NORTH CAROLINA DIVISION OF AIR QUALITY

Application Review

Issue Date:

Region: Raleigh Regional Office
County: Johnston
NC Facility ID: 5100211
Inspector's Name: Abdul Kadir
Date of Last Inspection: 06/07/2023
Compliance Code: 3 / Compliance - inspection

Facility Data

Applicant (Facility's Name): OPW Fueling Containment Systems

Facility Address:
OPW Fueling Containment Systems
3250 Highway 70 Business West
Smithfield, NC 27577

SIC: 3089 / Plastics Products, Nec
NAICS: 326122 / Plastics Pipe and Pipe Fitting Manufacturing

Facility Classification: Before: Title V **After:** Title V
Fee Classification: Before: Title V **After:** Title V

Permit Applicability (this application only)

SIP: 02Q .0304 (removed), .0504 (removed)
NSPS: N/A
NESHAP: N/A
PSD: N/A
PSD Avoidance: N/A
NC Toxics: N/A
112(r): N/A
Other: N/A

Contact Data

Facility Contact	Authorized Contact	Technical Contact
Greg Kennedy Director of Operations (919) 209-2434 3250 Highway 70 Business West Smithfield, NC 27577	Michael McCann Site General Manager (919) 209-2402 3250 Highway 70 Business West Smithfield, NC 27577	Steve Brinchek EHS/Facilities Manager (919) 209-2426 3250 Highway 70 Business West Smithfield, NC 27577

Application Data

Application Number: 5100211.21A, 5100211.21B
Date Received: 10/28/2021
Application Type: Modification, Renewal
Application Schedule: TV-1st Time

Existing Permit Data
Existing Permit Number: 10367/R04
Existing Permit Issue Date: 09/24/2020
Existing Permit Expiration Date: 01/31/2022

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2021	---	0.5500	26.21	0.4600	0.1900	7.26	6.08 [Styrene]
2020	---	0.5500	34.62	0.4600	0.1900	8.62	7.22 [Styrene]

Review Engineer: Emily Supple

Review Engineer's Signature: **Date:**

Comments / Recommendations:
Issue 10367/T05
Permit Issue Date:
Permit Expiration Date:

1. Purpose of Application

OPW Fueling Containment Systems (OPW) currently holds Air Permit No. 10367R04 for the manufacturing of various petroleum handling equipment components at their facility located in Smithfield, Johnston County, North Carolina. Per 15A NCAC 02Q .0504, the facility is allowed to construct and operate under 15A NCAC

02Q .0300 and required to submit a Title V permit application within one year from the date of beginning operation.

Until September 2020, OPW operated under a synthetic minor permit limiting emissions of styrene (a hazardous air pollutant or HAP) to less than 10 tons per year. In September 2020, OPW received a construction and operation permit under 15A NCAC 02Q .0300 to allow the installation and operation of the Open Molding Booth (ID No. ES-7), the addition of which reclassified the facility to Title V for potential emissions of styrene greater than 10 tons per year. Operation of the Open Molding Booth began November 1, 2020. This Initial Title V Permit Application (No. 5100211.21A) was submitted to DAQ on October 28, 2021, satisfying the requirements of 02Q .0504 to submit a Title V permit application within one year of beginning operation.

In addition to submitting the Initial Title V Permit Application, OPW is adding two new Cover Molding Presses (under ID No. ES-4) to the air permit with this application. Therefore, with this addition of equipment, this Initial Title V application is also considered a significant modification under 02Q .0501(b)(1).

This permit application was also meant to serve as a permit renewal application. Permit No. 10367R04 expired on January 31, 2022. As provided by 15A NCAC 02Q .0304, a permit renewal application was required to be submitted within 90 days of expiration of the permit, or by November 2, 2021. The application was received on October 28, 2021. The application did not contain a filled-out Form AA1 to formally request permit renewal. On August 1, 2023, DAQ received a revised Form AA1 to formally request renewal of the permit. With the receipt of the revised Form AA1, DAQ will consider this a timely receipt of the permit renewal application. The permit renewal application will be closed out with the issuance of the initial Title V permit.

2. Facility Description

From the most recent inspection report and permit review: OPW manufactures various petroleum handling equipment components, including dispenser sumps/pans, fire suppression systems, flexible piping systems, fuel and oil generator piping systems, pipe couplings/fittings/tank sumps, tank/transition/special sumps, test booths, tanks sump mounting flanges, sump entry fittings, flexworks loop systems, and manhole covers.

The current air permit contains the following permitted emission sources:

- ES-1 – Polyurethane Foam Production
- ES-2 – Trimming Operation
- ES-3 – Seven (7) Vacuum Assisted Molding Statiosn
- ES-4 – Seventeen (17) Cover Molding Presses
- ES-5 – Two (2) Bulk Resin Storage Tanks
- ES-6 – Nozzle Testing Operation
- ES-7 – Open Molding Booth with Fiberglass Mesh Filters

The current air permit lists the following insignificant activities:

- IES-1 – Plasma Cutting
- IES-2 – Polyethylene Extrusion
- IES-3 – Ferry Roto-mold
- IES-6 – Two (2) 40,000 lb PE Storage Bins
- IES-7 – Five (5) Welding Booths
- IES-8 – Island Forming Paint Booth
- IES-9 – Manhole Cover Paint Booth
- IES-11 – Manhole Cover Repair

The following emission source descriptions are taken from the R00, R01, R02, R03, and R04 permit reviews:

<u>ES-1 – Polyurethane Foam Production</u>

In this process, polyurethane foam is produced using three materials including UTC-6059 Component A and UTC-6059 Component B, as well as a mold release agent AXE GL PU-13RX. Component A is mixed with Component B (resin blend) and placed into the molds. The mold release agent is applied towards the end of the process to help remove the foam from the molds. The emissions associated with ES-1 are limited to VOCs, and HAPs. This emission source has no associated control device.

ES-2 – Trimming Operation

In this process, the edges of polyurethane manhole covers that are produced at the facility are trimmed. The trimming process creates particulate matter that is vented to a dust collector (ID No. CD-1) as well as a vacuum drum for the larger particles. The maximum design capacity of ES-2 is 195 foam beams per hour. Each manhole cover has 15 foam beams and each beam weighs approximately 1.341 pounds untrimmed. Air flow from the trimming operations is routed to the dust collector where at least 98% of particulate matter is captured.

ES-3 – Vacuum Assisted Molding Stations

In this process, vacuum assisted molds of polyester resins that are used for underground containment in fuel stations are produced. Up to 40 different products can be produced from these stations. Resins, catalyst, pigments, adhesive, primer, mold cleaner, gel coat, and release agent are all added to this process. This process emits a variety of VOCs, HAPs, and TAPs, depending on the product usage. These emission sources have no associated control devices.

ES-4 – Cover Molding Presses

Polyurethane manhole covers and appurtenances are formed in a closed press operation using vinyl ester resin. A variety of compression presses/molds are available to produce different size covers as needed. This operation emits styrene, a VOC and HAP, with no associated control devices. With this application, the facility is adding two new cover molding presses for a total of 19.

ES-5 – Bulk Resin Storage Tanks

These vertical, fixed roof tanks are used to store vinyl ester resins. The primary pollutant is styrene with no associated control device. This source will be moved to the insignificant activities list with this application and renamed to IES-5.

ES-6 – Nozzle Testing Operation

This operation consists of twenty-two (22) nozzle testing stations which are configured to test pertinent fuel dispensing functions of newly assembled fuel dispensing nozzles. An integral enclosed tank and associated piping is provided with each line to supply and receive the test fluid (Stoddard solvent). The Stoddard solvent is used as a surrogate to test nozzle fuel flow. The emissions from this process are fugitive with no tank venting to the atmosphere. This emission source emits VOC and has no associated control device.

ES-7 – Open Molding Booth with Fiberglass Mesh Filters

This process is used to manufacture reinforced plastic composite parts and consists of a spray booth, approximately 16 feet by 24 feet, with fiberglass mesh filters and spray guns. This process emits particulate matter, VOC, and styrene with no associated control devices.

IES-1 – Plasma Cutting

This process is used to cut stainless steel in the form of manhole covers of various sizes. Particulate matter may be emitted from this process at a rate of less than 5 tons per year.

IES-2 – Polyethylene Extrusion

This process is a multilayered polyethylene extrusion line where kynar material lining is added to the internal surface of the polyethylene pipe with the help of an adhesive. This process emits particulate matter, VOC, and HAPs at a rate of less than 5 tons per year.

IES-3 – Ferry Roto-mold

In this process, polyethylene powder is added to the ferry mold in buckets. The mold is rotated at a certain temperature and speed to produce the polyethylene mold of desired shape and thickness. This process emits particulate matter and VOC at a rate of less then 5 tons per year.

IES-6 – PE Storage Bins

The polyethylene (PE) is stored in these two bins that each have a 40,000 pound capacity. This source emits particulate matter at a rate of less than 5 tons per year.

IES-7 – Welding Booths

Five welding booths are connected with a portable duct and filter to collect particulates. All ducts vent inside the building. This source emits particulate matter at a rate of less than 5 tons per year.

IES-8 – Island Forming Paint Booth

This paint booth is used for painting island forms. The booth includes inherent filters to capture particulate matter emissions from the spray paint. This source emits particulate matter and VOC at a rate of less than 5 tons per year.

IES-9 – Manhole Cover Paint Booth

This paint booth is for painting manhole covers and includes inherent filters to capture particulate matter emissions from the spray paint. This source emits particulate matter and VOC at a rate of less than 5 tons per year.

IES-11 – Manhole Cover Repair

Repairs of polyurethane manhole covers produced at the facility are conducted in this process. A mixture of vinyl ester putty, cream hardener, and spray paint are used in the repair process. This process emits VOC and HAPs depending on the materials needed in the repair process. Emissions from this source are less than 5 tons per year.

3. History/Background/Application Chronology

Permit History

February 21, 2014	Air Permit No. 10367R00 was issued to OPW for a greenfield facility to manufacture various petroleum handling equipment components. The facility was classified as Small with the potential to emit each criteria air pollutant below major source thresholds.
September 17, 2015	Air Permit No. 10367R01 was issued to OPW for a permit modification to add the Cover Molding Operation (ID No. ES-4) and the bulk resin storage tanks (ID No. ES-5). The facility was reclassified as Synthetic Minor and limited to emissions below major source thresholds.
October 21, 2016	Air Permit No. 10367R02 was issued to OPW for a permit modification to add the Nozzle Testing Operation (ID No. ES-6).

May 5, 2017	Air Permit No. 10367R03 was issued to OPW for a permit modification to expand the Cover Molding Operation (ID No. ES-4) by adding seven additional presses for a total of seventeen.
September 24, 2020	Air Permit No. 10367R04 was issued to OPW for a permit modification to add the Open Molding Booth (ES-7). The facility was reclassified as Title V due to emissions of styrene greater than 10 tons per year. A Title V permit application was required to be submitted within 12 months of beginning operation of ES-7.
November 1, 2020	ES-7 begins operation.

Application Chronology

October 28, 2021	Permit Application No. 5100211.21A was received as a 1st time Title V permit application with a request for a modification to add two new Cover Molding Presses to the permit.
November 2, 2021	The acknowledgement letter was sent indicating that the facility's application was incomplete due to a missing zoning consistency determination.
November 4, 2021	The zoning consistency determination was received.
November 8, 2021	Epayment was received.
November 29, 2021	Judy Lee, formerly of DAQ, called Gary Yoder, facility consultant from ClimeCo Corp., to discuss replacement application pages.
December 3, 2021	Replacement pages were received via email.
June 8, 2023	Application reassigned to Emily Supple of DAQ for processing.
July 7, 2023	Emily Supple of DAQ requested a copy of the 2014 permit application from Mr. Gary Yoder of ClimeCo Corp. The information was received the same day.
July 13, 2023	Emily Supple of DAQ emailed Mr. Gary Yoder of ClimeCo Corp requesting verification of emission factors from the 2014 permit application.
July 18, 2023	Emily Supple of DAQ requested a revised Form AA1 from OPW.
August 1, 2023	Revised Form AA1 received.
August 7, 2023	Gary Yoder provided the requested emission factor verification via email.
XXXX XX, 2023	Draft permit and review forwarded to the regional office (RRO), Stationary Source Compliance Branch (SSCB), and the applicant.
XXXX XX, 2023	Draft permit and review forwarded to public notice and to EPA for review.
XXXX XX, 2023	Public comment period ends.
XXXX XX, 2023	EPA review period ends.

XXXX XX, 2023 Permit issued.

4. Permit Modification/Emission Changes and TVEE Discussion

This application is a 1st time Title V application, but the facility is also requesting modification of the air permit resulting in the following equipment changes:

- Adding two new cover molding presses to the currently permitted 17 presses (ID No. ES-4) for a total of 19 cover molding presses;
- Reclassifying two bulk resin storage tanks (Former ID No. ES-5) as insignificant activities (New ID No. IES-5) pursuant to 15A NCAC 02Q .0503(8).

The following regulations were removed from the permit with this application:

- 15A NCAC 02Q .0304, "Applications"
- 15A NCAC 02Q .0504, "Option for Obtaining Construction and Operation Permit"

Table 4.1 below describes the changes to the facility's current Air Permit No. 10367R04 as part of this 1st time Title V application with modification:

Table 4.1

Page No.	Section	Description of Changes
Cover and throughout	Throughout	• Updated all tables, dates, and permit revision numbers • Included most recent version of cover letter • Updated format to the most recent shell version • Updated 02Q .0308(a) references to 02Q .0508(f)
4	Section 1	• Removed ES-5 from table of emission sources • Renamed ES-5 as IES-5 and added it to Section 3
5	2.1 A	• Updated description of ES-4 to include 2 new cover molding presses
-	2.2 B	• Removed 02D .0540 as this condition is included under General Condition MM
-	2.2 B	• Removed 02Q .0207 as this condition is included under General Condition X
-	2.2 B	• Removed 02Q .0304 as this condition has been replaced by General Condition K
-	2.2 B	• Removed 02Q .0504 as this condition has been satisfied by the submittal of Permit Application No. 5100211.21A
-	2.2 B	• Removed 02D .0535 as this condition is included under General Condition I
16	Section 3	• Added Table of Insignificant Activities as Section 3 • Added IES-5 (previously ES-5) • Updated reference from 02Q .0102 to 02Q .0503(8)
17-24	Section 4	• Replaced general conditions with the most recent version of Title V general conditions (version 7.0, 08/21/2023)

Title V Equipment Editor

The emission source table in Section 1 of the air permit will be updated to reflect the change in emission source description of ES-4. ES-5 will be removed from Section 1 and added as an insignificant source to Section 3 of the permit. This source will be renamed IES-5.

The required updates were made to TVEE. TVEE for this application was reviewed and approved on August 25, 2023 by Jenny Sheppard of DAQ.

Emissions

The following Tables 4.2 and 4.3 are taken from the application and provide the facility-wide actual and potential emissions estimates for the facility. Potential emissions are uncontrolled and based on 8,760 hours of operation per year. Actual emissions are based on production data from calendar year 2020. Detailed emission calculations are discussed in this section below.

Table 4.2: Facility-Wide Actual Emissions

Actual Emissions Summary
OPW Fueling Containment Systems
Smithfield, NC
Facility ID: 5100211

Pollutants	ES-1 PE Foam	ES-2 Trim	ES-3 VAM	ES-4 Cover Mold	ES-5 (IES-5) Bulk Resin	ES-6 Nozzle Testing	ES-7 Open Molding	IES-1 Plasma Cutting	IES-2 PE Extrusion	IES-3 Ferry Roto Mold	IES-6 PE Storage	IES-7 Welding	IES-8 Island Forming	IES-9 Manhole Cover Booth	IES-11 Manhole Repair	Total (Actual)
	(ton/yr)															
VOC	3.52E+00		6.14E+00	6.95E+00	3.57E-02	1.71E+01	3.36E+00		4.11E-04	4.15E-02	8.50E-04		4.14E-01	4.14E-01	1.75E-03	37.96
NOx										5.51E-01						0.5506
CO										4.63E-01						0.4625
SO2										3.30E-03						0.0033
PM (TSP)		6.28E-02					5.87E-05	1.43E-03	2.82E-04	4.69E-03	6.80E-02	4.58E-04	2.15E-02	2.15E-02		0.1807
PM10		5.05E-02					5.87E-05	1.43E-03	2.82E-04	4.69E-03	6.80E-02	4.58E-04	2.15E-02	2.15E-02		0.1684
PM2.5		1.28E-02					5.87E-05	1.43E-03	2.82E-04	4.20E-03	6.80E-02	4.58E-04	2.15E-02	2.15E-02		0.1302
	(lb/yr)															
Chromium												1.76E-04				1.76E-04
Styrene			2.47E+03	1.18E+04	7.14E+01		6.71E+03								4.22E+01	2.11E+04
Methyl Methacrylate				1.44E+01												1.44E+01
Cumene				2.86E+00												2.86E+00
Acetophenone				1.14E+00												1.14E+00
Toluene			1.68E+02							3.74E-02						1.68E+02
Xylene			3.65E+02												1.35E-01	3.65E+02
Methyl Alcohol			4.92E+01													4.92E+01
MDI	2.27E+03															2.27E+03
Ethylene Glycol	8.79E+01															8.79E+01
Acetaldehyde (TH)										1.67E-04						1.67E-04
Acrolein (TH)										1.98E-04						1.98E-04
Ammonia (T)										3.52E+01						3.52E+01
Benzene (TH)										2.31E-02						2.31E-02
Benzo(a)pyrene (TH)										1.32E-05						1.32E-05
Cobalt unlisted compounds (H)										9.25E-04		1.76E-04				1.10E-03
Formaldehyde (TH)										8.26E-01						8.26E-01
Hexane, n- (TH)										1.98E+01						1.98E+01
Lead unlisted compounds (H)										5.51E-03						5.51E-03
Manganese unlisted compounds (TH)										0.00E+00		5.60E-02				5.60E-02
Napthalene (H)										6.72E-03						6.72E-03
Nickel metal (TH)										0.00E+00		1.76E-04				1.76E-04
Selenium compounds (H)										2.64E-04						2.64E-04

Table 4.3: Facility-Wide Potential Emissions

Potential Emissions Summary
OPW Fueling Containment Systems
Smithfield, NC
Facility ID: 5100211

Pollutants	ES-1 PE Foam	ES-2 Trim	ES-3 VAM	ES-4 Cover Mold	ES-5 (IES-5) Bulk Resin	ES-6 Nozzle Testing	ES-7 Open Molding	IES-1 Plasma Cutting	IES-2 PE Extrusion	IES-3 Ferry Roto Mold	IES-6 PE Storage	IES-7 Welding	IES-8 Island Forming	IES-9 Manhole Cover Booth	IES-11 Manhole Repair	Total (Controlled) (Actual)	Total (Uncontrolled) (Actual)
	(ton/yr)																
VOC	16.33		8.53	8.45	0.04	20.93	7.35		9.00E-04	1.82	0.00		0.10	0.10	3.83E-03	63.67	63.67
NOx										2.06						2.06	2.06
CO										1.73						1.73	1.73
SO2										0.01						0.01	0.01
PM (TSP)		0.28					1.28E-04	0.02	6.17E-04	0.02	0.25	1.00E-03	0.05	0.05		0.67	55.28
PM10		0.22					1.28E-04	0.02	6.17E-04	0.02	0.25	1.00E-03	0.05	0.05		0.61	22.37
PM2.5		0.06					1.28E-04	0.02	6.17E-04	0.02	0.25	1.00E-03	0.05	0.05		0.45	3.05
	(lb/yr)																
Chromium												3.85E-04				3.85E-04	3.85E-04
Styrene			3.44E+03	1.44E+04	7.14E+01		1.47E+04								9.24E+01	3.27E+04	3.27E+04
Methyl Methacrylate				1.76E+01												1.76E+01	1.76E+01
Cumene				3.48E+00												3.48E+00	3.48E+00
Acetophenone				1.39E+00												1.39E+00	1.39E+00
Toluene			2.34E+02							1.40E-01						2.34E+02	2.34E+02
Xylene			5.08E+02												2.96E-01	5.08E+02	5.08E+02
Methyl Alcohol			6.84E+01													6.84E+01	6.84E+01
MDI	1.48E+04															1.48E+04	1.48E+04
Ethylene Glycol	1.68E+04															1.68E+04	1.68E+04
Acetaldehyde (TH)										6.26E-04						6.26E-04	6.26E-04
Acrolein (TH)										7.41E-04						7.41E-04	7.41E-04
Ammonia (T)										1.32E+02						1.32E+02	1.32E+02
Benzene (TH)										8.65E-02						8.65E-02	8.65E-02
Benzo(a)pyrene (TH)										4.94E-05						4.94E-05	4.94E-05
Cobalt unlisted compounds (H)										3.46E-03		3.85E-04				3.85E-03	3.85E-03
Formaldehyde (TH)										3.09E+00						3.09E+00	3.09E+00
Hexane, n- (TH)										7.41E+01						7.41E+01	7.41E+01
Lead unlisted compounds (H)										2.06E-02						2.06E-02	2.06E-02
Manganese unlisted compounds (TH)										0.00E+00		1.23E-01				1.23E-01	1.23E-01
Napthalene (H)										2.51E-02						2.51E-02	2.51E-02
Nickel metal (TH)										0.00E+00		3.85E-04				3.85E-04	3.85E-04
Selenium compounds (H)										9.89E-04						9.89E-04	9.89E-04

ES-1 – Polyurethane Foam Production

This source emits VOCs and HAPs from the various components used during foam production. Potential and actual emissions from each component are based on the following general formula:

$$Emissions = Component\ Usage\ x\ Weight\%\ of\ Pollutant\ in\ Component$$

No control devices are associated with this process. Actual emissions were calculated using real production data from calendar year 2020. Potential emissions were calculated by scaling up the actual emissions to the maximum process rate and operating hours.

Attachment 1 below shows the detailed calculations for actual and potential emissions for this source.

ES-2 – Trimming Operations

This source emits particulate matter (PM, PM10, and PM2.5) and has a dust collector control device. The control efficiency of the dust collector varies based on particle size.

To estimate emissions of particulate matter, the facility determined that approximately 100 pounds of dust, or particulate matter, are collected from the dust collector each day, where each day has 8 operating hours. Based on AP-42, Figure 11.26-2, it is assumed that 100% of the dust collected is PM; 40% of the dust collected is PM10; and 5% of the dust collected is PM2.5.

The actual amount of particulate matter generated from the process is then back-calculated from the amount collected using the control efficiency of the dust collector according to the following sample calculation:

$$Total\ PM10\ Generated = \frac{Amount\ of\ PM\ Collected\ x\ 40\%}{PM10\ Control\ Efficiency}$$

Since the control efficiency of the dust collector varies based on particle size, the total emissions of PM, PM10, and PM2.5 are each calculated with a separate control efficiency as shown in the following Table 4.4:

Table 4.4: Actual PM Generated

Pollutant	Dust Collector Control Efficiency	Actual Amount Generated (lb/day)	Actual Amount Generated (lb/hr)*
PM	99.5%	100.5	12.6
PM10	99.0%	40.4	5.1
PM2.5	98.0%	5.1	0.6

*Actual amount generated per hour calculated by dividing the actual amount generated per day by 8, for 8 operating hours each day.

Actual emissions are then calculated according to the following example calculation:

$$Actual\ PM\ Emissions = 100.5\ \frac{lb}{day}\ x\ (1 - .995)\ x\ 250\ \frac{days}{year}$$

Potential emissions are calculated using the amount of particulate matter generated per hour, as shown in Table 4.4 above, and multiplying by the maximum hours of operation per year (8,760).

Attachment 2 below shows the detailed calculations for actual and potential emissions for this source.

ES-3 – Vacuum Assisted Molding Stations

This source emits VOCs, HAPs, and TAPs from the various components used in the process with no associated control devices. Potential and actual emissions from each component are based on the following general formula:

$$Emissions = Component\ Usage\ x\ Weight\%\ of\ Pollutant\ in\ Component\ x\ 3\%\ (Styrene\ Only)$$

Actual emissions were calculated using real production data from calendar year 2020. Potential emissions were calculated by scaling up the actual emissions to the maximum operating hours. Emissions of styrene from closed molding processes are assumed to be 3% of the total styrene content of the resin, according to AP-42 Section 4.4.

Attachment 3 below shows the detailed calculations for actual and potential emissions for this source.

ES-4 – Cover Molding Presses

This source emits VOCs, HAPs, and TAPs from the various components used in the process with no associated control devices. Potential and actual emissions from each component are based on the following general formula:

$$Emissions = Component\ Usage\ x\ Weight\%\ of\ Pollutant\ in\ Component\ x\ 3\%\ (Styrene\ Only)$$

Actual emissions were calculated using real production data from calendar year 2020. Potential emissions were calculated by scaling up the actual emissions to the maximum hours of operation. Additionally, the facility had only 15 presses in operation in calendar year 2020, although they are currently permitted for 17 presses, and the facility is requesting to add two more presses with this application for a total of 19 cover molding presses. Therefore, potential emissions were also scaled up to account for the increase in production capacity. Emissions of styrene from closed molding processes are assumed to be 3% of the total styrene content of the resin, according to AP-42 Section 4.4.

Attachment 4 below shows the detailed calculations for actual and potential emissions for this source.

ES-6 – Nozzle Testing Operation

This source emits VOCs only with no associated control devices. Potential and actual emissions are based on the following calculation:

$$VOC\ Emissions = Usage\ x\ 100\%$$

Actual emissions were calculated based on real production data from calendar year 2020. Potential emissions were calculated by scaling up the actual emissions to the maximum hours of operation.

Attachment 5 below shows the detailed calculations for actual and potential emissions for this source.

ES-7 – Open Molding Booth with Fiberglass Mesh Filters

This source emits VOC/HAP (styrene), and PM with no associated controls for VOCs/HAPs and fiberglass mesh filters for control of PM. The fiberglass mesh filters have an inherent PM control efficiency of 98.1%.

For calculation of styrene emissions, the facility first developed the average weighted HAP content for all styrene containing resins and gel coats used in the process using Equations 2 and 3 from MACT Subpart WWWW. Then, emission factors for styrene from resin and gel coat usage were developed using equations from Table 1 to MACT Subpart WWWW as shown in Table 4.5:

Table 4.5: MACT Subpart WWWW Equations

40 CFR Part 63 Subpart WWWW Calculation Basis			
Actual Open Molding Resin EF_{resin} = ((0.157 x %HAP) - 0.0165) x 2000		(≥33% HAP content)	
Actual Open Molding Gel Coat EF_{GC} = 0.445 x %HAP x 2000		(<33% HAP content)	
Actual Monthly Weighted Organic HAP Emission Factor	$= \frac{\sum_{i=1}^{n}(\text{Actual Operation EF}_i * \text{Material}_i)}{\sum_{i=1}^{n} Material_i}$		Eq. 1
Weighted Ave. Emission Limit	$= \frac{\sum_{i=1}^{n}(\text{EL}_i * \text{Material}_i)}{\sum_{i=1}^{n} \text{Material}_i}$	Eq. 2	

Potential and actual styrene emissions are then calculated for each component (resin and gel coats) according to the following general formula:

$$Styrene\ Emissions\ from\ Resin = Emission\ Factor\ \left(\frac{lb}{ton\ Resin}\right) x\ Resin\ Usage\ \left(\frac{ton}{year}\right)$$

Actual emissions are totaled for all components and are based on real production data from calendar year 2020. Potential emissions are calculated by scaling up actual emissions to the maximum hours of operation and maximum production rate.

For calculation of PM emissions, the facility assumed that 10% of all component usage would be lost as overspray (90% transfer efficiency), and of that overspray, 98.1% would be controlled by the inherent fiberglass mesh filters according to the following calculation:

$$PM\ Emissions = Component\ Usage\ x\ 10\%\ x\ (1 - .981)$$

Actual emissions are totaled for all components and are based on real production data from calendar year 2020. Potential emissions are calculated by scaling up actual emissions to the maximum hours of operation maximum production rate and removing the PM control efficiency.

Attachment 6 below shows the detailed calculations for actual and potential emissions from this source.

IES-1 – Plasma Cutting

This source operates indoors and has an associated dust collector. On August 7, 2023, Mr. Gary Yoder of ClimeCo Corp provided information via email indicating that the dust collector does not vent to the atmosphere. Thus, this source is not expected to emit any regulated air pollutant at a significant emission rate. This source has been previously listed as an insignificant source with potential emissions of 0.02 tons per year. To be conservative, this source will remain listed as insignificant, and the estimated emissions will remain the same.

IES-2 – Polyethylene Extrusion

This source emits VOC and particulate matter. Emissions from this source are estimated using factors determined from the technical paper, *Development of Emission Factors for Polyethylene Processing*[1], with the amount of polyethylene extruded per year. Actual emissions are based on real production from calendar year 2020. Potential emissions are calculated by scaling up actual emissions to the maximum operating hours per year.

[1] Development of Emission Factors for Polyethylene Processing, January 9, 2012

Attachment 7 below shows the detailed calculations for actual and potential emissions from this source, taken from the 2014 greenfield permit application.

IES-3 – Ferry Roto-mold

This source emits VOC, particulate matter, and pollutants associated with combustion. Combustion emissions from this source are calculated using emission factors from AP-42 Section 1.4.

VOC and PM emissions from the molding operation are based on polyethylene usage and emission factors from the Michigan DEQ's Emission Calculation Fact Sheet #9847 (Attachment 8, below). Actual emissions are based on real production data from calendar year 2020. Potential emissions are calculated by scaling up actual emissions to the maximum operating hours per year.

Attachment 9 below shows the detailed calculations for actual and potential emissions from this source.

IES-5 – Bulk Resin Storage Tanks

This source was previously listed as permitted source (Former ID No. ES-5) and has been moved to the insignificant activities list and renamed to IES-5 with this permit application. This source emits VOC, HAP, and TAP (styrene), and emissions are based on storage tank throughput and resin composition. For the purposes of emission estimation, it was assumed that the evaporative loss from this source is about 0.5% according to the following sample calculation:

$$VOC\ Emissions = Resin\ Throughput\ \left(\frac{lb}{year}\right) x\ Weight\ \%\ VOC\ x\ 0.5\%$$

Actual emissions were calculated using real production data from calendar year 2020 and are assumed to be equal to potential emissions.

Attachment 10 below shows the detailed calculations for actual and potential emissions for this source.

IES-6 – PE Storage Bins

This source emits VOC and PM. Emissions are based on polyethylene throughput and emission factors from the Michigan DEQ's Emission Calculation Fact Sheet #9847 (Attachment 8 below). Actual emissions are based on real production data from calendar year 2020. Potential emissions are calculated by scaling up actual emissions to the maximum operating hours per year.

Attachment 11 below shows the detailed calculations for actual and potential emissions from this source.

IES-7 – Welding Booths

This source emits PM and various HAP metals. Emissions are based on the amount of electrode used and an emission factor from AP-42 Section 12.19. Actual emissions are based on real production data from calendar year 2020. Potential emissions are calculated by scaling up actual emissions to the maximum operating hours per year.

Attachment 12 below shows the detailed calculations for actual and potential emissions from this source.

IES-8 – Island Forming Paint Booth and IES-9 – Manhole Cover Paint Booth

These sources emit PM and VOC. Emissions are calculated based on paint usage and paint composition. All VOC is assumed to be emitted. For PM emissions, an overspray rate of 35% (transfer efficiency of 65%) was assumed for each paint booth. It was also assumed that the paint used has a PM content of approximately 33%. The emissions were calculated according to the following sample calculation:

$$PM\ Emissions = Paint\ Usage\ \left(\frac{gallon}{year}\right) x\ 35\%\ x\ 33\%\ x\ Density\ \left(\frac{lb}{gallon}\right)$$

Actual emissions are based on real production data from calendar year 2020. Potential emissions are calculated by scaling up actual emissions to the maximum operating hours per year.

Attachment 13 below shows the detailed calculations for actual and potential emissions from these sources.

IES-11 – Manhole Cover Repair

This source emits VOCs, HAPs, and TAPs from the various components used in the process with no associated control devices. Potential and actual emissions from each component are based on the following general formula:

$$Emissions = Component\ Usage\ x\ Weight\%\ of\ Pollutant\ in\ Component\ x\ 3\%\ (Styrene\ Only)$$

Actual emissions were calculated using real production data from calendar year 2020. Potential emissions were calculated by scaling up the actual emissions to the maximum operating hours. Emissions of styrene from closed molding processes are assumed to be 3% of the total styrene content of the resin, according to AP-42 Section 4.4.

Attachment 14 below shows the detailed calculations for actual and potential emissions for this source.

5. Regulatory Review

The facility is currently subject to the following regulations:

- 15A NCAC 02D .0515, "Particulates from Miscellaneous Industrial Processes"
- 15A NCAC 02D .0521, "Control of Visible Emissions"
- 15A NCAC 02D .0535, "Excess Emissions Reporting and Malfunctions"
- 15A NCAC 02D .0540, "Particulates from Fugitive Dust Emission Sources"
- 15A NCAC 02D .1111, "Maximum Achievable Control Technology" (40 CFR 63 Subpart WWWW)
- 15A NCAC 02D .1806, "Control and Prohibition of Odorous Emissions"
- 15A NCAC 02Q .0207, "Annual Emissions Reporting"
- 15A NCAC 02Q .0304, "Applications"
- 15A NCAC 02Q .0317, "Avoidance Conditions" for 02D .0530 (PSD)
- 15A NCAC 02Q .0504, "Option for Obtaining Construction and Operation Permit"

a. 15A NCAC 02D .0515, "Particulates from Miscellaneous Industrial Processes"

This regulation establishes an allowable emission rate for particulate matter (PM) from any stack, vent, or outlet resulting from any industrial process for which no other emission control standards are applicable. This rule applies to all permitted emission sources (ID Nos. ES-1, ES-2, ES-3, ES-4, ES-6, and ES-7), but only ES-2 and ES-7 emit non-negligible quantities of PM. Emissions from these sources shall not exceed the allowable emission rate where the allowable emission rate (E) in pounds per hour is defined as a function of the process weight rate (P) in tons per hour according to the following formulas:

$E = 4.10 * (P)^{0.67}$ for $P \leq 30$ tons per hour; or
$E = 55 * (P)^{0.11} - 40$ for $P \geq 30$ tons per hour

Based on the emission calculations discussed in Section 4 above, the particulate matter emissions from these sources will comply with the allowable particulate matter emission limits after controls. A comparison of the maximum anticipated particulate matter emission rates with the associated allowable emission limits for each emission source is provided in Table 5.1:

Table 5.1: Allowable PM Emission Rates vs. Actual PM Emission Rates

Emission Source	Process Weight Rate (tph)	Allowable Emission Rate (lb/hr)	Actual Emission Rate (lb/hr)	In Compliance?
ES-2	0.13*	1.05	0.063	Yes
ES-7	0.0164**	0.26	2.93E-05	Yes

*Taken from the R01 permit review.
**Based on the application maximum design rates of 16.4 lb resin or gelcoat per part with a capacity of 2 parts/hour = 32.8 lb/hr = 0.0164 tph.

Compliance with this regulation is demonstrated since actual PM emissions are less than the allowable emission rate. The facility is required to maintain production records such that the process rate "P" as specified under this regulation can be derived to allow calculation of the allowable PM emissions.

b. 15A NCAC 02D .0521, "Control of Visible Emissions"

For sources manufactured after July 1, 1971, visible emissions shall not be more than 20 percent opacity when averaged over a six-minute period. However, except for sources required to install COMS, six-minute averaging periods may exceed 20 percent opacity if:

(1) No six-minute period exceeds 87 percent opacity;
(2) No more than one six-minute period exceeds 20 percent opacity in any hour; and
(3) No more than four six-minute periods exceed 20 percent opacity in any 24-hour period.

A source subject to an emission standard for visible emission in Rules 02D .0506, .0508, .0524, .1110, .1111, .1206, or .1210 of 15A NCAC shall meet the standard in that particular rule instead of the standard contained in 02D .0521.

All emission sources at OPW were constructed after July 1, 1971. OPW is subject to 02D .1111 for 40 CFR Part 63 Subpart WWWW, but this MACT standard does not have a visible emission standard. Therefore, each emission source at OPW is subject to 02D .0521.

Compliance with this regulation is expected and will be demonstrated by monthly visible emissions observations of each emission source. Recordkeeping and semiannual reporting are required.

c. 15A NCAC 02D .0535, "Excess Emissions Reporting and Malfunctions"

This rule applies to all sources at this facility. Any excess emissions that do not occur during start-up or shutdown are considered a violation of the appropriate rule, unless the owner or operator of the source of excess emissions demonstrates to the Director that the excess emissions are the result of a malfunction.

The owner or operator is required to notify the DAQ if the affected source emits excess emissions that last or more than four hours and that results from a malfunction, a breakdown of process or control equipment, or any other abnormal conditions. The facility shall notify the Director or his designee of any such occurrence by 9:00 a.m. EST of the Division's next business day of becoming aware of the occurrence and describe:

i. the name and location of the facility;
ii. the nature and cause of the malfunction or breakdown;
iii. the time when the malfunction or breakdown is first observed;
iv. the expected duration; and
v. an estimated rate of emissions.

Finally, the owner/operator is required to notify the Director or his designee immediately when the corrective measures have been accomplished.

This rule is currently listed in the permit under Section 2.2 B.7 and remains applicable with this application. However, with this initial Title V application, this rule will be removed from this section of the permit as it will be included in the updated Title V general conditions under Section 4.

d. 15A NCAC 02D .0540, "Particulates from Fugitive Dust Emissions Sources"

This rule requires owners and operators to not cause or allow fugitive dust emissions to cause or contribute to substantive complaints or excess visible emissions beyond the property boundary.

This rule is currently listed in the permit under Section 2.2 B.3 and remains applicable with this application. However, with this initial Title V application, this rule will be removed from this section of the permit as it will be included in the updated Title V general conditions under Section 4.

e. 15A NCAC 02D .1111, "Maximum Achievable Control Technology"

See Section 6 below for detailed information regarding MACT applicability.

f. 15A NCAC 02D .1806, "Control and Prohibition of Odorous Emissions"

This rule is state enforceable only. The Permittee shall not operate the facility without implementing management practices or installing and operating odor control equipment sufficient to prevent odorous emissions from the facility from causing or contributing to objectionable odors beyond the facility's boundary.

No monitoring, recordkeeping, or reporting is required for this condition. This facility has no history of complaints of objectionable odors. Continued compliance is expected.

g. 15A NCAC 02Q .0207, "Annual Emissions Reporting"

The owner or operator of this Title V facility shall report by June 30th of each year the actual emissions during the previous calendar year pursuant to 15A NCAC 02Q .0207.

This rule is currently listed in the permit under Section 2.2 B.4 and remains applicable with this application. However, with this initial Title V application, this rule will be removed from this section of the permit as it will be included in the updated Title V general conditions under Section 4.

h. 15A NCAC 02Q .0304, "Applications"

This rule states that the Permittee must file permit applications for renewal such that they are postmarked at least 90 days before expiration of the permit.

With this initial Title V application, this rule will be removed from the permit as it is no longer applicable. This rule will be replaced by the requirements of 15A NCAC 02Q .0513 which will be contained in the updated Title V general conditions in Section 4.

15A NCAC 02Q .0513 requires the Permittee to submit renewal applications at least six months prior to the date of expiration of the permit.

i. 15A NCAC 02Q .0317, "Avoidance Conditions" for 02D .0530 (PSD)

A major stationary source under Prevention of Significant Deterioration (PSD) rules is defined as any one of 28 named source categories in 40 CFR 51.166(b)(1)(i)(a) that has the potential to emit 100 tons per year of any regulated NSR pollutant or any other stationary source that has the potential to emit 250 tons per year of any NSR regulated pollutant (other than GHG). Operations at the OPW facility are not included

under the list of 28 major stationary source categories; thus, OPW is subject to PSD if the 250 tons per year threshold is exceeded.

As part of the R04 permit review, OPW requested terms and conditions be placed in the permit to limit potential VOC emissions to less than 250 tons per year. Accordingly, the current permit includes a PSD avoidance condition. However, per Table 4.3 above, the facility's PTE for VOCs, without considering controls, is less than 250 tons per year.

The facility is required to calculate and record monthly VOC emissions. A semiannual report is due by January 30 and July 30 of each calendar year. The emissions must be calculated for each of the 12-month periods over the past 17 months.

j. 15A NCAC 02Q .0504, "Option for Obtaining Construction and Operation Permit"

This rule required the facility to submit a Title V application within one year of startup of the proposed open molding process (ID No. ES-7). ES-7 began operation on November 1, 2020, and this application was received on October 28, 2021 thereby satisfying this requirement, and this rule will be removed from the permit.

6. NSPS, NESHAPS/MACT, PSD, 112(r), and CAM Applicability

NSPS

The facility is not currently subject to any New Source Performance Standard (NSPS). This permit modification does not affect this status.

NESHAPS/MACT

NESHAPS Subpart XXXXXX for Plastic Pipe and Pipe Fitting Manufacturing does not apply since OPW is not engaged in any of the activities that are listed in the standard.

NESHAPS Subpart MMMMM for Flexible Polyurethane Foam Fabrication Operations and NESHAPS Subpart OOOOOO for Flexible Polyurethane Foam Production and Fabrication Area Sources are applicable to facilities that produce flexible polyurethane foams. OPW only manufactures rigid polyurethane foams; therefore, these Subparts do not apply to the facility.

NESHAPS Subpart WWWW for Reinforced Plastic Composites Production does apply to the facility since they requested to remove their Synthetic Minor limit for emissions of HAPs and applied to become a Title V major source for emissions of a single HAP (styrene) above major source thresholds.

This regulation applies to the vacuum assisted molding, cover molding operation, bulk resin storage tanks, and open molding booth (ID Nos. ES-3, ES-4, ES-7, and IES-5). Per the R04 review, the facility is considered a new affected source under Subpart WWWW.

A complete review of existing applicable requirements under Subpart WWWW can be found in the September 24, 2020 R04 review (pages 47-62 of this review; Attachment 15 below).

With this application, the facility is adding two additional cover molding presses (ID No. ES-4) for a total of nineteen (19) cover molding presses. The two additional cover molding presses will be subject to Subpart WWWW and will have the following requirements:

Emission Limits/Work Practice Standards [40 CFR 63.5805, Tables 3 and 4 to Subpart WWWW]

For the two additional cover molding presses, OPW is subject to the following emission limits under Subpart WWWW as given in Table 6.1:

Table 6.1

Type of Material	Limit (lb/ton)
Corrosion resistant and/or high strength (CR/HS) mechanical resin application	113
CR/HS or high performance gel coat	605

The following work practice standards apply:

- Containers holding organic HAP-containing materials must be closed or covered, except during the addition or removal of materials;
- Bulk HAP-containing storage tanks may be vented only as necessary for safety;
- Cleaning solvents that contain HAP-containing cleaners may be used to clean cured resin from application equipment. Application equipment includes any equipment that directly contacts resin; and
- Only one charge per mold cycle per compression/injection molding machine shall be uncovered, unwrapped, or exposed.

Compliance Dates [40 CFR 63.5840, 63.5860(a); Tables 2, 8, and 9 to Subpart WWWW]

The Permittee shall be in compliance with the emission limits and work practice standards immediately upon start up of the new cover molding presses.

Testing [40 CFR 63.5845]

No testing requirements apply for the new cover molding presses since no add-on control devices will be used.

Monitoring [40 CFR 63.5810]

No monitoring requirements apply for injection molding/closed molding under this Subpart.

Recordkeeping [40 CFR 63.5915]

OPW must keep the following records pertaining to the new cover molding presses:

- A certified statement that the facility is in compliance with the work practice requirements given in Table 4 to the Subpart.
- All data, assumptions, and calculations used to determine organic HAP emissions factors or average organic HAP contents for operations listed in Tables 3, 5, and 7 to the Subpart.

Reporting [40 CFR 63.5910]

A Notification of Initial Startup shall be submitted within 15 days of commencement of operation of the new cover molding presses **(ID No. ES-4)** as specified in Application No. 5100211.21A.

A Notification of Compliance Status (NOCS) shall be submitted no later than one year plus 30 days from the effective date of Permit No. 10367T05. Initial compliance with this subpart shall be demonstrated if a certified statement is submitted in the NOCS that the Permittee is in compliance with all work practice standards in 40 CFR 63.5805(c) that apply to these new cover molding presses as specified under Table 9 to Subpart WWWW.

OPW must submit a summary report of all monitoring and recordkeeping on a semiannual basis which includes a statement that there were no deviations during the reporting period if there were no deviations from any emission limitation and that there were no deviations from the requirements for work practice standards. If there was a deviation from any emission limitation or work practice standard during the reporting period, OPW must report the information in 40 CFR 63.5910(d).

PSD

This facility is classified as a minor source under Prevention of Significant Deterioration (PSD). The facility has requested a limit of 250 tons per year (PSD Avoidance Condition) for VOC emissions.

Johnston County is in attainment for all promulgated National Ambient Air Quality Standards. Thus, the non-attainment regulations do not apply. Johnston County was triggered for PSD increment tracking for PM10 and SO2 as of October 28, 1981 (minor source baseline date). With this application, no increase in emissions of PM10 or SO2 is expected, so PSD increment tracking does not apply.

112(r)

Per Form A3, 112(r) Applicability Information, this facility is not subject to 40 CFR Part 68 "Prevention of Accidental Releases" – Section 112(r) of the Federal CAA. Regulated hazardous materials are not stored above threshold quantities.

CAM

15A NCAC 02D .0614, Compliance Assurance Monitoring (CAM), requires that compliance assurance monitoring (CAM) plan needs to be developed for all pollutant specific emissions units located at a facility required to obtain a Title V permit, that have pre-controlled emissions above the major source threshold, and use a control device to meet a non-exempt applicable requirement.

Only the Trimming Operations (ID No. ES-2) have an associated control device, dust collector (ID No. CD-1).

The potential emissions for ES-2 are shown in Table 6.1:

Table 6.1

Pollutant	Potential Uncontrolled Emissions (tpy)	Potential Controlled Emissions (tpy)
PM10	22.1	0.22
PM2.5	2.79	0.06

The potential emissions in Table 6.1 were taken from the application and are based on the following parameters:

- Maximum operation of 8,760 hours per year
- Control efficiencies of 99% (PM10) and 98% (PM2.5)
- Maximum amount of dust collected from the dust collector is 100 pounds per week. 40% of the dust collected is PM10, and 5% of the dust collected is PM2.5.

The potential emissions shown in Table 6.1 have been reviewed (see Section 4 above) and appear to be acceptable estimations.

Pre-controlled emissions are below major source thresholds, so CAM does not apply.

7. Facility Wide Air Toxics

On June 21, 2012, the North Carolina General Assembly passed air toxics reform legislation HB 952. Under the bill, any source that is covered under a MACT or Generally Achievable Control Technology (GACT) standard under 40 CFR Part 63 or Part 61 and any source covered under a 112(j) permit is exempt from regulation under the state air toxics rule, except in those circumstances when the DAQ Director makes a written finding that emissions from such a source presents an unacceptable risk to public health. The legislation requires that, upon

receipt of any permit application that would result in an increase in TAP emissions, DAQ must review the application to determine if the TAPs from the facility present an unacceptable risk to human health.

In 2020, as part of the R04 permit revision, the 02Q .0711 toxics condition was removed from the permit since the sources of toxic air pollutants (TAPs) at the facility are covered by MACT Subpart WWWW. It was determined during this review that TAP emissions at the facility do not pose an unacceptable risk to human health as all TAPs were emitted at levels below the applicable Toxic Permitting Emission Rate (TPER). With this application, emissions of styrene are expected to increase. As such, DAQ must evaluate the toxic emission rates from the facility to ensure that there is not an unacceptable risk to human health.

Table 7.1 below shows the facility-wide potential emissions of each TAP compared with the applicable TPER limit. The TPER limits given in 15A NCAC 02Q .0711(b) are used since all emission points are considered to be vertical and unobstructed.

Table 7.1

Toxic Air Pollutant	Emission Rate, Potential, Uncontrolled			TPER			Above TPER?
	(lb/hr)	(lb/day)	(lb/yr)	(lb/hr)	(lb/day)	(lb/yr)	
Acetaldehyde	7.15E-08	N/A	N/A	28.43	N/A	N/A	No
Acrolein	8.46E-08	N/A	N/A	0.08	N/A	N/A	No
Ammonia	0.015	N/A	N/A	2.84	N/A	N/A	No
Benzene	N/A	N/A	8.65E-02	N/A	N/A	11.069	No
Benzo(a)pyrene	N/A	N/A	4.94E-05	N/A	N/A	3.044	No
Chromium	N/A	1.05E-06	N/A	N/A	2.6E-02	N/A	No
Formaldehyde	3.53E-04	N/A	N/A	0.16	N/A	N/A	No
Hexane	N/A	0.20	N/A	N/A	46.3	N/A	No
Manganese	N/A	3.37E-04	N/A	N/A	1.3	N/A	No
Nickel	N/A	1.06E-06	N/A	N/A	0.3	N/A	No
Styrene	3.73	N/A	N/A	11.16	N/A	N/A	No
Toluene	0.027	0.64	N/A	58.97	197.96	N/A	No
Xylene	0.058	1.39	N/A	68.44	113.7	N/A	No

As shown by Table 7.1, the potential facility-wide emission rate of each TAP is below the applicable TPER limit. Therefore, no further analysis is required, and emissions of TAPs from this facility do not pose an unacceptable risk to human health. No permit condition for toxics is required at the time of this permit revision.

8. Facility Emissions Review

Page 1 of this review includes actual emissions data for calendar years 2020 through 2021. The highest reported HAP for each year was styrene.

The most recent emissions inventory received was for calendar year 2022 on June 21, 2023. This inventory has not yet been reviewed or approved by DAQ.

The next most recent emissions inventory received was for calendar year 2021 on June 27, 2022. This emissions inventory was approved as submitted on November 9, 2022. The following internal comments were made regarding the calendar year 2021 emissions inventory:

Differences in VOC emissions are due primarily to a 31% decrease in material throughput (23,558.6 lbs in 2021 and 34,194 lbs in 2020) from OS-4 Nozzle Testing Operation.

Differences in MDI and ethylene glycol emissions are due primarily to an 11.4% decrease in material throughput (380,212.77 lbs in 2021 and 428,895.26 lbs in 2020) from OS-16 Polyurethane Foam Production. Ethylene glycol emissions were not reported for 2020.

Differences in styrene emissions are due primarily to a 9.8% decrease in material throughput (1,132,608.54 lbs in 2021 and 1,256,301.25 lbs in 2020) from OS-18 Cover Molding and a 32.4% decrease in material throughput (142,254.09 lbs in 2021 and 210,560.59 lbs in 2020) from OS-17 Vacuum Assisted Molding.

Differences in toluene and xylene emissions are due primarily to a 32.4% decrease in material throughput (142,254.09 lbs in 2021 and 210,560.59 lbs in 2020) from OS-17 Vacuum Assisted Molding.

With this permit revision, potential emissions of styrene are expected to increase with the added cover molding presses (ID No. ES-4).

9. Compliance History/Statement

The latest compliance inspection was conducted on June 7, 2023 by Abdul Kadir, RRO. Based on observations made during the inspection, OPW appeared to be operating in compliance with all permit requirements. It is recommended that the facility be re-inspected in one year.

OPW has not been issued a Notice of Violation (NOV) in the last ten (10) years. However, the facility has received Notices of Deficiency (NODs) on the following occasions within the last ten years:

- May 17, 2017 for installation of a new cover molding press without first obtaining a permit. The new cover molding press was eligible to be added to the facility via a 15A NCAC 02Q .0318 notification, so an NOD was issued rather than a more serious compliance action.
- March 17, 2017 for a late annual report required under 15A NCAC 02Q .0315.

In accordance with the provisions of 15A NCAC 02Q .0520 and .0515(b)(4) the Responsible Official, Mr. Michael McCann, Site General Manager, has signed the required Title V Compliance Certification - Form E5 and Form A dated October 21, 2021.

10. Public Notice/EPA and Affected State(s) Review

Pursuant to 15A NCAC 2Q .0521, a notice of the DRAFT Title V Permit shall be made. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 2Q .0522, a copy of each permit application, each proposed permit and each final permit shall be provided to EPA.

Public Notice of the DRAFT Title V Permit was published in a local newspaper, the Johnstonian News, and ran from XXXXX XX, 2023 to XXXXXX XX, 2023.

EPA's 45-day review period ran concurrent with the 30-day Public Notice, from XXXXX XX, 2023 to XXXXX XX, 2023.

11. Other Regulatory Considerations

- Professional Engineer (PE) Seal Requirement – 15A NCAC 02Q .0112, Applications Requiring Professional Engineer Seal

  This regulation requires that a professional engineer (PE) licensed to practice in NC is required to seal the technical portions of air permit applications for new and modified sources that involve design, determination of applicability and appropriateness, or determination and interpretation of performance of air pollution capture and control systems.

  This rule includes a few exemptions from this PE seal requirement. One prominent exemption is for sources with non-optional air pollution control equipment that constitutes an integral part of the process equipment. The new cover molding presses added with this application use only inherent fiberglass mesh filters for control of particulate matter and are therefore exempt from the PE seal requirement.

- Zoning Requirement – 15A NCAC 02Q .0507(d)

  Pursuant to 15A NCAC 02Q .0507(d), a zoning consistency determination is required if expanding or adding new sources in accordance with G.S. 143-215.108(f) that bears the date of receipt entered by the clerk of the local government; or consists of a letter from the local government indicating that all zoning or subdivision ordinances are met by the facility. Per DAQ policy memorandum dated July 31, 2000, to prevent unnecessary delays in the review process, all applications received by DAQ, except for renewals without modifications, name/ownership changes, administrative changes, initial Title V applications without modifications, etc. will be required to include a zoning consistency determination.

  The Town of Smithfield is the only local government having jurisdiction over any part of the land on which OPW is located. A letter from Mark Helmer, Senior Planner/GIS Specialist of the Town of Smithfield, dated November 2, 2021, was included with the revised application received on November 4, 2021. The letter indicates that the expansion is permitted in accordance with the site plan. The cover letter of the revised application indicates that a copy of the permit application was sent along with the zoning consistency determination. Thus, the requirements of G.S. 143-215.108(f) have been met.

- Affirmative Defense Provisions - Removal

  EPA has promulgated a rule (88 FR 47029, July 21, 2023), with an effective date of August 21, 2023, removing the emergency affirmative defense provisions in operating permits programs, codified in both 40 CFR 70.6(g) and 71.6(g). EPA has concluded that these provisions are inconsistent with the EPA's current interpretation of the enforcement structure of the CAA, in light of prior court decisions1. Moreover, per EPA, the removal of these provisions is also consistent with other recent EPA actions involving affirmative defenses2 and will harmonize the EPA's treatment of affirmative defenses across different CAA programs. As a consequence of this EPA action to remove these provisions from 40 CFR 70.6(g), it will be necessary for states and local agencies that have adopted similar affirmative defense provisions in their Part 70 operating permit programs to revise their Part 70 programs (regulations) to remove these provisions. In addition, individual operating permits that contain Title V affirmative defenses based on 40 CFR 70.6(g) or similar state regulations will need to be revised.

  Regarding NCDAQ, it has not adopted these discretionary affirmative defense provisions in its Title V regulations (15A NCAC 02Q .0500). Instead, DAQ has chosen to include them directly in individual Title V permits as General Condition (GC) J.

  Per EPA, DAQ is required to promptly remove such impermissible provisions, as stated above, from individual Title V permits, after August 21, 2023, through normal course of permit issuance.

- An application fee of $1,002.00 was required and received for this application.
- The pink sheet indicates that an appropriate number of applications were received with the initial submittal on October 28, 2021.

12. Conclusions, Comments, and Recommendations

- The draft permit was sent to the regional office (Raleigh Regional Office, RRO) and the Stationary Source Compliance Branch (SSCB) for review on XXXX XX, 2023. Comments?

- The draft permit was sent to the applicant for review on XXXX XX, 2023. Comments?

- The public comment period ran from XXXX XX, 2023 through XXXX XX, 2023. Comments?

- The EPA review period ran from XXXX XX, 2023 through XXXX XX, 2023. Comments?

- This permit engineer recommends issuance of Air Permit No. 10367T05

Attachment 1

TABLE 3
Section .0500 Title V Air Permit Application
OPW Fueling Containment Systems, Inc.
Facility ID: 5100211

CY2020 OPW Source Information

Source Description	**Polurethane Foam Production**	
Source ID	**ES-1**	
Amount of UTC A Used	226,567.13	lb/year
Amount of UTC B Used	197,063.06	lb/year
Amount of Release Agent Used	0.00	lb/year
Amount of Slurry Wax Used	0.00	lb/year
Amount of Mold Cleaner Used	586.30	lb/year
Amount of Moldwiz Used	4,678.77	lb/year
Actual hours of operation	4,000	hr/yr
Total throughput	428,895.26	lb/year

Emission Information

Component	Pollutant	Actual Emissions			%wt
		lb/yr	lb/hr	ton/yr	
UTC A	VOC	2.27E+03	5.66E-01	1.13E+00	1.00%
	MDI	2.27E+03	5.66E-01	1.13E+00	1.00%
UTC B	VOC	0.00E+00	0.00E+00	0.00E+00	0.00%
Release Agent	VOC	0.00E+00	0.00E+00	0.00E+00	100.00%
	Ethyl Benzene	0.00E+00	0.00E+00	0.00E+00	0.50%
Slurry Wax	VOC	0.00E+00	0.00E+00	0.00E+00	45.00%
Mold Cleaner	VOC	8.79E+01	2.20E-02	4.40E-02	15.00%
	Ethylene Glycol	8.79E+01	2.20E-02	4.40E-02	15.00%
Moldwiz	VOC	4.68E+03	1.17E+00	2.34E+00	100.00%

Potential Emissions

Maximum Number of Mold Produced	17.00	molds/hr
Maximum Operating Schedule	8,760	hr/yr
Maximum Quanitity of UTC A Used	9.95	lb/mold
Maximum Amount of Mold Cleaner Used	0.75	lb/mold
Maximum Amount of Moldwiz Used	3.00	lb/day
	0.01	lb/mold

Emission Information

Component	Pollutant	Potential Emissions			%wt
		lb/yr	lb/hr	ton/yr	
UTC A	VOC	1.48E+04	5.66E-01	7.41E+00	1.00%
	MDI	1.48E+04	5.66E-01	7.41E+00	1.00%
Mold Cleaner	VOC	1.68E+04	2.20E-02	8.38E+00	15.00%
	Ethylene Glycol	1.68E+04	2.20E-02	8.38E+00	15.00%
Moldwiz	VOC	1.10E+03	1.17E+00	5.48E-01	100.00%

TABLE 4

Section .0500 Title V Air Permit Application

OPW Fueling Containment Systems, Inc.

Facility ID: 5100211

CY2020 OPW Source Information

Source Description	**Trimming Operation**	
Source ID	**ES-2**	
2020 Operation[1]	250	day/yr
Potential Operation	8760	hr/yr
Collected Dust[2]	100	lb/day
% PM[3]	100%	
% PM10[3]	40%	
% PM2.5[3]	5%	
Operating Schedule	50	week/yr
Overall Control Efficiency PM [4]	99.5%	
Overall Control Efficiency PM10 [4]	99.0%	
Overall Control Efficiency PM2.5 [4]	98%	
Pre-controlled PM	100.5	lb/day
Pre-controlled PM10	40.4	lb/day
Pre-controlled PM2.5	5.1	lb/day

Actual Emissions

Pollutant	Actual Controlled Emissions		
	lb/yr	lb/hr	ton/yr
PM	125.6	0.063	6.28E-02
PM_{10}	101.0	0.051	5.05E-02
$PM_{2.5}$	25.5	0.013	1.28E-02

Potential Emissions

Pollutant	Potential Controlled Emissions			Potential Controlled Emissions (Before Controls)		
	lb/yr	lb/hr	ton/yr	lb/yr	lb/hr	ton/yr
PM	550.3	0.063	2.75E-01	110050.3	12.563	5.50E+01
PM_{10}	442.4	0.051	2.21E-01	44242.4	5.051	2.21E+01
$PM_{2.5}$	111.7	0.013	5.59E-02	5586.7	0.638	2.79E+00

Notes:

[1] Trimming operates one 8-hour shift/day.

[2] Provided by OPW

[3] Based on EPA AP-42 Talc Processing. Ch. 11.26, Figure 11.26-2

[4] Estimated

Attachment 3

TABLE 5
Section .0500 Title V Air Permit Application
OPW Fueling Containment Systems, Inc.
Facility ID: 5100211

OPW Source Information

Source Description	Vaccum Assisted Molding			
Source ID	ES-3			
Usage		CY2020 Actual	Potential	Units
Amount of Drier used	DCI FV DUROCT COBALT 12% OCTOATE CLEX	11.84	16.46	lb/year
Amount of CX500 Mold Cleaner used	AXE GL CX500 MOLD CLEANER 4GL/CS	561.00	780.06	lb/year
Amount of Resin Remover used	UPC DX ACRASTRIP 600 CRR RESIN REMOVER	8,514.00	11,838.51	lb/year
Amount of Sealer used	CHL GL 15 SEALER EZ 4GL/CTN	306.72	426.49	lb/year
Amount of Primer used	CHL GL MPP2180 MOLD PREP & PRIMER	492.10	684.25	lb/year
Amount of Adhesive used	PLT FV FIBERTACK MT-1 ADHESIVE	6,634.39	9,224.96	lb/year
Amount of Semi-Permanent Release Agent used	CHL GL R&B EZ SEMI PERM RELEASE AGENT	1,424.48	1,980.71	lb/year
Amount of 4X8# Azox Clear Catalyst used	UNI 4X8# AZOX CLEAR	23,536.00	32,726.25	lb/year
Amount of CX502 Mold Cleaner used	AXE GL CX-502 XTEND MOLD CLEANER	459.00	638.23	lb/year
Amount of Regurole Resin used[1]	SIL45BA-2541 RESIN (REGUROLE)	167,656.14	233,121.87	lb/year
Amount of Mold Release used[1]	TRI TR-104 HI TEMP MOLD REL	183.75	255.50	lb/year
Amount of Permanent Release Agent used[1]	CHL GL MONO-COAT E255 SEMI PERMANENT RELEASE AGENT	721.28	1,002.92	lb/year
Amount of Cream Hardener used[1]	AXS HSP 4 OZ White F024685 Cream Hardener O-RMD	49.13	68.31	lb/year
Amount of Release agent used[1]	CHL FV IMO2 Internal Release Agent	10.76	14.97	lb/year
Total throughput		210,560.59	292,779.48	lb/year
Actual hours of operation		6,300		hr/year
Maximum hours of operation		8,760		hr/year
Resin free styrene factor		3%		

Emission Information

Component	Pollutant	Actual Emissions			Potential Emissions[1]			%wt
		lb/yr	lb/hr	ton/yr	lb/yr	lb/hr	ton/yr	
Drier	VOC	2.37E+00	3.76E-04	1.18E-03	3.29E+00	3.76E-04	1.65E-03	20.00%
CX500 Mold Cleaner	VOC	5.61E+02	8.90E-02	2.81E-01	7.80E+02	8.90E-02	3.90E-01	100.00%
	Toluene	1.68E+02	2.67E-02	8.42E-02	2.34E+02	2.67E-02	1.17E-01	30.00%
	Xylene	1.68E+02	2.67E-02	8.42E-02	2.34E+02	2.67E-02	1.17E-01	30.00%
Resin Remover	VOC	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
Sealer	VOC	3.07E+02	4.87E-02	1.53E-01	4.26E+02	4.87E-02	2.13E-01	100.00%
Primer	VOC	4.92E+02	7.81E-02	2.46E-01	6.84E+02	7.81E-02	3.42E-01	100.00%
	Xylene	1.97E+02	3.12E-02	9.84E-02	2.74E+02	3.12E-02	1.37E-01	40.00%
	Methyl Alcohol	4.92E+01	7.81E-03	2.46E-02	6.84E+01	7.81E-03	3.42E-02	10.00%
Adhesive	VOC	5.24E+03	8.32E-01	2.62E+00	7.29E+03	8.32E-01	3.64E+00	79.00%
Semi-Permanent Release Agent	VOC	1.42E+03	2.26E-01	7.12E-01	1.98E+03	2.26E-01	9.90E-01	100.00%
4X8# Azox Clear Catalyst	VOC	5.88E+02	9.34E-02	2.94E-01	8.18E+02	9.34E-02	4.09E-01	2.50%
CX502 Mold Cleaner	VOC	2.87E+02	4.55E-02	1.43E-01	3.99E+02	4.55E-02	1.99E-01	62.50%
Fiberglass Resin	VOC	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	76.00%
	Dimethyl Phthalate	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	60.00%
Regurole Resin	VOC	2.47E+03	3.93E-01	1.24E+00	3.44E+03	3.93E-01	1.72E+00	1.48%
	Styrene	2.47E+03	3.93E-01	1.24E+00	3.44E+03	3.93E-01	1.72E+00	49.20%
Vaccum Infusion Resin	VOC	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.48%
	Styrene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	49.20%
Wax solution	VOC	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.76%
	Styrene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	92.00%
Mold Release	VOC	1.47E+02	2.33E-02	7.35E-02	2.04E+02	2.33E-02	1.02E-01	80.00%
Permanent Release Agent	VOC	7.21E+02	1.14E-01	3.61E-01	1.00E+03	1.14E-01	5.01E-01	100.00%
44#HP Azox Clear Catalyst	VOC	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	63.00%
Cream Hardener	VOC	2.95E+01	4.68E-03	1.47E-02	4.10E+01	4.68E-03	2.05E-02	60.00%
Release Agent	VOC	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%

Notes:
[1] Potential emissions based on a ratio of actual-to-potential hours of operation (8760/6300 hrs).

Attachment 4

TABLE 6
Section .0500 Title V Air Permit Application
OPW Fueling Containment Systems, Inc.
Facility ID: 5100211

CY2020 OPW Source Information

Source Description	Cover Molding			
Source ID	ES-4			
Usage		Actual	Potential[1]	Units
Amount of Blue Pigment used	AOC FV CP-50836 Blue Pigment	99.00	198.61	lb/year
Amount of Pine Pigment used	AOC FV CP-40706 Pine Green Pigment	50.00	100.31	lb/year
Amount of Orange Pigment used	AOC FV CP-30202 Orange Pigment	392.00	786.41	lb/year
Amount of Red Pigment used	AOC FV CP-60714 Red Pigment	444.00	890.73	lb/year
Amount of Novolac Vinyl Ester Resin used	AOC DX F086-AAA-00 NOVOLAC UNPROMOTED VINYL ESTER HI HEAT	2,731.20	5,479.17	lb/year
Amount of ISO Gel Coat used	PCU FV 944-X-064 NEUTRAL ISO GEL COAT	360.00	722.21	lb/year
Amount of Open Head Vaccum Infusion Resin used	INT DX COR45-BA-131A OPEN HEAD VACUUM INFUSION RESIN	1,072,137.41	2,150,858.12	lb/year
Amount of DMA used	PUR GL DIMETHYLANILINE,N,N- (DMA)	5.46	10.95	lb/year
Amount of Styrene Monomer used	FV STYRENE MONOMER 50T VIRGIN	132.79	266.40	lb/year
Amount of Trigonox Initiator used	AKZ 35#HP TRIGONOX K90 CUMYL HYDROPEROXIDE	57.15	114.65	lb/year
Amount of Water-based Release Agent used	CHL GL 5094W Release 4GL/CS	6,897.18	13,836.71	lb/year
Amount of Black Pigment used	HKR FV HBK-3016 Black Pigment	3,464.00	6,949.27	lb/year
Amount of White Pigment used	HKR FV HWE-2303 White Pigment	910.00	1,825.59	lb/year
Amount of Regurole Resin used[2]	SIL45BA-2541 RESIN (REGUROLE)	167,656.14	336,341.75	lb/year
Amount of Mold Release used[2]	TRI TR-104 HI TEMP MOLD REL 14OZ 12CANS/CS MR 104 LTD QTY	183.75	368.63	lb/year
Amount of Permanent Release Agent used[2]	CHL GL MONO-COAT E255 SEMI PERMANENT RELEASE AGENT	721.28	1,446.99	lb/year
Amount of Cream Hardener used[2]	AXS HSP 4 OZ White F024685 Cream Hardener O-RMD	49.13	98.55	lb/year
Amount of Release agent used[2]	CHL FV IMO2 Internal Release Agent	10.76	21.59	lb/year
Total throughput		1,256,301.25	2,520,316.63	lb/year
Actual hours of operation		7,200.00		hr/year
Maximum hours of operation		8,760.00		hr/year
Actual No. Presses Operating in 2020		15		No. of Presses
Potential No. of Press With This Application		19		No. of Presses
Resin free methyl methacrylate factor		78.6%		
Resin free styrene factor		3%		

Emission Information

Component	Pollutant	Actual Emissions			Potential Emissions			%wt
		lb/yr	lb/hr	ton/yr	lb/yr	lb/hr	ton/yr	
Novolac Vinyl Ester Resin	VOC	9.56E+02	1.33E-01	4.78E-01	1.16E+03	1.33E-01	5.82E-01	35.00%
ISO Gel Coat	VOC	1.81E+01	2.51E-03	9.05E-03	2.20E+01	2.51E-03	1.10E-02	5.03%
	Styrene	3.66E+00	5.09E-04	1.83E-03	4.46E+00	5.09E-04	2.23E-03	33.91%
	Methyl Methacrylate	1.44E+01	2.00E-03	7.22E-03	1.76E+01	2.00E-03	8.78E-03	5.10%
Open Head Vaccum Infusion Resin	VOC	9.33E+03	1.30E+00	4.66E+00	1.13E+04	1.30E+00	5.67E+00	0.87%
	Styrene	9.33E+03	1.30E+00	4.66E+00	1.13E+04	1.30E+00	5.67E+00	29.00%
DMA	VOC	5.46E+00	7.58E-04	2.73E-03	6.64E+00	7.58E-04	3.32E-03	100.00%
Styrene Monomer	VOC	3.98E+00	5.52E-04	1.99E-03	4.84E+00	5.52E-04	2.42E-03	2.99%
	Styrene	3.98E+00	5.52E-04	1.99E-03	4.84E+00	5.52E-04	2.42E-03	99.80%
Trigonox Initiator	VOC	4.00E+00	5.56E-04	2.00E-03	4.87E+00	5.56E-04	2.43E-03	7.00%
	Cumene	2.86E+00	3.97E-04	1.43E-03	3.48E+00	3.97E-04	1.74E-03	5.00%
	Acetophenone	1.14E+00	1.59E-04	5.72E-04	1.39E+00	1.59E-04	6.95E-04	2.00%
Water-based relaease agent	VOC	2.07E+02	2.87E-02	1.03E-01	2.52E+02	2.87E-02	1.26E-01	3.00%
Regurole Resin	VOC	2.47E+03	3.44E-01	1.24E+00	3.01E+03	3.44E-01	1.51E+00	1.48%
	Styrene	2.47E+03	3.44E-01	1.24E+00	3.01E+03	3.44E-01	1.51E+00	49.20%
Mold Release	VOC	1.47E+02	2.04E-02	7.35E-02	1.79E+02	2.04E-02	8.94E-02	80.00%
Permanent Release Agent	VOC	7.21E+02	1.00E-01	3.61E-01	8.78E+02	1.00E-01	4.39E-01	100.00%
Cream Hardener	VOC	2.95E+01	4.09E-03	1.47E-02	3.59E+01	4.09E-03	1.79E-02	60.00%

Notes:
[1] OPW is permitted to operate 17 Cover Mold presses. Only 15 have been in operation. The additional two permitted presses will be added late 2021. This application is requesting for the addition of two more presses for a total of 19. Potential usage based on a factor of 1.27 (19/15 presses) plus a an hours of operation factor of 1.21 (8760/7200 hrs).

Attachment 5

TABLE 8

Section .0500 Title V Air Permit Application

OPW Fueling Containment Systems, Inc.

Facility ID: 5100211

CY2020 OPW Source Information

Source Description	**Nozzle Testing Operation**	
Source ID	**ES-6**	
Actual Mineral Spirits Usage	34,194.00	lb/year
Potential Mineral Sprits Usage[1]	41,864.35	lb/year
Actual hours of operation	7,155.00	hr/year
Potential hours of operation	8,760.00	hr/year
Control	0%	lb/year

Emission Information

Pollutant	Actual Emissions[2]			Potential Emissions			%wt
	lb/yr	lb/hr	ton/yr	lb/yr	lb/hr	ton/yr	
VOC	3.42E+04	4.78E+00	1.71E+01	4.19E+04	4.78E+00	2.09E+01	100.00%

Notes:

[1] Potential usage based on a ratio of actual to potential hours of operation.

[2] Assumed 100% of material used is evaporated

Attachment 6

TABLE 9

Section .0500 Title V Air Permit Application

OPW Fueling Containment Systems, Inc.

Facility ID: 5100211

OPW Source Information[1]

Facility Basis			
Material	Resin	Interior GC	Exterior GC
Storage	Bulk	Non-Bulk	Non-Bulk
Corrosion Resistant	Yes	Yes	Yes
Vapor Suppressed	No	No	No
% OHAP (styrene)	43.6%	18%	27%
Delivery	Non-atomized	Atomized	Atomized
Subaprt WWWW OHAP Limit (lb/ton)	113	605	605
	EL_R	EL_{IGC}	EL_{EGC}

Emission Information[1]

Expected Resin Use	58.9	ton/yr
Potential Resin Use	129.0	ton/yr
Expected Interior Gel Coat Use	1.2	ton/yr
Expected Exterior Gel Coat Use	1.7	ton/yr
Potential Interior Gel Coat Use	2.5	ton/yr
Potential Exterior Gel Coat Use	3.7	ton/yr
Resin OHAP Emission Limit	112.0	lb/ ton of Resin
Actual Resin EF	103.9	lb/ ton of Resin
Gel Coat OHAP Emission Limit	605.0	lb/ ton of Gel Coat
Actual Gel Coat EF	160.2	lb/ ton of Interior Gel Coat
	240.3	lb/ ton of Exterior Gel Coat
Expected hours of operation	4,000	hr/yr
Maximum hours of operation	8,760	hr/yr

Emission Information

Component	Pollutant	Expected Emissions[2]			Potential Emissions[3]		
		lb/yr	lb/hr	ton/yr	lb/yr	lb/hr	ton/yr
Resin	Styrene	6.12E+03	1.53E+00	3.06E+00	1.34E+04	1.53E+00	6.70E+00
Interior Gel Coat	Styrene	1.84E+02	4.61E-02	9.21E-02	4.03E+02	4.61E-02	2.02E-01
Exterior Gel Coat	Styrene	4.09E+02	1.02E-01	2.04E-01	8.95E+02	1.02E-01	4.47E-01

Notes:

[1] Based on OPW June 1, 2020 air permit application.

[2] Actual emission rates based on acutal emission factors and expected material usage.

[3] Potential emission rates based on acutal emission factors and potential material usage.

TABLE 10

Section .0500 Title V Air Permit Application

OPW Fueling Containment Systems, Inc.

Facility ID: 5100211

OPW Source Information[1]		
Expected Resin Use	58.9	ton/yr
Potential Resin Use	129.0	ton/yr
Expected Interior Gel Coat Use	1.2	ton/yr
Expected Exterior Gel Coat Use	1.7	ton/yr
Potential Interior Gel Coat Use	2.5	ton/yr
Potential Exterior Gel Coat Use	3.7	ton/yr
Overspray	10%	
Inherent Mesh Filter Control Efficiency	98.1%	
Expected hours of operation	4,000	hr/yr
Maximum hours of operation	8,760	hr/yr

Emission Information

Component	Pollutant	Expected Emissions			Potential Emissions			Potential Emissions (Uncontrolled)		
		lb/yr	lb/hr	ton/yr	lb/yr	lb/hr	ton/yr	lb/yr	lb/hr	ton/yr
Resin & Gel Coats	PM	1.17E-01	2.93E-05	5.87E-05	2.57E-01	2.93E-05	1.28E-04	1.35E+01	1.54E-03	6.76E-03

Notes:

[1] Based on OPW June 1, 2020 air permit application.

Attachment 7

OPW Fueling Containment Systems
Smithfield, North Carolina
August Mack Project Number: JN1846.251

Emission Unit Information	
EU ID	
Process Description	Polyethylene Extrusion
Source Classification Code	
Permitting Status	Permit Exempt

	Actual Emissions			Potential Emissions			Allowable Emissions		
	lbs./hour	lbs./day	tpy	lbs./hour	lbs./day	tpy	lbs./hour	lbs./day	tpy
PM	0.01	0.16	0.02	0.02	0.55	0.10	0.02	0.55	0.10
PM_{10}	0.01	0.16	0.02	0.02	0.55	0.10	0.02	0.55	0.10
$PM_{2.5}$	0.01	0.16	0.02	0.02	0.55	0.10	0.02	0.55	0.10
SO_2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NO_X	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OC	0.01	0.23	0.03	0.03	0.80	0.15	0.03	0.80	0.15
VOC	0.01	0.23	0.03	0.03	0.80	0.15	0.03	0.80	0.15
All HAP	0.02	0.23	0.03	0.04	1.02	0.19	0.04	1.02	0.19
HAP1	0.02	0.27	0.03	0.04	1.02	0.19	0.04	1.02	0.19

Givens:	Units		Source
Maximum amount of Kynar Flex	233.71	lb/hr	Steve Brinchek on 12/12/2013 - Hard copy
Maximum amount of Polyethylene	835.27	lb/hr	Steve Brinchek on 12/12/2013 - Hard copy
Maximum amount of PA12 AESNO P40TL	241.27	lb/hr	Steve Brinchek on 12/12/2013 - Hard copy
Maximum amount of OREVAC-18334A	121.54	lb/hr	Steve Brinchek on 12/12/2013 - Hard copy
Maximum amount of END 1100 Untwisted, Denier	6.70	lb/hr	Steve Brinchek on 12/12/2013 - Hard copy
Maximum amount of Colorant, Blue Pantone 293C	2.81	lb/hr	Steve Brinchek on 12/12/2013 - Hard copy
Maximum amount of PEBAX - X120500	4.82	lb/hr	Steve Brinchek on 12/12/2013 - Hard copy
Maximum amount of Urethane, Ester Base	53.86	lb/hr	Steve Brinchek on 12/12/2013 - Hard copy
Maximum amount of Poly, copolymer Dupont	42.34	lb/hr	Steve Brinchek on 12/12/2013 - Hard copy
Maximum amount of white plastic colorant for Geoflex	5.18	lb/hr	Steve Brinchek on 12/12/2013 - Hard copy
Maximum length of polyethylene pipe produced	720.0	ft/hr	Steve Brinchek in an email on 12/26/2013
HAP Maximum Content of Maleic Anhydride in Copolymer Dupont	0.10%		Threshold for this HAP is 0.025 lbs/hr
Actual amount of Polyethylene	356.11	lb/hr	SA-C20A Steve Brinchek on 12/12/2013 - Hard copy
Actual amount of Copolymer Dupont	16.63	lb/hr	
VOC Emission Factor	39.85	lbs/million pounds of PE	Y = Mt+C
PM Emission Factor	27.34	lbs/million pounds of PE	Y = Mt+C
Extrusion Temperature (t)	435	F	Steve Brinchek on 12/12/2013 - Hard copy
M (slope) for HDPE for VOC Emission Factor	0.27		Development of Emission Factors for Polyethylene Processing - AWMA Technical Paper: Table 8 HDPE VOC & Particulate Emission Factors
C (constant) for HDPE for VOC Emission Factor	-77.6		
M (slope) for HDPE for PM Emission Factor	0.141		
C (constant) for HDPE for PM Emission Factor	-34		
Actual Operating Schedule	16	hours/day	Actual Schedule
Actual Operating Schedule	4000	hours/year	Actual Schedule
Maximum Operating Schedule	24	hours/day	Maximum Schedule
Maximum Operating Schedule	8,760	hours/year	Maximum Schedule

Emission Unit Description

This is a multilayered polyethylene extrusion line. Kynar material lining is added to internal surface of the Polyethylene pipe with the help of the adhesive. Various materials added to prepare Kynar and adhesive are listed in the above table. Tie (adhesive) Layer ingredients are blended together in a dryer before fed into the extrusion line.

During the extrusion process, layers of polyethylene/OREVAC (a different type of plastic) are added based on the customer requirements. Last stage of the extrusion process is adding the jacket and is not always required for all pipes. This jacket is made out of kynar and polyethylene mix. The entire length of the extrusion line is about 100 feet. There are no stacks/vents or controls associated with this process.

For estimating the potential emissions, the composition (SA-GFP-2400) that uses maximum amount of ingredients per foot of pipe produced has been used. It is to be noted that only polyethylene is contributing to the VOC emissions and none of the other ingredients have VOCs in them. The only HAP emitted from this process is Maleic anhydride that is emitted from Copolymer Dupont. The quantities of other ingredients has been included in the above table to show the complete composition of the polyethylene pipe even though they do not contribute any emissions.

Emission Calculation Fact Sheet

Michigan Department Of Environmental Quality ◆ Environmental Science And Services Division ◆ (800) 662-9278

PLASTIC PRODUCTION AND PRODUCTS MANUFACTURING

This document lists Source Classification Codes (SCC) and emission factors for plastic production and product manufacturing facilities. They are provided as an aid in calculating emissions. Emissions factors for rubber and fiberglass manufacturing facilities are not included in this fact sheet; however, they must also be calculated and reported.

It is not required that facilities use these factors to estimate their emissions. If a facility disagrees with any emission factor in this document, other emission factors or methods of estimating emissions may be used provided the emission factors or methods correctly characterize the processes and the resulting emissions at the facility. A facility doing so must submit calculations and documentation showing the source of the factors or method used and justification for their use. For example, stack test data and site specific emission calculations provide more accurate emission estimates than the use of general emission factors.

Control Factors
The listed emission factors are for uncontrolled emissions. If a facility has control equipment, such as a fabric filter or thermal oxidizer, the emissions can be multiplied by the control factor. Calculate the control factor by subtracting the percent control efficiency from 100 and then divide that number by 100. For example, if the control efficiency is 87%, the control factor would be (100 - 87)/100 = 0.13. Control efficiencies may be listed on the equipment or in the equipment documentation. Alternatively, equipment suppliers can provide control efficiency values.

Scientific Notation
The emission factors are expressed in scientific notation, which means that the decimal point has been moved. If the exponent is negative, move the decimal point to the left. If the exponent is positive, move the decimal point to the right. If the exponent is zero, the decimal point does not move. For example, if a number is expressed as 2.0E-1, move the decimal point one place to the left to get 0.20. If a number is expressed as 2.0E2, move the decimal point 2 places to the right to get 200. If a number is expressed as 2.0E0, the decimal point does not move – the number is 2.0.

PLASTIC PRODUCTION

SCC	DESCRIPTION	POLLUTANT	EMISSION FACTORS
3-01-018-01	Polyvinyl Chlorides and Copolymers	NOX PM10,FLTRBLE SOX VOC	2.0E2 LB/TON PRODUCT 2.3E1 LB/TON PRODUCT 2.5E-2 LB/TON PRODUCT 1.7E1 LB/TON PRODUCT
3-01-018-02	Polypropylene and Copolymers	NOX PM10,FLTRBLE VOC	1.31E2 LB/TON PRODUCT 2.0E0 LB/TON PRODUCT 7.0E-1 LB/TON PRODUCT
3-01-018-07	General: Polyethylene (High Density)	PM10,FLTRBLE	6.6E-1 LB/TON PRODUCT
3-01-018-09	Extruder	VOC	1.1E1 LB/TON POLYETHYLENE
3-01-018-10	Conveying	VOC	4.6E-1 LB/TON POLYETHYLENE
3-01-018-11	Storage	PM,FLTRBLE VOC	8.0E-1 LB/TON POLYETHYLENE 1.0E-2 LB/TON POLYETHYLENE
3-01-018-12	General: Polyethylene (Low Density)	PM10,FLTRBLE	6.6E-1 LB/TON POLYETHYLENE
3-01-018-14	Extruder	VOC	6.6E1 LB/TON POLYETHYLENE

PLASTIC PRODUCTION *(continued)*

SCC	DESCRIPTION	POLLUTANT	EMISSION FACTORS
3-01-018-17	General*	VOC	1.07E1 LB/TON POLYSTYR RES
3-01-018-19	Solvent Recovery	VOC	3.2E0 LB/TON POLYSTYR RES
3-01-018-21	Extruding / Pelletizing / Conveying / Storage	VOC	3.0E-1 LB/TON POLYSTYR RES
3-01-018-27	Polyamide Resins	NOX	1.0E0 LB/TON POLYAMID RES
3-01-018-32	Urea-Formaldehyde Resins	VOC	1.47E1 LB/TON UREA-FOR RES
3-01-018-42	Melamine Resins	VOC	5.0E1 LB/TON MELAMINE RES
3-01-018-47	Epoxy Resins	VOC	5.1E0 LB/TON EPOXY RESIN
3-01-018-49	Acrylonitrile-Butadiene-Styrene (ABS) Resin	VOC	6.0E1 LB/TON ABS RESIN
3-01-018-70	Reactor (Polyether Resins)	VOC	5.0E1 LB/TON POLYETHRRESN
3-01-018-80	Reactor (Polyurethane)	VOC	5.2E1 LB/TON POLYURETHANE
3-01-018-92	Separation Process	VOC	2.0E0 LB/TON PRODUCT

* This factor may be used to calculate total emissions from a polystyrene resin production plant.

PLASTIC PRODUCTS MANUFACTURING

SCC	DESCRIPTION	POLLUTANT	EMISSION FACTORS
3-08-010-01	Adhesives Production	VOC	1.25E1 LB/TON ADHESIVE
3-08-010-02	Extruder	PM,PRIMARY VOC	9.58E-2 LB/TON PLASTIC 7.06E-2 LB/TON PLASTIC
3-08-010-03	Film Production, Die (Flat/Circular)	PM,PRIMARY VOC	8.02E-2 LB/TON PLASTIC 2.84E-2 LB/TON PLASTIC
3-08-010-04	Sheet Production, Polymerizer	VOC	3.5E0 LB/TON PLASTIC
3-08-010-05	Foam Production, General Process	VOC	6.0E1 LB/TON PLASTIC
3-08-010-06	Lamination, Kettles/Oven	VOC	2.05E1 LB/TON PLASTIC
3-08-010-07	Molding Machine	PM,PRIMARY VOC	1.302E-1 LB/TON PLASTIC 6.14E-2 LB/TON PLASTIC

RUBBER MANUFACTURING AND PRODUCTS: MAERS does not have the capability to calculate emissions for these SCC codes. Check "Other" on the MAERS E-101 Form and use an alternate method for calculating emissions. Be sure to submit documentation to support any calculations. For assistance in calculating emissions, refer to EPA's Clearinghouse for Inventories and Emission Factors (CHIEF) Internet Site at **www.epa.gov/ttn/chief** or contact your industry trade group/organization.

FIBERGLASS RESIN PRODUCTS: MAERS does not have the capability to calculate emissions for these SCC codes. Check "Other" on the MAERS E-101 Form and use an alternate method for calculating emissions. Be sure to submit documentation to support any calculations. Unified Emission Factors are available from the American Composites Manufacturers Association (ACMA) web site **www.cfa-hq.org/ga/index.cfm**.

Attachment 9

TABLE 15

Insignificant/Exempt Sources

OPW Fueling Containment Systems, Inc.

Facility ID: 5100211

Source Description	**Ferry Roto-Mold**	
Source ID	**IES-3**	
Amout of PE used per part	6	lb/part
Prodution Rate	4	part/hr
CY2020 Run Hours	2342	hr/yr
CY2020 PE Used	28.10	ton/yr
Oven Rating	2.25	MMBtu/hr
CY2020 Natural Gas Used	11,232.77	MMBtu/yr
Potential Run Hours	8760	hr/yr
Potential PE Used	105.12	ton/yr
Potential Natural Gas Used	42,014.97	MMBtu/yr

Emission Information

Operation	Pollutant	Emission Factor[1][2]	Units	Actual Emissions		Potential Emissions	
				lb/yr	ton/yr	lb/yr	ton/yr
Molding	VOC	6.14E-02	lb/ ton of plastic	1.73E+00	8.63E-04	6.45E+00	3.23E-03
	PM	1.30E-01	lb/ ton of plastic	3.66E+00	1.83E-03	1.37E+01	6.84E-03
Combustion	PM	5.10E-04	lb/MMBtu	5.73E+00	2.86E-03	2.14E+01	1.07E-02
	PM_{10}	5.10E-04	lb/MMBtu	5.73E+00	2.86E-03	2.14E+01	1.07E-02
	$PM_{2.5}$	4.22E-04	lb/MMBtu	4.74E+00	2.37E-03	1.77E+01	8.86E-03
	VOC	5.39E-03	lb/MMBtu	6.06E+01	3.03E-02	2.27E+02	1.13E-01
	NO_x	9.80E-02	lb/MMBtu	1.10E+03	5.51E-01	4.12E+03	2.06E+00
	CO	8.24E-02	lb/MMBtu	9.25E+02	4.63E-01	3.46E+03	1.73E+00
	SO_2	5.88E-04	lb/MMBtu	6.61E+00	3.30E-03	2.47E+01	1.24E-02
	Acetaldehyde (TH)	1.49E-08	lb/MMBtu	1.67E-04	8.37E-08	6.26E-04	3.13E-07
	Acrolein (TH)	1.76E-08	lb/MMBtu	1.98E-04	9.91E-08	7.41E-04	3.71E-07
	Ammonia (T)	3.14E-03	lb/MMBtu	3.52E+01	1.76E-02	1.32E+02	6.59E-02
	Benzene (TH)	2.06E-06	lb/MMBtu	2.31E-02	1.16E-05	8.65E-02	4.33E-05
	Benzo(a)pyrene (TH)	1.18E-09	lb/MMBtu	1.32E-05	6.61E-09	4.94E-05	2.47E-08
	Cobalt unlisted compounds (H)	8.24E-08	lb/MMBtu	9.25E-04	4.63E-07	3.46E-03	1.73E-06
	Formaldehyde (TH)	7.35E-05	lb/MMBtu	8.26E-01	4.13E-04	3.09E+00	1.54E-03
	Hexane, n- (TH)	1.76E-03	lb/MMBtu	1.98E+01	9.91E-03	7.41E+01	3.71E-02
	Lead unlisted compounds (H)	4.90E-07	lb/MMBtu	5.51E-03	2.75E-06	2.06E-02	1.03E-05
	Napthalene (H)	5.98E-07	lb/MMBtu	6.72E-03	3.36E-06	2.51E-02	1.26E-05
	Selenium compounds (H)	2.35E-08	lb/MMBtu	2.64E-04	1.32E-07	9.89E-04	4.94E-07
	Toluene (TH)	3.33E-06	lb/MMBtu	3.74E-02	1.87E-05	1.40E-01	7.00E-05

Notes:

[2] Molding Emission factors from January 12, 2014 permit application

[4] Combustion emissison factors from DAQ spreadsheet

Attachment 10

TABLE 7

Section .0500 Title V Air Permit Application

OPW Fueling Containment Systems, Inc.

Facility ID: 5100211

CY2020 OPW Source Information

Source Description	**Two Bulk Storage Tanks**		
Source ID	**ES-5**		
Amount of Resin Used	INT DX COR45-BA-131A OPEN HEAD VACUUM INFUSION RESIN 460#/DX	1,072,137.41	lb/year
Amount of Resin Used	SIL45BA-2541 RESIN (REGUROLE)	335,312.28	lb/year
Total throughput		1,407,449.69	lb/year

Emission Information

Component	Pollutant	Actual Emissions[1]		%wt
		lb/yr	ton/yr[2]	
Vacuum Infusion Resin	VOC	4.66E+01	2.33E-02	0.87%
	Styrene	4.66E+01	2.33E-02	0.87%
SIL45BA-2541 Resin	VOC	2.47E+01	1.24E-02	1.48%
	Styrene	2.47E+01	1.24E-02	1.48%

Notes:

[1] Conservatively assumed 0.5% loss

[2] The bulk resin storage tanks were permitted in the origional 2015 air permit application. This application is requesting that the tanks be re-classified as exempt/insignificant since annual emissions are less than 5 TYP (criteria) and less than 1,000 lb/hr (HAP).

TABLE 16

Insignificant/Exempt Sources

OPW Fueling Containment Systems, Inc.

Facility ID: 5100211

Source Description	**Polyethylene Storage Bins**	
Source ID	**IES-6**	
CY2020 PE Throughput	169.94	ton/year
CY2020 Run Hours	2342	hr/yr
Potential Run Hours	8760	hr/yr

Emission Information

Pollutant	Emission Factor[1]	Actual Emissions		Potential Emissions	
	lb/ton of PE	lb/yr	ton/yr	lb/yr	ton/yr
PM	8.00E-01	1.36E+02	6.80E-02	5.09E+02	2.54E-01
PM_{10}	8.00E-01	1.36E+02	6.80E-02	5.09E+02	2.54E-01
$PM_{2.5}$	8.00E-01	1.36E+02	6.80E-02	5.09E+02	2.54E-01
VOC	1.00E-02	1.70E+00	8.50E-04	6.36E+00	3.18E-03

Notes:

[1] Based on the January 14, 2014 OPW air permit application.

TABLE 17

Insignificant/Exempt Sources

OPW Fueling Containment Systems, Inc.

Facility ID: 5100211

Source Description	**Welding consisting of 5 welding booths**	
Source ID	**IES-7**	
Amount of electrode used	176.00	lb/year
CY2020 Run Hours	4000	hr/yr
Potential Run Hours	8760	hr/yr

Emission Information

Pollutant	Emission Factor[1]	Actual Emissions		Potential Emissions	
	lb/10^3 lb	lb/yr	ton/yr	lb/yr	ton/yr
PM	5.20E+00	9.15E-01	4.58E-04	2.00E+00	1.00E-03
PM10	5.20E+00	9.15E-01	4.58E-04	2.00E+00	1.00E-03
$PM_{2.5}$	5.20E+00	9.15E-01	4.58E-04	2.00E+00	1.00E-03
Cobalt	1.00E-03	1.76E-04	8.80E-08	3.85E-04	1.93E-07
Manganese	3.18E-01	5.60E-02	2.80E-05	1.23E-01	6.13E-05
Nickel	1.00E-03	1.76E-04	8.80E-08	3.85E-04	1.93E-07
Chromium	1.00E-03	1.76E-04	8.80E-08	3.85E-04	1.93E-07

Notes:

[1] Based on the January 14, 2014 OPW air permit application.

TABLE 18

Insignificant/Exempt Sources

OPW Fueling Containment Systems, Inc.

Facility ID: 5100211

Source Description	**Island Forming Paint Booth**	
Source ID	**IES-8**	
CY2020 Paint Usage	440.00	gallon/year
Transfer Efficiency	65%	
Overspray	35%	
PM Content	33%	
CY2020 Run Hours	4000	hr/yr
Potential Run Hours	8760	hr/yr

Emission Information

Pollutant	mission Factor[1]	Actual Emissions		Potential Emissions	
	lb/gallon	lb/yr	ton/yr	lb/yr	ton/yr
PM	8.46E-01	4.30E+01	2.15E-02	9.42E+01	4.71E-02
PM10	8.46E-01	4.30E+01	2.15E-02	9.42E+01	4.71E-02
$PM_{2.5}$	8.46E-01	4.30E+01	2.15E-02	9.42E+01	4.71E-02
VOC	1.88E+00	8.27E+02	4.14E-01	2.09E+02	1.05E-01

Notes:

[1] Based on the January 14, 2014 OPW air permit application.

TABLE 19

Insignificant/Exempt Sources

OPW Fueling Containment Systems, Inc.

Facility ID: 5100211

Source Description	**Manhole cover paint booth**	
Source ID	**IES-9**	
CY2020 Paint Usage	440.00	gallon/year
Transfer efficiency	65%	
Overspray	35%	
PM Content	33%	
CY2020 Run Hours	4000	hr/yr
Potential Run Hours	8760	hr/yr

Emission Information

Pollutant	mission Factor[1]	Actual Emissions		Potential Emissions	
	lb/gallon	lb/yr	ton/yr	lb/yr	ton/yr
PM	8.46E-01	4.30E+01	2.15E-02	9.42E+01	4.71E-02
PM10	8.46E-01	4.30E+01	2.15E-02	9.42E+01	4.71E-02
$PM_{2.5}$	8.46E-01	4.30E+01	2.15E-02	9.42E+01	4.71E-02
VOC	1.88E+00	8.27E+02	4.14E-01	2.09E+02	1.05E-01

TABLE 20
Insignificant/Exempt Sources
OPW Fueling Containment Systems, Inc.
Facility ID: 5100211

Source Description	**Manhole cover repair**	
Source ID	**IES-11**	
Amount of VE Putty Used	150.00	lb/year
Amount of Cream Hardener Used	0.00	lb/year
Styrene Emission Loss[1]	3%	
CY2020 Run Hours	4000	hr/yr
Potential Run Hours	8760	hr/yr

Emission Information

Operation	Pollutant	Actual Emissions		Potential Emissions		%wt
		lb/yr	ton/yr	lb/yr	ton/yr	
VE Putty	Styrene	4.22E+01	2.11E-02	9.24E+01	4.62E-02	28.14%
	Xylene	1.35E-01	6.75E-05	2.96E-01	1.48E-04	0.09%
	VOC	3.50E+00	1.75E-03	7.67E+00	3.83E-03	2.33%
Hardener	VOC	0.00E+00	0.00E+00	1.64E+02	8.21E-02	50.00%

Notes:
[1] Non-styrene organics assumed 100% loss

Attachment 15

NORTH CAROLINA DIVISION OF AIR QUALITY

Application Review

Issue Date: September 24, 2020

Region: Raleigh Regional Office
County: Johnston
NC Facility ID: 5100211
Inspector's Name: Matthew Mahler
Date of Last Inspection: 11/25/2019
Compliance Code: 3 / Compliance - inspection

Facility Data

Applicant (Facility's Name): OPW Fueling Containment Systems

Facility Address:
OPW Fueling Containment Systems
3250 Highway 70 Business West
Smithfield, NC 27577

SIC: 3089 / Plastics Products, Nec
NAICS: 326122 / Plastics Pipe and Pipe Fitting Manufacturing

Facility Classification: Before: Synthetic Minor **After:** Title V
Fee Classification: Before: Synthetic Minor **After:** Title V

Permit Applicability (this application only)

SIP: 15A NCAC 02D .0202 (removed), 02D .0515, 02D .0521, 02D .0535, 02D .0540, 02D .0611 (removed), 02D .1806; and 02Q .0207, 02Q .0304, 02Q .0315 (removed) and 02Q .0504
NSPS: N/A
NESHAP: 15A NCAC 02D .1111 (40 CFR Part 63, Subpart WWWW)
PSD: N/A
PSD Avoidance: 15A NCAC 02Q .0317 for 02D .0530 VOC emissions
NC Toxics: 15A NCAC 02Q .0711 (removed)
112(r): N/A
Other: N/A

Contact Data

Facility Contact	Authorized Contact	Technical Contact
Greg Kennedy Director of Operations (919) 209-2434 3250 Highway 70 Business West Smithfield, NC 27577	Michael McCann Site General Manager (919) 209-2402 3250 Highway 70 Business West Smithfield, NC 27577	Steve Brinchek EHS/Facilities Manager (919) 209-2426 3250 Highway 70 Business West Smithfield, NC 27577

Application Data

Application Number: 5100211.20A
Date Received: 06/02/2020
Application Type: Modification
Application Schedule: State

Existing Permit Data
Existing Permit Number: 10367/R03
Existing Permit Issue Date: 05/05/2017
Existing Permit Expiration Date: 01/31/2022

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP

No emissions inventory on record. The emissions inventory is due 11/02/2021.

Review Engineer: Judy Lee

Review Engineer's Signature: **Date:** September 24, 2020

Judy Lee

Comments / Recommendations:
Issue 10367R04
Permit Issue Date: September 24, 2020
Permit Expiration Date: January 21, 2022

1. Purpose of Application:

OPW Fueling Containment Systems (referred to as OPW throughout this document) currently holds Air Permit No. 10367R03 with an expiration date of January 31, 2022 for a liquids petroleum handling equipment manufacturer located in Smithfield, Johnston County, North Carolina. OPW submitted a Title V Air Permit application for their existing Smithfield location received by the Raleigh Central Office (RCO) on June 2, 2020.

The purpose of this application is to modify the existing air permit to allow for the construction and operation of a reinforced plastic composite open molding process to manufacture petroleum fuel containment parts. OPW plans to

construct a dedicated Open Molding Booth (ES-7) for this new process. The booth will have a dedicated air exhaust system with overspray particulate matter collected by fiberglass mesh filters before exiting the booth. OPW is currently permitted as a Synthetic Minor facility.

As part of this application, OPW also requests to become a major source of hazardous air pollutants (HAP). OPW is requesting to obtain a Title V construction and operation permit for a State Only modification issued pursuant to 15A NCAC 02Q .0300 as allowed under 15A NCAC 02Q .0504.

OPW will be required to file a complete Title V Air Quality Permit Application pursuant to 15A NCAC 02Q .0504 on or before 12 months after commencing operation of the proposed source(s). At that time, the permit will go through EPA and public comment.

2. Facility Description:

OPW manufactures various petroleum handling equipment components, including dispenser sumps/pans, fire suppression systems, flexible piping systems, fuel & oil generator piping systems, pipe couplings/fittings/tank sumps, tank/transition/special sumps, test booths, tanks sump mounting flanges, sump entry fittings, and flexworks loop systems.

Per the latest inspection report, the facility operates three, 8-hour shifts per day; five days/week, 50 weeks/year (6,000 hrs/yr). In the summer, the facility may operate up to 6 days/week.

- **Facility name/address/legal name/responsible official check:**

Facility Name:

- **IBEAM Facility/Location and Entity:** OPW Fueling Containment Systems
- NC Department of the Secretary of State Corporation search: **https://www.sosnc.gov/**
  Legal Name – OPW Fueling Components LLC
- **APPLICATION Site Name:** OPW Fueling Containment Systems
  Legal Corporate/Owner Name is OPW Fueling Containment Systems

The facility was asked to confirm the facility name as part of their review of the draft permit prior to issuance. Per email response from OPW's consultant sent through the responsible official of record, the site name is: OPW Fueling Containment Systems

Responsible Official:

- **IBEAM** lists Michael McCann, Site General Manager as the Responsible Official (RO)
- ✓ **APPLICATION** also lists Mr. McCann.

3. Application Chronology/Permitting History

- Application (No. 5100211.14A) for a State Greenfield facility was received by DAQ Raleigh Regional Office (RRO) on January 21, 2014 and Permit No. 10367R00 issued on February 21, 2014 to OPW Fueling Containment Systems (Permit Class – Small).
- Application (No. 5100211.15A) for a State modification was received by DAQ RRO on July 16, 2015 and Permit No. 10367R01 issued on September 17, 2015 (Permit Class – Synthetic Minor).
- Application (5100211.16A) for a State modification was received by DAQ RRO on September 1, 2016 and Permit No. 10367R02 issued on October 21, 2016 (Permit Class – Synthetic Minor).
- Application (5100211.17A) for a State modification was received by DAQ RRO on February 21, 2017 and Permit No. 10367R03 issued on May 5, 2017 (Permit Class – Synthetic Minor).
- Permit applicability determination was received by DAQ RRO on July 18, 2017 to determine whether addition of a sixth molding station to the existing source, "Vacuum Assisted Molding consisting of 5 stations," ID No.

ES 3, qualifies for treatment under the 15A NCAC 02Q .0318 "Changes Not Requiring Permit Revisions." Response sent on February 19, 2018 that the requested change meets the requirements of 15A NCAC 02Q .0318.

- Permit applicability determination was received by DAQ RRO on January 22, 2018 to determine whether addition of a seventh molding station to the existing source, "Vacuum Assisted Molding consisting of 5 stations," ID No. ES 3, qualifies for treatment under the 15A NCAC 02Q .0318 "Changes Not Requiring Permit Revisions." Response sent on July 21, 2017 that the requested change meets the requirements of 15A NCAC 02Q .0318.
- Application (No. 5100211.20A) for a State modification was received by DAQ RCO on June 2, 2020 and deemed complete for processing.
- Teleconference with Mr. Gary Yoder of ClimeCo Corporation, OPW's consultant to discuss the application.
- Email exchange with Mr. Yoder and this review engineer on June 4, 2020. A revised Form B9 was provided in addition to the spreadsheet for emission calculations.
- Email exchange with Mr. Yoder and this review engineer on June 8, 2020 regarding fiberglass filters and PM efficiency. Attached was the filter specification sheet from the manufacturer indicating 98.81% PM removal efficiency.
- Application (No. 5100211.20B) for a Notice of Intent to Construct (NOIC) was received by DAQ RCO on June 30, 2020 and approval issued on July 8, 2020.
- Email exchange with Mr. Yoder and this review engineer on August 5 & 6, 2020 regarding application clarifications (e.g., PM emissions, Subpart WWWW equations and emission factors, etc.).
- Preliminary drafts emailed to supervisor, Booker Pullen, for review on August 7, 2020. Comments received on September 10, 2020.
- Draft permit was sent to the facility for comments on September 11, 2020. Comments were received on September 16, 2020.
- A copy of the draft permit and review were sent to Ms. Dena Pittman, RRO and Mr. Samir Parekh, Stationary Source Compliance Branch (SSCB) for review on September 11, 2020. Comments were received on September 16, 2020 from SSCB and on September 22, 2020 from RRO.

4. Permit Modifications/Changes and Title V Equipment Editor (TVEE) Discussion

As discussed briefly under Section 1 above, this permit modification requests the addition of an open molding booth (ID No. ES-7) to manufacture reinforced plastic composite parts. With the addition of the proposed open molding booth, emissions of styrene may exceed the synthetic minor facility limit of less than 10 tons per year (tpy) for any single HAP (styrene); thus, OPW is requesting to be reclassified as a major source of HAPs and obtain a State Title V permit.

In addition, as listed under Section 3 above, OPW submitted a NOIC for its facility located in Smithfield for the following alteration before obtaining a permit revision:

- construction of a new spray booth, approximately 16 feet by 24 feet, with fiberglass mesh filters, and
- spray guns

The proposed project involves construction of the reinforced plastic composite open molding booth requested as part of this permit modification. The facility will be allowed to construct the open molding booth but will not be allowed to operate this source until issuance of this permit.

Per OPW, the following emissions increases are expected (Tables 2 and 3 of the application):

- 0.09 ton per year (tpy) of PM/PM_{10}/$PM_{2.5}$
- 3.64 tpy of VOC
- 3.64 tpy of Styrene (VOC/HAP/TAP)

In addition, the permit will be modified to include the addition of two new stations to emission source (ID No. ES 3), Vacuum Assisted Molding consisting of 5 stations. The new stations were approved as off permit changes pursuant to 15A NCAC 02Q .0318 through two separate applicability determinations (listed under Section 3 above).

The following table summarizes changes to the OPW Fueling Containment Systems, Smithfield, NC, Air Permit No. 10367R03:

Page No(s).	Section	Description of Changes
1 – 18	Globally	Converted from Synthetic Minor format to State – Title V format. Revised permit and application numbers, effective and issuance dates.
Attachment	Table of Insignificant Activities	-Removed Shuttle roto-mold unit (ID No. IES-4) per facility's comments on draft permit -Removed Vacuum forming (ID No. IES-4) per facility's comments on draft permit
Attachment	Table of Changes	-Added Table of Changes for this modification
3	1	-Added proposed open molding booth with fiberglass mesh filters. -Added two new stations to emission source (ID No. ES 3), Vacuum Assisted Molding consisting of 5 stations. The new stations were approved as off permit changes pursuant to 15A NCAC 02Q .0318 through two separate applicability determinations (July 21, 2017 and February 19, 2018). -Changed One - Bulk Resins Storage Tank to Two (2) per facility's comments on the draft permit. Per OPW there has always been two tanks. -Added MACT Subpart WWWW where applicable.
N/A	A.2	Removed reference to 15A NCAC 02D .0202 – Registration of Air Pollution Sources (replaced with 15A NCAC 02Q .0207 and .0304)
N/A	A.7	Removed 15A NCAC 02D .0611 Fabric Filter Requirements. This language is included in 02D .0515 for emissions sources that use control devices for particulate control.
N/A	A.9	Removed 15A NCAC 02Q .0501 Limitation to Avoid – Pursuant to 15A NCAC 02Q .0315 "Synthetic Minor Facilities"
N/A	A.10	Removed 15A NCAC 02Q .0711 Toxic Air Pollutant Emissions Limitation Requirement – Pursuant to pursuant to 15A NCAC 02Q .0702(a)(27)(B) since 40 CFR Part 63, Subpart WWWW will be applicable.
10 – 12	2.2 A.1	Added 15A NCAC 02D .1111 – Subpart WWWW
13	2.2 B.1	Added 15A NCAC 02Q .0317 – Avoidance for 02D .0530 (VOC)
14	2.2 B.4	Added 15A NCAC 02Q .0207 – Annual Emissions Reporting
14	2.2 B.5	Added 15A NCAC 02Q .0304 – Renewal Application
14	2.2 B.6	Added 15A NCAC 02Q .0504 – Option for Obtaining Construction and Operation Permit
16 – 18	3	Updated General Conditions

Modifications to Emission Source Module (ESM) were required as a result of this permit modification.

The required changes to ESM were reviewed and approved on September 16, 2020. See Permit Modification Tracking slip for confirmation.

5. Facility Emissions Review

OPW is currently classified as a Synthetic Minor for fee purposes. Styrene is the controlling pollutant. Styrene is emitted from materials used in the current injection molding operations with actual emission levels of approximately 8 tpy. With the addition of the open molding booth (3.64 tpy), emissions of styrene are expected to exceed the 10 tpy single HAP threshold; thus, requiring a Title V permit. This application submittal will serve to modify OPW's

air permit to add the open molding booth and reclassify the facility as a major Title V source due to HAP emissions (styrene).

Excerpt from review for existing permit No. 10367R03:
The emissions summary in the table below is based on the previous review with the addition of the VOC emissions from the increase in the cover molding operation. The limitation on styrene should ensure total HAPs remain below 25 tons per year.

Pollutant	Title V Emissions (tpy)	Permit Potential Emissions (tpy)
TSP	23.6	4.42
PM-10	23.6	4.42
VOC	117	<100
HAP (styrene)	22.9	<10
Total HAP	27.5	<25

Expected Facility-wide emissions including this modification are summarized in the following table from the application (Table 1 – Form D1 – Facility-wide Emissions Summary):

Compound	Open Molding (ES-7) Project PTE Increase (ton/yr)	Revised Actual Emissions (tpy)	Revised PTE Before Controls (tpy)	Revised PTE After Controls (ton/yr)
PM	0.16	1.64	16.63	3.27
PM-10	0.16	1.64	16.63	3.27
PM-2.5	0.16	1.64	16.63	3.27
SO2	N/A	N/A	N/A	N/A
NOx	N/A	N/A	N/A	N/A
CO	N/A	N/A	N/A	N/A
VOC	7.85	23.8	~125 (<250)	~125 (<250)
LEAD	Neg.	Neg.	Neg.	Neg.
Maleic Anhydride	0.003	0.013	0.015	0.02
MDI	0	0	2.1	2.1
Toluene	0.20	0.31	0.35	0.88
Styrene	7.3	10.38	~15.0 (>10)	~15.0 (>10)
Methanol	0.005	0.02	0.02	0.02
Glycol Ether	0.042	0.11	0.182	0.18
Methyl Methacrylate	0.002	0.01	0.011	0.011
Xylene	0.27	0.39	1.15	1.15
Ethylbenzene	0.042	0.003	0.18	0.18
Total HAP		11.2	19.0 (<25)	19.0 (<25)

6. Regulatory Review

OPW is currently subject to the following regulations:

Title 15A North Carolina Administrative Code (NCAC), Subchapter 02D .0202, 02D .0515, 02D .0521, 02D .0535, 02D .0540, 02D .0611, 02D .1806, 02Q .0315 and 02Q .0711.

A regulatory review of all the above listed requirements will be included in this document. In addition, any rules that the facility may potentially be subject to, as a result of changes requested with this permit application request, will be evaluated in detail below.

15A NCAC 02D .0515 – Particulates from Miscellaneous Industrial Processes
15A NCAC 02D .0521 – Control of Visible Emissions
15A NCAC 02D .0611 – Monitoring Emissions from Other Sources (Removed)
15A NCAC 02D .1111 – MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY (MACT) - 40 CFR 63, Subpart WWWW "National Emissions Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production" (Added)
15A NCAC 02D .1806 – Control and Prohibition of Odorous Emissions
15A NCAC 02Q .0315 – Synthetic Minor Facilities (Removed)
15A NCAC 02Q .0317 – Avoidance Conditions for 02D .0530 Prevention of Significant Deterioration (Added)
15A NCAC 02Q .0711 – Toxic Air Pollutants Emissions Limitation Requirement (Removed)

Due to this modification being processed as a State 300 permit, the following regulations must be reviewed for applicability:

15A NCAC 02D .0202 – Registration of Air Pollution Sources (Replaced with 02Q .0207 and 02Q .0304)
15A NCAC 02D .0535 – Excess Emissions Reporting and Malfunction
15A NCAC 02D .0540 – Particulates from Fugitive Dust Emission Sources
15A NCAC 02Q .0207 – Annual Emissions Reporting (Added)
15A NCAC 02Q .0304 – Renewal Application (Added)
15A NCAC 02Q .0504 – Option for Obtaining Construction and Operation Permit (Added)

Per Form B9 – Emission Source (Other), the proposed open molding booth is a dedicated booth to conduct open molding by applying a corrosion resistant/high strength (CR/HS) polyester resin and two gel coats to molds to manufacture gasoline fueling station parts. Resin and fiberglass will be applied using a non-atomized chop gun (mechanical) method. Gel coats will be applied using an atomized (mechanical) spray gun.

Per Form B – Specific Emission Source Information (required for all sources), the anticipated construction date is August 2020 and the expected operating schedule for the proposed open molding booth is:

12 hours/day; 5 days/week; 50 weeks/year = 3,000 hours of operation
(Tables 2 and 3 of the application base expected emissions of HAP/VOC and PM calculations on 4,000 hours per year)

15A NCAC 02D .0515, Particulates from Miscellaneous Industrial Processes – This regulation establishes an allowable emission rate for particulate matter (PM) from any stack, vent, or outlet resulting from any industrial process for which no other emission control standards are applicable. The regulation applies to Total Suspended Particulate (TSP) or PM less than 100 micrometers (µm). The particulate standard is based on a process weight equation. The allowable PM limit is calculated by the following equations to three significant figures:

For process weight rates up to 30 tons per hour (tph), allowable emission rates are calculated by the equation:

$E = 4.10(P)^{0.67}$

For process weight rates greater than 30 tph, allowable emission rates are calculated by the equation:

$E = 55.0(P)^{0.11} - 40$

For both equations:

E = allowable emission limit for PM in pounds per hour (lbs/hr); and
P = process weight rate in tph.

Process rate means the total weight of all materials introduced into any specific process that may cause any emission of PM. Solid fuels charged are considered as part of the process weight, but liquid and gaseous fuels and combustion air are not. For a cyclical or batch operation, the process rate is derived by dividing the total process weight by the number of hours in one complete operation from the beginning of any given process to the completion thereof, excluding any time during which the equipment is idle.

Per Form B9 (revised form received via email on June 4, 2020):

Materials Entering Process – Batch Operation	Units	Maximum Design Capacity (Unit/Batch)	Requested Capacity Limitation (Unit/Batch)
Corrosion Resistant Resin	lb/part	13.2	N/A
Corrosion Resistant Interior Gel Coat	lb/part	0.94	N/A
Corrosion Resistant Exterior Gel Coat	lb/part	1.3	N/A
Total		**15.44**	

Maximum design (batches/hour) – approximately 2 parts/hr
Batches/yr – approximately 8,476 parts/yr (resin); 2,500 parts/yr (gel coat)

Process weight rates (tph) are calculated based on the maximum design capacity:

$$P = 15.44 \frac{lb}{part} * 2 \frac{parts}{hr} * \frac{ton}{2{,}000\ lbs} = 0.0154\ tph$$

$E = 4.10(P)^{0.67}$
$E = 4.10(0.1544)^{0.67} = 0.2507 =$ 0.251 lb/hr allowable emissions rate

PM emissions:
Per the application, it is estimated that 1%* of open molding overspray will result in PM reaching the booth's ventilation system. The booth will be equipped with fiberglass mesh filters to limit PM emissions.

*The estimated 1% overspray value was increased to 10% based on similar NC permitted facilities (Revised calculations are included below).

Per Form C9 – Control Device (other), the filters will have an overall efficiency of 86%.

PM/PM_{10} before control emission rate (lb/hr) is 0.309
After control emission rate (lb/hr) is 0.0367

The fiberglass mesh filters are an integral part of the spray booth design; thus, not a control device. Per information obtained from the application and proposed booth manufacturer's website, the filters' primary function is to protect the air handling system.

Based on data provided via email exchange with Mr. Yoder on June 8, 2020 from the filter manufacturer, the fiberglass mesh filters have an average removal efficiency of 98.81-99.03% depending on the average paint holding capacity.

Revised calculations using data from TABLE 3. NEW OPEN MOLDING BOOTH (ES-7) PM EMISSIONS, 10% overspray and 98.81% particulate removal per manufacturers' data:

Open Molding Emissions				**Expected Actual**		**Expected Potential**	
Projected Open Molding Resin and Gel Coat Usage:				123505	lb/yr	270476.0	lb/yr
10% Overspray Exhaust Entrainment:				12350.5	lb/yr	27047.6	lb/yr
Before controls/filter emission rate				3.09	lb/hr	3.09	lb/hr
PM Control Efficiency:				98.81%		98.81%	
Post-Control Emissions of PM/PM-10/PM-2.5:				**147.0**	**lb/yr**	**321.9**	**lb/yr**
				0.1	**tpy**	**0.2**	**tpy**
Maximum Design Capacities – Form B9 (Revised 6/4/2020)							
02D .0515	P =	0.01544	tph	**Expected PM (lb/hr)**	@ 4,000 hrs/yr	@8,760 hrs/yr	
	E =	0.251	lb/hr	**0.0367**	lb/hr	**0.0367**	lb/hr
				< allowable		< allowable	

For this operation, the process weight rate is determined to be the weight of the coating materials (resin and gel coats) as well as the weight of the mold (part) being coated. The molds for this operation vary depending upon the part being constructed. The information provided on Form B9 is meant as an estimate since the facility has not yet determined which parts are to be manufactured in the booth, per email exchange with OPW's consultant on June 4, 2020.

The proposed open molding booth is a batch process; thus, the variables for one complete operation from the beginning of any given process to the completion thereof, are not known at this time. Therefore, for the purpose of calculating allowable emissions for this application request, the maximum design capacity of 15.44 pounds per part from Form B9 is used. The weight of the coatings was not included in calculating the allowable emission rate resulting in a more conservative smaller allowable emission rate of 0.251 pounds per hour (lb/hr).

The expected PM emissions are based on the projected weight (usage) of the coating materials as presented in the table above yielding an expected actual PM emissions rate of 0.0367 lb/hr.

Compliance is demonstrated since the expected actual PM emissions rate is less than the allowable emission rate. This calculation will be revised during processing of the complete Title V application required within one year of startup of the open molding booth. At that time, actual data for this batch process should be available to determine a more accurate process rate.

The facility is required to maintain production records such that the process rate "P" as specified under this regulation can be derived to allow calculation of the allowable PM emissions.

15A NCAC 02D .0521, Control of Visible Emissions – This regulation limits visible emissions (VE). The intent of this rule is to prevent, abate and control emissions generated from fuel burning operations and industrial processes where an emission can reasonably be expected to occur, except during startup, shutdowns, and malfunctions approved according to procedures set out in Rule 02D .0535. This regulation establishes a VE standard for sources based on the manufacture date.

This Rule shall apply to all fuel burning sources and to other processes that may have a visible emission. However, sources subject to a visible emission standard in Rules 02D .0506, .0508, .0524, .0543, .0544, .1110, .1111, .1205, .1206, .1210, .1211, or .1212 shall meet that standard instead of the opacity standard contained in this Rule.

OPW will be subject to 02D .1111 MACT (refer to regulation requirements below), one of the rules listed in 02D .0521(b). However, the applicable MACT does not have a VE standard.

The OPW facility was established prior to obtaining permit No. 10367R00 for a State Greenfield facility on February 21, 2014 as a Small fee class. Per the review for issued permit No. 10367R00, the polyurethane foam production (ID No. ES-1) unit was manufactured in 2006. Other permitted emission sources were manufactured after. Hence, all equipment was manufactured after July 1, 1971.

For sources manufactured after July 1, 1971, the VE standard is 20 percent (%) opacity when averaged over a 6-minute period.

The Permittee will be required to establish 'normal' visible emissions from the proposed open molding booth (ID No. ES-7) within the first 30-days of beginning operation.

In order to demonstrate compliance, the Permittee will be required to observe actual visible emissions on a monthly basis for comparison to 'normal'. If emissions are observed outside of 'normal', the Permittee shall take corrective action. Recordkeeping and reporting are required.

15A NCAC 02D .0611, MONITORING EMISSIONS FROM OTHER SOURCES –
(a) This Rule shall apply to sources of air pollutants, including toxic air pollutants, from sources that are not covered by 15A NCAC 02D .0606, .0607, .0608, or .0610(a).
(b) The owner or operator of a source shall maintain records of production rates, throughputs, material usage, and other process operational information necessary to determine compliance with the facility's permit and all applicable requirements. The Director shall specify in the facility's permit, pursuant to 15A NCAC 02D .0605, the types of records that the owner or operator shall maintain.

Excerpt from review for issued permit No. 10367R00:
Trimming operations (ID No. ES-2) are controlled by a Farr Gold GS8 air pulse jet dust collector (ID No. CD-1) that was manufactured on July 29, 2010. Air flow from the trimming operations at approximately 6,000 acfm is routed to the dust collected where 98% of particulates greater than 5 microns are captured. There are two compartments in the collector and 8 filters, each having a total of 325 square feet of filter area, for a total filter surface area of 2,600 square feet. The air-to-cloth ratio is 2.31:1, which is a bit lower than the typical A/C ratio range of 5-15:1 for an air pulse jet dust collector; however, this should result in lower stress on the bags and a longer overall bag life. [EPA APTI Course 413 Control of Particulate Emissions Student Manual (October 1981)]

The 02D .0611 requirements in OPW's current permit are now included under 02D .0515 for emissions sources that use control devices for PM control per current Title V shell guidance. Hence, 02D .0611 will be removed during processing of this State 300 permit (Title V fee class) modification.

15A NCAC 02D .0958, Work Practices for Sources of Volatile Organic Compounds – Effective November 1, 2016 – 15A NCAC 02D .0958 is applicable only to following counties/areas in NC:

- Cabarrus County;
- Gaston County;
- Lincoln County;

- Mecklenburg County;
- Rowan County;
- Union County; and
- Davidson Township and Coddle Creek Township in Iredell County

Thus, this rule does not apply in Johnston County.

15A NCAC 02D. 1111, MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY – This Rule shall apply to sources subject to national emission standards for hazardous air pollutants (NESHAPs) for source categories promulgated in 40 CFR Part 63.

The NESHAPs are found in 40 CFR Part 63 of the Clean Air Act (CAA). These standards require application of technology-based emissions standards referred to as Maximum Achievable Control Technology (MACT) or Generally Available Control Technology (GACT). The NESHAPs are delegated to the states, but both the EPA and the states implement and enforce these standards. Compliance with an applicable federal and/or state rule is the responsibility of the facility.

OPW has requested to remove their Synthetic Minor limit (refer to 02Q .0315 below) and are applying to become a Title III and Title V major source for emissions of a single HAP (styrene) greater than 10 tpy. Thus, subjecting them to major source standards under 40 CFR Part 63 as part of this permit modification.

Title 40: Protection of Environment
PART 63—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORIES
40 CFR 63, Subpart WWWW—National Emissions Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production (§63.5780)
§63.5785 Am I subject to this subpart?
(a) You are subject to this subpart if you own or operate a reinforced plastic composites production facility that is located at a major source of HAP emissions. Reinforced plastic composites production is limited to operations in which reinforced and/or nonreinforced plastic composites or plastic molding compounds are manufactured using thermoset resins and/or gel coats that contain styrene to produce plastic composites. The resins and gel coats may also contain materials designed to enhance the chemical, physical, and/or thermal properties of the product. Reinforced plastic composites production also includes cleaning, mixing, HAP-containing materials storage, and repair operations associated with the production of plastic composites.
(b) You are not subject to this subpart if your facility only repairs reinforced plastic composites. Repair includes the non-routine manufacture of individual components or parts intended to repair a larger item as defined in §63.5935.
(c) You are not subject to this subpart if your facility is a research and development facility …
(d) You are not subject to this subpart if your reinforced plastic composites operations use less than 1.2 tons per year (tpy) of thermoset resins and gel coats that contain styrene combined.

Per Table 2 of the application, OPW's reinforced plastic composites production proposes expected and potential usage of thermoset resins and gel coats that contain styrene in quantities greater than 1.2 tpy as summarized below:

Expected actual usage (tpy) @ 4,000 hr/yr	Potential usage (tpy) @ 8,760 hr/yr
Initial Projected Open Molding Resin Usage (Single Resin):	
58.9	129
Initial Projected Open Molding Gel Coat Usage (Interior and Exterior):	
Interior	
1.15	2.5
Exterior	
1.7	3.7
Total of thermoset resins and gel coats combined (tpy):	
61.75	**135.2**

Hence, OPW will be subject to Subpart WWWW upon issuance of this State 300 (Title V fee class) permit.

§63.5790 What parts of my plant does this subpart cover?
(a) This subpart applies to each new or existing affected source at reinforced plastic composites production facilities.
(b) The affected source consists of all parts of your facility engaged in the following operations: Open molding, closed molding, centrifugal casting, continuous lamination, continuous casting, polymer casting, pultrusion, sheet molding compound (SMC) manufacturing, bulk molding compound (BMC) manufacturing, mixing, cleaning of equipment used in reinforced plastic composites manufacture, HAP-containing materials storage, and repair operations on parts you also manufacture.
(c) The following operations are specifically excluded from any requirements in this subpart: …
(d) Production resins that must meet military specifications are allowed to meet the organic HAP limit contained in that specification. …
[68 FR 19402, Apr. 21, 2003, as amended at 70 FR 50124, Aug. 25, 2005]

Per Form E – Title V General Information, with this modification to become a major HAP source pursuant to ~~§67.5390(c)~~ §63.5790(b), 40 CFR Part 63 Subpart WWWW will also apply to the Vacuum Assisted Molding stations (ID No. ES-3) and Cover Molding presses (ID No. ES-4) since they are injection molding processes (closed molding operations).

In addition, Subpart WWWW will also apply to the two (2) existing bulk resins storage tanks (ID No. ES-5).

§63.5795 How do I know if my reinforced plastic composites production facility is a new affected source or an existing affected source?
(a) A reinforced plastic composites production facility is a new affected source if it meets all the criteria in paragraphs (a)(1) and (2) of this section.
(1) You commence construction of the source after August 2, 2001.
(2) You commence construction, and no other reinforced plastic composites production source exists at that site.
(b) For the purposes of this subpart, an existing affected source is any affected source that is not a new affected source.

Per the application, OPW began operation in 2014, after Subpart WWWW's effective date of April 21, 2003. However, the facility was in operation prior to submittal of an application (Application No. 5100211.14A) for a State Greenfield facility (Small fee class) received by RRO on January 21, 2014. At that time, addition of the following new equipment required permitting:

Excerpt from review for issued permit No. 10367R00:
OPW is proposing to add the following emissions sources to their facility that will now require the facility to obtain an air permit: one (1) polyurethane foam production process, one (1) polyurethane foam trimmer, one (1) vacuum assisted molding process, one (1) cover molding process, one (1) manhole cover repair station, and one (1) trimming operation. Of these new sources, the polyurethane foam production process, the vacuum assisted molding process, and the trimming operation shall require permitting. The other sources will be listed as exempt/insignificant sources as detailed below. The proposed equipment is currently located at a sister facility in Connecticut and the OPW plans to relocate the equipment to the Smithfield location.

Existing equipment:
The facility currently operates the following emissions sources: one (1) plasma cutter, one (1) polyethylene extrusion process, one (1) ferry roto-mold unit, one (1) shuttle roto-mold unit, one (1) vacuum forming unit, two (2) polyethylene storage bins, five (5) welding booths, one (1) shot blast unit, one (1) island form painting booth, one (1) manhole cover painting booth, and four (4) dry machining operations.

Per this application, the proposed open molding booth (ES-7) and existing injection molding sources (ES-3 and ES-4) are subject to Subpart WWWW as an existing area source becoming a major source.

However, OPW commenced construction of the affected source after August 2, 2001. Therefore, per §63.5795(a) above the facility is considered a new affected source.

§63.5796 What are the organic HAP emissions factor equations in Table 1 to this subpart, and how are they used in this subpart?
Emissions factors are used in this subpart to determine compliance with certain organic HAP emissions limits in Tables 3 and 5 to this subpart. You may use the equations in Table 1 to this subpart to calculate your emissions factors. Equations are available for each open molding operation and centrifugal casting operation and have units of pounds of organic HAP emitted per ton (lb/ton) of resin or gel coat applied. These equations are intended to provide a method for you to demonstrate compliance without the need to conduct for a HAP emissions test. In lieu of these equations, you can elect to use site-specific organic HAP emissions factors to demonstrate compliance provided your site-specific organic HAP emissions factors are incorporated in the facility's air emissions permit and are based on actual facility HAP emissions test data. You may also use the organic HAP emissions factors calculated using the equations in Table 1 to this subpart, combined with resin and gel coat use data, to calculate your organic HAP emissions.

OPW will use a single resin and two gel coats (interior and exterior) in the new open molding booth (ES-7) to manufacture fuel containment components. These materials will be mechanically applied as discussed in more detail below. Both resin and gel coats will be applied at the facility as purchased (i.e., no material mixing on-site).

- Resin:

OPW plans to use a single, corrosion resistant (CR/HS), nonvapor-suppressed resin in the open molding booth to manufacture gasoline filling station parts. The resin (and fiberglass filament) will be delivered to part molds using a mechanical low-pressure, non-atomizing gun (chop gun). As a new open molding source emitting less than 100 TPY of HAP, using a mechanical application method, the organic HAP emission limit is ~~112~~ 113 lb/ton (Subpart WWWW, Table 3). Since only one resin will be applied, the organic HAP content limit that meets the ~~112~~ 113 lb/ton emission limit is 46.2% (Subpart WWWW, Table 3). The only organic HAP in OPW's resin is styrene. OPW will maximize the allowable styrene content level in the open molding resin while maintaining Subpart WWWW compliance (i.e., < 46.2% HAP/styrene).

- Gel Coat:

OPW plans to apply one each of an interior [18% HAP (styrene only)] and exterior [33% HAP (styrene only)], corrosion resistant (CR/HS) gel coat in the open molding booth to manufacture filling station parts. The gel coats will be delivered to part molds using a mechanical atomized spray gun. For this resin type using a mechanical application method, the organic HAP emission limit is 605 lb/ton (Subpart WWWW, Table 3).

A review of the application and Subpart WWWW revealed some errors. The facility used the appropriate equations (labelled incorrectly for nonatomized gel coat) and the percent styrene from material safety data sheets (MSDS) for one (interior) of two gel coats corresponded with the application. The MSDS for the exterior gel coat indicates 27% HAP. An incorrect EF for the corrosion resistant resin application (i.e., the application has 112 lb/ton) was used.

Per email exchange with Gary Yoder on August 5, 2020, the above items were clarified. The Title V permit application submittal required pursuant to 15A NCAC 02Q .0504 within one year of startup of the open molding process will reflect the necessary changes.

The correct equations, % HAP and EFs are corrected, where applicable, in the following discussions:

OPW used equations in Table 1 to Subpart WWWW to calculate organic HAP emissions factors for specific open molding process streams proposed with this application. OPW will only use one resin and two gel coats. The resin will be a corrosion resistant, non-vapor suppressed design with styrene as the only organic HAP present. The resin and fiberglass will be applied mechanically to molds using a low-pressure, non-atomizing chop gun. The two gel coat materials (interior and exterior) will be corrosion resistant, non-vapor suppressed type gel coats applied mechanically using an atomized spray gun.

Hence, the equations in Table 1 to Subpart WWWW – under 1.c.i. for non-atomized mechanical resin application and 1.f. for atomized spray gel coat application were used to calculate the organic HAP EF based on each material's percent organic HAP. The equations in Table 1 to Subpart WWWW used in the application are summarized below:

Table 1 to Subpart WWWW of Part 63—Equations To Calculate Organic HAP Emissions Factors for Specific Open Molding and Centrifugal Casting Process Streams [As specified in §63.5810]

If your operation type is a new or existing …	**And you use …**	**With …**	**Use this organic HAP Emissions Factor (EF) for materials with**	
			less than 33 % organic HAP	**33 % or more organic HAP**
1. Open molding operation	c. nonatomized mechanical resin application	i. nonvapor-suppressed resin	EF = 0.107 x %HAP x 2000	EF = ((0.157 x %HAP) - 0.0165) x 2000
	f. atomized spray gel coat application	nonvapor-suppressed gel coat	EF = 0.445 x %HAP x 2000	EF = ((1.03646 x %HAP) - 0.195) x 2000

OPW used the above equations to determine if the organic HAP EF for each material is equal to or less than its respective corresponding organic HAP emission limit found in Table 3 to Subpart WWWW based on operation type.

Table 3 to Subpart WWWW of Part 63—Organic HAP Emissions Limits for Existing Open Molding Sources, New Open Molding Sources Emitting Less Than 100 TPY of HAP, and New and Existing Centrifugal Casting and Continuous Lamination/Casting Sources that Emit Less Than 100 TPY of HAP [As specified in §63.5805]

If your operation type is ...	**And you use ...**	**[1]Your organic HAP emissions limit is ...**
1. open molding—corrosion-resistant and/or high strength (CR/HS)	a. mechanical resin application b. filament application c. manual resin application	113 lb/ton. 171 lb/ton. 123 lb/ton.
6. open molding—gel coat[3]	a. tooling gel coating b. white/off white pigmented gel coating c. all other pigmented gel coating d. CR/HS or high performance gel coat e. fire retardant gel coat f. clear production gel coat	440 lb/ton. 267 lb/ton. 377 lb/ton. 605 lb/ton. 854 lb/ton. 522 lb/ton.

[1]Organic HAP emissions limits for open molding and centrifugal casting are expressed as lb/ton. You must be at or below these values based on a 12-month rolling average.

[3]If you only apply gel coat with manual application, for compliance purposes treat the gel coat as if it were applied using atomized spray guns to determine both emission limits and emission factors. If you use multiple application methods and any portion of a specific gel coat is applied using nonatomized spray, you may use the nonatomized spray gel coat equation to calculate an emission factor for the manually applied portion of that gel coat. Otherwise, use the atomized spray gel coat application equation to calculate emission factors.

§63.5797 How do I determine the organic HAP content of my resins and gel coats?

In order to determine the organic HAP content of resins and gel coats, you may rely on information provided by the material manufacturer, such as manufacturer's formulation data and material safety data sheets (MSDS), using the procedures specified in paragraphs (a) through (c) of this section, as applicable.

Per the application, all current and new composite resins and gel coats will be used as purchased and therefore, no material mixing will occur at the facility. The facility will rely on information provided by the material manufacturer (or supplier) (e.g., MSDS or formulation data) to determine the organic HAP content of resins and gel coats.

The application did not include an MSDS for the proposed resin. The resin percent styrene (%HAP) was back-calculated based on the organic HAP emission limit for operation type {open molding—corrosion-resistant and/or high strength (CR/HS)} and application method {mechanical resin application} found in Table 3 to Subpart WWWW, and the appropriate equation found in Table 1 to determine what % HAP will not exceed the emission limit. The 112 lb/ton EF used in the application came from the April 21, 2003 final rule, not the June 25, 2005 amendments. The correct EF should be 113 lb/ton as presented in the excerpt from Table 3 to Subpart WWWW above.

The following equation found in Table 1 to Subpart WWWW was used:

EF equation =/> 33 % organic HAP (19% for nonatomized gel coat) from Table 1 to Subpart WWWW:				
EF =	((0.157 x %HAP) - 0.0165) x 2000	113	46.4968	%HAP back calculating

Hence, application of a resin with less than 46.5 % organic HAP content will not exceed the 113 lb/ton emission limit. The actual percent styrene will be confirmed during the processing of OPW's Initial Title V application, as well as the review of required monitoring, recordkeeping and reporting requirements added to this permit.

Compliance is expected with an organic HAP emission limit for materials (i.e., resins) of 46.5% or less.

The gel coat (GC) percent styrene listed in the application are:

- interior [18% HAP (styrene only)] and
- exterior [33% HAP (styrene only)], corrosion resistant (CR/HS) gel coat

Excerpt from Table 2 of the application, the following GC percentages and equations were used:

Atomized Mechanical Gel Coat Application Option						
EF_j =	0.445 x %HAP x 2000			EF_j =	((1.03646 x %HAP) - 0.195) x 2000	
	If resin "j" contains less than 33% organic HAP content, by weight.				If resin "j" contains 33% or more organic HAP content, by weight.	
EF_j =	0.445 x 0.18 x 2000			EF_j =	((1.03646 x 0.33) - 0.195) x 2000	
=	160.2	lb/ton, Interior Gel Coat		=	294.1	lb/ton, Exterior Gel Coat

Per the MSDS provided for the exterior gel coat, styrene is only 27%, which equates to:

$$EF = 0.445\ x\ 0.27\ x\ 2{,}000 = 240.3\ \frac{lb}{ton}, Exterior\ Gel\ Coat$$

$$EF\ (interior\ GC + exterior\ GC)\ =\ (160.2 + 294.1)\frac{lb}{ton}\ =\ 454.3\ \frac{lb}{ton} < 605\ lb/ton$$

$$EF\ (interior\ GC + exterior\ GC)\ =\ (160.2 + 240.3)\frac{lb}{ton}\ =\ 400.5\ \frac{lb}{ton} < 605\ lb/ton$$

Either percentage (33 or 27 % styrene) for the exterior gel coat combined with the interior gel coat (18 % styrene) indicates that application of both gel coats (interior and exterior) will not exceed the 605 lb HAP/ton emission limit when combined pursuant to §63.5810. The exterior gel coat percent styrene was confirmed to be 27%, not 33% used in the application.

§63.5799 How do I calculate my facility's organic HAP emissions on a tpy basis for purposes of determining which paragraphs of §63.5805 apply?
To calculate your facility's organic HAP emissions in tpy for purposes of determining which paragraphs in §63.5805 apply to you, you must use the procedures in either paragraph (a) of this section for new facilities prior to startup, or paragraph (b) of this section for existing facilities and new facilities after startup. You are not required to calculate or report emissions under this section if you are an existing facility that does not have centrifugal casting or continuous lamination/casting operations, or a new facility that does not have any of the following operations: Open molding, centrifugal casting, continuous lamination/casting, pultrusion, SMC and BMC manufacturing, and mixing. Emissions calculation and emission reporting procedures in other sections of this subpart still apply. …

OPW is a new facility with proposed open molding operations; thus, they are required to calculate their facility's organic HAP emissions in tpy under this section for new facilities prior to startup to determine which paragraphs in §63.5805 apply.

(a) For new facilities prior to startup, calculate a weighted average organic HAP emissions factor for the operations specified in §63.5805(c) and (d) on a lbs/ton of resin and gel coat basis. Base the weighted average on your projected operation for the 12 months subsequent to facility startup. Multiply the weighted average organic HAP emissions factor by projected resin use over the same period. You may calculate your organic HAP emissions factor based on the factors in Table 1 to this subpart, or you may use any HAP emissions factor approved by us, such as factors from the "Compilation of Air Pollutant Emissions Factors, Volume I: Stationary Point and Area Sources (AP-42)," or organic HAP emissions test data from similar facilities.

Per Table 2 of the application, OPW's reinforced plastic composites production projected annual open molding emissions are summarized below (revised per MSDS exterior GC %HAP of 27):

Expected actual HAP (tpy) @ 4,000 hr/yr	Potential HAP (tpy) @ 8,760 hr/yr
Open Molding Resin HAP (styrene) emissions (Single Resin) – (EF x Projected Resin Usage):	
113 lb HAP/ton x 58.9 tpy resin x ton/2,000 lb =	113 lb HAP/ton x 129 tpy resin x ton/2,000 lb =
3.3	**7.3**
Open Molding Gel Coat HAP (styrene) emissions (Interior and Exterior):	
Interior (18% styrene) – (EF x Projected Gel Coat Usage)	
160.2 lb HAP/ton x 1.15 tpy GC x ton/2,000 lb	160.2 lb HAP/ton x 2.5 tpy GC x ton/2,000 lb
0.1	0.2
Exterior (33% styrene per application) – (EF x Projected Gel Coat Usage)	
294.1 lb HAP/ton x 1.7 tpy GC x ton/2,000 lb	294.1 lb HAP/ton x 3.7 tpy GC x ton/2,000 lb
0.25	0.54
Exterior (27% styrene per MSDS) – (EF x Projected Gel Coat Usage)	
240.3 lb HAP/ton x 1.7 tpy GC x ton/2,000 lb	240.3 lb HAP/ton x 3.7 tpy GC x ton/2,000 lb
0.2	0.44
Combined Open Molding Gel Coat HAP (styrene) emissions (Interior @ 18% and Exterior @ 33%):	
0.35	**0.74**
Combined Open Molding Gel Coat HAP (styrene) emissions (Interior @ 18% and Exterior @ 27%):	
0.3	**0.64**
Combined resins and gel coats emissions (tpy):	
3.65 (18%I&33%E) or 3.6 (18%I&27%E)	**8.04 (18%I&33%E) or 7.94 (18%I&27%E)**

Based on the above calculations, the standards in paragraph §63.5805(c) apply to OPW.

§63.5800 When do I have to comply with this subpart?
You must comply with the standards in this subpart by the dates specified in Table 2 to this subpart. Facilities meeting an organic HAP emissions standard based on a 12-month rolling average must begin collecting data on the compliance date in order to demonstrate compliance.

Table 2 to Subpart WWWW of Part 63—Compliance Dates for New and Existing Reinforced Plastic Composites Facilities [As required in §63.5800 and §63.5840]

If your facility is …	And …	Then you must comply by this date …
4. A new source	Is a major source at startup	Upon startup or April 21, 2003, whichever is later.
5. A new source	Is an area source at startup and becomes a major source	Immediately upon becoming a major source

There is nothing in the rule that distinguishes between an area source becoming a major source due to increasing capacity or due to the startup of a proposed operation (in this case the open molding operation). Thus, OPW (the facility) must be in compliance immediately upon becoming a major source. In this case, upon issuance of OPW's State 300 (Title V fee class) permit (No. 10367R04) requested with this modification.

§63.5805 What standards must I meet to comply with this subpart?
You must meet the requirements of paragraphs (a) through (h) of this section that apply to you. You may elect to comply using any options to meet the standards described in §63.5810 through §63.5830. Use the procedures in §63.5799 to determine if you meet or exceed the 100 tpy threshold.
(a) If you have an existing facility …
(b) All operations at existing facilities …
(c) If you have a new facility that emits less than 100 tpy of HAP from the combination of all open molding, centrifugal casting, continuous lamination/casting, pultrusion, SMC manufacturing, mixing, and BMC manufacturing, you must meet the organic HAP emissions limits in Table 3 to this subpart and the work practice standards in Table 4 to this subpart that apply to you.

Per the application, OPW will meet the standards for open molding operations by complying with the organic HAP emission limits (lb/ton) in Table 3 to Subpart WWWW (as presented above) using the appropriate equations in Table 1 to Subpart WWWW.

As determined under §63.5799 above, the expected weighted average combined resin and gel coat organic HAP (styrene) emissions in tpy are less than 100 tpy. Hence, OPW must meet the requirements of §63.5805(c) above.

(e) If you have a new or existing facility subject to paragraph (a)(2) or (c) of this section at its initial compliance date that subsequently meets or exceeds the 100 tpy threshold in any calendar year, you must notify your permitting authority in your compliance report. You may at the same time request a one-time exemption from the requirements of paragraph (a)(1) or (d) of this section in your compliance report if you can demonstrate all of the criteria in paragraphs (e)(1) through (3) are met.
(f) If you apply for an exemption in paragraph (e) of this section and subsequently exceed the HAP emission thresholds specified in paragraph (c) of §63.5830 over the next 12-month period, you must notify the permitting authority in your semiannual report, the exemption is removed, and your facility must comply with paragraph (d) of this section within 3 years from the time your organic HAP emissions first exceeded the threshold.

The applicable requirements under §63.5805 will be added to OPW's permit.

§63.5810 What are my options for meeting the standards for open molding and centrifugal casting operations at new and existing sources?
You must use one of the following methods in paragraphs (a) through (d) of this section to meet the standards for open molding or centrifugal casting operations in Table 3 or 5 to this subpart. You may use any control method that reduces organic HAP emissions, including reducing resin and gel coat organic HAP content, changing to nonatomized mechanical application, using covered curing techniques, and routing part or all of your emissions to an add-on control. You may use different compliance options for the different operations listed in Table 3 or 5 to this subpart. The necessary calculations must be completed within 30 days after the end of each month. You may switch between the compliance options in paragraphs (a) through (d) of this section. When you change to an option based on a 12-month rolling average, you must base the average on the previous 12 months of data calculated using the compliance option you are changing to, unless you were previously using an option that did not require you to maintain records of resin and gel coat use. In this case, you must immediately begin collecting resin and gel coat use data and demonstrate compliance 12 months after changing options.
(a) Demonstrate that an individual resin or gel coat, as applied, meets the applicable emission limit in Table 3 or 5 to this subpart.
(1) Calculate your actual organic HAP emissions factor for each different process stream within each operation type. A process stream is defined as each individual combination of resin or gel coat, application technique, and control technique. Process streams within operations types are considered different from each other if any of the following four characteristics vary: the neat resin plus or neat gel coat plus organic HAP content, the gel coat type, the application technique, or the control technique. You must calculate organic HAP emissions factors for each different process stream by using the appropriate equations in Table 1 to this subpart for open molding and for centrifugal casting, or site-specific organic HAP emissions factors discussed in §63.5796.

OPW calculated the organic HAP emissions factors for each proposed process stream using the appropriate equations in Table 1 to Subpart WWWW for open molding as discussed under §63.5796 above. Based on the organic HAP emission limit for operation type and application type found in Table 3 to Subpart WWWW, as presented under §63.5797 above; compliance with the emission standards in §63.5805(c) for OPW's proposed open molding process is expected.

(b) Demonstrate that, on average, you meet the individual organic HAP emissions limits for each combination of operation type and resin application method or gel coat type. Demonstrate that on average you meet the individual organic HAP emissions limits for each unique combination of operation type and resin application method or gel coat type shown in Table 3 to this subpart that applies to you.
(1)(i) Group the process streams described in paragraph (a) to this section by operation type and resin application method or gel coat type listed in Table 3 to this subpart and then calculate a weighted average emission factor based on the amounts of each individual resin or gel coat used for the last 12 months. To do this, sum the product of each individual organic HAP emissions factor calculated in paragraph (a)(1) of this section and the amount of neat resin

plus and neat gel coat plus usage that corresponds to the individual factors and divide the numerator by the total amount of neat resin plus and neat gel coat plus used in that operation type as shown in Equation 2 of this section.

Per Table 3 of Subpart WWWW, the allowable emission rate for organic HAPs varies with the operation and application type. For an open molding - gel coat operation using CR/HS or high performance nonvapor-suppressed gel coat, the limit is 605 pounds per ton of gel coat processed. The emission factors used to calculate (open molding - atomized spray gel coat) the emission rates are determined using the following equations from Table 1 of Subpart WWWW:

HAP content	Equation
% HAP< 33	0.445 x %HAP x 2000
% HAP ≥ 33	[(1.03646 x %HAP) - 0.195] x 2000

Where %HAP = the concentration of organic HAP in the resin, in weight percent (i.e., if the resin contains 33% organic HAP by weight, then %HAP = 0.33)

(2) Compare each organic HAP emissions factor calculated in paragraph (b)(1) of this section with its corresponding organic HAP emissions limit in Table 3 or 5 to this subpart. If all emissions factors are equal to or less than their corresponding emission limits, then you are in compliance.

- ✓ The organic HAP EFs for the two gel coats were combined and compared to the corresponding organic HAP emission limit by operation type. Compliance is demonstrated.
- ✓ The organic HAP EFs for the resin was determined by using the corresponding organic HAP emission limit by operation type to calculate the %HAP limit to demonstrate compliance.

Thus, compliance with the calculations specified in paragraph §63.5810(b)(1) referenced in paragraph §63.5810(c)(2) below is demonstrated and will be added to OPW's permit.

(c) Demonstrate compliance with a weighted average emission limit. Demonstrate each month that you meet each weighted average of the organic HAP emissions limits in Table 3 or 5 to this subpart that apply to you. When using this option, you must demonstrate compliance with the weighted average organic HAP emissions limit for all your open molding operations, and then separately demonstrate compliance with the weighted average organic HAP emissions limit for all your centrifugal casting operations. Open molding operations and centrifugal casting operations may not be averaged with each other.
(1) Each month calculate the weighted average organic HAP emissions limit for all open molding operations and the weighted average organic HAP emissions limit for all centrifugal casting operations for your facility for the last 12-month period to determine the organic HAP emissions limit you must meet. To do this, multiply the individual organic HAP emissions limits in Table 3 or 5 to this subpart for each open molding (centrifugal casting) operation type by the amount of neat resin plus or neat gel coat plus used in the last 12 months for each open molding (centrifugal casting) operation type, sum these results, and then divide this sum by the total amount of neat resin plus and neat gel coat plus used in open molding (centrifugal casting) over the last 12 months as shown in Equation 3 of this section.
(2) Each month calculate your weighted average organic HAP emissions factor for open molding and centrifugal casting. To do this, multiply your actual open molding (centrifugal casting) operation organic HAP emissions factors calculated in paragraph (b)(1) of this section and the amount of neat resin plus and neat gel coat plus used in each open molding (centrifugal casting) operation type, sum the results, and divide this sum by the total amount of neat resin plus and neat gel coat plus used in open molding (centrifugal casting) operations as shown in Equation 4 of this section.
(3) Compare the values calculated in paragraphs (c)(1) and (2) of this section. If each 12-month rolling average organic HAP emissions factor is less than or equal to the corresponding 12-month rolling average organic HAP emissions limit, then you are in compliance.

OPW is considered a new facility prior to startup and plans to demonstrate compliance using the weighted average method as specified in paragraph §63.5810(c) of the rule for all open molding operations. The requirements and appropriate equations for demonstrating compliance as specified in 40 CFR 63.5810(c)(1) through (c)(3) where

placed in the permit. In addition, the equations for open molding processes as proposed in the application (No. 5100211.20A) are included under Sections 2.2 A.1.c.ii.(a) and (b) of the revised permit.

§63.5835 What are my general requirements for complying with this subpart?
(a) You must be in compliance at all times with the work practice standards in Table 4 to this subpart, as well as the organic HAP emissions limits in Tables 3, or 5, or the organic HAP content limits in Table 7 to this subpart, as applicable, that you are meeting without the use of add-on controls.
(b) You must be in compliance with all organic HAP emissions limits in this subpart that you meet using add-on controls, except during periods of startup, shutdown, and malfunction.
(c) You must always operate and maintain your affected source, including air pollution control and monitoring equipment, according to the provisions in §63.6(e)(1)(i).
(d) You must develop a written startup, shutdown, and malfunction plan according to the provisions in §63.6(e)(3) for any organic HAP emissions limits you meet using an add-on control.

OPW will not use an add-on control; thus, no written startup, shutdown, and malfunction plan is required and the facility must be in compliance at all times.

§63.5840 By what date must I conduct a performance test or other initial compliance demonstration?
You must conduct performance tests, performance evaluations, design evaluations, capture efficiency testing, and other initial compliance demonstrations by the compliance date specified in Table 2 to this subpart, with three exceptions. Open molding and centrifugal casting operations that elect to meet an organic HAP emissions limit on a 12-month rolling average must initiate collection of the required data on the compliance date, and demonstrate compliance 1 year after the compliance date.

As previously discussed, per Table 2 of Subpart WWWW, OPW must be in compliance immediately upon becoming a major source. In this case, upon issuance of this permit. Therefore, any initial compliance demonstrations for meeting the organic HAP emissions limits must be met 1 (one) year after the compliance date (i.e., the effective date of permit No. 10367R04.

§63.5860 How do I demonstrate initial compliance with the standards?
(a) You demonstrate initial compliance with each organic HAP emissions standard in paragraphs (a) through (h) of §63.5805 that applies to you by using the procedures shown in Tables 8 and 9 to this subpart.
(b) If using an add-on control device …

Pursuant to §63.5805(c), OPW must meet the organic HAP emissions limits in Table 3 to this subpart and the work practice standards in Table 4 to this subpart that apply.

Table 8 to Subpart WWWW of Part 63—Initial Compliance With Organic HAP Emissions Limits - As specified in §63.5860(a), you must demonstrate initial compliance with organic HAP emissions limits as specified in the following table:

For . . .	**That must meet the following organic HAP emissions limit . . .**	**You have demonstrated initial compliance if . . .**
1. open molding and centrifugal casting operations	a. an organic HAP emissions limit shown in Tables 3 or 5 to this subpart, or an organic HAP content limit shown in Table 7 to this subpart	i. you have met the appropriate organic HAP emissions limits for these operations as calculated using the procedures in §63.5810 on a 12-month rolling average 1 year after the appropriate compliance date, and/or ii. you demonstrate that any individual resins or gel coats not included in (i) above, as applied, meet their applicable emission limits, or iii. you demonstrate using the appropriate values in Table 7 to this subpart that the weighted average of all resins and gel coats for each resin type and application method meet the appropriate organic HAP contents.

Table 7 to Subpart WWWW of Part 63—Options Allowing Use of the Same Resin Across Different Operations That Use the Same Resin Type [As specified in §63.5810(d)]

OPW proposes the use of one resin in their proposed open molding operation; thus, Table 7 does not apply. The application stated should future open molding include multiple resins emission averaging will be completed using Table 1 of Subpart WWWW.

OPW will meet the organic HAP emissions limits in Table 3 of Subpart WWWW using the equations in Table 1 of Subpart WWWW for its open molding process. Therefore, initial compliance is demonstrated if you meet the standards in §63.5810 that apply one year after the appropriate compliance date as specified under item 1.a.i of Table 8 to Subpart WWWW.

Table 9 to Subpart WWWW of Part 63—Initial Compliance With Work Practice Standards – As specified in §63.5860(a), you must demonstrate initial compliance with work practice standards as specified in the following table:

For . . .	**That must meet the following standards . . .**	**You have demonstrated initial compliance if . . .**
1. a new or existing closed molding operation using compression/injection molding	uncover, unwrap or expose only one charge per mold cycle per compression/injection molding machine. For machines with multiple molds, one charge means sufficient material to fill all molds for one cycle. For machines with robotic loaders, no more than one charge may be exposed prior to the loader. For machines fed by hoppers, sufficient material may be uncovered to fill the hopper. Hoppers must be closed when not adding materials. Materials may be uncovered to feed to slitting machines. Materials must be recovered after slitting	the owner or operator submits a certified statement in the notice of compliance status that only one charge is uncovered, unwrapped, or exposed per mold cycle per compression/injection molding machine, or prior to the loader, hoppers are closed except when adding materials, and materials are recovered after slitting.
2. a new or existing cleaning operation	not use cleaning solvents that contain HAP, except that styrene may be used in closed systems, and organic HAP containing materials may be used to clean cured resin from application equipment. Application equipment includes any equipment that directly contacts resin between storage and applying resin to the mold or reinforcement	the owner or operator submits a certified statement in the notice of compliance status that all cleaning materials, except styrene contained in closed systems, or materials used to clean cured resin from application equipment, contain no HAP.
3. a new or existing materials HAP-containing materials storage operation	keep containers that store HAP-containing materials closed or covered except during the addition or removal of materials. Bulk HAP-containing materials storage tanks may be vented as necessary for safety	the owner or operator submits a certified statement in the notice of compliance status that all HAP-containing storage containers are kept closed or covered except when adding or removing materials, and that any bulk storage tanks are vented only as necessary for safety.

OPW will meet the work practice standards in Table 4 of Subpart WWWW for the Vacuum Assisted Molding stations (ID No. ES-3), Cover Molding presses (ID No. ES-4) and the two existing bulk resins storage tanks (ID No. ES-5) as discussed in more detail under §63.5900 below. Therefore, initial compliance is demonstrated if you submit a certified statement in the notice of compliance status that the Permittee is in compliance with all work practice standards in §63.5805(c) that apply as specified under items 1 through 3 of Table 9 to Subpart WWWW.

Paragraph §63.5860(a) of this standard does not specify a date for the notice of compliance status (Refer to §63.5905 discussion below).

The appropriate compliance dates have been placed in OPW's permit.

§63.5895 How do I monitor and collect data to demonstrate continuous compliance?
(a) During production, you must collect and keep a record of data as indicated in 40 CFR part 63, subpart SS, if you are using an add-on control device.

(b) You must monitor and collect data as specified in paragraphs (b)(1) through (4) of this section.
(1) Except for monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), you must conduct all monitoring in continuous operation (or collect data at all required intervals) at all times that the affected source is operating.
(2) You may not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities for purposes to this subpart, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable. You must use all the data collected during all other periods in assessing the operation of the control device and associated control system.
(3) At all times, you must maintain necessary parts for routine repairs of the monitoring equipment.
(4) A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring equipment to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.
(c) You must collect and keep records of resin and gel coat use, organic HAP content, and operation where the resin is used if you are meeting any organic HAP emissions limits based on an organic HAP emissions limit in Tables 3 or 5 to this subpart. You must collect and keep records of resin and gel coat use, organic HAP content, and operation where the resin is used if you are meeting any organic HAP content limits in Table 7 to this subpart if you are averaging organic HAP contents. Resin use records may be based on purchase records if you can reasonably estimate how the resin is applied. The organic HAP content records may be based on MSDS or on resin specifications supplied by the resin supplier.
(d) Resin and gel coat use records are not required for the individual resins and gel coats that are demonstrated, as applied, to meet their applicable emission as defined in §63.5810(a). …
(e) For each of your pultrusion machines, ...

OPW will use resin and gel coats as purchased by the supplier and organic HAP content based on MSDS; thus, resin and gel coat use records required pursuant to paragraph §63.5895(c) above will be added to the permit.

§63.5900 How do I demonstrate continuous compliance with the standards?
(a) You must demonstrate continuous compliance with each standard in §63.5805 that applies to you according to the methods specified in paragraphs (a)(1) through (3) of this section.
(1) Compliance with organic HAP emissions limits for sources using add-on control …
(2) Compliance with organic HAP emissions limits is demonstrated by maintaining an organic HAP emissions factor value less than or equal to the appropriate organic HAP emissions limit listed in Table 3 or 5 to this subpart, on a 12-month rolling average, and/or by including in each compliance report a statement that individual resins and gel coats, as applied, meet the appropriate organic HAP emissions limits, as discussed in §63.5895(d).

OPW will demonstrate continuous compliance pursuant to paragraph §63.5900(a)(2) above.

(3) Compliance with organic HAP content limits in Table 7 to this subpart …

As previously discussed, Table 7 does not apply at this time.

(4) Compliance with the work practice standards in Table 4 to this subpart is demonstrated by performing the work practice required for your operation.

Work practice standards will apply to the Vacuum Assisted Molding stations (ID No. ES-3) and Cover Molding presses (ID No. ES-4) since they are injection molding processes. The two existing bulk resins storage tanks (ID No. ES-5) will also be subject to work practice standards.

Injection molding processes (closed molding operations), cleaning operations and HAP containing materials storage operations must follow the work practice standards below:

Table 4 to Subpart WWWW of Part 63—Work Practice Standards [As specified in §63.5805]

For . . .	You must . . .
1. A new or existing closed molding operating using compression/injection molding	Uncover, unwrap or expose only one charge per mold cycle per compression/injection molding machine. For machines with multiple molds, one charge means sufficient material to fill all molds for one cycle. For machines with robotic loaders, no more than one charge may be exposed prior to the loader. For machines fed by hoppers, sufficient material may be uncovered to fill the hopper. Hoppers must be closed when not adding materials. Materials may be uncovered to feed to slitting machines. Materials must be recovered after slitting.
2. A new or existing cleaning operation	Not use cleaning solvents that contain HAP, except that styrene may be used as a cleaner in closed systems, and organic HAP containing cleaners may be used to clean cured resin from application equipment. Application equipment includes any equipment that directly contacts resin.
3. A new or existing materials HAP-containing materials storage operation	Keep containers that store HAP-containing materials closed or covered except during the addition or removal of materials. Bulk HAP-containing materials storage tanks may be vented as necessary for safety.

The appropriate work practice standards in Table 4 to Subpart WWWW will be added to the permit.

(b) You must report each deviation from each standard in §63.5805 that applies to you. The deviations must be reported according to the requirements in §63.5910.

A requirement to report deviations will be added to the permit.

(c) You must meet the organic HAP emissions limits and work practice standards that apply to you at all times.

The permit requires monthly calculations to demonstrate continuous compliance with the weighted average emission limit method specified in 40 CFR 63.5810(c) and a certified statement that the Permittee is in compliance with the work practice requirements.

§63.5905 What notifications must I submit and when?
(a) You must submit all of the notifications in Table 13 to this subpart that apply to you by the dates specified in Table 13 to this subpart. The notifications are described more fully in 40 CFR part 63, subpart A, referenced in Table 13 to this subpart.
(b) If you change any information submitted in any notification, you must submit the changes in writing to the Administrator within 15 calendar days after the change.

Table 13 to Subpart WWWW of Part 63—Applicability and Timing of Notifications – As required in §63.5905(a), you must determine the applicable notifications and submit them by the dates shown in the following table:

If your facility . . .	You must submit . . .	By this date . . .
2. Is a new source subject to this subpart	The notifications specified in §63.9(b)(4) and (5)	No later than the dates specified §63.9(b)(4) and (5).
4. Is complying with organic HAP emissions limit averaging provisions	A Notification of Compliance Status as specified in §63.9(h)	No later than 1 year plus 30 days after your facility's compliance date.
5. Is complying with organic HAP content limits, application equipment requirements, or organic HAP emissions limit other than organic HAP emissions limit averaging	A Notification of Compliance Status as specified in §63.9(h)	No later than 30 calendar days after your facility's compliance date.

As discussed under §63.5860(a), no compliance date was provided for demonstrating initial compliance with the work practice requirements by submitting a certified statement with the Notice of Compliance Status; however, per Table 13 to Subpart WWWW the facility must submit a Notification of Compliance Status no later than 1 (one) year after your compliance date.

The appropriate notification requirements have been added to OPW's permit.

§63.5915 What records must I keep?
(a) You must keep the records listed in paragraphs (a)(1) through (3) of this section.
(1) A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status that you submitted, according to the requirements in §63.10(b)(2)(xiv).

40 CFR Part 63, Subpart A—General Provisions
§63.10 Recordkeeping and reporting requirements.
(b) General recordkeeping requirements.
(2) The owner or operator of an affected source subject to the provisions of this part shall maintain relevant records for such source of—
(xiv) All documentation supporting initial notifications and notifications of compliance status under §63.9.

§63.9 Notification requirements.
(b) Initial notifications. (1)(i) The requirements of this paragraph apply to the owner or operator of an affected source when such source becomes subject to a relevant standard.
(ii) If an area source that otherwise would be subject to an emission standard or other requirement established under this part if it were a major source subsequently increases its emissions of hazardous air pollutants (or its potential to emit hazardous air pollutants) such that the source is a major source that is subject to the emission standard or other requirement, such source shall be subject to the notification requirements of this section.
(iii) Affected sources that are required under this paragraph to submit an initial notification may use the application for approval of construction or reconstruction under § 63.5(d) of this subpart, if relevant, to fulfill the initial notification requirements of this paragraph.

OPW did not request that the application serve as the initial notification as allowed under 40 CFR § 63.9(b)(1)(iii); however, the application demonstrates compliance with the organic HAP emissions limits and the permit requires the applicant keep all records necessary to determine compliance with the organic HAP emission factors pursuant to §63.5915(d) below. In addition, the permit contains requirements pursuant to §63.5915(d) below for a certified statement that the Permittee is in compliance with the work practice requirements in Table 4 to Subpart WWWW. Therefore, it is recommended that this application for approval of construction as required under §63.5(d) serve to fulfill the initial notification requirements.

During email exchanges with Mr. Yoder, OPW's consultant, on September 15, 2020, a question regarding the initial notification was discussed:

Question:
63.9(b)(4)(i) Notice of intent to construct. This has been satisfied with the request and receipt of authorization to construct prior to receiving the permit. Please confirm.

Response:
Yes, per §63.9(b) Initial Notifications (1)(iii) Affected sources required to submit an initial notification may use the application for approval of construction or reconstruction under §63.5(d) to fulfill the initial notification requirements.

§63.9(b)(4)(v) A notification of the actual date of startup of the source, delivered or postmarked within 15 calendar days after that date.

This requirement will be added to the revised permit for the open molding booth (ES-7).

§63.9(h) Notification of compliance status. (1) The requirements of paragraphs (h)(2) through (h)(4) of this section apply when an affected source becomes subject to a relevant standard.
(2)(i) Before a title V permit has been issued to the owner or operator of an affected source, and each time a notification of compliance status is required under this part, the owner or operator of such source shall submit to the Administrator a notification of compliance status, signed by the responsible official who shall certify its accuracy, attesting to whether the source has complied with the relevant standard. The notification shall list—
(A) The methods that were used to determine compliance;
(B) The results of any performance tests, opacity or visible emission observations, continuous monitoring system (CMS) performance evaluations, and/or other monitoring procedures or methods that were conducted;
(C) The methods that will be used for determining continuing compliance, including a description of monitoring and reporting requirements and test methods;
(D) The type and quantity of hazardous air pollutants emitted by the source (or surrogate pollutants if specified in the relevant standard), reported in units and averaging times and in accordance with the test methods specified in the relevant standard;
(E) If the relevant standard applies to both major and area sources, an analysis demonstrating whether the affected source is a major source (using the emissions data generated for this notification);
(F) A description of the air pollution control equipment (or method) for each emission point, including each control device (or method) for each hazardous air pollutant and the control efficiency (percent) for each control device (or method); and
(G) A statement by the owner or operator of the affected existing, new, or reconstructed source as to whether the source has complied with the relevant standard or other requirements.
(ii) The notification must be sent before the close of business on the 60th day following the completion of the relevant compliance demonstration activity specified in the relevant standard (unless a different reporting period is specified in the standard, in which case the letter must be sent before the close of business on the day the report of the relevant testing or monitoring results is required to be delivered or postmarked). For example, the notification shall be sent before close of business on the 60th (or other required) day following completion of the initial performance test and again before the close of business on the 60th (or other required) day following the completion of any subsequent required performance test. If no performance test is required but opacity or visible emission observations are required to demonstrate compliance with an opacity or visible emission standard under this part, the notification of compliance status shall be sent before close of business on the 30th day following the completion of opacity or visible emission observations. Notifications may be combined as long as the due date requirement for each notification is met.
(3) After a title V permit has been issued to the owner or operator of an affected source, the owner or operator of such source shall comply with all requirements for compliance status reports contained in the source's title V permit, including reports required under this part. After a title V permit has been issued to the owner or operator of an affected source, and each time a notification of compliance status is required under this part, the owner or operator of such source shall submit the notification of compliance status to the appropriate permitting authority following completion of the relevant compliance demonstration activity specified in the relevant standard.
(4) [Reserved]
*end of Subpart A excerpt
…
(3) Records of performance tests, design, and performance evaluations as required in §63.10(b)(2).
(b) If you use an add-on control device, …
(c) You must keep all data, assumptions, and calculations used to determine organic HAP emissions factors or average organic HAP contents for operations listed in tables 3, 5, and 7 to this subpart.
(d) You must keep a certified statement that you are in compliance with the work practice requirements in Table 4 to this subpart, as applicable.
(e) For a new or existing continuous lamination/ casting operation, …
[68 FR 19402, Apr. 21, 2003, as amended at 70 FR 50129, Aug. 25, 2005; 85 FR 15977, Mar. 20, 2020]

Per Table 13 of Subpart WWWW, the NOCS is required no later than one year, plus 30 days from the effective date of the permit as discussed under §63.5905 above in more detail.

The appropriate monitoring, recordkeeping and reporting requirements will be added to the revised permit for OPW's State Title V permit request.

15A NCAC 02D .1806, Control and Prohibition of Odorous Emissions – The facility is required to prevent objectionable odors beyond the facility's boundary. There were no objectionable odors detected during the most recent inspection. There is no history of complaints of objectionable odors involving this facility. Continued compliance is expected.

15A NCAC 02Q .0315, Synthetic Minor Facilities – A synthetic minor facility means a facility whose permit contains terms and conditions to avoid the procedures of 15A NCAC 02Q .0500, Title V Procedures. A modification to a permit to remove terms and conditions in the permit that made 15A NCAC 02Q .0500 inapplicable shall be processed pursuant to 15A NCAC 02Q .0300 or 15A NCAC 02Q .0500. The applicant shall choose which of these procedures to follow. However, if the terms and conditions are removed following the procedures of Section 02Q .0300, the permittee shall submit a permit application pursuant to the procedures of 15A NCAC 02Q .0500 within one year after the limiting terms and conditions are removed. After a facility is issued a permit that contains terms and conditions that made 15A NCAC 02Q .0500 inapplicable, the facility shall comply with the permitting requirements of Section 02Q .0300. The Director may require monitoring, recordkeeping, and reporting necessary to assure compliance with the terms and conditions placed in a permit issued pursuant to this Rule.

As discussed under previous sections, this permit modification request is to remove the Synthetic Minor conditions and facility-wide limitations contained in OPW's current permit, listed below:

Pollutant	Emission Limit (Tons per consecutive 12-month period)
VOC	100
Individual HAPs	10
Total HAPs	25

OPW also requests to become a major source of HAP. OPW is requesting to obtain a Title V construction and operation permit pursuant to 15A NCAC 02Q .0300 for a State Only modification issued pursuant to 15A NCAC 02Q .0300 as allowed under 15A NCAC 02Q .0504 (refer to 15A NCAC 02Q .0504 below).

OPW will be required to file a complete Title V Air Quality Permit Application pursuant to 15A NCAC 02Q .0504 on or before 12 months after assuming operation of the proposed source(s). At that time, the permit will go through EPA and public comment.

Hence, applicability of this rule will be removed.

15A NCAC 02Q .0317, Avoidance Conditions for 02D .0530 Prevention of Significant Deterioration – A major stationary source under Prevention of Significant Deterioration (PSD) rules is defined as any one of 28 named source categories in 40 CFR 51.166(b)(1)(i)(a) that has the potential to emit 100 tons per year of any regulated pollutant or any other stationary source that has the potential to emit 250 tons per year of any PSD regulated pollutant (other than GHG). Operations at the OPW facility are not included under the list of the 28 major stationary source categories; thus, subject if the 250 tpy threshold is exceeded.

This condition allows for the avoidance of PSD by limiting facility wide Volatile Organic Compound (VOC) emissions to less than 250 tons per consecutive 12-month period; hence the facility will be PSD minor.

As part of this modification, OPW is requesting terms and conditions be placed in their permit to limit potential VOC emissions to less than 250 tpy.

Per TABLE 4. 2019 ACTUAL MATERIAL USAGE AND VOC/HAP EMISSION RATES of the application:

Total VOC	**20.50**	**tpy**
Total HAP	**7.71**	**tpy**
Total HAP (Styrene)	**7.05**	**tpy**

The expected actual (3.6 tpy HAP/VOC) and potential emissions (8.0 tpy HAP/VOC) from the proposed open molding process (ES-7) were reviewed and revised as discussed under 15A NCAC 02D. 1111 above. As discussed under Section 5 above, facility-wide VOC emissions were previously estimated to be 117 tpy. Potential VOC emissions including the addition of the open molding process are not expected to exceed the less than 250 tpy VOC avoidance limit. Thus, compliance with this avoidance condition is expected.

The facility will be required to calculate and record monthly VOC emissions. A semiannual report is required by January 30 and July 30 of each calendar year. The emissions must be calculated for each of the 12-month periods over the past 17 months.

15A NCAC 02Q .0711, Toxic Air Pollutants Emissions Limitation Requirement – Any facility that emits a toxic air pollutant (TAP) listed in 15A NCAC 02Q .0711 based on its actual emission rate that exceeds its respective TAP permitting emission rates (TPER) must first obtain an air permit to emit the TAP(s). A permit to emit TAPs shall be required for any facility, excluding sources exempt from evaluation by 15A NCAC 02Q .0702.

As discussed under 15A NCAC 02D .1111 above, 40 CFR Part 63, Subpart WWWW will apply upon issuance of this revised State 300 permit (Title V fee class). Thus, a permit to emit toxic air pollutants shall not be required pursuant to 15A NCAC 02Q .0702(a)(27)(B):

15A NCAC 02Q .0702 EXEMPTIONS (a):

(27) an air emission source that is any of the following:
(A) subject to an applicable requirement pursuant to 40 CFR Part 61, as amended;
(B) an affected source pursuant to 40 CFR Part 63, as amended; or
(C) subject to a case-by-case MACT permit requirement issued by the Division pursuant to Paragraph (j) of 42 U.S.C. Section 7412, as amended;

However, the Division is required to evaluate whether there is an unacceptable risk to human health per Session Law 2012-91.

As noted previously, this modification will result in an increase in emissions of styrene at a rate of approximately 3.7 tpy. Per Table 2 of the application (revised as discussed under 15A 02D .1111 above), styrene emissions are expected at an annual rate of 7,340.2 pounds per year (lb/yr) with an expected actual operating schedule of 4,000 hours/yr. This equates to an expected actual hourly rate of 1.84 (lb/hr) from the proposed open molding booth as calculated below:

$$Styrene\ \left(\frac{lb}{hr}\right)\ from\ ES-7\ =\ \frac{7{,}340.2\ lb\ styrene}{yr}\ *\ \frac{yr}{4{,}000\ hrs}\ =\ \frac{1.84\ lb\ styrene}{hr}$$

As part of the modification for issued permit 10367R01 (Application No. 5100211.15A), stack modifications such that all will be classified as vertical and unobstructed were completed. Per review, all emission points are now vertical and unobstructed.

Excerpt from review for existing permit No. 10367R03:
This application does trigger an air toxics evaluation. The application shows the toxic air pollutant of styrene to be below its respective TPER. These emissions have been reviewed and appear correct.

Styrene = 3.9 (cover mold) + 1.21 (vacuum assist) + 1.15 (resins tanks) = 6.27 lb/hr

A Facility-wide actual air toxics emissions compared to their respective TPERs are summarized in the table below:

Toxic Air Pollutant	Emission Rate	TPER	Emissions
styrene	hourly	11.16	6.27
toluene	hourly	58.97	0.19
	daily	197.96	4.56
xylene	hourly	68.44	0.23
	daily	113.7	5.52

Note:
Maleic anhydride is not emitted from the operations this application addresses, so it does not need evaluation. Xylene and toluene were evaluated in the application and their emission rates were below their respective TPERs. The above table shows the emissions at their potential and not at the requested lowered rate due to the removal of two stations. Even though xylene is now not a part of the modifications of this application, it should be listed on the 2Q .0711 list. This pollutant was shown in the R01 application as being emitted when it was listed on the insignificant/exempt list. It appears to have not been listed in the application when the toxic air pollutants were noted in the 2Q .0711 listing so it will be added now.

Expected emissions from all sources of styrene are summarized in the following table:

Emission Source ID No(s).	Expected emissions of Styrene (lb/hr)	TPER per 15A NCAC 02Q .0711(b)
ES-3 (vacuum assisted molding)	1.21	
ES-4 (cover molding)	3.9	
ES-5 (resins tanks)	1.15	
ES-7 (open molding)	1.84	
Total	**8.1**	**11.16 lb/hr**

Facility-wide expected actual emissions are less than the TPER listed in 15A NCAC 02Q .0711(b) of 11.16 lb/hr for styrene (refer to Facility Wide Air Toxics Pollutants under Section 8 below). Hence, no further analysis is needed at this time and compliance is expected.

DAQ does not believe that there is an unsafe health risk per this modification. As a result, the TPER table will be removed from OPW's permit.

Due to this modification being processed as a State 300 permit (Title V fee class), applicability of the following regulations is discussed below:

15A NCAC 02D .0202 – Registration of Air Pollution Sources (Replaced with 02Q .0207)
15A NCAC 02D .0535 – Excess Emissions Reporting and Malfunction
15A NCAC 02D .0540 – Particulates from Fugitive Dust Emission Sources
15A NCAC 02Q .0207 – Annual Emissions Reporting (Added)
15A NCAC 02Q .0304 – Renewal Application (Added)
15A NCAC 02Q .0504 – Option for Obtaining Construction and Operation Permit (Added)

15A NCAC 02D .0202, Registration of Air Pollution Sources – The Director may require the owner or operator of a source of air pollution to register that source, pursuant to G.S. 143 215.107(a)(4). Any person required to register a source of air pollution with the Division shall register the source on forms provided by the Division and shall provide the following information:
(1) the name of the person, company, or corporation operating the sources;
(2) the address, location, and county;
(3) principal officer of the company;
(4) quantities and kinds of raw materials used;
(5) process flow sheets;
(6) operating schedules;
(7) total weights and kinds of air pollution released;

(8) types and quantities of fuels used;
(9) stack heights; and
(10) other information considered essential in evaluating the potential of the source to cause air pollution. The forms shall be completed and returned to the Division within 60 days following their receipt.

Applicability of 15A NCAC 02D .0202 is listed under Specific Conditions and Limitations A.1. of OPW's current permit. In addition, requirements under Specific Conditions and Limitations A.2 Permit Renewal and Emission Inventory Requirement:
The Permittee, at least 90 days prior to the expiration date of this permit, shall request permit renewal by letter in accordance with 15A NCAC 02Q .0304(d) and (f). Pursuant to 15A NCAC 02Q .0203(i), no permit application fee is required for renewal of an existing air permit (without a modification request). The renewal request (with AA application form) should be submitted to the Regional Supervisor, DAQ. Also, at least 90 days prior to the expiration date of this permit, the Permittee shall submit the air pollution emission inventory report (with Certification Sheet) in accordance with 15A NCAC 02D .0202, pursuant to N.C. General Statute 143 215.65. The report shall be submitted to the Regional Supervisor, DAQ and shall document air pollutants emitted for the 2020 calendar year.

This permit modification will result in issuance of a State Title V permit; hence, the above condition will be replaced with 15A NCAC 02Q .0207 and 02Q .0304 as discussed below.

15A NCAC 02D .0535, Excess Emissions Reporting and Malfunction – This rule requires owners and operators to report excess emissions, malfunctions and/or a breakdown of process or control equipment or any other abnormal conditions.

15A NCAC 02D .0540, Particulate from Fugitive Dust Emission Sources – This rule requires owners and operators to not cause or allow fugitive dust emissions to cause or contribute to substantive complaints or excess visible emissions beyond the property boundary.

15A NCAC 02Q .0207, Annual Emissions Reporting – The owner or operator of a Title V facility shall report by June 30th of each year the actual emissions during the previous calendar year pursuant to 15A NCAC 02Q .0207.

15A NCAC 02Q .0304, Application – Permit Renewals:
(a) Obtaining and filing application. Permit, permit modification, or permit renewal applications may be obtained and shall be filed in writing according to 15A NCAC 02Q .0104.
…
(f) When to file applications for permit renewal. Applicants shall file applications for renewals such that they are mailed to the Director at the address specified in 15A NCAC 02Q .0104 and postmarked at least 90 days before expiration of the permit.

15A NCAC 02Q .0504, Option for Obtaining Construction and Operation Permit
This application is being processed under the state construction and operating permit program in accordance with the procedures in 15A NCAC 02Q .0300 for a State/Greenfield Title V permit. Pursuant to 15A NCAC 02Q .0504(d), if the procedures in 15A NCAC 02Q .0300 are followed, the permittee shall have one year from the date of beginning operation of the facility or source to file an amended application following the procedures in this 15A NCAC 02Q .0500. The Director shall place a condition in the construction and operation permit stating this requirement.

Hence, a complete Title V application will be required within one year of startup of the proposed open molding process (ID No. ES-7).

7. NSPS/PSD/NAA/Increment/MACT/CAM/Facility Wide Toxic Air Pollutants

NSPS – The facility is not currently subject to a New Source Performance Standard (NSPS). This permit modification does not affect this status.

NESHAPS/MACT – The facility is currently a Title III minor source, not subject to Maximum Achievable Control Technology (MACT) Standards, 15A NCAC 02D .1111 – 40 CFR 63.

This permit modification removes the synthetic minor limitations and reclassifies the facility as a Title V and Title III major source for HAPs. Therefore, the facility is subject to 40 CFR 63 major source standards.

NESHAPS Subpart WWWW for Reinforced Plastic Composites Production does apply. Refer to Section 6 above for more details.

NESHAPS Subpart XXXXXX for Plastic Pipe and Pipe Fitting Manufacturing does not apply since OPW is not engaged in any of the activities that are listed in the standard.

NESHAPS Subpart MMMMM (Flexible Polyurethane Foam Fabrication Operations) and Subpart OOOOOO (Flexible Polyurethane Foam Production and Fabrication Area Sources) are applicable to facilities that produce flexible polyurethane foams. OPW only manufactures rigid polyurethane foams; therefore, these subparts do not apply to the facility.

PSD/Increment - This facility is classified as a minor source under Prevention of Significant Deterioration (PSD). The facility has requested a limit of less than 250 tpy PSD Avoidance Condition for VOC emissions.

Johnston County is in attainment for criteria pollutants and the non-attainment (NAA) regulations do not apply. Johnston County was triggered for PSD increment tracking for PM_{10} and SO_2 as of October 28, 1981. A review of total PM_{10} from the proposed source (ID No. ES-7) is summarized below:

Emission Source	PM10 potential emissions (pounds/hour) before controls	PM10 potential emissions (pounds/hour) after controls
Open Molding Booth (ID No. ES-7)	3.09	0.04

Potential increment consumed from this modification is 0.04 lbs/hr. The expected increase will be added to the permit cover letter.

112(r) – Per Form A3 - 112(r) APPLICABILITY INFORMATION this facility is not subject to 40 CFR Part 68 "Prevention of Accidental Releases" – Section 112(r) of the Federal CAA. Regulated hazardous materials are not stored above threshold quantities.

CAM – 15A NCAC 02D .0614 [40 CFR Part 64] COMPLIANCE ASSURANCE MONITORING (CAM) - 40 CFR 64 requires that a continuous compliance assurance monitoring (CAM) plan be developed for all equipment located at a major facility, that have pre-controlled emissions above the major source threshold, and use a control device to meet an applicable standard.

The proposed open molding booth (ID No. ES-7) does not use a control device to meet an applicable standard and will be subject to Subpart WWWW; thus, it is not subject to CAM.

Existing Trimming operations (ID No. ES-2) are controlled by a dust collector (ID No. CD-1).

Excerpt from review for issued permit No. 10367R00:
The potential emissions associated with ES-2 were calculated by the facility's consultant and found to be acceptable. Emissions are shown in the table below. The following parameters were used to calculate emissions:

- Maximum operating schedule of 8,760 hours per year
- Overall control efficiency of the dust collector = 98%
- Maximum amount of dust collected from the dust collector is 90 pounds per week.
- Maximum amount of dust collected from the vacuum drum is 90 pounds per day. The vacuum drum is located indoors and the air flow routed to the drum does not also flow to the dust collector.

Pollutant	Title V Emissions (tpy)	Permit Potential Emissions with controls (tpy)
TSP	19.71	0.18
PM-10	19.71	0.18
PM-2.5	19.71	0.18

Pre-controlled emissions are below major source threshold; hence CAM does not apply.

8. Facility Wide Air Toxics Pollutants

The proposed open molding process (ID No. ES-7) and existing processes (ID Nos. ES-4 through ES-5) will be subject to MACT standards as discussed under 15A NCAC 02D .1111 (Section 6) above. In addition, as discussed under 15A NCAC 02Q .0711 (Section 6) above, styrene emissions do not exceed its respective TPER. The effects on the environment as a result of this modification will be minimal and there are no unacceptable risks to human health. As a result, air toxics will be removed pursuant to 15A NCAC 02Q .0702(a)(27)(B).

9. Compliance History

Per latest inspection report – Compliance history (5-years):
A review of NCDAQ's IBEAM database revealed that the facility was issued an NOD on May 17, 2017 for installing a new emission source, a press, without following the procedures for notifying NCDAQ. Note that effective June 13, 2016, the North Carolina air quality permitting rules, specifically 15A NCAC 2Q .0318, were modified to establish new procedures that allow non-Title V permit holders to expedite implementing changes at their facilities. These new procedures allow changes to be made prior to revising the non-Title V permit if certain conditions are met. Changes that qualify under 15A NCAC 2Q .0318 can be made seven (7) days after notification (no application needed) is made to the DAQ provided that our office confirms in writing the proposed changes to be eligible. The 2017 NOD letter explained that the new procedures could have allowed the facility to install and operate the new press without first obtaining a new permit had they properly notified DAQ prior to installation. The 2017 NOD letter also indicated that the deficiency of installing and operating the new press was resolved with the facility's submittal of their air permit modification application dated February 21, 2017. Additionally, the facility was issued an NOD on March 17, 2017 for a late annual report.

RRO Comments, Conclusions and Recommendations:
The facility was found to be in compliance during the last inspection on November 25, 2019 by RRO, Mr. Matthew Mahler. Therefore, it can be concluded that the facility is and has been in substantial compliance with the air permit issued to the Permittee.

10. Public Notice / EPA and Affected State(s) Review

A notice of the DRAFT Title V Permit is not required as part of this state only modification.

11. RCO Conclusions, Comments, and Recommendations:

Professional Engineering Seal
A Professional Engineering Seal (PE Seal) is required for permit applications pursuant to 15A NCAC 02Q .0112 – Applications Requiring Professional Engineer Seal. A PE shall seal technical portions of air permit applications for new sources and modifications of existing sources as defined in 15A NCAC 02Q .0103 that involve:

(1) design;
(2) determination of applicability and appropriateness;
(3) or determination and interpretation of performance; of air pollution capture and control systems.

A PE Seal is not required for this permit modification because the facility only uses fiberglass mesh filters for control of particulate emissions that are inherent to the process.

Zoning Consistency Determination
A consistency determination is required for this permit modification pursuant to 15A NCAC 2Q .0507(d) due to addition of the proposed source. A zoning consistency determination is required if the modification is considered an expansion. A letter from Mark E. Helmer, AICP, CZP, Senior Planner/GIS Specialist for Smithfield, NC Planning Department was received with the application. The letter indicates the expansion is permitted in accordance with the site plan. However, the letter does not indicate that a copy of the draft permit application accompanied the request from OPW. An email was sent to Mr. Yoder, OPW's consultant on July 21, 2020 requesting a copy of the zoning request sent to the local government. During that exchange, Mr. Yoder forwarded the correspondence sent to

Mr. Helmer, Town of Smithfield on May 22, 2020. The email correspondence included a copy of the draft permit application with the zoning request. Therefore, the requirements of NCGS 143-215.108(f) have been met.

RRO recommends issuance of the permit and was presented with a DRAFT permit prior to issuance.

RCO concurs with RRO's recommendation to issue Air Quality Permit No. **10367R04**.