 140-29079-1
Client Project/Site: PPA Carbon Bed Outlet

For:

The Chemours Company FC, LLC
c/o AECOM
Sabre Building, Suite 300
4051 Ogletown Road
Newark, Delaware 19713

Attn: Michael Aucoin



Authorized for release by:
10/27/2022 9:02:15 AM

Courtney Adkins, Project Manager II
(865)291-3019
Courtney.Adkins@et.eurofinsus.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Definitions/Glossary

Client: The Chemours Company FC, LLC
Project/Site: PPA Carbon Bed Outlet

Job ID: 140-29079-1

Qualifiers

LCMS

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: The Chemours Company FC, LLC
Project/Site: PPA Carbon Bed Outlet

Job ID: 140-29079-1

Job ID: 140-29079-1

Laboratory: Eurofins Knoxville

Narrative

Job Narrative 140-29079-1

Receipt

The samples were received on 9/30/2022 11:50 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.3° C.

LCMS

Methods 537 (modified), Dilution: LC/MS/MS Sampling Train Preparation and Analysis: The sampling train components are extracted and analyzed for Per- and Polyfluorinated Alkyl Substances (PFAS) using Eurofins TestAmerica Knoxville standard operating procedures KNOX-OP-0026 and KNOX-LC-0007.

The sampling trains are prepared as four analytical fractions: The particulate filter and front half of the filter holder, nozzle and probe solvent rinses are combined for one analytical fraction. The XAD-2 resin trap and back half of the filter holder, coil condenser and connecting glassware solvent rinses are also combined as a separate analytical fraction. The condensate, impinger contents and their related glassware DI water rinses make up the third analytical fraction. The breakthrough XAD module makes up the fourth analytical fraction.

The filters and XAD components are spiked with isotope dilution internal standards and the components are extracted with methanol/ammonium hydroxide by shaking for at least 18 hours. The extracts are concentrated to 10 mL and analyzed by HPLC/MS/MS. The condensates are spiked with the isotope dilution internal standards and extracted using either Solid-Phase Extraction (SPE) or diluting the water sample for analysis. Each extract at its final volume is 80:20 methanol:water

Sample results were calculated using the following equation:

Result, ng/sample = (on-column concentration, ng/mL) × (nominal final volume of extract (10 mL) / 1 sample) × DF × SF

Where:

DF = Instrument dilution factor

SF = Extraction Split Factor = (final volume of extract in the initial extraction batch / initial volume of extract in the "Split" batch)

For condensate, if less than the entire sample is extracted, the fraction of sample used replaces "1 sample"

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Client Sample Results

Client: The Chemours Company FC, LLC
 Project/Site: PPA Carbon Bed Outlet

Job ID: 140-29079-1

Client Sample ID: T-2689, T-2690 PPA CB OUTLET R1 OTM-45 FH

Lab Sample ID: 140-29079-1

Date Collected: 09/27/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	0.991		0.0500	0.0470	ug/Sample		10/04/22 10:10	10/22/22 15:01	10
Isotope Dilution	%Recovery	Qualifier	Limits						
13C3 HFPO-DA	88		25 - 150						
							Prepared	Analyzed	Dil Fac
							10/04/22 10:10	10/22/22 15:01	10

Client Sample ID: T-2691, T-2692, T-2694 PPA CB OUTLET R1 OTM-45 BH

Lab Sample ID: 140-29079-2

Date Collected: 09/27/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	0.578		0.400	0.220	ug/Sample		10/03/22 08:25	10/21/22 16:41	20
Isotope Dilution	%Recovery	Qualifier	Limits						
13C3 HFPO-DA	73		25 - 150						
							Prepared	Analyzed	Dil Fac
							10/03/22 08:25	10/21/22 16:41	20

Client Sample ID: T-2693 PPA CB OUTLET R1 OTM-45 IMPINGERS 1,2,&3 CONDENSATE

Lab Sample ID: 140-29079-3

Date Collected: 09/27/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.0735	0.0294	ug/Sample		10/05/22 11:45	10/22/22 01:06	1
Isotope Dilution	%Recovery	Qualifier	Limits						
13C3 HFPO-DA	93		25 - 150						
							Prepared	Analyzed	Dil Fac
							10/05/22 11:45	10/22/22 01:06	1

Client Sample ID: T-2695 PPA CB OUTLET R1 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE

Lab Sample ID: 140-29079-4

Date Collected: 09/27/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	0.143		0.0200	0.0110	ug/Sample		10/03/22 08:25	10/21/22 16:50	1
Isotope Dilution	%Recovery	Qualifier	Limits						
13C3 HFPO-DA	79		25 - 150						
							Prepared	Analyzed	Dil Fac
							10/03/22 08:25	10/21/22 16:50	1

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Client Sample Results

Client: The Chemours Company FC, LLC
 Project/Site: PPA Carbon Bed Outlet

Job ID: 140-29079-1

Client Sample ID: T-2696, T-2697 PPA CB OUTLET R2 OTM-45 FH

Lab Sample ID: 140-29079-5

Date Collected: 09/27/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	0.479		0.0500	0.0470	ug/Sample		10/04/22 10:10	10/22/22 15:10	10
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C3 HFPO-DA	88		25 - 150				10/04/22 10:10	10/22/22 15:10	10

Client Sample ID: T-2698, T-2699, T-2701 PPA CB OUTLET R2 OTM-45 BH

Lab Sample ID: 140-29079-6

Date Collected: 09/27/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	0.475		0.400	0.220	ug/Sample		10/03/22 08:25	10/21/22 16:59	20
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C3 HFPO-DA	93		25 - 150				10/03/22 08:25	10/21/22 16:59	20

Client Sample ID: T-2700 PPA CB OUTLET R2 OTM-45 IMPINGERS 1,2,&3 CONDENSATE

Lab Sample ID: 140-29079-7

Date Collected: 09/27/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.0735	0.0294	ug/Sample		10/05/22 11:45	10/22/22 01:14	1
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C3 HFPO-DA	92		25 - 150				10/05/22 11:45	10/22/22 01:14	1

Client Sample ID: T-2702 PPA CB OUTLET R2 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE

Lab Sample ID: 140-29079-8

Date Collected: 09/27/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	0.0139	J	0.0200	0.0110	ug/Sample		10/03/22 08:25	10/21/22 17:09	1
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C3 HFPO-DA	80		25 - 150				10/03/22 08:25	10/21/22 17:09	1

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Client Sample Results

Client: The Chemours Company FC, LLC
 Project/Site: PPA Carbon Bed Outlet

Job ID: 140-29079-1

Client Sample ID: T-2703, T-2704 PPA CB OUTLET R3 OTM-45 FH

Lab Sample ID: 140-29079-9

Date Collected: 09/27/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	1.45		0.0500	0.0470	ug/Sample		10/04/22 10:10	10/22/22 15:36	10
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
¹³ C3 HFPO-DA	91		25 - 150				10/04/22 10:10	10/22/22 15:36	10

Client Sample ID: T-2705, T-2706, T-2708 PPA CB OUTLET R3 OTM-45 BH

Lab Sample ID: 140-29079-10

Date Collected: 09/27/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	0.972		0.400	0.220	ug/Sample		10/03/22 08:25	10/21/22 17:27	20
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
¹³ C3 HFPO-DA	90		25 - 150				10/03/22 08:25	10/21/22 17:27	20

Client Sample ID: T-2707 PPA CB OUTLET R3 OTM-45 IMPINGERS 1,2,&3 CONDENSATE

Lab Sample ID: 140-29079-11

Date Collected: 09/27/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.0746	0.0299	ug/Sample		10/05/22 11:45	10/22/22 01:41	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
¹³ C3 HFPO-DA	98		25 - 150				10/05/22 11:45	10/22/22 01:41	1

Client Sample ID: T-2709 PPA CB OUTLET R3 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE

Lab Sample ID: 140-29079-12

Date Collected: 09/27/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	0.0128	J	0.0200	0.0110	ug/Sample		10/03/22 08:25	10/21/22 17:35	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
¹³ C3 HFPO-DA	87		25 - 150				10/03/22 08:25	10/21/22 17:35	1

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Isotope Dilution Summary

Client: The Chemours Company FC, LLC
 Project/Site: PPA Carbon Bed Outlet

Job ID: 140-29079-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Air

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HFPODA (25-150)
140-29079-1	T-2689, T-2690 PPA CB OUTLE	88
140-29079-2	T-2691, T-2692, T-2694 PPA CE OUTLET R1 OTM-45 BH	73
140-29079-3	T-2693 PPA CB OUTLET R1 OTM-45 IMPINGERS 1,2,&3 CONDENSATE	93
140-29079-4	T-2695 PPA CB OUTLET R1 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE	79
140-29079-5	T-2696, T-2697 PPA CB OUTLET R2 OTM-45 FH	88
140-29079-6	T-2698, T-2699, T-2701 PPA CE OUTLET R2 OTM-45 BH	93
140-29079-7	T-2700 PPA CB OUTLET R2 OTM-45 IMPINGERS 1,2,&3 CONDENSATE	92
140-29079-8	T-2702 PPA CB OUTLET R2 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE	80
140-29079-9	T-2703, T-2704 PPA CB OUTLET R3 OTM-45 FH	91
140-29079-10	T-2705, T-2706, T-2708 PPA CE OUTLET R3 OTM-45 BH	90
140-29079-11	T-2707 PPA CB OUTLET R3 OTM-45 IMPINGERS 1,2,&3 CONDENSATE	98
140-29079-12	T-2709 PPA CB OUTLET R3 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE	87
LCS 140-65913/2-B	Lab Control Sample	87
LCS 140-65971/2-B	Lab Control Sample	75
LCS 140-66018/2-A	Lab Control Sample	87
LCSD 140-65913/3-B	Lab Control Sample Dup	89
LCSD 140-65971/3-B	Lab Control Sample Dup	76
LCSD 140-66018/3-A	Lab Control Sample Dup	102
MB 140-65913/14-B	Method Blank	79
MB 140-65913/1-B	Method Blank	90
MB 140-65971/1-B	Method Blank	87
MB 140-66018/1-A	Method Blank	92

Surrogate Legend

HFPODA = 13C3 HFPO-DA

QC Sample Results

Client: The Chemours Company FC, LLC
 Project/Site: PPA Carbon Bed Outlet

Job ID: 140-29079-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 140-65913/14-B
Matrix: Air
Analysis Batch: 66559

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 65913

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.0200	0.0110	ug/Sample		10/03/22 08:25	10/21/22 17:18	1
Isotope Dilution	%Recovery	MB Qualifier	MB Limits				Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	79		25 - 150				10/03/22 08:25	10/21/22 17:18	1

Lab Sample ID: MB 140-65913/1-B
Matrix: Air
Analysis Batch: 66559

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 65913

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.0200	0.0110	ug/Sample		10/03/22 08:25	10/21/22 15:00	1
Isotope Dilution	%Recovery	MB Qualifier	MB Limits				Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	90		25 - 150				10/03/22 08:25	10/21/22 15:00	1

Lab Sample ID: LCS 140-65913/2-B
Matrix: Air
Analysis Batch: 66559

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 65913

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
HFPO-DA	0.0200	0.02698		ug/Sample		135	60 - 140
Isotope Dilution	%Recovery	LCS Qualifier	LCS Limits				
13C3 HFPO-DA	87		25 - 150				

Lab Sample ID: LCSD 140-65913/3-B
Matrix: Air
Analysis Batch: 66559

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 65913

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HFPO-DA	0.0200	0.02541		ug/Sample		127	60 - 140	6	30
Isotope Dilution	%Recovery	LCSD Qualifier	LCSD Limits						
13C3 HFPO-DA	89		25 - 150						

Lab Sample ID: MB 140-65971/1-B
Matrix: Air
Analysis Batch: 66559

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 65971

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.00500	0.00470	ug/Sample		10/04/22 10:10	10/22/22 04:28	1
Isotope Dilution	%Recovery	MB Qualifier	MB Limits				Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	87		25 - 150				10/04/22 10:10	10/22/22 04:28	1

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QC Sample Results

Client: The Chemours Company FC, LLC
 Project/Site: PPA Carbon Bed Outlet

Job ID: 140-29079-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 140-65971/2-B
Matrix: Air
Analysis Batch: 66559

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 65971

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
HFPO-DA	0.0200	0.02649		ug/Sample		132	60 - 140
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
13C3 HFPO-DA	75		25 - 150				

Lab Sample ID: LCSD 140-65971/3-B
Matrix: Air
Analysis Batch: 66559

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 65971

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HFPO-DA	0.0200	0.02626		ug/Sample		131	60 - 140	1	30
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>						
13C3 HFPO-DA	76		25 - 150						

Lab Sample ID: MB 140-66018/1-A
Matrix: Air
Analysis Batch: 66559

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 66018

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.000500	0.000200	ug/Sample		10/05/22 11:45	10/22/22 00:04	1
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C3 HFPO-DA	92		25 - 150				10/05/22 11:45	10/22/22 00:04	1

Lab Sample ID: LCS 140-66018/2-A
Matrix: Air
Analysis Batch: 66559

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 66018

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
HFPO-DA	0.0100	0.01234		ug/Sample		123	60 - 140
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
13C3 HFPO-DA	87		25 - 150				

Lab Sample ID: LCSD 140-66018/3-A
Matrix: Air
Analysis Batch: 66559

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 66018

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HFPO-DA	0.0100	0.01095		ug/Sample		109	60 - 140	12	30
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>						
13C3 HFPO-DA	102		25 - 150						

QC Association Summary

Client: The Chemours Company FC, LLC
 Project/Site: PPA Carbon Bed Outlet

Job ID: 140-29079-1

LCMS

Prep Batch: 65913

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-29079-2	T-2691, T-2692, T-2694 PPA CB OUTLET R1 OT	Total/NA	Air	None	
140-29079-4	T-2695 PPA CB OUTLET R1 OTM-45 BREAKTH	Total/NA	Air	None	
140-29079-6	T-2698, T-2699, T-2701 PPA CB OUTLET R2 OT	Total/NA	Air	None	
140-29079-8	T-2702 PPA CB OUTLET R2 OTM-45 BREAKTH	Total/NA	Air	None	
140-29079-10	T-2705, T-2706, T-2708 PPA CB OUTLET R3 OT	Total/NA	Air	None	
140-29079-12	T-2709 PPA CB OUTLET R3 OTM-45 BREAKTH	Total/NA	Air	None	
MB 140-65913/14-B	Method Blank	Total/NA	Air	None	
MB 140-65913/1-B	Method Blank	Total/NA	Air	None	
LCS 140-65913/2-B	Lab Control Sample	Total/NA	Air	None	
LCSD 140-65913/3-B	Lab Control Sample Dup	Total/NA	Air	None	

Prep Batch: 65971

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-29079-1	T-2689, T-2690 PPA CB OUTLET R1 OTM-45 FH	Total/NA	Air	None	
140-29079-5	T-2696, T-2697 PPA CB OUTLET R2 OTM-45 FH	Total/NA	Air	None	
140-29079-9	T-2703, T-2704 PPA CB OUTLET R3 OTM-45 FH	Total/NA	Air	None	
MB 140-65971/1-B	Method Blank	Total/NA	Air	None	
LCS 140-65971/2-B	Lab Control Sample	Total/NA	Air	None	
LCSD 140-65971/3-B	Lab Control Sample Dup	Total/NA	Air	None	

Cleanup Batch: 66004

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-29079-2	T-2691, T-2692, T-2694 PPA CB OUTLET R1 OT	Total/NA	Air	Split	65913
140-29079-4	T-2695 PPA CB OUTLET R1 OTM-45 BREAKTH	Total/NA	Air	Split	65913
140-29079-6	T-2698, T-2699, T-2701 PPA CB OUTLET R2 OT	Total/NA	Air	Split	65913
140-29079-8	T-2702 PPA CB OUTLET R2 OTM-45 BREAKTH	Total/NA	Air	Split	65913
140-29079-10	T-2705, T-2706, T-2708 PPA CB OUTLET R3 OT	Total/NA	Air	Split	65913
140-29079-12	T-2709 PPA CB OUTLET R3 OTM-45 BREAKTH	Total/NA	Air	Split	65913
MB 140-65913/14-B	Method Blank	Total/NA	Air	Split	65913
MB 140-65913/1-B	Method Blank	Total/NA	Air	Split	65913
LCS 140-65913/2-B	Lab Control Sample	Total/NA	Air	Split	65913
LCSD 140-65913/3-B	Lab Control Sample Dup	Total/NA	Air	Split	65913

Prep Batch: 66018

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-29079-3	T-2693 PPA CB OUTLET R1 OTM-45 IMPINGER	Total/NA	Air	PFAS Prep	
140-29079-7	T-2700 PPA CB OUTLET R2 OTM-45 IMPINGER	Total/NA	Air	PFAS Prep	
140-29079-11	T-2707 PPA CB OUTLET R3 OTM-45 IMPINGER	Total/NA	Air	PFAS Prep	
MB 140-66018/1-A	Method Blank	Total/NA	Air	PFAS Prep	
LCS 140-66018/2-A	Lab Control Sample	Total/NA	Air	PFAS Prep	
LCSD 140-66018/3-A	Lab Control Sample Dup	Total/NA	Air	PFAS Prep	

Cleanup Batch: 66029

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-29079-1	T-2689, T-2690 PPA CB OUTLET R1 OTM-45 FH	Total/NA	Air	Split	65971
140-29079-5	T-2696, T-2697 PPA CB OUTLET R2 OTM-45 FH	Total/NA	Air	Split	65971
140-29079-9	T-2703, T-2704 PPA CB OUTLET R3 OTM-45 FH	Total/NA	Air	Split	65971
MB 140-65971/1-B	Method Blank	Total/NA	Air	Split	65971
LCS 140-65971/2-B	Lab Control Sample	Total/NA	Air	Split	65971
LCSD 140-65971/3-B	Lab Control Sample Dup	Total/NA	Air	Split	65971

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QC Association Summary

Client: The Chemours Company FC, LLC
 Project/Site: PPA Carbon Bed Outlet

Job ID: 140-29079-1

LCMS

Analysis Batch: 66559

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-29079-2	T-2691, T-2692, T-2694 PPA CB OUTLET R1 OT	Total/NA	Air	537 (modified)	66004
140-29079-3	T-2693 PPA CB OUTLET R1 OTM-45 IMPINGER	Total/NA	Air	537 (modified)	66018
140-29079-4	T-2695 PPA CB OUTLET R1 OTM-45 BREAKTH	Total/NA	Air	537 (modified)	66004
140-29079-6	T-2698, T-2699, T-2701 PPA CB OUTLET R2 OT	Total/NA	Air	537 (modified)	66004
140-29079-7	T-2700 PPA CB OUTLET R2 OTM-45 IMPINGER	Total/NA	Air	537 (modified)	66018
140-29079-8	T-2702 PPA CB OUTLET R2 OTM-45 BREAKTH	Total/NA	Air	537 (modified)	66004
140-29079-10	T-2705, T-2706, T-2708 PPA CB OUTLET R3 OT	Total/NA	Air	537 (modified)	66004
140-29079-11	T-2707 PPA CB OUTLET R3 OTM-45 IMPINGER	Total/NA	Air	537 (modified)	66018
140-29079-12	T-2709 PPA CB OUTLET R3 OTM-45 BREAKTH	Total/NA	Air	537 (modified)	66004
MB 140-65913/14-B	Method Blank	Total/NA	Air	537 (modified)	66004
MB 140-65913/1-B	Method Blank	Total/NA	Air	537 (modified)	66004
MB 140-65971/1-B	Method Blank	Total/NA	Air	537 (modified)	66029
MB 140-66018/1-A	Method Blank	Total/NA	Air	537 (modified)	66018
LCS 140-65913/2-B	Lab Control Sample	Total/NA	Air	537 (modified)	66004
LCS 140-65971/2-B	Lab Control Sample	Total/NA	Air	537 (modified)	66029
LCS 140-66018/2-A	Lab Control Sample	Total/NA	Air	537 (modified)	66018
LCSD 140-65913/3-B	Lab Control Sample Dup	Total/NA	Air	537 (modified)	66004
LCSD 140-65971/3-B	Lab Control Sample Dup	Total/NA	Air	537 (modified)	66029
LCSD 140-66018/3-A	Lab Control Sample Dup	Total/NA	Air	537 (modified)	66018

Analysis Batch: 66593

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-29079-1	T-2689, T-2690 PPA CB OUTLET R1 OTM-45 FH	Total/NA	Air	537 (modified)	66029
140-29079-5	T-2696, T-2697 PPA CB OUTLET R2 OTM-45 FH	Total/NA	Air	537 (modified)	66029
140-29079-9	T-2703, T-2704 PPA CB OUTLET R3 OTM-45 FH	Total/NA	Air	537 (modified)	66029

Lab Chronicle

Client: The Chemours Company FC, LLC
 Project/Site: PPA Carbon Bed Outlet

Job ID: 140-29079-1

Client Sample ID: T-2689, T-2690 PPA CB OUTLET R1 OTM-45 FH

Lab Sample ID: 140-29079-1

Date Collected: 09/27/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	52 mL	65971	10/04/22 10:10	ACW	EET KNX
Total/NA	Cleanup	Split			26 mL	10 mL	66029	10/05/22 13:37	CAC	EET KNX
Total/NA	Analysis	537 (modified)		10	1 mL	1 mL	66593	10/22/22 15:01	CAC	EET KNX
Instrument ID: LCA										

Client Sample ID: T-2691, T-2692, T-2694 PPA CB OUTLET R1 OTM-45 BH

Lab Sample ID: 140-29079-2

Date Collected: 09/27/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	360 mL	65913	10/03/22 08:25	ACW	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	66004	10/05/22 08:22	ACW	EET KNX
Total/NA	Analysis	537 (modified)		20	1 mL	1 mL	66559	10/21/22 16:41	CAC	EET KNX
Instrument ID: LCA										

Client Sample ID: T-2693 PPA CB OUTLET R1 OTM-45 IMPINGERS 1,2,&3 CONDENSATE

Lab Sample ID: 140-29079-3

Date Collected: 09/27/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PFAS Prep			0.0068 Sample	10 mL	66018	10/05/22 11:45	ACW	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	66559	10/22/22 01:06	CAC	EET KNX
Instrument ID: LCA										

Client Sample ID: T-2695 PPA CB OUTLET R1 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE

Lab Sample ID: 140-29079-4

Date Collected: 09/27/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	360 mL	65913	10/03/22 08:25	ACW	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	66004	10/05/22 08:22	ACW	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	66559	10/21/22 16:50	CAC	EET KNX
Instrument ID: LCA										

Lab Chronicle

Client: The Chemours Company FC, LLC
 Project/Site: PPA Carbon Bed Outlet

Job ID: 140-29079-1

Client Sample ID: T-2696, T-2697 PPA CB OUTLET R2 OTM-45 FH

Lab Sample ID: 140-29079-5

Date Collected: 09/27/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	50 mL	65971	10/04/22 10:10	ACW	EET KNX
Total/NA	Cleanup	Split			25 mL	10 mL	66029	10/05/22 13:37	CAC	EET KNX
Total/NA	Analysis	537 (modified)		10	1 mL	1 mL	66593	10/22/22 15:10	CAC	EET KNX
Instrument ID: LCA										

Client Sample ID: T-2698, T-2699, T-2701 PPA CB OUTLET R2 OTM-45 BH

Lab Sample ID: 140-29079-6

Date Collected: 09/27/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	360 mL	65913	10/03/22 08:25	ACW	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	66004	10/05/22 08:22	ACW	EET KNX
Total/NA	Analysis	537 (modified)		20	1 mL	1 mL	66559	10/21/22 16:59	CAC	EET KNX
Instrument ID: LCA										

Client Sample ID: T-2700 PPA CB OUTLET R2 OTM-45 IMPINGERS 1,2,&3 CONDENSATE

Lab Sample ID: 140-29079-7

Date Collected: 09/27/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PFAS Prep			0.0068 Sample	10 mL	66018	10/05/22 11:45	ACW	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	66559	10/22/22 01:14	CAC	EET KNX
Instrument ID: LCA										

Client Sample ID: T-2702 PPA CB OUTLET R2 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE

Lab Sample ID: 140-29079-8

Date Collected: 09/27/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	360 mL	65913	10/03/22 08:25	ACW	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	66004	10/05/22 08:22	ACW	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	66559	10/21/22 17:09	CAC	EET KNX
Instrument ID: LCA										

Lab Chronicle

Client: The Chemours Company FC, LLC
 Project/Site: PPA Carbon Bed Outlet

Job ID: 140-29079-1

Client Sample ID: T-2703, T-2704 PPA CB OUTLET R3 OTM-45 FH

Lab Sample ID: 140-29079-9

Date Collected: 09/27/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	50 mL	65971	10/04/22 10:10	ACW	EET KNX
Total/NA	Cleanup	Split			25 mL	10 mL	66029	10/05/22 13:37	CAC	EET KNX
Total/NA	Analysis	537 (modified)		10	1 mL	1 mL	66593	10/22/22 15:36	CAC	EET KNX
Instrument ID: LCA										

Client Sample ID: T-2705, T-2706, T-2708 PPA CB OUTLET R3 OTM-45 BH

Lab Sample ID: 140-29079-10

Date Collected: 09/27/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	360 mL	65913	10/03/22 08:25	ACW	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	66004	10/05/22 08:22	ACW	EET KNX
Total/NA	Analysis	537 (modified)		20	1 mL	1 mL	66559	10/21/22 17:27	CAC	EET KNX
Instrument ID: LCA										

Client Sample ID: T-2707 PPA CB OUTLET R3 OTM-45 IMPINGERS 1,2,&3 CONDENSATE

Lab Sample ID: 140-29079-11

Date Collected: 09/27/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PFAS Prep			0.0067 Sample	10 mL	66018	10/05/22 11:45	ACW	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	66559	10/22/22 01:41	CAC	EET KNX
Instrument ID: LCA										

Client Sample ID: T-2709 PPA CB OUTLET R3 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE

Lab Sample ID: 140-29079-12

Date Collected: 09/27/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	360 mL	65913	10/03/22 08:25	ACW	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	66004	10/05/22 08:22	ACW	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	66559	10/21/22 17:35	CAC	EET KNX
Instrument ID: LCA										

Laboratory References:

EET KNX = Eurofins Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000

Accreditation/Certification Summary

Client: The Chemours Company FC, LLC
 Project/Site: PPA Carbon Bed Outlet

Job ID: 140-29079-1

Laboratory: Eurofins Knoxville

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
	AFCEE	N/A	
ANAB	Dept. of Defense ELAP	L2311	02-13-25
ANAB	Dept. of Energy	L2311.01	02-13-25
ANAB	ISO/IEC 17025	L2311	02-13-25
Arkansas DEQ	State	88-0688	06-16-23
California	State	2423	06-30-22 *
Colorado	State	TN00009	02-28-23
Connecticut	State	PH-0223	09-30-23
Florida	NELAP	E87177	06-30-23
Georgia (DW)	State	906	12-11-22
Hawaii	State	NA	12-11-22
Kansas	NELAP	E-10349	10-31-22
Kentucky (DW)	State	90101	12-31-22
Louisiana	NELAP	83979	06-30-23
Louisiana (All)	NELAP	83979	06-30-23
Louisiana (DW)	State	LA019	12-31-22
Maryland	State	277	03-31-23
Michigan	State	9933	12-11-22
Nevada	State	TN00009	07-31-23
New Hampshire	NELAP	299919	01-17-23
New Jersey	NELAP	TN001	06-30-23
New York	NELAP	10781	03-31-23
North Carolina (DW)	State	21705	07-31-23
North Carolina (WW/SW)	State	64	12-31-22
Ohio VAP	State	CL0059	06-02-23
Oklahoma	State	9415	08-31-23
Oregon	NELAP	TNI0189	12-31-22
Pennsylvania	NELAP	68-00576	12-31-22
Tennessee	State	02014	07-27-25
Texas	NELAP	T104704380-22-17	08-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-19-00236	12-31-22
Utah	NELAP	TN00009	07-31-23
Virginia	NELAP	460176	09-14-23
Washington	State	C593	01-19-23
West Virginia (DW)	State	9955C	12-31-22
West Virginia DEP	State	345	04-30-23
Wisconsin	State	998044300	08-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: The Chemours Company FC, LLC
Project/Site: PPA Carbon Bed Outlet

Job ID: 140-29079-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	EET KNX
None	Leaching Procedure	TAL SOP	EET KNX
None	Leaching Procedure for Filter	TAL SOP	EET KNX
PFAS Prep	Preparation, Direct Inject PFAS	TAL-SAC	EET KNX
Split	Source Air Split	None	EET KNX

Protocol References:

EPA = US Environmental Protection Agency

None = None

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

TAL-SAC = Eurofins Sacramento, Facility Standard Operating Procedure.

Laboratory References:

EET KNX = Eurofins Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000

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Sample Summary

Client: The Chemours Company FC, LLC
 Project/Site: PPA Carbon Bed Outlet

Job ID: 140-29079-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
140-29079-1	T-2689, T-2690 PPA CB OUTLET R1 OTM-45 FH	Air	09/27/22 00:00	09/30/22 11:50
140-29079-2	T-2691, T-2692, T-2694 PPA CB OUTLET R1 OTM-45 BH	Air	09/27/22 00:00	09/30/22 11:50
140-29079-3	T-2693 PPA CB OUTLET R1 OTM-45 IMPINGERS 1,2,&3 CONDENSATE	Air	09/27/22 00:00	09/30/22 11:50
140-29079-4	T-2695 PPA CB OUTLET R1 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE	Air	09/27/22 00:00	09/30/22 11:50
140-29079-5	T-2696, T-2697 PPA CB OUTLET R2 OTM-45 FH	Air	09/27/22 00:00	09/30/22 11:50
140-29079-6	T-2698, T-2699, T-2701 PPA CB OUTLET R2 OTM-45 BH	Air	09/27/22 00:00	09/30/22 11:50
140-29079-7	T-2700 PPA CB OUTLET R2 OTM-45 IMPINGERS 1,2,&3 CONDENSATE	Air	09/27/22 00:00	09/30/22 11:50
140-29079-8	T-2702 PPA CB OUTLET R2 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE	Air	09/27/22 00:00	09/30/22 11:50
140-29079-9	T-2703, T-2704 PPA CB OUTLET R3 OTM-45 FH	Air	09/27/22 00:00	09/30/22 11:50
140-29079-10	T-2705, T-2706, T-2708 PPA CB OUTLET R3 OTM-45 BH	Air	09/27/22 00:00	09/30/22 11:50
140-29079-11	T-2707 PPA CB OUTLET R3 OTM-45 IMPINGERS 1,2,&3 CONDENSATE	Air	09/27/22 00:00	09/30/22 11:50
140-29079-12	T-2709 PPA CB OUTLET R3 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE	Air	09/27/22 00:00	09/30/22 11:50

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Project Identification:		Chemours Emissions Test	
Client Name:	The Chemours Company FC, LLC		
Client Contact:	Christel Compton Office: (910) 678-1213 Cell: (910) 975-3386		
TestAmerica Project Manager:	Courtney Adkins Office: (865) 291-3019		
TestAmerica Program Manager:	Billy Anderson Office: (865) 291-3080 Cell: (865) 206-9004		

Laboratory Deliverable Turnaround Requirements:	
Analytical Due Date: (Review-Released Data)	21 Days from Lab Receipt
Data Package Due Date:	28 Days from Lab Receipt

Analytical Testing QC Requirements:
 The Legend for Project-Specific Quality Control Testing is designated in the "QC" column as follows: "BT" = Blank Train, "RB" = Reagent Blank, "MS" = Matrix Spike, "MSD" = Matrix Spike Duplicate, "DUP" = Duplicate, "PB" = Proof Blank, "TB" = Trip Blank

Laboratory Destination:	
Eurofins TestAmerica 5815 Middlebrook Pike Knoxville, TN 37921	
Lab Phone Number:	865.291.3000
Courier:	Hand Deliver

Project Deliverables:
 Report analytical results on TALS Report form Std_Tal_L4. Include "Field Sample Number", "Sample Type", and "Run Number" on all TALS Reports.

Analytical Parameter:	Holding Time Requirements:	Preservation Requirements:
HFPO-DA (CAS No. 13252-13-6) & PFOA (CAS No. 335-67-1)	14 Days to Extraction; 40 Days to Analysis	Cool, 4°C

Field Sample No./Sample Coding ID	Run No.	Sample Collection Date	Project QC Requirements	Sample Bottle/ Container	Sample Type/Analysis	Analytical Specifications
T-2689 PPA CB OUTLET R1 OTM-45 Filter (Combine with T-2690)	1	9/27/22		250 mL HDPE Wide-Mouth Bottle	Particulate Filter (82.6 mm Whatman Glass Microfiber) OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level. Use the Front-Half Probe Rinse to assist the solvent extraction of the Filter sample. Analyze for HFPO-DA and PFOA.
T-2690 PPA CB OUTLET R1 OTM-45 FH of Filter Holder & Probe MeOH Rinse (Combine with T-2689)	1	9/27/22		250 mL HDPE Wide-Mouth Bottle	Front Half of Filter Holder & Probe Methanol/5% Ammonium Hydroxide Rinse OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Use this solvent sample in the Filter extraction.
T-2691 PPA CB OUTLET R1 OTM-45 XAD-2 Resin Tube	1	9/27/22		XAD-2 Resin Tube	XAD-2 Resin Tube OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level. Use the Back-Half Glassware Rinse and the Impinger Glassware Methanol Rinse to assist the solvent extraction of the XAD-2 resin sample. Analyze for HFPO-DA and PFOA.



140-29079 Chain of Custody

Field Sample No./Sample Coding ID	Run No.	Sample Collection Date	Project QC Requirements	Sample Bottle/ Container	Sample Type/Analysis	Analytical Specifications
T-2692 PPA CB OUTLET R1 OTM-45 BH of Filter Holder & Coil Condenser MeOH Rinse (Combine with T-2691)	1	9/27/22		250 mL HDPE Wide-Mouth Bottle	Back Half of Filter Holder & Coil Condenser Methanol/5% Ammonium Hydroxide Rinse OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Use this solvent sample and the Impinger Glassware Methanol Rinse in the XAD-2 Resin extraction. Analyze for HFPO-DA and PFOA.
T-2693 PPA CB OUTLET R1 OTM-45 Impingers 1,2 & 3 Condensate	1	9/27/22		1 Liter HDPE Wide-Mouth Bottle	Impinger #1, #2 & #3 Condensate OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Analyze for HFPO-DA and PFOA.
T-2694 PPA CB OUTLET R1 OTM-45 Impinger Glassware MeOH Rinse (Combine with T-2691)	1	9/27/22		250 mL HDPE Wide-Mouth Bottle	Impinger Glassware Methanol/5% Ammonium Hydroxide Rinse OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Use this solvent sample in the XAD-2 Resin Extraction.
T-2695 PPA CB OUTLET R1 OTM-45 Breakthrough XAD-2 Resin Tube	1	9/27/22		XAD-2 Resin Tube	Breakthrough XAD-2 Resin Tube OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level and perform the regular XAD-2 Resin Extraction. Analyze for HFPO-DA and PFOA.
T-2696 PPA CB OUTLET R2 OTM-45 Filter (Combine with T-2697)	2	9/27/22		250 mL HDPE Wide-Mouth Bottle	Particulate Filter (82.6 mm Whatman Glass Microfiber) OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level. Use the Front-Half Probe Rinse to assist the solvent extraction of the Filter sample. Analyze for HFPO-DA and PFOA.
T-2697 PPA CB OUTLET R2 OTM-45 FH of Filter Holder & Probe MeOH Rinse (Combine with T-2696)	2	9/27/22		250 mL HDPE Wide-Mouth Bottle	Front Half of Filter Holder & Probe Methanol/5% Ammonium Hydroxide Rinse OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Use this solvent sample in the Filter extraction.

Field Sample No./Sample Coding ID	Run No.	Sample Collection Date	Project QC Requirements	Sample Bottle/ Container	Sample Type/Analysis	Analytical Specifications
T-2698 PPA CB OUTLET R2 OTM-45 XAD-2 Resin Tube	2	9/27/22		XAD-2 Resin Tube	XAD-2 Resin Tube OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level. Use the Back-Half Glassware Rinse and the Impinger Glassware Methanol Rinse to assist the solvent extraction of the XAD-2 resin sample. Analyze for HFPO-DA and PFOA.
T-2699 PPA CB OUTLET R2 OTM-45 BH of Filter Holder & Coil Condenser MeOH Rinse (Combine with T-2698)	2	9/27/22		250 mL HDPE Wide-Mouth Bottle	Back Half of Filter Holder & Coil Condenser Methanol/5% Ammonium Hydroxide Rinse OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Use this solvent sample and the Impinger Glassware Methanol Rinse in the XAD-2 Resin extraction. Analyze for HFPO-DA and PFOA.
T-2700 PPA CB OUTLET R2 OTM-45 Impingers 1,2 & 3 Condensate	2	9/27/22		1 Liter HDPE Wide-Mouth Bottle	Impinger #1, #2 & #3 Condensate OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Analyze for HFPO-DA and PFOA.
T-2701 PPA CB OUTLET R2 OTM-45 Impinger Glassware MeOH Rinse (Combine with T-2698)	2	9/27/22		250 mL HDPE Wide-Mouth Bottle	Impinger Glassware Methanol/5% Ammonium Hydroxide Rinse OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Use this solvent sample in the XAD-2 Resin Extraction.
T-2702 PPA CB OUTLET R2 OTM-45 Breakthrough XAD-2 Resin Tube	2	9/27/22		XAD-2 Resin Tube	Breakthrough XAD-2 Resin Tube OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level and perform the regular XAD-2 Resin Extraction. Analyze for HFPO-DA and PFOA.
T-2703 PPA CB OUTLET R3 OTM-45 Filter (Combine with T-2704)	3	9/27/22		250 mL HDPE Wide-Mouth Bottle	Particulate Filter (82.6 mm Whatman Glass Microfiber) OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level. Use the Front-Half Probe Rinse to assist the solvent extraction of the Filter sample. Analyze for HFPO-DA and PFOA.

Field Sample No./Sample Coding ID	Run No.	Sample Collection Date	Project QC Requirements	Sample Bottle/ Container	Sample Type/Analysis	Analytical Specifications
T-2704 PPA CB OUTLET R3 OTM-45 FH of Filter Holder & Probe MeOH Rinse (Combine with T-2703)	3	9/27/22		250 mL HDPE Wide-Mouth Bottle	Front Half of Filter Holder & Probe Methanol/5% Ammonium Hydroxide Rinse OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Use this solvent sample in the Filter extraction.
T-2705 PPA CB OUTLET R3 OTM-45 XAD-2 Resin Tube	3	9/27/22		XAD-2 Resin Tube	XAD-2 Resin Tube OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level. Use the Back-Half Glassware Rinse and the Impinger Glassware Methanol Rinse to assist the solvent extraction of the XAD-2 resin sample. Analyze for HFPO-DA and PFOA.
T-2706 PPA CB OUTLET R3 OTM-45 BH of Filter Holder & Coil Condenser MeOH Rinse (Combine with T-2705)	3	9/27/22		250 mL HDPE Wide-Mouth Bottle	Back Half of Filter Holder & Coil Condenser Methanol/5% Ammonium Hydroxide Rinse OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Use this solvent sample and the Impinger Glassware Methanol Rinse in the XAD-2 Resin extraction. Analyze for HFPO-DA and PFOA.
T-2707 PPA CB OUTLET R3 OTM-45 Impingers 1, 2 & 3 Condensate	3	9/27/22		1 Liter HDPE Wide-Mouth Bottle	Impinger #1, #2 & #3 Condensate OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Analyze for HFPO-DA and PFOA.
T-2708 PPA CB OUTLET R3 OTM-45 Impinger Glassware MeOH Rinse (Combine with T-2705)	3	9/27/22		250 mL HDPE Wide-Mouth Bottle	Impinger Glassware Methanol/5% Ammonium Hydroxide Rinse OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Use this solvent sample in the XAD-2 Resin Extraction.
T-2709 PPA CB OUTLET R3 OTM-45 Breakthrough XAD-2 Resin Tube	3	9/27/22		XAD-2 Resin Tube	Breakthrough XAD-2 Resin Tube OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level and perform the regular XAD-2 Resin Extraction. Analyze for HFPO-DA and PFOA.



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Sample Receipt Log and Condition of the Samples Upon Receipt:

Please fill in the following information:

Comments

(Please write "NONE" if no comment applicable)

- | | |
|---|--------------------------------------|
| (1) Record the identities of any samples that were listed on the RFA but were not found in the sample shipment. | NONE |
| (2) Record the sample shipping cooler temperature of all coolers transporting samples listed on this RFA: | REC @ 0.2°C NT CT
0.3°C |
| (3) Record any apparent sample loss/breakage. | NONE |
| (4) Record any unidentified samples transported with this shipment of samples: | NONE |
| (5) Indicate if all samples were received according to the project's required specifications (i.e. no nonconformances): | NONE |

Custody Transfer:

Relinquished By:	Name	Alliance TG Company	9/29/22/1730 Date/Time
Accepted By:	Name	ETA KNOX Company	9/29/22 1730 Date/Time
Relinquished By:	Name	ETA KNOX Company	9/30/22 1150 Date/Time
Accepted By:	Name	ETAKNY Company	09.30.22 1150 Date/Time
Relinquished By:	Name	Company	Date/Time
Accepted By:	Name	Company	Date/Time
Relinquished By:	Name	Company	Date/Time
Accepted By:	Name	Company	Date/Time

EUROFINS/TESTAMERICA KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST

Review Items	Yes	No	NA	If No, what was the problem?	Comments/Actions Taken
1. Are the shipping containers intact?	✓			<input type="checkbox"/> Containers, Broken	
2. Were ambient air containers received intact?			✓	<input type="checkbox"/> Checked in lab	
3. The coolers/containers custody seal if present, is it intact?			✓	<input type="checkbox"/> Yes <input type="checkbox"/> NA	
4. Is the cooler temperature within limits? (> freezing temp. of water to 6 °C, VOST: 10°C) Thermometer ID : <u>SC-73</u> Correction factor: <u>±0.1°C</u>	✓			<input type="checkbox"/> Cooler Out of Temp, Client Contacted, Proceed/Cancel <input type="checkbox"/> Cooler Out of Temp, Same Day Receipt	
5. Were all of the sample containers received intact?	✓			<input type="checkbox"/> Containers, Broken	
6. Were samples received in appropriate containers?	✓			<input type="checkbox"/> Containers, Improper; Client Contacted; Proceed/Cancel	
7. Do sample container labels match COC? (IDs, Dates, Times)	✓			<input type="checkbox"/> COC & Samples Do Not Match <input type="checkbox"/> COC Incorrect/Incomplete <input type="checkbox"/> COC Not Received	
8. Were all of the samples listed on the COC received?	✓			<input type="checkbox"/> Sample Received, Not on COC <input type="checkbox"/> Sample on COC, Not Received	
9. Is the date/time of sample collection noted?	✓			<input type="checkbox"/> COC; No Date/Time; Client Contacted	
10. Was the sampler identified on the COC?			✓	<input type="checkbox"/> Sampler Not Listed on COC	
11. Is the client and project name/# identified?	✓			<input type="checkbox"/> COC Incorrect/Incomplete	
12. Are tests/parameters listed for each sample?	✓			<input type="checkbox"/> COC No tests on COC	
13. Is the matrix of the samples noted?	✓			<input type="checkbox"/> COC Incorrect/Incomplete	
14. Was COC relinquished? (Signed/Dated/Timed)	✓			<input type="checkbox"/> COC Incorrect/Incomplete	
15. Were samples received within holding time?	✓			<input type="checkbox"/> Holding Time - Receipt	
16. Were samples received with correct chemical preservative (excluding Encore)?			✓	<input type="checkbox"/> pH Adjusted, pH Included (See box 16A) <input type="checkbox"/> Incorrect Preservative	
17. Were VOA samples received without headspace?			✓	<input type="checkbox"/> Headspace (VOA only)	
18. Did you check for residual chlorine, if necessary? (e.g. 1613B, 1668) Chlorine test strip lot number:			✓	<input type="checkbox"/> Residual Chlorine	
19. For 1613B water samples is pH<9?			✓	<input type="checkbox"/> If no, notify lab to adjust	
20. For rad samples was sample activity info. Provided?			✓	<input type="checkbox"/> Project missing info	
Project #: <u>1400 4316</u> PM Instructions: _____					

Labeling Verified by: _____ Date: _____

pH test strip lot number: _____

Box 16A: pH Preservation	Box 18A: Residual Chlorine
Preservative: _____	
Lot Number: _____	
Exp Date: _____	
Analyst: _____	
Date: _____	
Time: _____	

Sample Receiving Associate: POTD Date: 09.30.22





PFAS BATCH WORKSHEET

Lab Name: Eurofins Knoxville Job No.: 140-29079-1 Batch Start Date: 10/03/22 08:25 Batch Analyst: Wright, Aurielle C
 SDG No.: _____ Batch End Date: 10/05/22 08:17
 Batch Number: 65913
 Batch Method: None

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	63xxMFC_IDA 00051	63xxMFC3LSP 00010
MB 140-65913/1		None, Split, 537 (modified)		1 Sample	360 mL	0.5 mL	
LCS 140-65913/2		None, Split, 537 (modified)		1 Sample	360 mL	0.5 mL	1 mL
LCSD 140-65913/3		None, Split, 537 (modified)		1 Sample	360 mL	0.5 mL	1 mL
140-29079-A-2	T-2691, T-2692, T-2694 PPA CB OUTLET R1 OTM-45 BH	None, Split, 537 (modified)	T	1 Sample	360 mL	0.5 mL	
140-29079-A-4	T-2695 PPA CB OUTLET R1 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE	None, Split, 537 (modified)	T	1 Sample	360 mL	0.5 mL	
140-29079-A-6	T-2698, T-2699, T-2701 PPA CB OUTLET R2 OTM-45 BH	None, Split, 537 (modified)	T	1 Sample	360 mL	0.5 mL	
140-29079-A-8	T-2702 PPA CB OUTLET R2 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE	None, Split, 537 (modified)	T	1 Sample	360 mL	0.5 mL	
MB 140-65913/14		None, Split, 537 (modified)		1 Sample	360 mL	0.5 mL	
140-29079-A-10	T-2705, T-2706, T-2708 PPA CB OUTLET R3 OTM-45 BH	None, Split, 537 (modified)	T	1 Sample	360 mL	0.5 mL	
140-29079-A-12	T-2709 PPA CB OUTLET R3 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE	None, Split, 537 (modified)	T	1 Sample	360 mL	0.5 mL	

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

PFAS BATCH WORKSHEET

Lab Name: Eurofins Knoxville Job No.: 140-29079-1 Batch Start Date: 10/03/22 08:25 Batch Analyst: Wright, Aurielle C
 SDG No.: Batch Number: 65913 Batch End Date: 10/05/22 08:17
 Batch Method: None

Batch Notes	
H2O/ 5% NH4OH ID	5%NH4OH/MeOH: 518496
Extraction 1 Start Time	10/03/2022 12:35
Extraction 1 End Time	10/04/2022 08:30
Extraction 2 Start Time	10/04/2022 10:05
Extraction 2 End Time	10/05/2022 08:15
Analyst ID - Extraction	acw
Analyst ID - Spike Analyst	cac
Analyst ID - Spike Witness Analyst	acw
PVDF Filter ID	520581
XAD ID	494989
Hot Block ID	pfas1 & 2
Oven, Bath or Block Temperature 1	60 Degrees C

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

PFAS BATCH WORKSHEET

Lab Name: Eurofins Knoxville Job No.: 140-29079-1

SDG No.: _____

Batch Number: 65971 Batch Start Date: 10/04/22 10:10 Batch Analyst: Wright, Aurielle C

Batch Method: None Batch End Date: 10/05/22 13:35

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	CalcMsg	63xxMPFC_IDA 00051	63xxPFC3LSP 00010
MB 140-65971/1		None, Split, 537 (modified)		1 Sample	50 mL	CALC NOT SET TO RUN	0.5 mL	
LCS 140-65971/2		None, Split, 537 (modified)		1 Sample	50 mL	CALC NOT SET TO RUN	0.5 mL	1 mL
LCSD 140-65971/3		None, Split, 537 (modified)		1 Sample	50 mL	CALC NOT SET TO RUN	0.5 mL	1 mL
140-29079-A-1	T-2689, T-2690 PPA CB OUTLET R1 OTM-45 FH	None, Split, 537 (modified)	T	1 Sample	52 mL	CALC NOT SET TO RUN	0.5 mL	
140-29079-A-5	T-2696, T-2697 PPA CB OUTLET R2 OTM-45 FH	None, Split, 537 (modified)	T	1 Sample	50 mL	CALC NOT SET TO RUN	0.5 mL	
140-29079-A-9	T-2703, T-2704 PPA CB OUTLET R3 OTM-45 FH	None, Split, 537 (modified)	T	1 Sample	50 mL	CALC NOT SET TO RUN	0.5 mL	

Batch Notes	
H2O/ 5% NH4OH ID	5%NH4OH/MeOH:521647
Extraction Start Date	10/04/2022
Extraction Start time	14:00
Extraction End Date	10/05/2022
Extraction End time	10:20
Analyst ID - Extraction	acw
Analyst ID - Spike Analyst	cac
Analyst ID - Spike Witness Analyst	acw
Filter ID	511522
Hot Block ID	PFAS 1/2
Oven, Bath or Block Temperature 1	60 Degrees C

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

537 (modified)

PFAS BATCH WORKSHEET

Lab Name: Eurofins Knoxville Job No.: 140-29079-1 Batch Start Date: 10/05/22 08:22 Batch Analyst: Wright, Aurielle C
 SDG No.: _____ Batch End Date: 10/10/22 15:38
 Batch Number: 66004
 Batch Method: Split

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	63xxMPFOA-IS 00052
MB 140-65913/1-A		Split, 537 (modified)		180 mL	10 mL	250 uL
LCS 140-65913/2-A		Split, 537 (modified)		180 mL	10 mL	250 uL
LCSD 140-65913/3-A		Split, 537 (modified)		180 mL	10 mL	250 uL
140-29079-A-2-A	T-2691, T-2692, T-2694 PPA CB OUTLET R1 OTM-45 BH	Split, 537 (modified)	T	180 mL	10 mL	250 uL
140-29079-A-4-A	T-2695 PPA CB OUTLET R1 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE	Split, 537 (modified)	T	180 mL	10 mL	250 uL
140-29079-A-6-A	T-2698, T-2699, T-2701 PPA CB OUTLET R2 OTM-45 BH	Split, 537 (modified)	T	180 mL	10 mL	250 uL
140-29079-A-8-A	T-2702 PPA CB OUTLET R2 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE	Split, 537 (modified)	T	180 mL	10 mL	250 uL
MB 140-65913/14-A		Split, 537 (modified)		180 mL	10 mL	250 uL
140-29079-A-10-A	T-2705, T-2706, T-2708 PPA CB OUTLET R3 OTM-45 BH	Split, 537 (modified)	T	180 mL	10 mL	250 uL
140-29079-A-12-A	T-2709 PPA CB OUTLET R3 OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE	Split, 537 (modified)	T	180 mL	10 mL	250 uL

Batch Notes	
Analyst ID - Spike Analyst	cac
Analyst ID - Spike Witness Analyst	acw

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

PFAS BATCH WORKSHEET

Lab Name: Eurofins Knoxville Job No.: 140-29079-1
 SDG No.: _____
 Batch Number: 66018 Batch Start Date: 10/05/22 11:45 Batch Analyst: Wright, Aurielle C
 Batch Method: PFAS Prep Batch End Date: 10/07/22 15:12

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	63xxMPFC_IDA 00051	63xxMPFOA-IS 00052	63xxPFC3LSP 00010
MB 140-66018/1		PFAS Prep, 537 (modified)		1 Sample	10 mL	0.25 mL	0.25 mL	
LCS 140-66018/2		PFAS Prep, 537 (modified)		1 Sample	10 mL	0.25 mL	0.25 mL	0.5 mL
LCSD 140-66018/3		PFAS Prep, 537 (modified)		1 Sample	10 mL	0.25 mL	0.25 mL	0.5 mL
140-29079-A-3	T-2693 PFA CB OUTLET R1 OTM-45 IMPINGERS 1,2,&3 CONDENSATE	PFAS Prep, 537 (modified)	T	0.0068 Sample	10 mL	0.25 mL	0.25 mL	
140-29079-A-7	T-2700 PFA CB OUTLET R2 OTM-45 IMPINGERS 1,2,&3 CONDENSATE	PFAS Prep, 537 (modified)	T	0.0068 Sample	10 mL	0.25 mL	0.25 mL	
140-29079-A-11	T-2707 PFA CB OUTLET R3 OTM-45 IMPINGERS 1,2,&3 CONDENSATE	PFAS Prep, 537 (modified)	T	0.0067 Sample	10 mL	0.25 mL	0.25 mL	

Batch Notes	
Methanol ID	509164
Analyst ID - IDA Reagent Drop	cac
Analyst ID - IDA Reagent Drop Witness	dws
Analyst ID - TA Reagent Drop	cac
Analyst ID - TA Reagent Drop Witness	dws

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Eurofins/TestAmerica Knoxville Prep Batch Review Checklist

Batch # 101018

Split Batch # N/A

Review Items	N/A	Yes	No	If No, why is data reportable?	2nd Level
1. Were the samples extracted within the required holding times? <u>M/S 10/7/22</u>		✓		If No, NCM #: _____	✓
2. Are the final extracts free of water , precipitates, multiple phases, and for HRMS - color?		✓			✓
3. Were all project specific requirements met?		✓			✓
4. Were the correct start and completion dates entered into TALS?		✓			✓
5. Are the spike IDs and volumes correct in TALS for the method?		✓			✓
6. Does the prep batch paperwork package contain all required documentation which has been properly and completely filled out, including: <ul style="list-style-type: none"> • Extraction Benchsheet (Excel) • Batch Worksheets (ANLY) • Verify Protocol #'s (compare excel sheet to TALS) <u>M/S 10/7/22</u> • Was the Excel Extraction Benchsheet and Prep Batch Review Checklist scanned and attached to batch in TALS? 		✓			✓
7. Did extracts go through GPC cleanup? Has the following nonconformance been associated with all extracts?	✓			If Yes, NCM# <u>140-38695</u>	<u>NA</u>
8. Are all additional nonconformances documented appropriately?	✓			If Yes, NCM#: _____	<u>NA</u>
Analyst: <u>CAC</u> Date: <u>10/07/2022</u>					
Comments:					
Example Calculation:					
<u>29077-A-3 → 2ml used</u>					
<u>300ml recieved = 0.006666 sample = 0.0067 Sample</u>					
2nd Level Reviewer: <u>M/S</u> Date: <u>10/7/22</u>					
Comments:					

PFAS BATCH WORKSHEET

Lab Name: Eurofins Knoxville Job No.: 140-29079-1 Batch Start Date: 10/05/22 13:37 Batch Analyst: Clark, Courtney A
 SDG No.: _____ Batch End Date: 10/11/22 13:51
 Batch Number: 66029
 Batch Method: Split

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	63xxMFOA-IS 00052
MB 140-65971/1-A		Split, 537 (modified)		25 mL	10 mL	250 uL
LCS 140-65971/2-A		Split, 537 (modified)		25 mL	10 mL	250 uL
LCS 140-65971/3-A		Split, 537 (modified)		25 mL	10 mL	250 uL
140-29079-A-1-A	T-2689, T-2690 PPA CB OUTLET R1 OTM-45 FH	Split, 537 (modified)	T	26 mL	10 mL	250 uL
140-29079-A-5-A	T-2696, T-2697 PPA CB OUTLET R2 OTM-45 FH	Split, 537 (modified)	T	25 mL	10 mL	250 uL
140-29079-A-9-A	T-2703, T-2704 PPA CB OUTLET R3 OTM-45 FH	Split, 537 (modified)	T	25 mL	10 mL	250 uL

Batch Notes	
Analyst ID - Spike Analyst	cac
Analyst ID - Spike Witness Analyst	acw

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Carbon beds FH

Eurofins TestAmerica Knoxville Extraction Sheet
PFAS in Source Air Front Half Fraction

Prep Batch Number: 65971
 Split Batch Number: 111029
 TALS Prep Chain: LCMS_FH_Prep --> Split_SA_LCMS

Sample ID	Measure associated rinses using a graduated cylinder and record volume (mL)	Push down filter with tweezers in bottle	Create MB and LCS/D by using clean filter and placing in 125mL container	Add 50 ng/mL IS (IDA) to all samples & QC. Record volume in TALS.	Add 20 ng/mL native spike (TA) to LCS/D.	Add rinses and MeOH/5% NH4OH to the appropriate volume. Record volume of extraction solvent (mL)	Extract on shaker table for 18hr minimum	Filter sample using filter paper and plastic funnel	Place on hotblock at 60 deg C. Concentrate to <10mL.	Transfer to 10mL polypropylene tube. Place on N-EVAP and concentrate to near dryness. Add 2mL DI water.	Add 50ng/mL internal standard. Record volume in TALS. Bring to final volume in methanol. Filter using plastic syringe and 0.45um PVDF filter disk.
MB 140-65971/1	N/A				N/A						
LCSD 140-65971/2											
LCSD 140-65971/3											
140-29077-A-1 (140-520746)	83				N/A						
140-29077-A-5 (140-520753)	50										
140-29077-A-9 (140-520760)	60										
140-29079-A-1 (140-520816)	52										
140-29079-A-5 (140-520823)	48										
140-29079-A-9 (140-520830)	47										
140-29080-A-1 (140-520845)	50										
140-29080-A-5 (140-520852)	100										
140-29080-A-9 (140-520859)	90										
140-29081-A-1 (140-520866)	60										
MB 140-65971/14	N/A										
140-29081-A-5 (140-520873)	68										
140-29081-A-9 (140-520880)	75										
140-29085-A-1 (140-520984)	63										
140-29085-A-7 (140-520993)	111										
140-29085-A-11 (140-521000)	N/A										
140-29082-A-1 (140-520887)	77										
140-29082-A-5 (140-520894)	63										
140-29082-A-9 (140-520901)	69										
140-29084-A-1 (140-520944)	64										
140-29084-A-5 (140-520951)	72										
140-29084-A-9 (140-520958)	72										
140-29084-A-11 (140-520965)	72										
140-29084-A-15 (140-520972)	72										
	QC										
	AGW										
	10/14										
	QC										
	10/13										
	QC										
	10/17										
	QC										
	10/11										

OP135R1 031121 PFAS Front Half (TALS)

OP135R1, 3/11/21



ANALYTICAL REPORT

Eurofins Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921
Tel: (865)291-3000

Laboratory Job ID: 140-29085-1
Client Project/Site: Field QC

For:

The Chemours Company FC, LLC
c/o AECOM
Sabre Building, Suite 300
4051 Ogletown Road
Newark, Delaware 19713

Attn: Michael Aucoin



Authorized for release by:
10/27/2022 10:59:25 AM

Courtney Adkins, Project Manager II
(865)291-3019
Courtney.Adkins@et.eurofinsus.com

LINKS

Review your project
results through



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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Definitions/Glossary

Client: The Chemours Company FC, LLC
Project/Site: Field QC

Job ID: 140-29085-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: The Chemours Company FC, LLC
Project/Site: Field QC

Job ID: 140-29085-1

Job ID: 140-29085-1

Laboratory: Eurofins Knoxville

Narrative

Job Narrative 140-29085-1

Receipt

The samples were received on 9/30/2022 11:50 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 4.1° C.

LCMS

Methods 537 (modified), Dilution: LC/MS/MS Sampling Train Preparation and Analysis: The sampling train components are extracted and analyzed for Per- and Polyfluorinated Alkyl Substances (PFAS) using Eurofins TestAmerica Knoxville standard operating procedures KNOX-OP-0026 and KNOX-LC-0007.

The sampling trains are prepared as four analytical fractions: The particulate filter and front half of the filter holder, nozzle and probe solvent rinses are combined for one analytical fraction. The XAD-2 resin trap and back half of the filter holder, coil condenser and connecting glassware solvent rinses are also combined as a separate analytical fraction. The condensate, impinger contents and their related glassware DI water rinses make up the third analytical fraction. The breakthrough XAD module makes up the fourth analytical fraction.

The filters and XAD components are spiked with isotope dilution internal standards and the components are extracted with methanol/ammonium hydroxide by shaking for at least 18 hours. The extracts are concentrated to 10 mL and analyzed by HPLC/MS/MS. The condensates are spiked with the isotope dilution internal standards and extracted using either Solid-Phase Extraction (SPE) or diluting the water sample for analysis. Each extract at its final volume is 80:20 methanol:water

Sample results were calculated using the following equation:

Result, ng/sample = (on-column concentration, ng/mL) × (nominal final volume of extract (10 mL) / 1 sample) × DF × SF

Where:

DF = Instrument dilution factor

SF = Extraction Split Factor = (final volume of extract in the initial extraction batch / initial volume of extract in the "Split" batch)

For condensate, if less than the entire sample is extracted, the fraction of sample used replaces "1 sample"

Method 537 (modified): Sample, T-2802 QC OTM-45 MEOH WITH 5% NH4OH RB (140-29085-6), was not spiked with IDA on extraction due to analyst error. The sample was spiked with IDA after analysis and sample was re-analyzed. The results will not take into account the loss during extraction.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client Sample Results

Client: The Chemours Company FC, LLC
Project/Site: Field QC

Job ID: 140-29085-1

Client Sample ID: T-2794, T-2795 QC OTN-45 FH

Lab Sample ID: 140-29085-1

Date Collected: 09/28/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	2.48		0.246	0.231	ug/Sample		10/04/22 10:10	10/22/22 16:29	50
Isotope Dilution	%Recovery	Qualifier	Limits						
¹³ C3 HFPO-DA	106		25 - 150						
Prepared	Analyzed	Dil Fac							
10/04/22 10:10	10/22/22 16:29	50							

Client Sample ID: T-2796, T-2797, T-2799 QC OTM-45 BH

Lab Sample ID: 140-29085-2

Date Collected: 09/28/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.0200	0.0110	ug/Sample		10/03/22 12:47	10/21/22 20:50	1
Isotope Dilution	%Recovery	Qualifier	Limits						
¹³ C3 HFPO-DA	101		25 - 150						
Prepared	Analyzed	Dil Fac							
10/03/22 12:47	10/21/22 20:50	1							

Client Sample ID: T-2798 QC OTM-45 IMPINGERS 1,2,&3

Lab Sample ID: 140-29085-3

CONDENSATE

Date Collected: 09/28/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.0794	0.0317	ug/Sample		10/05/22 11:45	10/22/22 02:51	1
Isotope Dilution	%Recovery	Qualifier	Limits						
¹³ C3 HFPO-DA	95		25 - 150						
Prepared	Analyzed	Dil Fac							
10/05/22 11:45	10/22/22 02:51	1							

Client Sample ID: T-2800 QC OM-45 BREAKTHROUGH XAD-2

Lab Sample ID: 140-29085-4

RESIN TUBE

Date Collected: 09/28/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.0200	0.0110	ug/Sample		10/03/22 12:47	10/21/22 20:59	1
Isotope Dilution	%Recovery	Qualifier	Limits						
¹³ C3 HFPO-DA	90		25 - 150						
Prepared	Analyzed	Dil Fac							
10/03/22 12:47	10/21/22 20:59	1							

Client Sample ID: T-2801 QC OTM-45 DI WATER RB

Lab Sample ID: 140-29085-5

Date Collected: 09/28/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.0388	0.0155	ug/Sample		10/05/22 11:45	10/22/22 03:00	1
Isotope Dilution	%Recovery	Qualifier	Limits						
¹³ C3 HFPO-DA	98		25 - 150						
Prepared	Analyzed	Dil Fac							
10/05/22 11:45	10/22/22 03:00	1							

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Client Sample Results

Client: The Chemours Company FC, LLC
Project/Site: Field QC

Job ID: 140-29085-1

**Client Sample ID: T-2802 QC OTM-45 MEOH WITH 5% NH4OH
RB**

Lab Sample ID: 140-29085-6

Date Collected: 09/28/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.0199	0.0109	ug/Sample		10/03/22 12:47	10/25/22 12:52	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
¹³ C3 HFPO-DA	102		25 - 150				10/03/22 12:47	10/25/22 12:52	1

Client Sample ID: T-2803, T-2804 QC OTM-45 FH

Lab Sample ID: 140-29085-7

Date Collected: 09/28/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	0.00841		0.00496	0.00466	ug/Sample		10/04/22 10:10	10/22/22 07:51	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
¹³ C3 HFPO-DA	83		25 - 150				10/04/22 10:10	10/22/22 07:51	1

Client Sample ID: T-2805, T-2806, T-2808 QC OTM-45 BH

Lab Sample ID: 140-29085-8

Date Collected: 09/28/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.0200	0.0110	ug/Sample		10/03/22 12:47	10/21/22 21:16	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
¹³ C3 HFPO-DA	91		25 - 150				10/03/22 12:47	10/21/22 21:16	1

**Client Sample ID: T-2807 QC OTM-45 IMPINGERS 1,2,&3
CONDENSATE**

Lab Sample ID: 140-29085-9

Date Collected: 09/28/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.0769	0.0308	ug/Sample		10/05/22 11:45	10/22/22 03:26	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
¹³ C3 HFPO-DA	92		25 - 150				10/05/22 11:45	10/22/22 03:26	1

**Client Sample ID: T-2809 QC OTM-45 BREAKTHROUGH XAD-2
RESIN TUBE**

Lab Sample ID: 140-29085-10

Date Collected: 09/28/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.0200	0.0110	ug/Sample		10/03/22 12:47	10/21/22 21:25	1

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Client Sample Results

Client: The Chemours Company FC, LLC
Project/Site: Field QC

Job ID: 140-29085-1

Client Sample ID: T-2809 QC OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE

Lab Sample ID: 140-29085-10

Date Collected: 09/28/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Sample Container: Air Train

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	96		25 - 150	10/03/22 12:47	10/21/22 21:25	1

Client Sample ID: MEDIA CHECK T-2246

Lab Sample ID: 140-29085-11

Date Collected: 09/28/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.00500	0.00470	ug/Sample		10/04/22 10:10	10/22/22 07:59	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	82		25 - 150	10/04/22 10:10	10/22/22 07:59	1

Client Sample ID: MEDIA CHECK T-2247

Lab Sample ID: 140-29085-12

Date Collected: 09/28/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Sample Container: Air Train

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	0.0276		0.0200	0.0110	ug/Sample		10/03/22 12:47	10/21/22 21:52	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	85		25 - 150	10/03/22 12:47	10/21/22 21:52	1

Default Detection Limits

Client: The Chemours Company FC, LLC
Project/Site: Field QC

Job ID: 140-29085-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Prep: None

Analyte	RL	MDL	Units
HFPO-DA	0.00500	0.00470	ug/Sample
HFPO-DA	0.0200	0.0110	ug/Sample

Method: 537 (modified) - Fluorinated Alkyl Substances

Prep: PFAS Prep

Analyte	RL	MDL	Units
HFPO-DA	0.000500	0.000200	ug/Sample

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Isotope Dilution Summary

Client: The Chemours Company FC, LLC
 Project/Site: Field QC

Job ID: 140-29085-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Air

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	HFPODA (25-150)	
140-29085-1	T-2794, T-2795 QC OTN-45 FH	106	
140-29085-2	T-2796, T-2797, T-2799 QC OTM-45 BH	101	
140-29085-3	T-2798 QC OTM-45 IMPINGER: 1,2,&3 CONDENSATE	95	
140-29085-4	T-2800 QC OM-45 BREAKTHROUGH XAD-2 RESI TUBE	90	
140-29085-5	T-2801 QC OTM-45 DI WATER RB	98	
140-29085-6	T-2802 QC OTM-45 MEOH WITH 5% NH4OH RB	102	
140-29085-7	T-2803, T-2804 QC OTM-45 FH	83	
140-29085-8	T-2805, T-2806, T-2808 QC OTM-45 BH	91	
140-29085-9	T-2807 QC OTM-45 IMPINGER: 1,2,&3 CONDENSATE	92	
140-29085-10	T-2809 QC OTM-45 BREAKTHROUGH XAD-2 RESI TUBE	96	
140-29085-11	MEDIA CHECK T-2246	82	
140-29085-12	MEDIA CHECK T-2247	85	
LCS 140-65942/2-B	Lab Control Sample	95	
LCS 140-65971/2-B	Lab Control Sample	75	
LCS 140-66018/2-A	Lab Control Sample	87	
LCSD 140-65942/3-B	Lab Control Sample Dup	89	
LCSD 140-65971/3-B	Lab Control Sample Dup	76	
LCSD 140-66018/3-A	Lab Control Sample Dup	102	
MB 140-65942/1-B	Method Blank	85	
MB 140-65971/14-B	Method Blank	81	
MB 140-65971/1-B	Method Blank	87	
MB 140-66018/14-A	Method Blank	94	
MB 140-66018/1-A	Method Blank	92	

Surrogate Legend

HFPODA = 13C3 HFPO-DA

QC Sample Results

Client: The Chemours Company FC, LLC
Project/Site: Field QC

Job ID: 140-29085-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 140-65942/1-B
Matrix: Air
Analysis Batch: 66559

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 65942

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.0200	0.0110	ug/Sample		10/03/22 12:47	10/21/22 19:31	1
Isotope Dilution	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	85		25 - 150				10/03/22 12:47	10/21/22 19:31	1

Lab Sample ID: LCS 140-65942/2-B
Matrix: Air
Analysis Batch: 66559

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 65942

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
HFPO-DA	0.0200	0.02246		ug/Sample		112	60 - 140
Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits				
13C3 HFPO-DA	95		25 - 150				

Lab Sample ID: LCSD 140-65942/3-B
Matrix: Air
Analysis Batch: 66559

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 65942

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HFPO-DA	0.0200	0.02415		ug/Sample		121	60 - 140	7	30
Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits						
13C3 HFPO-DA	89		25 - 150						

Lab Sample ID: MB 140-65971/14-B
Matrix: Air
Analysis Batch: 66559

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 65971

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.00500	0.00470	ug/Sample		10/04/22 10:10	10/22/22 07:15	1
Isotope Dilution	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	81		25 - 150				10/04/22 10:10	10/22/22 07:15	1

Lab Sample ID: MB 140-65971/1-B
Matrix: Air
Analysis Batch: 66559

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 65971

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.00500	0.00470	ug/Sample		10/04/22 10:10	10/22/22 04:28	1
Isotope Dilution	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	87		25 - 150				10/04/22 10:10	10/22/22 04:28	1

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QC Sample Results

Client: The Chemours Company FC, LLC
Project/Site: Field QC

Job ID: 140-29085-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 140-65971/2-B
Matrix: Air
Analysis Batch: 66559

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 65971

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
HFPO-DA	0.0200	0.02649		ug/Sample		132	60 - 140
<i>Isotope Dilution</i>		<i>%Recovery</i>	<i>Qualifier</i>				<i>Limits</i>
13C3 HFPO-DA		75					25 - 150

Lab Sample ID: LCSD 140-65971/3-B
Matrix: Air
Analysis Batch: 66559

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 65971

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HFPO-DA	0.0200	0.02626		ug/Sample		131	60 - 140	1	30
<i>Isotope Dilution</i>		<i>%Recovery</i>	<i>Qualifier</i>				<i>Limits</i>		
13C3 HFPO-DA		76					25 - 150		

Lab Sample ID: MB 140-66018/14-A
Matrix: Air
Analysis Batch: 66559

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 66018

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.000500	0.000200	ug/Sample		10/05/22 11:45	10/22/22 02:25	1
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C3 HFPO-DA	94		25 - 150				10/05/22 11:45	10/22/22 02:25	1

Lab Sample ID: MB 140-66018/1-A
Matrix: Air
Analysis Batch: 66559

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 66018

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HFPO-DA	ND		0.000500	0.000200	ug/Sample		10/05/22 11:45	10/22/22 00:04	1
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C3 HFPO-DA	92		25 - 150				10/05/22 11:45	10/22/22 00:04	1

Lab Sample ID: LCS 140-66018/2-A
Matrix: Air
Analysis Batch: 66559

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 66018

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
HFPO-DA	0.0100	0.01234		ug/Sample		123	60 - 140
<i>Isotope Dilution</i>		<i>%Recovery</i>	<i>Qualifier</i>				<i>Limits</i>
13C3 HFPO-DA		87					25 - 150

QC Sample Results

Client: The Chemours Company FC, LLC
 Project/Site: Field QC

Job ID: 140-29085-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCSD 140-66018/3-A
 Matrix: Air
 Analysis Batch: 66559

Client Sample ID: Lab Control Sample Dup
 Prep Type: Total/NA
 Prep Batch: 66018

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HFPO-DA	0.0100	0.01095		ug/Sample		109	60 - 140	12	30
<i>Isotope Dilution</i>									
<i>13C3 HFPO-DA</i>									

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>13C3 HFPO-DA</i>	102		25 - 150

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QC Association Summary

Client: The Chemours Company FC, LLC
Project/Site: Field QC

Job ID: 140-29085-1

LCMS

Prep Batch: 65942

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-29085-2	T-2796, T-2797, T-2799 QC OTM-45 BH	Total/NA	Air	None	
140-29085-4	T-2800 QC OM-45 BREAKTHROUGH XAD-2 RE	Total/NA	Air	None	
140-29085-6	T-2802 QC OTM-45 MEOH WITH 5% NH4OH RI	Total/NA	Air	None	
140-29085-8	T-2805, T-2806, T-2808 QC OTM-45 BH	Total/NA	Air	None	
140-29085-10	T-2809 QC OTM-45 BREAKTHROUGH XAD-2 R	Total/NA	Air	None	
140-29085-12	MEDIA CHECK T-2247	Total/NA	Air	None	
MB 140-65942/1-B	Method Blank	Total/NA	Air	None	
LCS 140-65942/2-B	Lab Control Sample	Total/NA	Air	None	
LCSD 140-65942/3-B	Lab Control Sample Dup	Total/NA	Air	None	

Prep Batch: 65971

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-29085-1	T-2794, T-2795 QC OTN-45 FH	Total/NA	Air	None	
140-29085-7	T-2803, T-2804 QC OTM-45 FH	Total/NA	Air	None	
140-29085-11	MEDIA CHECK T-2246	Total/NA	Air	None	
MB 140-65971/14-B	Method Blank	Total/NA	Air	None	
MB 140-65971/1-B	Method Blank	Total/NA	Air	None	
LCS 140-65971/2-B	Lab Control Sample	Total/NA	Air	None	
LCSD 140-65971/3-B	Lab Control Sample Dup	Total/NA	Air	None	

Prep Batch: 66018

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-29085-3	T-2798 QC OTM-45 IMPINGERS 1,2,&3 CONDE	Total/NA	Air	PFAS Prep	
140-29085-5	T-2801 QC OTM-45 DI WATER RB	Total/NA	Air	PFAS Prep	
140-29085-9	T-2807 QC OTM-45 IMPINGERS 1,2,&3 CONDE	Total/NA	Air	PFAS Prep	
MB 140-66018/14-A	Method Blank	Total/NA	Air	PFAS Prep	
MB 140-66018/1-A	Method Blank	Total/NA	Air	PFAS Prep	
LCS 140-66018/2-A	Lab Control Sample	Total/NA	Air	PFAS Prep	
LCSD 140-66018/3-A	Lab Control Sample Dup	Total/NA	Air	PFAS Prep	

Cleanup Batch: 66029

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-29085-1	T-2794, T-2795 QC OTN-45 FH	Total/NA	Air	Split	65971
140-29085-7	T-2803, T-2804 QC OTM-45 FH	Total/NA	Air	Split	65971
140-29085-11	MEDIA CHECK T-2246	Total/NA	Air	Split	65971
MB 140-65971/14-B	Method Blank	Total/NA	Air	Split	65971
MB 140-65971/1-B	Method Blank	Total/NA	Air	Split	65971
LCS 140-65971/2-B	Lab Control Sample	Total/NA	Air	Split	65971
LCSD 140-65971/3-B	Lab Control Sample Dup	Total/NA	Air	Split	65971

Cleanup Batch: 66031

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-29085-2	T-2796, T-2797, T-2799 QC OTM-45 BH	Total/NA	Air	Split	65942
140-29085-4	T-2800 QC OM-45 BREAKTHROUGH XAD-2 RE	Total/NA	Air	Split	65942
140-29085-6	T-2802 QC OTM-45 MEOH WITH 5% NH4OH RI	Total/NA	Air	Split	65942
140-29085-8	T-2805, T-2806, T-2808 QC OTM-45 BH	Total/NA	Air	Split	65942
140-29085-10	T-2809 QC OTM-45 BREAKTHROUGH XAD-2 R	Total/NA	Air	Split	65942
140-29085-12	MEDIA CHECK T-2247	Total/NA	Air	Split	65942
MB 140-65942/1-B	Method Blank	Total/NA	Air	Split	65942
LCS 140-65942/2-B	Lab Control Sample	Total/NA	Air	Split	65942
LCSD 140-65942/3-B	Lab Control Sample Dup	Total/NA	Air	Split	65942

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QC Association Summary

Client: The Chemours Company FC, LLC
 Project/Site: Field QC

Job ID: 140-29085-1

LCMS

Analysis Batch: 66559

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-29085-2	T-2796, T-2797, T-2799 QC OTM-45 BH	Total/NA	Air	537 (modified)	66031
140-29085-3	T-2798 QC OTM-45 IMPINGERS 1,2,&3 CONDE	Total/NA	Air	537 (modified)	66018
140-29085-4	T-2800 QC OM-45 BREAKTHROUGH XAD-2 RE	Total/NA	Air	537 (modified)	66031
140-29085-5	T-2801 QC OTM-45 DI WATER RB	Total/NA	Air	537 (modified)	66018
140-29085-7	T-2803, T-2804 QC OTM-45 FH	Total/NA	Air	537 (modified)	66029
140-29085-8	T-2805, T-2806, T-2808 QC OTM-45 BH	Total/NA	Air	537 (modified)	66031
140-29085-9	T-2807 QC OTM-45 IMPINGERS 1,2,&3 CONDE	Total/NA	Air	537 (modified)	66018
140-29085-10	T-2809 QC OTM-45 BREAKTHROUGH XAD-2 R	Total/NA	Air	537 (modified)	66031
140-29085-11	MEDIA CHECK T-2246	Total/NA	Air	537 (modified)	66029
140-29085-12	MEDIA CHECK T-2247	Total/NA	Air	537 (modified)	66031
MB 140-65942/1-B	Method Blank	Total/NA	Air	537 (modified)	66031
MB 140-65971/14-B	Method Blank	Total/NA	Air	537 (modified)	66029
MB 140-65971/1-B	Method Blank	Total/NA	Air	537 (modified)	66029
MB 140-66018/14-A	Method Blank	Total/NA	Air	537 (modified)	66018
MB 140-66018/1-A	Method Blank	Total/NA	Air	537 (modified)	66018
LCS 140-65942/2-B	Lab Control Sample	Total/NA	Air	537 (modified)	66031
LCS 140-65971/2-B	Lab Control Sample	Total/NA	Air	537 (modified)	66029
LCS 140-66018/2-A	Lab Control Sample	Total/NA	Air	537 (modified)	66018
LCSD 140-65942/3-B	Lab Control Sample Dup	Total/NA	Air	537 (modified)	66031
LCSD 140-65971/3-B	Lab Control Sample Dup	Total/NA	Air	537 (modified)	66029
LCSD 140-66018/3-A	Lab Control Sample Dup	Total/NA	Air	537 (modified)	66018

Analysis Batch: 66593

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-29085-1	T-2794, T-2795 QC OTN-45 FH	Total/NA	Air	537 (modified)	66029

Analysis Batch: 66691

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-29085-6	T-2802 QC OTM-45 MEOH WITH 5% NH4OH RI	Total/NA	Air	537 (modified)	66031

Lab Chronicle

Client: The Chemours Company FC, LLC
Project/Site: Field QC

Job ID: 140-29085-1

Client Sample ID: T-2794, T-2795 QC OTN-45 FH

Lab Sample ID: 140-29085-1

Date Collected: 09/28/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	65 mL	65971	10/04/22 10:10	ACW	EET KNX
Total/NA	Cleanup	Split			33 mL	10 mL	66029	10/05/22 13:37	CAC	EET KNX
Total/NA	Analysis	537 (modified)		50	1 mL	1 mL	66593	10/22/22 16:29	CAC	EET KNX
Instrument ID: LCA										

Client Sample ID: T-2796, T-2797, T-2799 QC OTM-45 BH

Lab Sample ID: 140-29085-2

Date Collected: 09/28/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	360 mL	65942	10/03/22 12:47	ACW	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	66031	10/05/22 13:54	ACW	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	66559	10/21/22 20:50	CAC	EET KNX
Instrument ID: LCA										

Client Sample ID: T-2798 QC OTM-45 IMPINGERS 1,2,&3 CONDENSATE

Lab Sample ID: 140-29085-3

Date Collected: 09/28/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PFAS Prep			0.0063 Sample	10 mL	66018	10/05/22 11:45	ACW	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	66559	10/22/22 02:51	CAC	EET KNX
Instrument ID: LCA										

Client Sample ID: T-2800 QC OM-45 BREAKTHROUGH XAD-2 RESIN TUBE

Lab Sample ID: 140-29085-4

Date Collected: 09/28/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	360 mL	65942	10/03/22 12:47	ACW	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	66031	10/05/22 13:54	ACW	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	66559	10/21/22 20:59	CAC	EET KNX
Instrument ID: LCA										

Client Sample ID: T-2801 QC OTM-45 DI WATER RB

Lab Sample ID: 140-29085-5

Date Collected: 09/28/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PFAS Prep			0.0129 Sample	10 mL	66018	10/05/22 11:45	ACW	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	66559	10/22/22 03:00	CAC	EET KNX
Instrument ID: LCA										

Eurofins Knoxville

Lab Chronicle

Client: The Chemours Company FC, LLC
Project/Site: Field QC

Job ID: 140-29085-1

**Client Sample ID: T-2802 QC OTM-45 MEOH WITH 5% NH4OH
RB**

Lab Sample ID: 140-29085-6

Date Collected: 09/28/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	133 mL	65942	10/03/22 12:47	ACW	EET KNX
Total/NA	Cleanup	Split			67 mL	10 mL	66031	10/05/22 13:54	ACW	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	66691	10/25/22 12:52	CAC	EET KNX
Instrument ID: LCA										

Client Sample ID: T-2803, T-2804 QC OTM-45 FH

Lab Sample ID: 140-29085-7

Date Collected: 09/28/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	111 mL	65971	10/04/22 10:10	ACW	EET KNX
Total/NA	Cleanup	Split			56 mL	10 mL	66029	10/05/22 13:37	CAC	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	66559	10/22/22 07:51	CAC	EET KNX
Instrument ID: LCA										

Client Sample ID: T-2805, T-2806, T-2808 QC OTM-45 BH

Lab Sample ID: 140-29085-8

Date Collected: 09/28/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	360 mL	65942	10/03/22 12:47	ACW	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	66031	10/05/22 13:54	ACW	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	66559	10/21/22 21:16	CAC	EET KNX
Instrument ID: LCA										

**Client Sample ID: T-2807 QC OTM-45 IMPINGERS 1,2,&3
CONDENSATE**

Lab Sample ID: 140-29085-9

Date Collected: 09/28/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PFAS Prep			0.0065 Sample	10 mL	66018	10/05/22 11:45	ACW	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	66559	10/22/22 03:26	CAC	EET KNX
Instrument ID: LCA										

**Client Sample ID: T-2809 QC OTM-45 BREAKTHROUGH XAD-2
RESIN TUBE**

Lab Sample ID: 140-29085-10

Date Collected: 09/28/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	360 mL	65942	10/03/22 12:47	ACW	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	66031	10/05/22 13:54	ACW	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	66559	10/21/22 21:25	CAC	EET KNX
Instrument ID: LCA										

Eurofins Knoxville

Lab Chronicle

Client: The Chemours Company FC, LLC
Project/Site: Field QC

Job ID: 140-29085-1

Client Sample ID: MEDIA CHECK T-2246

Lab Sample ID: 140-29085-11

Date Collected: 09/28/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	50 mL	65971	10/04/22 10:10	ACW	EET KNX
Total/NA	Cleanup	Split			25 mL	10 mL	66029	10/05/22 13:37	CAC	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	66559	10/22/22 07:59	CAC	EET KNX
Instrument ID: LCA										

Client Sample ID: MEDIA CHECK T-2247

Lab Sample ID: 140-29085-12

Date Collected: 09/28/22 00:00

Matrix: Air

Date Received: 09/30/22 11:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	360 mL	65942	10/03/22 12:47	ACW	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	66031	10/05/22 13:54	ACW	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	66559	10/21/22 21:52	CAC	EET KNX
Instrument ID: LCA										

Client Sample ID: Method Blank

Lab Sample ID: MB 140-65942/1-B

Date Collected: N/A

Matrix: Air

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	360 mL	65942	10/03/22 12:47	ACW	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	66031	10/05/22 13:54	ACW	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	66559	10/21/22 19:31	CAC	EET KNX
Instrument ID: LCA										

Client Sample ID: Method Blank

Lab Sample ID: MB 140-65971/14-B

Date Collected: N/A

Matrix: Air

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	50 mL	65971	10/04/22 10:10	ACW	EET KNX
Total/NA	Cleanup	Split			25 mL	10 mL	66029	10/05/22 13:37	CAC	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	66559	10/22/22 07:15	CAC	EET KNX
Instrument ID: LCA										

Client Sample ID: Method Blank

Lab Sample ID: MB 140-65971/1-B

Date Collected: N/A

Matrix: Air

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	50 mL	65971	10/04/22 10:10	ACW	EET KNX
Total/NA	Cleanup	Split			25 mL	10 mL	66029	10/05/22 13:37	CAC	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	66559	10/22/22 04:28	CAC	EET KNX
Instrument ID: LCA										

Eurofins Knoxville

Lab Chronicle

Client: The Chemours Company FC, LLC
Project/Site: Field QC

Job ID: 140-29085-1

Client Sample ID: Method Blank

Lab Sample ID: MB 140-66018/14-A

Date Collected: N/A

Matrix: Air

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PFAS Prep			1 Sample	10 mL	66018	10/05/22 11:45	ACW	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	66559	10/22/22 02:25	CAC	EET KNX
Instrument ID: LCA										

Client Sample ID: Method Blank

Lab Sample ID: MB 140-66018/1-A

Date Collected: N/A

Matrix: Air

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PFAS Prep			1 Sample	10 mL	66018	10/05/22 11:45	ACW	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	66559	10/22/22 00:04	CAC	EET KNX
Instrument ID: LCA										

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 140-65942/2-B

Date Collected: N/A

Matrix: Air

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	360 mL	65942	10/03/22 12:47	ACW	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	66031	10/05/22 13:54	ACW	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	66559	10/21/22 19:40	CAC	EET KNX
Instrument ID: LCA										

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 140-65971/2-B

Date Collected: N/A

Matrix: Air

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	50 mL	65971	10/04/22 10:10	ACW	EET KNX
Total/NA	Cleanup	Split			25 mL	10 mL	66029	10/05/22 13:37	CAC	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	66559	10/22/22 04:37	CAC	EET KNX
Instrument ID: LCA										

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 140-66018/2-A

Date Collected: N/A

Matrix: Air

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PFAS Prep			1 Sample	10 mL	66018	10/05/22 11:45	ACW	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	66559	10/22/22 00:13	CAC	EET KNX
Instrument ID: LCA										

Lab Chronicle

Client: The Chemours Company FC, LLC
 Project/Site: Field QC

Job ID: 140-29085-1

Client Sample ID: Lab Control Sample Dup

Lab Sample ID: LCSD 140-65942/3-B

Date Collected: N/A

Matrix: Air

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	360 mL	65942	10/03/22 12:47	ACW	EET KNX
Total/NA	Cleanup	Split			180 mL	10 mL	66031	10/05/22 13:54	ACW	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	66559	10/21/22 20:06	CAC	EET KNX
Instrument ID: LCA										

Client Sample ID: Lab Control Sample Dup

Lab Sample ID: LCSD 140-65971/3-B

Date Collected: N/A

Matrix: Air

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	None			1 Sample	50 mL	65971	10/04/22 10:10	ACW	EET KNX
Total/NA	Cleanup	Split			25 mL	10 mL	66029	10/05/22 13:37	CAC	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	66559	10/22/22 04:46	CAC	EET KNX
Instrument ID: LCA										

Client Sample ID: Lab Control Sample Dup

Lab Sample ID: LCSD 140-66018/3-A

Date Collected: N/A

Matrix: Air

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PFAS Prep			1 Sample	10 mL	66018	10/05/22 11:45	ACW	EET KNX
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	66559	10/22/22 00:21	CAC	EET KNX
Instrument ID: LCA										

Laboratory References:

EET KNX = Eurofins Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000

Accreditation/Certification Summary

Client: The Chemours Company FC, LLC
 Project/Site: Field QC

Job ID: 140-29085-1

Laboratory: Eurofins Knoxville

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
	AFCEE	N/A	
ANAB	Dept. of Defense ELAP	L2311	02-13-25
ANAB	Dept. of Energy	L2311.01	02-13-25
ANAB	ISO/IEC 17025	L2311	02-13-25
Arkansas DEQ	State	88-0688	06-16-23
California	State	2423	06-30-22 *
Colorado	State	TN00009	02-28-23
Connecticut	State	PH-0223	09-30-23
Florida	NELAP	E87177	06-30-23
Georgia (DW)	State	906	12-11-22
Hawaii	State	NA	12-11-22
Kansas	NELAP	E-10349	10-31-22
Kentucky (DW)	State	90101	12-31-22
Louisiana	NELAP	83979	06-30-23
Louisiana (All)	NELAP	83979	06-30-23
Louisiana (DW)	State	LA019	12-31-22
Maryland	State	277	03-31-23
Michigan	State	9933	12-11-22
Nevada	State	TN00009	07-31-23
New Hampshire	NELAP	299919	01-17-23
New Jersey	NELAP	TN001	06-30-23
New York	NELAP	10781	03-31-23
North Carolina (DW)	State	21705	07-31-23
North Carolina (WW/SW)	State	64	12-31-22
Ohio VAP	State	CL0059	06-02-23
Oklahoma	State	9415	08-31-23
Oregon	NELAP	TNI0189	12-31-22
Pennsylvania	NELAP	68-00576	12-31-22
Tennessee	State	02014	07-27-25
Texas	NELAP	T104704380-22-17	08-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-19-00236	12-31-22
Utah	NELAP	TN00009	07-31-23
Virginia	NELAP	460176	09-14-23
Washington	State	C593	01-19-23
West Virginia (DW)	State	9955C	12-31-22
West Virginia DEP	State	345	04-30-23
Wisconsin	State	998044300	08-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: The Chemours Company FC, LLC
Project/Site: Field QC

Job ID: 140-29085-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	EET KNX
None	Leaching Procedure	TAL SOP	EET KNX
None	Leaching Procedure for Filter	TAL SOP	EET KNX
PFAS Prep	Preparation, Direct Inject PFAS	TAL-SAC	EET KNX
Split	Source Air Split	None	EET KNX

Protocol References:

EPA = US Environmental Protection Agency

None = None

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

TAL-SAC = Eurofins Sacramento, Facility Standard Operating Procedure.

Laboratory References:

EET KNX = Eurofins Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000



Sample Summary

Client: The Chemours Company FC, LLC
Project/Site: Field QC

Job ID: 140-29085-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
140-29085-1	T-2794, T-2795 QC OTN-45 FH	Air	09/28/22 00:00	09/30/22 11:50
140-29085-2	T-2796, T-2797, T-2799 QC OTM-45 BH	Air	09/28/22 00:00	09/30/22 11:50
140-29085-3	T-2798 QC OTM-45 IMPINGERS 1,2,&3 CONDENSATE	Air	09/28/22 00:00	09/30/22 11:50
140-29085-4	T-2800 QC OM-45 BREAKTHROUGH XAD-2 RESIN TUBE	Air	09/28/22 00:00	09/30/22 11:50
140-29085-5	T-2801 QC OTM-45 DI WATER RB	Air	09/28/22 00:00	09/30/22 11:50
140-29085-6	T-2802 QC OTM-45 MEOH WITH 5% NH4OH RB	Air	09/28/22 00:00	09/30/22 11:50
140-29085-7	T-2803, T-2804 QC OTM-45 FH	Air	09/28/22 00:00	09/30/22 11:50
140-29085-8	T-2805, T-2806, T-2808 QC OTM-45 BH	Air	09/28/22 00:00	09/30/22 11:50
140-29085-9	T-2807 QC OTM-45 IMPINGERS 1,2,&3 CONDENSATE	Air	09/28/22 00:00	09/30/22 11:50
140-29085-10	T-2809 QC OTM-45 BREAKTHROUGH XAD-2 RESIN TUBE	Air	09/28/22 00:00	09/30/22 11:50
140-29085-11	MEDIA CHECK T-2246	Air	09/28/22 00:00	09/30/22 11:50
140-29085-12	MEDIA CHECK T-2247	Air	09/28/22 00:00	09/30/22 11:50



Project Identification:		Chemours Emissions Test	
Client Name:	The Chemours Company FC, LLC		
Client Contact:	Christel Compton Office: (910) 678-1213 Cell: (910) 975-3386		
TestAmerica Project Manager:	Courtney Adkins Office: (865) 291-3019		
TestAmerica Program Manager:	Billy Anderson Office: (865) 291-3080 Cell: (865) 206-9004		

Laboratory Deliverable Turnaround Requirements:	
Analytical Due Date: (Review-Released Data)	21 Days from Lab Receipt
Data Package Due Date:	28 Days from Lab Receipt

Analytical Testing QC Requirements:
 The Legend for ProjecB- Specific Quality Control Testing is designated in the "QC" column as follows: "BT" = Blank Train, "RB" = Reagent Blank, "MS" = Matrix Spike, "MSD" = Matrix Spike Duplicate, "DUP" = Duplicate, "PB" = Proof Blank, "TB" = Trip Blank

Laboratory Destination:	Eurofins TestAmerica 5815 Middlebrook Pike Knoxville, TN 37921
Lab Phone Number:	865.291.3000
Courier:	Hand Deliver

Project Deliverables:
 Report analytical results on TALS Report form Std_Tal_L4. Include "Field Sample Number", "Sample Type", and "Run Number" on all TALS Reports.

Analytical Parameter:	Holding Time Requirements:	Preservation Requirements:
HFPO-DA (CAS No. 13252-13-6) & PFOA (CAS No. 335-67-1)	14 Days to Extraction; 40 Days to Analysis	Cool, 4°C

Field Sample No./Sample Coding ID	Run No.	Sample Collection Date	Project QC Requirements	Sample Bottle/ Container	Sample Type/Analysis	Analytical Specifications
T-2794 QC OTM-45 Filter PBT (Combine with T-2795)	QC	9/28/22	Proof Blank Train	250 mL HDPE Wide-Mouth Bottle	Particulate Filter (82.6 mm Whatman Glass Microfiber) OTM-45 Blank Train HFPO-DA & PFOA Analysis	Knoxville: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level. Use the Front- Half Probe Rinse to assist the solvent extraction of the Filter sample. Analyze for HFPO-DA and PFOA.
T-2795 QC OTM-45 FH of Filter Holder & Probe MeOH Rinse PBT (Combine with B- 1658)	QC	9/28/22	Proof Blank Train	250 mL HDPE Wide-Mouth Bottle	Front Half of Filter Holder & Probe Methanol/5% Ammonium Hydroxide Rinse OTM-45 Blank Train HFPO-DA & PFOA Analysis	Knoxville: Use this solvent sample in the Filter extraction.



140-29085 Chain of Custody

Field Sample No./Sample Coding ID	Run No.	Sample Collection Date	Project QC Requirements	Sample Bottle/ Container	Sample Type/Analysis	Analytical Specifications
T-2796 QC OTM-45 XAD-2 Resin Tube PBT	QC	9/28/22	Proof Blank Train	XAD-2 Resin Tube	XAD-2 Resin Tube OTM-45 Blank Train HFPO-DA & PFOA Analysis	Knoxville: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level. Use the Back-Half Glassware Rinse and the Impinger Glassware Methanol Rinse to assist the solvent extraction of the XAD-2 resin sample. Analyze for HFPO-DA and PFOA.
T-2797 QC OTM-45 BH of Filter Holder & Coil Condenser MeOH Rinse PBT (Combine with T-2796)	QC	9/28/22	Proof Blank Train	250 mL HDPE Wide- Mouth Bottle	Back Half of Filter Holder & Coil Condenser Methanol/5% Ammonium Hydroxide Rinse OTM-45 Blank Train HFPO-DA & PFOA Analysis	Knoxville: Use this solvent sample and the Impinger Glassware Methanol Rinse in the XAD-2 Resin extraction. Analyze for HFPO-DA and PFOA.
T-2798 QC OTM-45 Impingers 1,2 & 3 Condensate PBT	QC	9/28/22	Proof Blank Train	1 Liter HDPE Wide-Mouth Bottle	Impinger #1, #2 & #3 Condensate OTM-45 Blank Train HFPO-DA & PFOA Analysis	Knoxville: Analyze for HFPO-DA and PFOA.
T-2799 QC OTM-45 Impinger Glassware MeOH Rinse PBT (Combine with T-2796)	QC	9/28/22	Proof Blank Train	250 mL HDPE Wide- Mouth Bottle	Impinger Glassware Methanol/5% Ammonium Hydroxide Rinse OTM-45 Blank Train HFPO-DA & PFOA Analysis	Knoxville: Use this solvent sample in the XAD-2 Resin Extraction.
T-2800 QC OTM-45 Breakthrough XAD- 2 Resin Tube PBT	QC	9/28/22	Proof Blank Train	XAD-2 Resin Tube	Breakthrough XAD-2 Resin Tube OTM-45 Blank Train HFPO-DA & PFOA Analysis	Knoxville: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level and perform the regular XAD-2 Resin Extraction. Analyze for HFPO-DA and PFOA.



Field Sample No./Sample Coding ID	Run No.	Sample Collection Date	Project QC Requirements	Sample Bottle/ Container	Sample Type/Analysis	Analytical Specifications
T-2801 QC OTM-45 DI Water RB	QC	9/28/22	Reagent Blank	250 mL HDPE Wide-Mouth Bottle	Deionized (DI) Water Reagent Blank OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Analyze for HFPO-DA and PFOA.
T-2802 QC OTM-45 MeOH with 5% NH ₄ OH RB	QC	9/28/22	Reagent Blank	250 mL HDPE Wide-Mouth Bottle	Methanol with 5% NH₄OH Reagent Blank OTM-45 Train HFPO-DA & PFOA Analysis	Knoxville: Analyze for HFPO-DA and PFOA.
T-2803 QC OTM-45 Filter BT (Combine with T-2804)	QC	9/28/22	Field Blank Train	250 mL HDPE Wide-Mouth Bottle	Particulate Filter (82.6 mm Whatman Glass Microfiber) OTM-45 Blank Train HFPO-DA & PFOA Analysis	Knoxville: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level. Use the Front- Half Probe Rinse to assist the solvent extraction of the Filter sample. Analyze for HFPO-DA and PFOA.
T-2804 QC OTM-45 FH of Filter Holder & Probe MeOH Rinse BT (Combine with B- 1667)	QC	9/28/22	Field Blank Train	250 mL HDPE Wide-Mouth Bottle	Front Half of Filter Holder & Probe Methanol/5% Ammonium Hydroxide Rinse OTM-45 Blank Train HFPO-DA & PFOA Analysis	Knoxville: Use this solvent sample in the Filter extraction.
T-2805 QC OTM-45 XAD-2 Resin Tube BT	QC	9/28/22	Field Blank Train	XAD-2 Resin Tube	XAD-2 Resin Tube OTM-45 Blank Train HFPO-DA & PFOA Analysis	Knoxville: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level. Use the Back-Half Glassware Rinse and the Impinger Glassware Methanol Rinse to assist the solvent extraction of the XAD-2 resin sample. Analyze for HFPO-DA and PFOA.



Field Sample No./Sample Coding ID	Run No.	Sample Collection Date	Project QC Requirements	Sample Bottle/ Container	Sample Type/Analysis	Analytical Specifications
T-2806 QC OTM-45 BH of Filter Holder & Coil Condenser MeOH Rinse BT (Combine with T-2805)	QC	9/28/22	Field Blank Train	250 mL HDPE Wide- Mouth Bottle	Back Half of Filter Holder & Coil Condenser Methanol/5% Ammonium Hydroxide Rinse OTM-45 Blank Train HFPO-DA & PFOA Analysis	Knoxville: Use this solvent sample and the Impinger Glassware Methanol Rinse in the XAD-2 Resin extraction. Analyze for HFPO-DA and PFOA.
T-2807 QC OTM-45 Impingers 1,2 & 3 Condensate BT	QC	9/28/22	Field Blank Train	1 Liter HDPE Wide-Mouth Bottle	Impinger #1, #2 & #3 Condensate OTM-45 Blank Train HFPO-DA & PFOA Analysis	Knoxville: Analyze for HFPO-DA and PFOA.
T-2808 QC OTM-45 Impinger Glassware MeOH Rinse BT (Combine with T-2805)	QC	9/28/22	Field Blank Train	250 mL HDPE Wide- Mouth Bottle	Impinger Glassware Methanol/5% Ammonium Hydroxide Rinse OTM-45 Blank Train HFPO-DA & PFOA Analysis	Knoxville: Use this solvent sample in the XAD-2 Resin Extraction.
T-2809 QC OTM-45 Breakthrough XAD- 2 Resin Tube BT	QC	9/28/22	Field Blank Train	XAD-2 Resin Tube	Breakthrough XAD-2 Resin Tube OTM-45 Blank Train HFPO-DA & PFOA Analysis	Knoxville: Spike sample with the Isotope Dilution Internal Standard (IDIS) at the regular level and perform the regular XAD-2 Resin Extraction. Analyze for HFPO-DA and PFOA.

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Sample Receipt Log and Condition of the Samples Upon Receipt:

Please fill in the following information:

Comments

(Please write "NONE" if no comment applicable)

(1) Record the identities of any samples that were listed on the RFA but were not found in the sample shipment.

NONE

(2) Record the sample shipping cooler temperature of all coolers transporting samples listed on this RFA:

Rec @ RT CT
 4.0°C 4.1°C

(3) Record any aQ2rent sample loss/breakage.

NONE

(4) Record any unidentified samples transported with this shipment of samples:

NONE

(5) Indicate if all samples were received according to the project's required specifications (i.e. no nonconformances):

NONE

Custody Transfer:

Relinquished By:	<u>Robert Gray</u> Name	<u>Alliance TG</u> Company	<u>9/29/22 1730</u> Date/Time
Accepted By:	<u>Doug Gallo</u> Name	<u>ETA KNOX</u> Company	<u>9/29/22 1730</u> Date/Time
Relinquished By:	<u>Doug Gallo</u> Name	<u>ETA KNOX</u> Company	<u>9/30/22 1150</u> Date/Time
Accepted By:	<u>R. D. D.</u> Name	<u>ETA KNOX</u> Company	<u>09.30.22 1150</u> Date/Time
Relinquished By:	_____ Name	_____ Company	_____ Date/Time
Accepted By:	_____ Name	_____ Company	_____ Date/Time
Relinquished By:	_____ Name	_____ Company	_____ Date/Time
Accepted By:	_____ Name	_____ Company	_____ Date/Time

Review Items	Yes	No	NA	If No, what was the problem?	Comments/Actions Take
1. Are the shipping containers intact?	✓			<input type="checkbox"/> Containers, Broken	
2. Were ambient air containers received intact?			✓	<input type="checkbox"/> Checked in lab	
3. The coolers/containers custody seal if present, is it intact?			✓	<input type="checkbox"/> Yes <input type="checkbox"/> NA	
4. Is the cooler temperature within limits? (> freezing temp. of water to 6 °C, VOST: 10°C) Thermometer ID : <u>SC-73</u> Correction factor: <u>40.10C</u>	✓			<input type="checkbox"/> Cooler Out of Temp, Client Contacted, Proceed/Cancel <input type="checkbox"/> Cooler Out of Temp, Same Day Receipt	
5. Were all of the sample containers received intact?	✓			<input type="checkbox"/> Containers, Broken	
6. Were samples received in appropriate containers?	✓			<input type="checkbox"/> Containers, Improper; Client Contacted; Proceed/Cancel	
7. Do sample container labels match COC? (IDs, Dates, Times)	✓			<input type="checkbox"/> COC & Samples Do Not Match <input type="checkbox"/> COC Incorrect/Incomplete <input type="checkbox"/> COC Not Received	
8. Were all of the samples listed on the COC received?	✓			<input type="checkbox"/> Sample Received, Not on COC <input type="checkbox"/> Sample on COC, Not Received	
9. Is the date/time of sample collection noted?	✓			<input type="checkbox"/> COC; No Date/Time; Client Contacted	
10. Was the sampler identified on the COC?			✓	<input type="checkbox"/> Sampler Not Listed on COC	
11. Is the client and project name/# identified?	✓			<input type="checkbox"/> COC Incorrect/Incomplete	
12. Are tests/parameters listed for each sample?	✓			<input type="checkbox"/> COC No tests on COC	
13. Is the matrix of the samples noted?	✓			<input type="checkbox"/> COC Incorrect/Incomplete	
14. Was COC relinquished? (Signed/Dated/Timed)	✓			<input type="checkbox"/> COC Incorrect/Incomplete	
15. Were samples received within holding time?	✓			<input type="checkbox"/> Holding Time - Receipt	
16. Were samples received with correct chemical preservative (excluding Encore)?			✓	<input type="checkbox"/> pH Adjusted, pH Included (See box 16A) <input type="checkbox"/> Incorrect Preservative	
17. Were VOA samples received without headspace?			✓	<input type="checkbox"/> Headspace (VOA only)	
18. Did you check for residual chlorine, if necessary? (e.g. 1613B, 1668) Chlorine test strip lot number:			✓	<input type="checkbox"/> Residual Chlorine	
19. For 1613B water samples is pH<9?			✓		
20. For rad samples was sample activity info. Provided?			✓	<input type="checkbox"/> If no, notify lab to adjust <input type="checkbox"/> Project missing info	
Project #: <u>14004326</u> PM Instructions: _____					
Sample Receiving Associate: <u>P. ...</u> Date: <u>09.30.22</u>					

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Appendix D

Location Chemours Company - Fayetteville Works Facility, NC
 Source Polymer Process Aid Outlet
 Project No. 2022-3359
 Parameter HFPO-DA

Date	Nozzle ID	Nozzle Diameter (in.)			Dn (Average)	Difference	Criteria	Material
		#1	#2	#3				
9/26/22	GL-3	0.249	0.250	0.251	0.250	0.002	≤ 0.004 in.	glass
Date	Pitot ID	Evidence of damage?	Evidence of mis-alignment?	Calibration or Repair required?				
9/26/22	P4-2	no	no	no				
Date	Probe or Thermocouple ID	Reference Temp. (°F)	Indicated Temp. (°F)	Difference	Criteria	Probe Length		
9/27/22	TC-5D	70.0	69.0	0.2%	± 1.5 % (absolute)	5'		
Field Balance Check								
Date	09/27/22							
Balance ID:	VICON							
Test Weight ID:	SYR-1							
Certified Weight (g):	1000.0							
Measured Weight (g):	999.7							
Weight Difference (g):	0.3	--	--	--	--	--		
Date	Barometric Pressure	Evidence of damage?	Reading Verified	Calibration or Repair required?	Weather Station Location			
9/27/22	Weather Station	NA	NA	NA	Fayetteville, NC			
Date	Meter Box ID	Positive Pressure Leak Check						
9/27/22	MB 7	Pass						
Reagent	Lot#	Field Prep performed	Field Lot	Date	By			
DIH2O		No			Test America			
Methanol/Ammonia Mix		No			Test America			

Location Chemours Company - Fayetteville Works Facility, NC
 Source Polymer Process Aid Inlet
 Project No. 2022-3359
 Parameter HFPO-DA

Date	Nozzle ID	Nozzle Diameter (in.)			Dn (Average)	Difference	Criteria	Material
		#1	#2	#3				
9/26/22	GL-4	0.250	0.249	0.250	0.250	0.001	≤ 0.004 in.	glass
Date	Pitot ID	Evidence of damage?	Evidence of mis-alignment?	Calibration or Repair required?				
9/26/22	P4-1	no	no	no				
Date	Probe or Thermocouple ID	Reference Temp. (°F)	Indicated Temp. (°F)	Difference	Criteria	Probe Length		
9/27/22	TC-7D	68.0	69.0	0.2%	± 1.5 % (absolute)	5'		
Field Balance Check								
Date	09/27/22							
Balance ID:	VICON							
Test Weight ID:	SYR-1							
Certified Weight (g):	1000.0							
Measured Weight (g):	999.7							
Weight Difference (g):	0.3	--	--	--	--	--		
Date	Barometric Pressure	Evidence of damage?	Reading Verified	Calibration or Repair required?	Weather Station Location			
9/27/22	Weather Station	NA	NA	NA	Fayetteville, NC			
Date	Meter Box ID	Positive Pressure Leak Check						
9/27/22	MB 15	Pass						
Reagent	Lot#	Field Prep performed	Field Lot	Date	By			
DIH2O		No			Test America			
Methanol/Ammonia Mix		No			Test America			

	DGM Calibration-Orifices	Document ID	620.004
		Revision	20.1
Issuing Department	Tech Services	Effective Date	10/5/20
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Equipment Detail - Dry Gas Meter

Console ID: 7
 Meter S/N: 2355
 Critical Orifice S/N: 1393

Calibration Detail

Initial Barometric Pressure, in. Hg (P _b)		30.07					
Final Barometric Pressure, in. Hg (P _b)		30.07					
Average Barometric Pressure, in. Hg (P _b)		30.07					
Critical Orifice ID (Y)		11	11	18	18	31	31
K' Factor, ft ³ ·R ^{1/2} / in. WC·min (K')		0.3060	0.306	0.4961	0.4961	0.8358	0.8358
Vacuum Pressure, in. Hg (V _p)		22.5	22.5	20.0	20.0	16.0	16.0
Initial DGM Volume, ft ³ (V _m)		975.311	991.147	981.359	930.841	0.002	16.132
Final DGM Volume, ft ³ (V _m)		981.359	997.245	991.147	940.602	16.132	32.328
Total DGM Volume, ft ³ (V _m)		6.048	6.098	9.788	9.761	16.130	16.196
Ambient Temperature, °F (T _a)		76	75	76	76	75	74
Initial DGM Temperature, °F (T _m)		78	75	78	76	77	76
Final DGM Temperature, °F (T _m)		78	77	79	77	79	77
Average DGM Temperature, °F (T _m)		78	76	79	77	78	77
Elapsed Time (Θ)		15.00	15.00	15.00	15.00	15.00	15.00
Meter Orifice Pressure, in. WC (ΔH)		0.51	0.51	1.40	1.40	3.90	3.90
Standard Meter volume, ft ³ (V _{mstd})		5.9738	6.0457	9.6800	9.6893	16.0641	16.1750
Standard Critical Orifice Volume, ft ³ (V _{cr})		5.9633	5.9689	9.6680	9.6680	16.3033	16.3186
Meter Correction Factor (Y)		0.998	0.987	0.999	0.998	1.015	1.009
Tolerance --		0.003	0.014	0.002	0.003	0.014	0.008
Orifice Calibration Value (ΔH @)		1.793	1.796	1.875	1.882	1.849	1.851
Tolerance --		0.048	0.045	0.034	0.041	0.008	0.010
Orifice Cal Check --		1.89		1.34		1.93	
Meter Correction Factor (Y)		1.001					
Orifice Calibration Value (ΔH @)		1.841					
Positive Pressure Leak Check		Yes					

Equipment Detail - Thermocouple Sensor


Reference Calibrator Make: Altek
 Reference Calibrator Model: Series 22
 Reference Calibrator S/N: 8475031

Calibration Detail

Reference Temp.		Display Temp.		Accuracy	Difference
°F	°R	°F	°R	%	°F
0	460	0	460	0.0	0
100	560	99	559	0.2	1
200	660	198	658	0.3	2
300	760	297	757	0.4	3
400	860	398	858	0.2	2
500	960	496	956	0.4	4
600	1,060	596	1,056	0.4	4
700	1,160	697	1,157	0.3	3
800	1,260	797	1,257	0.2	3
900	1,360	896	1,356	0.3	4
1,000	1,460	995	1,455	0.3	5
1,100	1,560	1,097	1,557	0.2	3
1,200	1,660	1,195	1,655	0.3	5

Personnel

Calibration By: Jacob Cavallo
 Calibration Date: 7/14/2022
 Expiration Date: 1/14/2023

	DGM Calibration-Orifices	Document ID	620.004
		Revision	20.1
Issuing Department	Tech Services	Effective Date	10/5/20
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Equipment Detail - Dry Gas Meter

Console ID: 15
 Meter S/N: 17087361
 Critical Orifice S/N: 1393

Calibration Detail

Initial Barometric Pressure, in. Hg (P _i)		29.73					
Final Barometric Pressure, in. Hg (P _f)		29.71					
Average Barometric Pressure, in. Hg (P _b)		29.72					
Critical Orifice ID (Y)		11	11	18	18	31	31
K' Factor, ft ³ ·R ^{1/2} / in. WC·min (K')		0.3060	0.306	0.4961	0.4961	0.8358	0.8358
Vacuum Pressure, in. Hg (V _p)		23.5	23.5	19.5	19.5	16.5	16.5
Initial DGM Volume, ft ³ (V _{m_i})		984.591	990.402	996.198	5.734	15.285	31.171
Final DGM Volume, ft ³ (V _{m_f})		990.402	996.198	1,005.734	15.285	31.171	47.071
Total DGM Volume, ft ³ (V _m)		5.811	5.796	9.536	9.551	15.886	15.900
Ambient Temperature, °F (T _a)		79	79	79	80	80	81
Initial DGM Temperature, °F (T _{m_i})		78	79	79	80	81	82
Final DGM Temperature, °F (T _{m_f})		79	79	80	81	82	83
Average DGM Temperature, °F (T _m)		79	79	80	81	82	83
Elapsed Time (Θ)		15.00	15.00	15.00	15.00	15.00	15.00
Meter Orifice Pressure, in. WC (ΔH)		0.51	0.51	1.10	1.10	3.70	3.70
Standard Meter volume, ft ³ (V _{mstd})		5.6677	5.6479	9.2972	9.2946	15.5299	15.5150
Standard Critical Orifice Volume, ft ³ (V _{cr})		5.8775	5.8775	9.5288	9.520	16.0387	16.0239
Meter Correction Factor (Y)		1.037	1.041	1.025	1.024	1.033	1.033
Tolerance	--	0.005	0.009	0.007	0.008	0.001	0.001
Orifice Calibration Value (ΔH @)		1.822	1.821	1.495	1.495	1.780	1.780
Tolerance	--	0.124	0.122	0.204	0.204	0.081	0.081
Orifice Cal Check	--	1.39		1.37		0.80	
Meter Correction Factor (Y)		1.032					
Orifice Calibration Value (ΔH @)		1.699					
Positive Pressure Leak Check		Yes					

Equipment Detail - Thermocouple Sensor

Reference Calibrator Make: Altek
 Reference Calibrator Model: Series 22
 Reference Calibrator S/N: 8475031

Calibration Detail

Reference Temp.		Display Temp.		Accuracy	Difference
°F	°R	°F	°R	%	°F
0	460	0	460	0.0	0
100	560	99	559	0.2	1
200	660	198	658	0.3	2
300	760	297	757	0.4	3
400	860	398	858	0.2	2
500	960	496	956	0.4	4
600	1,060	596	1,056	0.4	4
700	1,160	697	1,157	0.3	3
800	1,260	797	1,257	0.2	3
900	1,360	896	1,356	0.3	4
1,000	1,460	995	1,455	0.3	5
1,100	1,560	1,097	1,557	0.2	3
1,200	1,660	1,195	1,655	0.3	5

Personnel

Calibration By: Jacob Cavallo
 Calibration Date: 7/21/2022
 Expiration Date: 1/21/2023

Appendix E

Date	800	900	1000	1100	1200	1300	1400	1500
9/27/2022								
Time	800	900	1000	1100	1200	1300	1400	1500
Stack Testing								
A/F column Feed Rate (pounds per hour)								
903 Distillation (pounds per hour)								
DAF ISO Venting								
Charging water to Hyd - venting								
Charging Sulfuric acid - venting			5 minutes					
Hydrolysis - Wash Tank pressure Transfer to Hydrolysis	x		x					
Hydrolysis - Phase Settle (del as no venting 7-9-21)								
Vap heels pressure transfer								
Vap cycle						x	x	x
Rec Tk to 903 Fd Tk Press Xfer (added to process 4/2020)								
Venting after press tran from North/South Acid tank to Hyd		x						
DAF tran to Hyd - venting during transfer								
Hydrolysis - transfer to Waste Acid Trailer								
Wash Tk to Vaporizer pressure transfer (new 8-2019)								
Pump Recovered Tote to Hydrolysis Rx (new 9-15-21)								
Scrubber Recirculation Flow (gpm)	37 gpm			38 gpm			38 gpm	

Last Page of Report