

**COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
Blue Ridge Regional Office**

**STATEMENT OF LEGAL AND FACTUAL BASIS
Bassett Furniture Industries, Inc. Plant 11**

747 Beaver Creek Drive - Martinsville, Virginia
Permit No. BRRO-31013

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, Bassett Furniture Industries, Inc. has applied for a Title V Operating Permit for its Henry County facility. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

Engineer/Permit Contact: _____
Terry Moore
(434) 582-6251

Date: 12/9/13

Air Permit Manager: _____
Jed Brown

Date: 12/10/13

Regional Director: _____
Robert Weld

Date: 12/11/13

FACILITY INFORMATION

Permittee

Bassett Furniture Industries, Inc.
P.O. Box 626
Martinsville, VA 24055

Facility

Bassett Furniture Industries, Inc. Plant 11¹
747 Beaver Creek Drive
Martinsville, VA 24112

AFS ID Number: 51-089-00116

SOURCE DESCRIPTION

NAICS Code: 337122 – Non-upholstered Wood Household Furniture Manufacturing
SIC Code 2511 – Wood Household Furniture Manufacturing

The facility is a wood household furniture manufacturer of primarily tables and chairs with the following processes: Woodworking Operations (T-WW1 and T-WW2), Assembly Operations (T-WW3) and Finishing (T-FW1). The facility is a Title V major source for VOC and hazardous air pollutants (HAPS). Combined HAPs exceed 25 tpy, with at least one individual HAP exceeding 10 tpy (i.e., xylene). The facility has one underlying state NSR permit dated 6/08/04 and its conditions are included in the current Title V permit.

COMPLIANCE STATUS

A full compliance evaluation of this facility, including a site visit, has been conducted. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ, are evaluated for compliance. Based on these compliance evaluations, the facility has not been found to be in violation of any state or federal applicable requirements at this time.

EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

The emissions units, and any associated air pollution control device, at this facility are listed in the Emission Unit condition.

¹Bassett Furniture Industries Inc. stated in a 10/21/13 email that the name of the facility should be “Bassett Furniture Industries, Inc. Plant 11.”

EMISSION INVENTORY

The 2012 annual emission update has been reviewed and accepted (VOC – 126.04 tpy, HAPs – 14.32 tpy and PM-10 – 0.57tpy).

EMISSION UNIT APPLICABLE REQUIREMENTS

Applicable Title V requirements (6/08/04 permit, NSPS, MACT, etc) are discussed below in the following EMISSION UNIT APPLICABLE REQUIREMENTS:

- Assembly (T-WW3)
- Woodworking (T-WW1, T-WW2, H112 and H113)
- Finishing Operations (T-FW1)
- Wood Furniture MACT Subpart JJ
- Facility Wide

EMISSION UNIT APPLICABLE REQUIREMENTS – Assembly (T-WW3)

The Title V application identifies the VOC emissions from gluing as “insignificant”. However, gluing at this facility is subject to the Wood Furniture MACT Subpart JJ². Therefore, the gluing operation performed in Assembly (T-WW3) is not insignificant for the purpose of Title V permitting; and T-WW3 is included in the Title V permit as discussed in this SOB. The applicable requirements of Subpart JJ are discussed in **Wood Furniture MACT Subpart JJ**. The 6/08/04 underlying permit does not contain conditions specifically addressing T-WW3. However, VOC emissions from gluing are considered in establishing the annual VOC limit stated in Condition 8 of the 6/08/04 permit and is addressed below in the **Finishing Operations (T-FW1)** discussion.

EMISSION UNIT APPLICABLE REQUIREMENTS – Woodworking (T-WW1, T-WW2, H112 and H113)

Limitations

Particulate emissions from the assorted woodworking equipment are controlled by fabric filters. Each fabric is subject to a 0.01 gr/dscf emission limit, an annual emission limit and 5% opacity limit. Subsequent transfer of the collected material from the fabric filters are controlled by a completely enclosed transfer system; and any fugitive emission points are limited to 10% opacity. The permitted annual woodworking particulate emissions include the emissions from the three woodworking processes. The third process³ (i.e., sealer sander (H112) and sander

²The November 2011 amendment to Subpart JJ included formaldehyde limitations from gluing.

³The facility's 4/21/00 permit amendment increased the permitted annual particulate emissions from the operation of woodworking equipment from 21.6 to the present permitted limit of 24.2 tpy to address the emissions from the third

downdraft conveyor (H113)) is controlled by a filter identified as DFT 3-36.

Compliance Assurance Monitoring (CAM) is not applicable to the woodworking equipment as discussed in **PERMIT SHIELD & INAPPLICABLE REQUIREMENT**.

Monitoring and Recordkeeping

Each fabric filter is equipped with a device to continuously measure the differential pressure drop across the fabric filter, as required by the NSR permit; and each fabric filter exhaust is required to be observed at least once per day that the fabric filter operates. The following is required, including associated records: Minimum monthly inspection of the fabric filters; maintenance schedule of air pollution control equipment and related process equipment; written operating procedures for air pollution control equipment; train the operators of the air pollution control equipment; and maintain an inventory of spare parts. Also, records are required for square foot of wood table top, annual emissions calculated monthly as the sum of each consecutive 12-month period, data and assumption used in the emissions calculations and the justification for use in the calculations, visual observations, visible emissions evaluations and corrective actions.

The monitoring and recordkeeping required for the woodworking equipment are sufficient to assure compliance with the limitations in this permit.

EMISSION UNIT APPLICABLE REQUIREMENTS – Finishing Operations (T-FW1)

The finishing emissions units listed in the 6/08/04 permit have changed as delineated below. These changes are not subject to permitting action and are reflected in the Title V permit.

- Spray booth H118 manual spray booth on the Robot Line removed as identified in the 6/26/06 Title V renewal application and the facility's 4/9/13 letter.
- TieCoat Oven F110 (0.9 MMBtu/hr) removed as identified in the 6/26/06 Title V renewal application.
- Corrections to emission units and stack reference numbers as identified in the May 2011 Title V renewal application and the facility's 4/9/13 letter.
- The following equipment was permitted to be installed per the 6/08/04 permit⁴; however, as identified in the May 2011 Title V renewal application, it will not be installed:
 - Three Spray Booths: Toner/Stain (F121), Stain (F122) and Shade/Pad/Sealer (F123)
 - Sealer Oven F115 (0.9 MMBtu/hr)

woodworking process. The facility confirmed in a 4/9/11 letter that the filter vents to the ambient air. Therefore, the process and filter are addressed in the new Title V permit. This process is located in the facility's T-FW1 Finishing area.

⁴The approval for installation of this equipment is no longer valid per Condition 23 of the 6/08/04 permit (i.e., not commenced or discontinued for a period of 18 months).

New reference numbers have been assigned to the Spray Booths and Ovens to reflect current facility equipment and operation⁵ and to avoid confusion with facility's internal reference numbers. The current finishing equipment⁶ consists of a ten spray booths, five ovens, one washoff tank and one roll coater line as shown on the updated Finishing Room process flow diagram provided with the facility's 4/9/13 letter.

Limitations

T-FW1 consists of Spray Booths (F100, F102, F104, F106, F108, F109, F111, F113, H117 and F120), Drying Ovens (F101, F103, F105, F107 and F115), Roll Coater Line (Roll Coaters H107 and H109, and Buffer H103⁷) and Wash Off Tank (F114). The spray booths, roll coaters and ovens are subject to MACT Subpart JJ as discussed in the **Wood Furniture MACT Subpart JJ**.

The units in this section are covered by the conditions in the 6/08/04 permit, which include:

- Hourly and annual permitted emissions limits⁸ for the spray booths, roll coaters and washoff tank. The annual limits are based on estimated annual usage of coatings included in the application for the 4/9/99 permit. The hourly permitted limits are based on estimated annual usage of different coatings and hours of operation of the finishing operation⁹.

⁵The May 2011 Title V renewal application identified F111 Topcoat Booth as being a two part booth, with reference ID numbers F111A and F111B. The updated process flow diagram list only F111, but shows two process flows from the booth. The 4/9/13 letter identifies oven F107 as being a double side oven.

⁶NSR permits list number of spray guns (e.g., Condition 2 of the 6/8/04 permit – 45 spray guns). However, the maximum number of spray guns in operation at any given time is limited by the number of spray booths and the number of employees (i.e., one or two per booth). The number of spray guns at each booth can vary depending on the coatings being applied and the pieces of furniture being coated.

⁷The particulate emissions from the Buffer are controlled by the DFT 3-36, the filter that controls the Woodworking equipment sander (H112) and sander downdraft conveyor (H113).

⁸Emission limits were not established for the ovens and boilers because the quantity of annual emissions associated with fuel burning is low. The facility demonstrates compliance with the permitted VOCs and particulate from finishing by material balance, with transfer efficiency and filter control efficiency taken into consideration for particulate emissions.

⁹The application for the 4/9/99 permit provided the VOC emission calculations, with the estimated hourly calculated as noted below (see VOC). The particulate emissions calculations are not included in the Title V renewal application; however, they appear to be based on the information provided in the application for the 4/9/99 permit as noted below (see Particulate).

VOC

Hourly Coating Usage = Anticipated gallons per year of each typical coatings and solvents / (245 days/yr x 16 hours/day) x a factor of 1.5

Hourly VOC = Hourly coating usage x VOC content of coatings and solvent

Annual VOC = Annual coating and solvent usages x VOC content / 2000 lbs/ton

Particulate

Annual particulate = Solids coatings applied on a monthly basis for each coating at a transfer efficiency of 50% and a filter with a control efficiency of 95%

Solids (lbs) per month = Coating Usage (in gal/mo) x Coating Density(in lbs/gal) x Solids Content (in % by weight)

- Particulate emissions¹⁰ from the spray booths operation controlled by paper or styrene filters or water curtain, with visible emissions from the spray booth exhausts limited to 5% opacity.
- Organic compound emissions (VOC and organic HAPs) from the finishing spray booths minimized by proper spraying technique, the use of HVLP and air assisted airless spray nozzles, and by complying with the Work Practice Standards of 40 CFR 63, Subpart JJ.

Condition 8 of the 6/08/04 permit establishes lbs/hr and tons/yr of particulate and VOC emission limits from the operation of the finishing line spray booths, roll coaters and wash off tank. The permitted 248 tpy of VOC is a facility wide limit, which also includes potential VOC emissions from gluing operation performed in T-WW3. Therefore, “gluing operation” is added to the Title V permit condition addressing Condition 8 of the 6/08/04 permit.¹¹ The potential emissions associated with combustion emissions from the drying ovens and hot water heaters are less than 0.5 tpy¹² for both particulate and VOC emissions.

Compliance Assurance Monitoring (CAM) is not applicable to the spray booths as discussed in **PERMIT SHIELD & INAPPLICABLE REQUIREMENT**.

Monitoring and Recordkeeping

The 6/08/04 permit include requirements for maintaining records of all emission data, operating parameters and monitoring data necessary to demonstrate compliance with the permit. These records include: Monthly and annual material balance including the throughput and emissions of VOC and particulate matter (annual throughput and emissions shall be calculated monthly as the sum of each consecutive 12-month period); daily record of the number of hours of operation for the finishing line spray booths; data and information used in the material balance and justification for use; associated with air pollution control equipment (minimum monthly inspection; maintenance schedule; written operating procedures; training of the operators; and maintain an inventory of spare parts); and daily visual observations, visible emissions evaluations (VEE) and corrective actions. In addition records of types and quantities of coating used, including VOC and solid contents of coatings/glues, are required to determine monthly and annual particulate and VOC emissions from the application of coatings. These requirements are included in the Title V permit. Also, the Title V permit requires records to address the minimum permitted control efficiency of the spray booth’s particulate control device (95%) or if a higher control efficiency is used in calculating emissions to demonstrate compliance with the permitted emission rates (The updated Form 805 list 97.5% for paper or styrene filters.). For

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¹⁰Condition 8 of the 6/08/04 permit provides particulate emission limits as TSP and PM-10. For the Title V permit particulate limits are listed as PM and PM-10.

¹¹The Title V permit contains requirements to keep appropriate records and calculate emissions to show contribution of the gluing operation to the permitted VOC emissions limits.

¹²Potential combustion emissions calculations provided in the 6/27/06 Title V application. Potential emissions calculations verified for the permitted and nonpermitted drying ovens and hot water heaters.

demonstrating compliance with the permitted finishing emissions limits language is included in the Title V permit recordkeeping condition addressing VOC emissions from the gluing operation and in VOC and solid content of waste materials.

The spray booths are required by the NSR permit to be equipped with a measuring differential pressure drop device to continuously measure the differential pressure drop across the filter media. The Title V permit requires each spray booth exhaust to be observed at least once each day that the booth operates. . If visible emissions are detected VEEs are required to be performed, unless corrective actions is taken that achieves no visible emissions. The measuring device and the observation of visible emissions provide an indication that the filter device is operating properly and compliance with the particulate emission limits.

The monitoring and recordkeeping required for the finishing operation is sufficient to assure compliance with the limitations in this permit.

EMISSION UNIT APPLICABLE REQUIREMENTS – Wood Furniture MACT Subpart JJ

The facility is a major source of HAPs and is a new source as defined by 40 CFR 63 Subpart JJ. The Title V permit includes applicable requirements of Subpart JJ¹³, including the 11/21/11 amendment.

Limitations

The facility has historically demonstrated compliance with Subpart JJ by the use of compliant coatings. However, for permit flexibility the other continuous compliance methods are included in the Title V permit.

Monitoring and Recordkeeping

The applicable monitoring and recordkeeping requirements from Subpart JJ are included in the Title V permit, which is sufficient to assure compliance with Subpart JJ.

Reporting

Specific applicable reporting requirements from Subpart JJ are included in the Title V permit.¹⁴

¹³The 6/8/04 permit references Subpart JJ; but, specific requirements are included in the Title V permit. Table 1 of Subpart JJ identifies the requirements of Subpart A that apply to Subpart JJ. Many of the applicable Subpart A's requirements address air pollution control equipment or monitoring equipment. This facility does not have air pollution equipment or monitoring equipment that is used to comply with Subpart JJ. Therefore, these requirements of Subpart A are not applicable. Subpart JJ's amendment includes "General duty" requirements (see §63.802(c)); therefore, the general duty of Subpart A is not applicable except for §63.6(e)(1)(iii). Subpart A has not been amended since the 11/21/11 amendment of Subpart JJ.

¹⁴§63.807(a) requires the source to fulfill all reporting requirements of §63.7 through §63.10 of Subpart A. The following sections of Subpart A are applicable to this facility and are addressed in the Title V permit by general reporting Condition 20:

- §63.9 – time period adjustment, change in provided information

FACILITY WIDE CONDITIONS

Facility wide requirements addressing operation and maintenance procedures, monitoring, recordkeeping and testing from the 6/08/04 permit are included in Title V permit. However, recordkeeping in Condition 17 of the 6/08/04 permit for specific emission units is listed in the Title V permit recordkeeping condition for that emission unit.

INSIGNIFICANT EMISSIONS UNITS

The updated Form 805 on page 18 lists the hot water heaters and the drying ovens as insignificant. However, the drying ovens are considered part of the finishing operation per Subpart JJ. Therefore, they are not insignificant for Title V and are included in the emission unit table condition in the Title V permit.

PERMIT SHIELD & INAPPLICABLE REQUIREMENTS

The Title V renewal application identified the following federal requirements as being nonapplicable to the facility: Plywood MACT Subpart DDDD, Boiler MACT Subpart DDDDD and CAM. The justification from the application is provided along with an “Applicability Review” for each requirement is provided below:

- 40 CFR Part 63 Subpart DDDD Plywood and Composite Wood Products MACT not applicable because no affected operations at this plant.
Applicability Review: Subpart *DDDD* applies to a PCWP manufacturing facility, which is the following per §63.2231(a): “A PCWP manufacturing facility is a facility that manufactures plywood and/or composite wood products by bonding wood material (fibers, particles, strands, veneers, etc.) or agricultural fiber, generally with resin under heat and pressure, to form a structural panel or engineered wood product. Plywood and composite wood products manufacturing facilities also include facilities that manufacture dry veneer and lumber kilns located at any facility. Plywood and composite wood products include, but are not limited to, plywood, veneer, particleboard, oriented strandboard, hardboard, fiberboard, medium density fiberboard, laminated strand lumber, laminated veneer lumber, wood I-joists, kiln-dried lumber, and glue-laminated beams.” Therefore, this MACT does not apply.
 - 40 CFR Part 64 Compliance Assurance Monitoring (CAM) not applicable because the PTE does not exceed major source threshold for controlled emissions.
Applicability Review: In accordance with the requirements of 40 CFR 64, Compliance Assurance Monitoring (CAM), review for CAM applicability has been completed. The
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- §63.10(a) and (d) – submit to EPA a copy of the report submitted to state; report to Administrator and compliance progress report.

three conditions that must be met for an emissions unit to be subject to CAM are:

1. Emits or has the potential to emit (in the absence of add-on control devices) quantities of one or more regulated air pollutants that exceed major source thresholds,
2. Is subject to one or more emission limitations for the regulated air pollutant(s) for which it is major before control, and
3. Uses a control device to achieve compliance with one or more of these emission limitations.

The only emission units equipped with air pollution control device are the spray booths (filters and water curtains to control particulate overspray) and woodworking operations (baghouses to control particulate emissions). CAM does not apply to these emissions units because the potential uncontrolled particulate emissions are less than the 100 tpy.

- 40 CFR Part 63 Subpart DDDDD Boiler MACT emission limitations are not applicable because all process heaters are less than 10 MMBtu/hr.

Applicability Review: Since the facility's 5/2/11 Title V renewal application the final rule for Subpart DDDDD was published in the Federal Register on 1/31/13¹⁵. Based on the final rule and information provided the facility's updated Form 805 dated 5/24/13 the drying ovens and hot water heaters are not subject to the Boiler MACT as delineated below:

- The facility's Drying Ovens are do not meet the definitions of "boilers" or "process heater" as defined in §63.7575; and therefore, does not meet the applicability requirements of §63.7485 (i.e., "own or operate an industrial, commercial, or institutional boiler or process heater as defined in §63.7575")
- The facility's hot water heaters are natural gas fired each with a rated capacity of 1.44 MMBtu/hr, with a tank water capacity less than 120 gallons; and therefore, are exempt from Subpart DDDDD per §63.7491¹⁶.

MACT Subpart JJJJJ (Boiler at HAP area source) is not applicable because the facility is a HAP major source.

There are no applicable Greenhouse Gases (GHG) permitting requirements.

¹⁵However, since the final rule, EPA granted petitions for reconsideration of specific sections of the rule. EPA's 8/5/13 letter also states EPA will continue to evaluate other issues raised in the petitions and intends to make clarifying changes and corrections to the final rule.

¹⁶§63.7491 (d): A hot water heater as defined in this subpart."

§63.7575 Definitions "**Hot water heater** means a closed vessel with a capacity of no more than 120 U.S. gallons in which water is heated by combustion of gaseous, liquid, or biomass/bio-based solid fuel and is withdrawn for use external to the vessel. Hot water boilers (i.e., not generating steam) combusting gaseous, liquid, or biomass fuel with a heat input capacity of less than 1.6 million Btu per hour are included in this definition. The 120 U.S. gallon capacity threshold to be considered a hot water heater is independent of the 1.6 MMBtu/hr heat input capacity threshold for hot water boilers. Hot water heater also means a tankless unit that provides on demand hot water."

GENERAL CONDITIONS

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110 that apply to all Federal-operating permitted sources. This includes requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions

COMMENTS ON GENERAL CONDITIONS

Permit Expiration

These conditions refer to the Board taking action on a permit application. The Board is the State Air Pollution Control Board. The authority to take action on permit application(s) has been delegated to the Regions as allowed by §2.2-604 and §10.1-1185 of the *Code of Virginia*, and the “Department of Environmental Quality Agency Policy Statement No. 2-09”.

Failure/Malfunction Reporting

Section 9 VAC 5-20-180 requires malfunction and excess emission reporting within four hours of discovery. Section 9 VAC 5-80-250 of the Title V regulations also requires malfunction reporting; however, reporting is required within two days. Section 9 VAC 5-20-180 is from the general regulations. All affected facilities are subject to section 9 VAC 5-20-180 including Title V facilities. Section 9 VAC 5-80-250 is from the Title V regulations. Title V facilities are subject to both sections. A facility may make a single report that meets the requirements of 9 VAC 5-20-180 and 9 VAC 5-80-250. The report must be made within four daytime business hours of discovery of the malfunction.

Permit Modification

This general condition cites the sections that follow:

9 VAC 5-80-50 Applicability, Federal Operating Permit For Stationary Sources

9 VAC 5-80-190 Changes to Permits

9 VAC 5-80-260 Enforcement

9 VAC 5-80-1100 Applicability, Permits For New and Modified Stationary Sources

9 VAC 5-80-1605 Applicability, Permits For Major Stationary Sources and Modifications

Located in Prevention of Significant Deterioration Areas

9 VAC 5-80-2000 Applicability, Permits for Major Stationary Sources and Major Modifications

Locating in Nonattainment Areas

Malfunction as an Affirmative Defense

The regulations contain two reporting requirements for malfunctions that coincide. The reporting requirements are listed in sections 9 VAC 5-80-250 and 9 VAC 5-20-180. The malfunction requirements are listed in the Malfunction as an Affirmative Defense conditions and

Failure/Malfunction Reporting condition.

Asbestos Requirements

The Virginia Department of Labor and Industry under Section 40.1-51.20 of the Code of Virginia also holds authority to enforce 40 CFR 61 Subpart M, National Emission Standards for Asbestos

STATE ONLY APPLICABLE REQUIREMENTS

The Title V permit contains no State Only Applicable Requirements.

FUTURE APPLICABLE REQUIREMENTS

None identified.

COMPLIANCE PLAN

Not required.

CONFIDENTIAL INFORMATION

The permittee did not submit a request for confidentiality. All portions of the Title V application are suitable for public review.

PUBLIC PARTICIPATION

The draft/proposed permit public notice appeared in the Martinsville Bulletin from October 24, 2013 to November 25, 2013. No comments received.