

NORTH CAROLINA DIVISION OF AIR QUALITY
Application Review

Issue Date:

Region: Mooresville Regional Office
County: Catawba
NC Facility ID: 1800102
Inspector's Name: Sandy Sherer
Date of Last Inspection: 05/19/2022
Compliance Code: 3 / Compliance - inspection

Facility Data	Permit Applicability (this application only)
Applicant (Facility's Name): Hickory Chair, LLC Facility Address: Hickory Chair, LLC 37 9th Street Place SE Hickory, NC 28602 SIC: 2512 / Upholstered Household Furniture NAICS: 337121 / Upholstered Household Furniture Manufacturing Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V	SIP: 02D .0504, .0504, .0512, .0516, .0521, .0524, .0530(u), .1100 .1111 NSPS: NA NESHAP: GACT JJJJJ, GACT OOOOOO; 02Q .0317 (MACT Avoidance) PSD: NA PSD Avoidance: NA NC Toxics: NA 112(r): NA Other: 02D .1806

Contact Data			Application Data
Facility Contact	Authorized Contact	Technical Contact	Application Number: 1800102.22A Date Received: 10/11/2022 Application Type: Renewal Application Schedule: TV-Renewal Existing Permit Data Existing Permit Number: 02779/T26 Existing Permit Issue Date: 12/18/2018 Existing Permit Expiration Date: 05/31/2023
Lori Butterfield Compliance Assistant (828) 679-2615 PO Box 608 Hickory, NC 28603	Tim Atkins VP – Supply Chain (828) 217-0193 PO Box 2147 Hickory, NC 28603	Dennis Tart Environmental Engineer (828) 326-8376 PO Box 608 Hickory, NC 28603	

Total Actual emissions in TONS/YEAR:							
CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2021	0.2600	5.71	42.13	6.76	4.18	3.55	2.18 [Toluene]
2020	0.3500	7.37	40.51	8.81	5.39	3.57	2.04 [Toluene]
2019	0.2900	6.20	45.20	7.40	4.66	3.16	2.16 [Toluene]
2018	0.1200	2.98	53.79	3.41	2.35	3.76	2.77 [Toluene]
2017	0.2000	4.35	64.31	5.13	3.68	4.62	3.39 [Toluene]

Review Engineer: Eric L. Crump, P.E. Review Engineer's Signature: _____ Date: _____	Comments / Recommendations: Issue 02779/T27 Permit Issue Date: Permit Expiration Date:
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1. Purpose of Application

Hickory Chair, LLC (hereinafter referred to as Hickory Chair) is a furniture manufacturing plant located in Hickory, Catawba County, North Carolina. The facility currently operates under Title V Permit No. 02779T26 with an expiration date of May 31, 2023. Hickory Chair has applied for renewal of their Title V air quality permit. The renewal application was received on October 11, 2022, or at least six months prior to the expiration date as required by General Condition 3.K of the current permit. Therefore, the existing permit shall not expire until the renewal permit has been issued or denied. All terms and conditions of the existing permit shall remain in effect until the renewal permit has been issued or denied.

Through permit application No. 1800102.22A, Hickory Chair included the following changes to the facility:

- addition of Northwood 3-axis CNC router, connected to control device CDBF3,
- removal of several unused machines from the same dust main as the router, and
- addition of a grinding booth which exhausts into the facility.

In an email to the NC Division of Air Quality (DAQ) dated January 26, 2023, Hickory Chair requested the addition of a wood laser cutter to the permit as an insignificant activity.

2. Facility Description

Hickory Chair manufactures, assembles, and finishes upholstered case goods furniture. The facility currently operates nine hours daily Monday through Thursday and a half-day Friday, but may also operate on Saturday if demand requires. This facility employs almost 500 people.

The facility operates a wood furniture and parts coating operation (ID No. SPO-1) consisting of 20 dry filter spray booths (ID Nos. SB-1 through SB-20), a dip tank (ID No. DT-1), a wash-off tank (ID No. WT-1), gluing operation, (ID No. G-1), glue press operations (ID No. G2), and three steam heated drying ovens (ID Nos. DO-1, DO-2, and DO-3). A wood-fired boiler (WBF-1, manufactured by Bigelow in 1957) provides comfort heat and process heat for the steam-heated finishing ovens. A natural gas/No. 2 fuel-oil fired boiler (formerly ID No. OFB, now ID No. GFB, manufactured by Cleaver Brooks, dated August 1968) also provides comfort heat, plus process heat for the ovens when sufficient wood fuel is not available on site. The fuel oil tank for this boiler was removed from the facility on October 26, 2022, making this boiler a natural-gas-fired boiler only. The facility operates a wood dust collection system (ID No. ESDS) with associated cyclones (ID Nos. CDCY-1 through CDCY-3) and bagfilters (ID Nos. CDBF-1 through CDBF-8).

3. Application Chronology

June 15, 2018	DAQ issues Permit No. 02779T25 to Heritage Home Group, LLC - Hickory Chair as a Title V renewal.
October 28, 2018	DAQ acknowledges receipt of application No. 1800102.18B from Heritage Home Group, LLC on October 22 for an ownership/name change, noting the applicant did not include the required permit application process fee.
December 18, 2018	DAQ issues Permit No. 02779T26 to Hickory Chair as an administrative change, changing the facility name to Hickory Chair, LLC.

October 11, 2022 DAQ receives permit renewal application No. 1800102.22A from Hickory Chair.

October 13, 2022 Hickory Chair receives letter from MRO stating the renewal application was incomplete (i.e., Form A was not signed).

October 25, 2022 DAQ receives signed permit application Form A with revisions from Hickory Chair.

January 26, 2023 Hickory Chair sends email to DAQ requesting the addition of a wood laser cutter to the permit as an insignificant activity.

June 27, 2023 Memorandum from Dennis Tart, Hickory Chair to Eric Crump, DAQ, documenting phone conversation regarding boiler ID No. OFB. The boiler has not used fuel oil since February 2017, and the storage tank supplying fuel oil was removed on October 26, 2022.

July 3, 2023 Draft permit and review sent for DAQ supervisory review.

July 19, 2023 DAQ supervisor provides comments on draft permit and review.

August 3, 2023 DAQ sends email to Hickory Chair requesting air toxics emissions information necessary to assess whether facility-wide emissions of any regulated pollutant exceed the applicable toxic air pollutant emission rate (TPER), per 15A NCAC 02Q .0711. If any TPER is exceeded, Hickory Chair will also need to demonstrate compliance with the applicable acceptable ambient level (AAL), per 02D .1104.

September 27, 2023 Hickory Chair responds to DAQ, requesting an applicability determination justifying DAQ's request for air toxics information.

October 5, 2023 DAQ and Hickory Chair discuss the air toxics emissions information request by telephone.

October 10, 2023 DAQ sends email to Hickory Chair, informing them that a review of emission inventories for the years 2018-2022 indicate that facility-wide emission rates for benzene exceed the toxic pollutant emission rates listed in 15A NCAC 02Q .0711, and that over 99% of those emissions are attributable to the wood-fired boiler. DAQ requests that Hickory Chair provide DAQ with the stack and building parameters for the combustion sources at the facility to conduct modeling to determine whether there is risk to public health per Session Law 2012-091 (enacted July 1, 2012).

October 23, 2023 Hickory Chair responds to DAQ, indicating that their methods for estimating emissions from the boiler resulted in overreporting of emissions for the annual emission inventories, They submitted emission estimates using an method with improved accuracy which resulted in lower emissions. Hickory Chair requested permission to change the methods used to develop emissions inventory estimates for the boiler. Hickory Chair also requested to perform the air toxics dispersion modeling and to provide DAQ with the results.

November 16, 2023 Mooresville Regional Office (MRO) approves the proposed change in the method to calculate emissions from the boiler, agreeing that using the auger revolutions

wood use factor is an appropriate method to calculate emissions. Hickory Chair will use this new method of calculating emissions in all future emissions inventories.

- February 13, 2024 Beth Morton (Morton Environmental) submits air permit dispersion modeling checklist and protocol for Hickory Chair to DAQ’s Air Quality Assessment Branch (AQAB).
- March 14, 2024 Morton Environmental submits air dispersion modeling files for Hickory Chair to AQAB.
- April 3, 2024 AQAB issues memo with review of toxics dispersion modeling analysis for Hickory Chair.
- April 11, 2024 DAQ sends draft permit to Hickory Chair, Stationary Source Compliance Branch (SSCB) and Mooresville Regional Office (MRO) for review and comment with an April 19, 2024 deadline. No comments were received from Hickory Chair or MRO.
- April 19, 2024 DAQ receives comments on draft permit from SSCB.
- xxx Permit renewal notice published, 30-day public notice and comment period begins, and 45-day EPA comment period begins.
- xxx 30-day public notice and comment period ends.
- xxx 45-day EPA comment period ends.

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

The following table summarizes changes made to the current Hickory Chair permit in this permit renewal:

Page No.	Section	Description of Changes
Cover and throughout	---	<ul style="list-style-type: none"> • Updated all dates and permit revision numbers • Updated all limits/standards summary tables to current standard format
Insignificant Activities List	Attachment	Moved to Section 3 of permit
2	Table of Contents	<ul style="list-style-type: none"> • Changed Section 3 from “General Conditions” to “Insignificant Activities per 15A NCAC 02Q .0503(8)” • Added new Section 4, “General Conditions”
3	List of Acronyms	Relocated here (formerly last page of permit)
4	1	Changed ID No. of boiler OFB to GFB, removed GACT JJJJJ designation, and deleted mention of No.2 fuel oil from boiler description
5	2.1 A.1.a	Changed “source” to “boiler (ID No. WFB-1)
6	2.1 A.2.a	Changed “source” to “boiler (ID No. WFB-1)
	2.1 A.3.c.i	Deleted “and/or fuel oil” from first sentence

Page No.	Section	Description of Changes
7	2.1 A.4	Updated section to reflect the most current stipulations for 15A NCAC 02D .1111 and GACT JJJJJ
10	2.1 B.1	Deleted the word “MISCELLANEOUS” from title of rule
12	2.1 C 2.1 C.1, C.2, and C.3	<ul style="list-style-type: none"> Changed ID No. of boiler OFB to GFB, and deleted mention of No.2 fuel oil from description of boiler Deleted GACT JJJJJ from limits and standards summary table <p>Changed ID No. of boiler OFB to GFB, and deleted mention of No.2 fuel oil from MRR requirements</p>
13	2.1 C.4 2.1 C.4 2.1 C.4.c	<p>Deleted stipulations for 02D .1111/GACT JJJJJ for boiler from permit. Renumbered subsequent sections accordingly.</p> <p>(Formerly Section 2.1 C.5) Updated section to reflect the most current stipulations for 15A NCAC 02D .0530(u)</p> <p>Added requirement to compare reported annual emissions of SO₂ to projected annual emissions</p>
14	2.1 D.1	<ul style="list-style-type: none"> Deleted the word “MISCELLANEOUS” from title of rule Updated section to reflect the most current stipulations for 15A NCAC 02D .0512
15	2.1 D.2.c and e	Updated section to reflect the most current stipulations for 15A NCAC 02D .0521
16	2.1 D.3.e 2.1 D.3.f	<p>Replaced text with noncompliance statement.</p> <p>(Formerly Section 2.1 D.3.e) Changed “flexible polyurethane foam fabrication facility” to “wood furniture and parts coating operation (ID No. SPO-1)”</p>
17	2.2 A.2	Updated section to reflect the most current stipulations for 15A NCAC 02Q .0317 for MACT
18	2.2 A.2.c.i and ii	Changed “hazardous air pollutant(s) used” to “hazardous air pollutant(s) emitted”
19	3	<ul style="list-style-type: none"> Section 3 is now “Insignificant Activities per 15A NCAC 02Q .0503(8)” Added source ID No. I-KLC-1, Wood laser cutter
20-27	4	Updated General Conditions to version 7.0 dated August 21, 2023

The source “Wood laser cutter (ID No. I-KLC-1)” has been added to the TVEE.

The following source has been modified in the TVEE as follows:

- Previous ID No. and description: ID No. OFB, One natural gas/No.2 fuel oil-fired boiler (29.29 million Btu per hour maximum heat input rate)
- New ID No. and description: ID No. GFB, One natural gas-fired boiler (29.29 million Btu per hour maximum heat input rate)

5. Description of Changes and Estimated Emissions

The following changes have been made to the Hickory Chair facility:

- Addition of Northwood 3-axis CNC router
- Removal of several unused machines from the same dust main as the router

As stated in the permit application (9/12/22 note from Howard Martin, P.E. to Denis Tart of Hickory Chair), the Northwood router requires dust extraction and was connected to the dust main associated with fan (3A), which is connected to an existing bagfilter (CDBF3). Several machines not in use were removed from the facility, freeing up enough capacity accommodate the particulate to be generated by the router. No changes were made to the main ductwork size, fan drives, or fan speed, so there was no change to overall air volume exhausted through the wood-dust collection system (ESDS) – which is the permitted source that includes the router (and the other machines which were removed from the facility). Overall, this exchange of equipment did not cause a change in particulate emissions from the facility, and no change to the permit was required. Continued compliance is expected.

- Addition of a grinding booth which exhausts into the facility

As also stated in the permit application (9/12/22 note from H. Martin to D. Tart), Hickory Chair installed a new grinding booth to capture dust produced from the chamfering the edges of plywood frames with a handheld grinder. The booth employs a fan to produce air flow across the face of the booth, which is exhausted into the facility. A water bath captures dust from the air flow before it is returned into the building. Since the air flow from the grinding booth does not leave the building, it is not exhausted into the ambient air, and is not considered an emission source subject to regulation.

- Addition of a wood laser cutter (ID No. I-KLC-1)

This laser cutter would be used to cut wood, generating particulate matter. Using the DAQ wood working emissions calculator spreadsheet (Revision C, July 2007), and based on the maximum total weight of wood kerf cut per year (0.78 tons), the cutter would generate 0.24 tons of particulate matter per year. No other emissions would be generated by use of the laser cutter. This source can therefore be classified as an insignificant activity under 15A NCAC 02Q .0503(8), because its emissions would not violate any applicable emissions standard, its potential uncontrolled criteria pollutant emissions are no more than five tons per year and its potential uncontrolled hazardous air pollutant (HAP) emissions are below 1000 pounds per year. For this reason, no conditions are included in the permit for this source. The wood laser cutter is not subject to any permit conditions.

It should be noted that classifying an emission source or activity as insignificant does not mean it is exempted from any applicable requirement, or that the Permittee is exempted from demonstrating compliance with any applicable requirement. The Permittee is required to have documentation—including calculations, if necessary—available at the facility at all times that demonstrates that an emission source or activity is insignificant.

6. Regulatory Review

Hickory Chair is subject to the following state regulations, in addition to the requirements in the General Conditions:

15A NCAC 02D .0503, Particulates from Fuel Burning Indirect Heat Exchangers. This rule applies to particulate matter (PM) emissions from the combustion of fuel in indirect heat exchangers, such as boilers, that are discharged from any stack or chimney into the atmosphere. The regulation provides the following equation for determining the allowable emissions limit as a function of maximum heat input:

$$E = 1.090 \times Q^{-0.2594}$$

Where:

- E = allowable emissions limit for PM in pounds per million British thermal unit per hour (lb/MMBtu); and
- Q = maximum heat input in million Btu per hour (MMBtu/hr).

(Note: the maximum heat input is the total heat content of all fuels and is the sum of maximum heat input of all fuel burning indirect heat exchangers at a plant site which are in operation, under construction, or permitted when determining the allowable emission limit for each fuel burning indirect heat exchanger.)

The natural gas-fired boiler (ID No. GFB, built in 1968, formerly known as ID No. OFB when it also fired No. 2 fuel oil) is subject to this regulation. This boiler has a 29.29 MMBtu/hr maximum heat input rate. As explained in a previous permit review (D. Putney, Permit No. 02779T21, December 5, 2008), in accordance with 2D .0503(e) the maximum heat input for the equation must also include heat inputs from:

- finishing material/paper (formerly permitted at 1.44×10^6 Btu/hr based on 180 lb/hr allowable combustion rate and estimated heat value of 8,000 Btu/lb), and
- coal (formerly permitted at 14.6×10^6 Btu/hr) combustion in boiler WFB-1.

So, using the above equation, $Q = 1.44 + 14.6 + 29.29 = 45.33$ MMBtu/hr, and the allowable PM emissions limit for this boiler is 0.41 lb/MMBtu (see Section 9 of this review). Because natural gas or No. 2 fuel oil are relatively clean burning fuels with regard to PM, no monitoring, recordkeeping, or reporting is required for this boiler with regard to PM emissions. This permit renewal does not affect this status. Continued compliance is expected.

15A NCAC 02D .0504, Particulates from Wood Burning Indirect Heat Exchangers. This regulation applies to fuel burning equipment that burns 100 percent wood (with no other fuels in combination) for the primary purpose of producing heat or power by indirect heat transfer. PM emissions from wood combustion shall not exceed the allowable limits in the following table:

Maximum Heat Input (MMBtu/hr)	Allowable Emission Limit (lb/MMBtu)
≤ 10	0.70
100	0.41
1,000	0.25
≥ 10,000	0.15

If the heat input falls between any two consecutive heat inputs listed in the above table, the allowable PM emission limit shall be calculated using the following equation:

$$E = 1.1698 \times Q^{-.2230}$$

Where:

E = allowable emissions limit for PM in lb/MMBtu; and

Q = maximum heat input in MMBtu/hr.

The wood-fired fire tube boiler (ID No. WFB-1, built in 1957) is subject to this regulation. Since this boiler has a 38 MMBtu/hr maximum heat input rate, the allowable PM emissions limit for this boiler as determined using the above equation is 0.52 lb/MMBtu of heat input. Hickory Chair is required to control PM emissions from this boiler with two multicyclones (ID Nos. CDMCY-1 and CDMCY-2). They must perform inspections and maintenance as recommended by the manufacturer, but should at minimum include an annual internal inspection of each multicyclone's structural integrity; and a monthly external visual inspection of the system ductwork, and multicyclones for leaks. The results of inspection and maintenance (including variances from manufacturer's recommendations and corrections made) must be maintained in a logbook. Summary reports of monitoring and recordkeeping activities must be submitted semiannually.

This permit renewal does not affect this status with regard to 02D .0504. Continued compliance is expected.

15A NCAC 02D .0512, Particulates from Wood Products Finishing Plants. This rule prohibits the discharge of particulate matter caused by the working, sanding, or finishing of wood from any stack, vent, or building into the atmosphere without providing ductwork and collectors “. . . that are properly designed and adequate to collect particulate to the maximum extent practicable . . . In no case shall the ambient air quality standards be exceeded beyond the property line.”

The following sources at the Hickory Chair facility are subject to this rule:

- Wood-dust collection system (ID No. ESDS)
- Twenty dry filter-type spray booths (ID Nos. SB-1 through SB-20) – PM emissions are to be controlled by dry type filters and adequate ductwork.

For the wood dust collection system, PM emissions must be controlled using eight associated bagfilters (ID Nos. CDBF-1 through CDBF-8) and three associated simple cyclones (ID Nos. CDCY-1 through CDCY-3). Hickory Chair must inspect and maintain these devices in accordance with the manufacturer's recommendations, if any. At a minimum, the Permittee must conduct monthly external inspection of the ductwork cyclones, and bagfilters, noting the structural integrity, and an annual internal inspection of the bagfilters, noting their condition and structural integrity.

For the spray booths, PM emissions must be controlled using adequate ductwork and properly designed collectors. Hickory Chair must, at a minimum, conduct weekly inspection of the spray booth(s)' filters noting their condition; and annual inspection of the associated ductwork, noting its structural integrity.

The results of all inspection and maintenance (including variances from manufacturer's recommendations and corrections made) must be maintained in a logbook. Summary reports of monitoring and recordkeeping activities must be submitted semiannually.

This permit renewal does not affect the status of these sources with regards to 02D .0512. Continued compliance is expected.

NCAC 02D .0516, Sulfur Dioxide Emissions from Combustion Sources. Under this regulation, emissions of sulfur dioxide (SO₂) from any source of combustion discharged from any vent, stack, or chimney shall not exceed 2.3 pounds of SO₂ per MMBtu input. The natural gas/No. 2 fuel oil-fired boiler (ID No. OFB) and the wood-fired fire tube boiler (ID No. WFB-1) are subject to this rule. Because the fuels used in both boilers are generally low in sulfur content, the limit of SO₂ emissions limit is unlikely to be exceeded. For this reason, no monitoring, recordkeeping, or reporting is required for either boiler with regard to SO₂ emissions. This permit renewal does not affect this status. Continued compliance is expected.

15A NCAC 02D .0521, Control of Visible Emissions. This regulation establishes opacity limits for visible emissions generated by fuel burning operations and industrial processes where visible emissions are expected to occur (except during startups, shutdowns, and malfunctions approved according to procedures in 15A NCAC 02D .0535, Excess Emissions Reporting and Malfunctions). The regulation establishes opacity limits for visible emissions from sources based on the date the sources were manufactured.

The following table lists the sources at the Hickory Chair facility subject to this regulation and their respective opacity limits.

Date of Manufacture	Sources	Opacity Limit	Additional limitations
As of July 1, 1971	<ul style="list-style-type: none"> • Wood-fired fire tube boiler (WFB-1) • Natural gas -fired boiler (GFB) • Twenty dry filter-spray booths (SB-1 through SB-20) • *Wood dust collection system (ESDS) emissions from bagfilters CDBF-1 through CDBF-5 and cyclones CDCY-1 through CDCY-3 	40 percent opacity averaged over a six-minute period	Six-minute averaging periods may exceed 40 percent not more than: once in any hour, and four times in any 24-hour period. In no event shall the six-minute average exceed 90 percent opacity.
After July 1, 1971	*Wood dust collection system (ESDS) emissions from bagfilters CDBF-6 through CDBF-8	20 percent opacity averaged over a six-minute period	Six-minute averaging periods may exceed 20 percent not more than: once in any hour, and four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

Date of Manufacture	Sources	Opacity Limit	Additional limitations
<p>*Note: Portions of the wood dust collection system at Hickory Chair were constructed at different times. The percent opacity limit appropriate for each portion based on the date of construction has been assigned as shown in the table above.</p>			

Hickory Chair must observe the emission points for the wood boiler, the wood dust collection system, and the spray booths once each month while being fired with fuel for any visible emissions above normal. If visible emissions are observed to be above normal, Hickory Chair must either act appropriately to correct the above-normal emissions as soon as practicable and within the monitoring period and record the action taken—or demonstrate that the percent opacity is below the established limit in accordance with 15A NCAC 02D .2610 (Method 9). Hickory Chair must maintain the results of the monitoring, corrective actions, or testing in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. No visible emission violations are expected from boiler GFB since natural gas is a relatively clean burning fuel. Therefore, no monitoring, recordkeeping, or reporting is required for visible emissions from this source.

This permit renewal does not affect the status of these sources with regard to 02D .0521. Continued compliance is expected.

15A NCAC 02D .0524, New Source Performance Standards. See Section 8 of this review.

15A NCAC 02D .0530(u), Prevention of Significant Deterioration (Use of Projected Actual Emissions). See Section 9 of this review.

15A NCAC 02D .1100, Control of Toxic Air Pollutants. See Section 12 of this review.

15A NCAC 02D .1111, Maximum Achievable Control Technology. See Section 7 of this review.

15A NCAC 02D .1806, Control and Prohibition of Odorous Emissions (State Enforceable Only). This rule, which applies facility-wide and is state-enforceable only, provides for the control and prohibition of objectionable odorous emissions. The rule requires Hickory Chair to implement management practices or install and operate odor control equipment that is sufficient to prevent odorous emissions from causing or contributing to objectionable odors beyond the facility's boundary. This permit renewal does not affect the status of these sources with regard to 02D .1806. Continued compliance is expected.

15A NCAC 02Q .0317, Avoidance Conditions. Under this regulation, the owner or operator of a facility may ask DAQ to place terms and conditions in that facility's permit to avoid the applicability of certain regulatory requirements. DAQ may require monitoring, recordkeeping, and reporting as needed to provide assurance that the avoidance conditions are being met. The Hickory Chair permit has avoidance conditions for 15A NCAC 02D .1111, Maximum Achievable Control Technology. These are discussed in Section 7 of this review.

Note: The permit has been updated with this renewal to reflect the most current stipulations for all applicable regulations.

7. National Emission Standards for Hazardous Air Pollutants (NESHAPS): Maximum and/or Generally Achievable Control Technology (MACT/GACT)

Hickory Chair is not a major source for hazardous air pollutants (HAPs) – i.e., the facility does not emit 10 tons per year (tpy) or more of a single HAP or 25 tpy or more of multiple HAPs. The facility is subject to the following GACT standards:

40 CFR 63, Subpart JJJJJJ, National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial, and Institutional Boilers. The wood-fired boiler (WFB-1) is subject to this GACT standard. It has met the initial compliance requirements for the one-time initial energy assessment (8/28/2013) and the initial tune up (1/09/2014). Hickory Chair was required to do the following:

- comply with the general duty clause (operation and maintenance in a manner consistent with safety and good air pollution control practices);
- conduct biennial tune-ups;
- keep a copy of each notification and report submitted to comply with this rule and all documentation supporting any Notification of Compliance Status;
- maintain records to document conformance with the work practices, emission reduction measures, and management practices;
- keep records of occurrence and duration of each malfunction of the boiler, or of the associated air pollution control and monitoring equipment (multicyclones CDMCY-1 and CDMCY-2);
- keep records of actions taken during periods of malfunction to minimize emissions in accordance with the general duty to minimize emissions in 40 CFR 63.11205(a);
- keep all records in a form suitable and readily available for review either onsite or accessible from a central location, for five years following the date of recorded action; and
- submit semiannual summary reports of recordkeeping activities.

This permit renewal does not affect this status. Continued compliance is expected.

Because the other boiler at the facility (ID No. OFB, now redesignated as ID No. GFB, as discussed in Sections 2 and 4 of this review) no longer fires No. 2 fuel oil and now only fires natural gas, the boiler is no longer subject to GACT JJJJJJ. The stipulations for Subpart JJJJJJ will therefore be removed from the permit in this renewal.

40 CFR 63, Subpart OOOOOO, National Emission Standards for Hazardous Air Pollutants for Flexible Polyurethane Foam Production and Fabrication Area Sources. The wood furniture and parts coating operation (SPO-1) at Hickory Chair is subject to this GACT standard. The operation includes the following sources:

- Twenty dry filter-type spray booths (SB-1 through SB-20)
- One dip tank (DT-1)
- One wash off tank (WT-1)
- Gluing operation (G-1)
- Miscellaneous glue press operations including edge banding, resin prep, and miscellaneous coating operations (G2)
- Three steam-heated drying ovens (DO-1 through DO-3)

Under Subpart OOOOOO, Hickory Chair shall not use any adhesive that contains methylene chloride in any process where pieces of flexible polyurethane foam are cut, bonded, and/or laminated together

or to other substrates. [40 CFR 63.11416(e)]. Compliance is to be demonstrated using adhesive usage records, Material Safety Data Sheets, and/or engineering calculations. No reporting is required.

Hickory Chair has accepted conditions in their permit to avoid applicability of 15A NCAC 02D .1111: Maximum Achievable Control Technology, and the following MACT standards under 40 CFR Part 63:

- Subpart JJ, National Emission Standards for Wood Furniture Manufacturing Operations
- Subpart DDDD, National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products

To remain classified an area source for HAP and avoid applicability of these regulations, Hickory Chair must ensure facility emissions are less than the major source thresholds (10 tons per year of each HAP, and 25 tons per year of all HAP combined). They must also maintain monthly fuel consumption records of fuels or HAP containing used and/or operating hours for the following emission sources:

Emission Source ID No.	Emission Source	Material/Fuel Type
GFB (formerly OFB)	Natural gas-fired boiler (29.29 million Btu per hour maximum heat input rate)	Natural gas
WFB-1	Wood-fired fire-tube boiler (38 million Btu per hour maximum heat input rate)	Wood
DFE	Diesel-fired emergency fire pump (251 horsepower maximum rated power output)	Diesel
SPO-1	Wood furniture & parts coating and gluing operations	HAP containing coating/finishing/cleaning materials and/or adhesives

Semiannual reporting of the following is required for each month during the semiannual period, and for each 12-month period ending on each month during the semiannual period using a 12-month rolling total:

- type and amount of fuel including sulfur content used during the previous calendar year,
- type and amount of HAP containing coating/finishing/cleaning materials and/or adhesives used during the previous calendar year,
- greatest quantity in pounds of an individual HAP emitted¹:
- pounds of all hazardous air pollutants emitted²:

This permit renewal does not affect this status. Continued compliance is expected.

8. New Source Performance Standards (NSPS)

Currently, no sources at the Hickory Chair facility are subject to NSPS. This permit renewal does not affect this status.

¹ The word “emitted” replaces the word “used” which was as this requirement was written in the previous permit. It has been changed to “emitted” in this permit because reporting of the amount of pollutants emitted is necessary to determine compliance with the avoidance condition.

² See previous footnote.

9. New Source Review (NSR)/Prevention of Significant Deterioration (PSD)

The Hickory Chair facility is considered a PSD-minor source. The facility has not been reviewed for PSD purposes and is not avoiding triggering a PSD review.

Air Permit No. 02779T23 (Application No. 180010213A) was a permit modification that allowed the firing of natural gas and No. 2 fuel oil in boiler OFB. Hickory Chair used the "projected actual emissions" option under 15A NCAC 02D .0530(u)—based on limiting No. 2 fuel oil usage (with a sulfur content of 0.5 percent by weight) to 900,000 gallons per year—to demonstrate that the modification would not result in a significant emissions increase, thereby triggering a PSD review. To demonstrate continued compliance, Hickory Chair is required to maintain records of fuel usage, sulfur content and annual emissions on a calendar year basis related to the modification for 10 years and submit annual reports. Based on a phone call with Donna Musick on March 27, 2018, the facility completed the gas upgrade in 2015. Therefore, Hickory Chair is required to submit annual reports until 2025. These dates are included in the permit. This permit does not affect this status.

Language has been added to the permit to specify the projected actual emissions estimate for sulfur dioxide, and to clarify that while this estimate is not an emissions limit, Hickory Chair is required to include an explanation in their annual reports if emissions should exceed the projected annual emissions. Continued compliance is expected.

10. Risk Management Plan (RMP) Requirements

40 CFR Part 68 requires stationary sources storing more than threshold quantities of regulated substances to develop a RMP in accordance with Section 112(r) of the Clean Air Act. The RMP lists the potential effects of a chemical accident at the facility, steps the facility is taking to prevent an accident, and emergency response procedures to be followed if an accident should occur.

Hickory Chair is not subject to Section 112(r) of the Clean Air Act requirements because it does not store any of the regulated substances in quantities above the thresholds in the Rule. This permit renewal does not affect the 112(r) status of the facility.

11. Compliance Assurance Monitoring (CAM)

The CAM rule (15A NCAC 02D .0614) applies to each pollutant specific emissions unit located at a source that is required to obtain a Title V, Part 70 or 71 permit if it meets all of the following criteria:

- It is subject to an emission limitation or standard, and
- It uses a control device to achieve compliance, and
- It has potential pre-control emissions that equal or exceed the major source threshold (i.e., either 100 tons/year for criteria pollutants, 10 tons/year of any individual HAP, or 25 tons/year of any combination of HAP).

The following emission limitations or standards are exempted from the CAM rule:

- NSPS or NESHAP standards proposed after November 15, 1990;
- Stratospheric ozone protection requirements under Title VI of the Clean Air Act
- Acid rain program requirements;
- Emission limitations or standards or other requirements that apply solely under an approved emissions trading program;

- An emissions cap that meets requirements of 40 CFR 70.4(b)(12) or 71.6(a)(13);
- Emission limitations or standards for which a Part 70 or 71 permit specifies a continuous compliance determination method, as defined in 40 CFR 64.1, unless the applicable compliance method includes an assumed control device emission reduction factor that could be affected by the actual operation and maintenance of the control device (e.g., a surface coating line controlled by an incinerator for which continuous compliance is determined by calculating emissions on the basis of coating records and an assumed control device efficiency factor based on an initial performance test; in this example, this part would apply to the control device and capture system, but not to the remaining elements of the coating line, such as raw material usage).
- Certain municipally owned utility units, as defined in 40 CFR 72.2.

Please note that the emission unit is not exempted from the CAM rule if nonexempt emission limitations or standards (e.g. a state rule or an older NSPS emission limits) apply to the emissions unit.

CAM is not applicable to the Hickory Chair facility because none of the sources at the facility have potential pre-control emissions that equal or exceed major source thresholds (i.e, no sources emit 100 tons per year of any criteria pollutant, 10 tons per year of any individual HAP, or 25 tons per year of any combination of HAP This permit renewal does not affect the facility’s status with respect to CAM. Continued compliance is expected.

12. Facility-wide Air Toxics Review

While processing this renewal application, it was unclear whether the Hickory Chair facility was currently operating in compliance with NC’s air toxics program (15A NCAC 02Q .0700 and 02D .1100). Further investigation indicated that DAQ had not adequately assessed air toxics compliance on at least two occasions in the last 11 years.

- In 2013, when DAQ issued a renewed/modified permit (02779T23, 12/23/2013) to allow firing of additional fuels in boiler OFB, any increases in emissions associated with the modification needed to be evaluated for compliance—even though the subject boiler was exempt from the air toxics program pursuant to Session Law 2012-091, enacted July 1, 2012. This permit required the facility to comply with (i) an area source limitation for hazardous air pollutants (HAPs) to keep emissions below MACT thresholds, (ii) area source standards for boilers (40 CFR Part 63 Subpart JJJJJ), and (iii) MACT standards for the wood furniture industry (40 CFR Part 63 Subpart JJ), plywood and composite wood products (40 CFR Part 63 Subpart DDDD) and reciprocating internal combustion engines (Part 63 Subpart ZZZZ).
- In 2018, when DAQ again renewed the permit (02779T25, 6/15/2018) and removed the major source requirements (40 CFR Part 63 Subparts JJ and DDDD) from the permit, DAQ needed to determine compliance pursuant with the above law—but did not make this determination. This permit included the applicability for area source standards for boilers (40 CFR Part 63, Subpart JJJJJ) and flexible polyurethane foam production (40 CFR Part 63 Subpart OOOOOO), and standards for reciprocating internal combustion engines (40 CFR Part 63 Subpart ZZZZ).

To determine whether the Hickory Chair facility complies with this air toxic requirement, DAQ asked Hickory Chair to perform a facility wide evaluation for all air toxics pollutants expected to be emitted from the facility sources, regardless of whether the source is exempt from air toxics permitting pursuant to 02Q .0702. If facility-wide emissions for any regulated pollutant exceeded the applicable toxic air pollutant emission rate (TPER), pursuant to 02Q .0711, the facility would need to demonstrate compliance with the applicable acceptable ambient level (AAL), per 02D .1104. Generally modeling is performed to determine compliance with AALs. With the enactment of Session Law 2012-091, DAQ is

responsible for modeling Part 63-subject sources (i.e., exempt sources from air toxics program), but the applicant is required to perform modeling for all non-Part 63 subject sources (i.e., not exempt from air toxics program). Hickory Chair elected of their own volition to perform modeling for sources subject and not subject to 40 CFR Part 63. The modeling protocol and results were reviewed by AQAB³.

The maximum modeled toxics impacts are summarized below. They demonstrate that Hickory Chair emissions do not exceed the AALs.

Pollutant	Averaging Period	Max. Conc. (µg/m ³)	AAL (µg/m ³)	% of AAL
Benzene	Annual	0.102	0.12	85

In accordance with 15A NCAC 02Q .0702(a)(27)(B), an air permit to emit toxic air pollutants is not required for sources that are affected sources pursuant to 40 CFR Part 63 at the Hickory Chair facility. No requirements under 15A NCAC 02Q .0700 and 02D .1100 will be included in the permit.

13. Facility Emissions Review

The table in the header page of this review summarizes emissions Hickory Chair has reported in the annual emissions inventories for 2017 through 2021 after application of required emission controls. There have been no significant increases in emissions over this time period. No changes made to the permit during this time period or in this permit renewal have resulted in increases in the facility’s potential to emit.

14. Compliance History and Status

The following chronology dates from when the Hickory Chair permit was last renewed on December 18, 2018.

- August 16, 2018 Denise Hayes, Mooresville Regional Office (MRO) conducts facility compliance inspection. Facility appeared to be operating in compliance with all permit requirements.
- August 22, 2019 Denise Hayes, MRO conducts facility compliance inspection. Facility appeared to be operating in compliance with all permit requirements.
- July 29, 2020 Emily Supple, MRO conducts partial facility compliance inspection by phone due to COVID-19 visitation constraints. Facility appeared to be operating in compliance with all permit requirements.
- February 23, 2021 Emily Supple, MRO conducts facility compliance inspection. Facility appeared to be operating in compliance with all permit requirements.
- May 19, 2022 Emily Supple, MRO conducts facility compliance inspection. Facility appeared to be operating in compliance with all permit requirements.

³ N. Jones, AQAB memo titled “Corrected Review of Toxics Dispersion Modeling Analysis for Hickory Chair, LLC”, April 8, 2024. (Note: the memo lists the “% of AAL” is 75%. The table shown here lists the % of AAL as $0.102 \div 0.12 = 85\%$).

In summary, no compliance issues have been observed at the facility since the last permit renewal. Continued compliance is expected.

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

A notice of the DRAFT Title V Permit shall be made pursuant to 15A NCAC 02Q .0521. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Consistent with 15A NCAC 02Q .0525, the EPA will have a concurrent 45-day review period. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 02Q .0522, a copy of each permit application, each proposed permit and each final permit shall be provided to EPA. Also, pursuant to 02Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice is provided to the public under 02Q .0521 above.

South Carolina is an affected state within 50 miles of the facility. The Mecklenburg County Department of Environmental Protection, the Forsyth County Office of Environmental Assistance and Protection, and the Asheville-Buncombe Air Quality Agency are affected local programs within 50 miles of the facility.

Notice of the DRAFT Title V Permit to Affected States ran from XXXX, 2024, to XXXX, 2024.

Discuss any comments received from Affected States or Local Programs.

Public Notice of the DRAFT Title V Permit ran from XXXX, 2024, to XXXX, 2024. ***Discuss any public comments received.***

EPA's 45-day review period ran concurrent with the 30-day Public Notice, from XXXX, 2024, to XXXX, 2024. ***Discuss any comments received from EPA and U.S. EPA Region 4 regarding the DRAFT Title V Permit.***

16. Other Regulatory Considerations

The following items were not required in Permit Application No. 1800102.22A:

- Professional Engineer's seal
- Zoning consistency determination
- Permit fee.

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 decisions. Moreover, per EPA, the removal of these provisions is also consistent with other recent EPA actions involving affirmative defenses 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. These provisions have been removed from the permit in this permit revision.

17. Recommendations

DAQ has reviewed the permit application(s) for Hickory Chair, LLC located in Hickory, Catawba County to determine compliance with all procedures and requirements. DAQ has determined that this facility is complying or will achieve compliance, as specified in the permit, with all requirements that are applicable to the affected sources. DAQ recommends the issuance of Air Permit No. 02779T27.